



LIBRARY
OF THE
UNIVERSITY
OF ILLINOIS

610.5

AM

v.80²

cop. 6

RECORDING
MACHINE

CENTRAL CIRCULATION AND BOOKSTACKS

The person borrowing this material is responsible for its renewal or return before the **Latest Date** stamped below. You may be charged a minimum fee of \$75.00 for each non-returned or lost item.

Theft, mutilation, or defacement of library materials can be causes for student disciplinary action. All materials owned by the University of Illinois Library are the property of the State of Illinois and are protected by Article 16B of Illinois Criminal Law and Procedure.

TO RENEW, CALL (217) 333-8400.


University of Illinois Library at Urbana-Champaign

APR 10 2002
BUILDING USE ONLY

APR 10 2002

When renewing by phone, write new due date below previous due date.

L162



Digitized by the Internet Archive
in 2019 with funding from
University of Illinois Urbana-Champaign

<https://archive.org/details/journalofamerica8021unse>

AM
COP. 6

V 80 per 2

This Issue Exceeds 80,000 Copies

THE JOURNAL

OF THE

American Medical Association

Dr Henry Harlung
722 Diversey Parkway
NH Chicago Ill

Annual Subscription, \$6.00

PUBLISHED WEEKLY

Single Copies, 20 Cents

VOLUME 80, No. 14

535 North Dearborn Street, CHICAGO, ILL.

APRIL 7, 1923

CONTENTS AND SUBJECT INDEX

Early Recognition and Economic Aspects of Heart Disease. Robert H. Halsey, M.D., New York.....971

The Life Insurance Value of Graphic Heart Records. S. Calvin Smith, M.D., Philadelphia973

Partial Obstruction at Duodenojejunal Junction as Cause of Ulcer of Duodenum. E. P. Sloan, M.D., Bloomington, Ill.977

Defective Diet as a Cause of Sterility: Final Report of Fertility Studies in the Albino Rat. Donald Macomber, M.D., Boston978

Hypertension Heart: The Most Common Form of So-Called Chronic Myocarditis. George Edmeston Fahr, M.D., Minneapolis981

The Surgical Management of Patients with Goiter. W. D. Haines, M.D., Cincinnati984

Oriental Sore (Cutaneous Leishmaniasis) in the United States. Robert A. Lambert, M.D., New Haven, Conn.986

Subcutaneous Implantation of the Human Ovum. George L. Streeter, M.D., Baltimore989

Osteomyelitis of the Ilium in Children. Carl Bearse, M.D., Boston.....991

Keratoderma Blennorrhagica. Herman L. Kretschmer, M.D., Chicago...993

Lipemia Retinalis. Horace Gray, M.D., and H. F. Root, M.D., Boston...995

Caffein Intravenously—the Best of Stimulants. W. W. Duke, M.D., Kansas City, Mo.....998

The Scope of the Roentgenologist's Report. Charles D. Enfield, M.D., Louisville, Ky.....999

NEW AND NONOFFICIAL REMEDIES

Ethylene as an Anesthetic.....1003

EDITORIALS

Some Misconceptions About Hypertension and Diet.....1004

A Cheerful Prospect in the Field of Public Health Activities.....1005

Proposed Tests for Fatigue.....1005

CURRENT COMMENT

A French Surgeon Turns Litterateur1006

The Undetermined Nitrogenous Compounds of the Urine.....1007

Alcohol and Disease.....1007

The Emergency Function of the Suprarenals.....1007

SPECIAL ARTICLE

The Care and Feeding of Infants (Concluded).....1001

ASSOCIATION NEWS 1008

(Subject Index on next page)

Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on June 14, 1918. If undeliverable, return postage is guaranteed. Copyright, 1923, by the American Medical Association. NEXT ANNUAL SESSION, SAN FRANCISCO, JUNE 25-29, 1923

BOOKS

There is a particularly important work announced today on page 3.



40 Years' Experience

When you consult Dr. Griffith's work, *Diseases of Infants and Children*, you are profiting by an experience covering 40 years, with a large private and hospital practice. One entire section is devoted to Infectious Diseases, fully discussing every disease peculiar to childhood, and in each case detailing etiology, method of transmission, pathologic anatomy, symptoms, complications and sequels, prognosis, clinical and bacteriologic diagnosis, treatment and general rules for the hygienic care, and quarantine regulations. There is a large section on the diseases of the respiratory system, particularly emphasizing rhinitis and pneumonia. Besides the specific discussion under each disease, there is an entire chapter devoted to general therapeutics. In this chapter are included the administration of medicine, dosage, table of dosage at one year, hypodermic injection, hypodermoclysis, intraperitoneal injections, enemata, enteroclysis, inhalations, inunctions, hydrotherapy, vaccine and serum therapy, intravenous injections, transfusion of blood, lavage, mechanotherapy, etc.

Use coupon on page 3.

Diseases of Infants and Children. By J. P. CROZER GRIFFITH, M.D., Professor of Pediatrics in the University of Pennsylvania. Two octavos totalling 1500 pages, illustrated. Per set: Cloth, \$18.00 net

SAUNDERS, Publishers

See Page 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics.

Abrams outdone; diagnosis by machine....	1017
Alcohol and disease.....E-1007	
passengers' liquor allowance questioned..	1014
Alcoholism, increased frequency of.....	1034
Ametropia, ametropic eyes.....	1033
Anatomy, study of skeleton at different ages	1038
Anemia, chronic, blood volume and plasma in	1027
pernicious	1034
Aneurysm, aortic, rupture of.....	1029
Angina pectoris, surgical treatment of....	1029
Antigen, lyophil and lyophobic proteins as.	1034
Aortitis, abdominal	1033
Appendicitis, suppurative, primary union after operation for.....	1031
Appendix, oxyuris vermicularis in.....	1031
Arteriosclerosis, intestinal	1035
Artery, renal, rupture of	1031
coronary, thrombosis of.....	1027
Asphyxia neonatorum	1034
Association News	1008
Balloon, toy, accidents due to.....	1017
Betanaphthol, dosage of.....	1023
Bile duct, substitute for Kehr's drainage of	1036
Birth rate, factors contributing to depopulation	1034
control libel action.....	1016
Blinded, war, books for.....	1018
Blood, Arneith's blood count in normal infants	1036
hemoglobin and corpuscles in infants....	1037
nonprotein nitrogen in.....	1038
platelets and vitamin A.....	1030
pressure, high, and diet, some misconceptions about	E-1004
pressure, high, and protein feeding.....	1028
pressure, Korotkow's method of determination of	1034
sedimentation speed of corpuscles.....	1034
sugar curve after heat puncture.....	1038
sugar, diurnal variation in, of rabbit....	1027
Body, relative weight of parts of.....	1024
Books	1025
Base	Adv. page 26
base of.....	1017
as a stimulant.....	*998
ition.....	1033
losage of.....	1023
team, occupational sensitization to.....	1027
Celiac plexus, blocking of.....	1033
Cell degeneration, pigmented fatty change in	1031
metabolism, change of.....	1034
Children, growth (temporary dwarfs).....	1036
motor underdevelopment of intellectually normal children	1036
welfare, practical instruction in.....	1018
Cholera, rapid diagnosis of.....	1033
Chorea, cardiac complications of.....	1039
Colloid shock in relation to malaria.....	1033
Congress, conference on hygiene, microbiology and pathology.....	1019
eighth congress of legal medicine.....	1019
Correspondence	1023
Cow, diseases of.....	1031
Deafness in schoolchildren.....	1037
Death penalty, infliction of, by lethal gas	Ml-1026
Deaths	1021
Diabetes insipidus and pituitary tumor....	1035
diastase in blood and urine in.....	1031
Diagnosis by machine.....	1017
Diet, some misconceptions about hypertension and	E-1004
Diphtheria, antigenic value of toxin-antitoxin mixtures	1030
campaign against	1020
prevention and control of.....	1029
"the intracutaneous guinea-pig test for human susceptibility and immunity to diphtheria"	C-1023
Diuresis and intensity of metabolism....	1034
Docimasia, pulmonary	1034
Drugs, habit-forming, control of.....	1019
Duhamel, Georges, a French surgeon turns litterateur	E-1006
Duodenojejunal junction, partial obstruction at	*977
Duodenal ulcer, cause of.....	*977
Dwarfs, "temporary dwarfs".....	1036

Dystrophy, general, and scurvy.....	1036
Education, danger of stereotyped curriculum	1009
opportunities for study at French clinics.	1014
Embolism, air, during urethroscopy.....	1017
Encephalitis, Parkinsonian syndromes after, atropin in	1035
postencephalitic psychic disturbances....	1038
Encephalography	1035
Epilepsy, treatment of.....	1037
Epiphysis, mechanical strain on.....	1035
Erythema nodosum	1038
Ethylene as an anesthetic.....	1003
Eyes, accommodation in ametropic eyes after correction with glasses.....	1033
Fat, pigmented fatty change in cell degeneration	1031
tissue in new-born.....	1036
Fatigue, test for, in neurasthenia.....	1038
proposed tests for.....E-1005	
Feces, occult bleeding in feces of infants.	1036
Feeblemindedness, psychic energy and mental insufficiency	1038
Fever, blood sugar curve after heat puncture	1038
Foreign Letters	1016
France, opportunities for study at French clinics	1014
Gas, infliction of death penalty by use of lethal gas	Ml-1026
Gastrectomy, improved technic for.....	1028
Gastro-enterostomy, improved technic for.	1028
Gastro-intestinal tract, movement of mucous membrane of	1028
Goiter, surgical management of.....	*984
Government Services	1015
Headache, nervous, calcium treatment of.	1038
Health activities, a cheerful prospect in field of	E-1005
conference	1019
Heart disease	*971
graphic records	*973
patient, chronic	1030
sarcoma of, primary.....	1029
Hematemesis in nephritis.....	1027
Hospital interns and externs, risks incurred by	1017
Hydrostatic test	1034
Hypospadias, balanic, correction of.....	1032
Ilium, osteomyelitis of.....	*991
Immunology, lyophil and lyophobic proteins as antigen and antibody.....	1034
Infant, breast feeding at Lima.....	1033
care and feeding of.....	*1001
intestinal intoxication in.....	1029
new-born, fat tissue in.....	1036
Infection, bacterial, and vitamin C.....	1031
Intestine, endogenous infection of.....	1036
Intoxication in infants.....	1029
Kehr's drainage of hepatic duct, substitute for	1036
Keratoderma blenorrhagica	*993
Kidney, aches and pains of renal origin....	1030
function tests and salt.....	1032
Kinesia, postencephalitic paradoxical.....	1033
Labor, acute dilatation of stomach after.	1037
Lactation, food consumption of rats during and after	1036
Lead, white, dangers of.....	1018
Leishmaniasis, cutaneous, in United States.*986	
Leprosy, antimony in.....	1033
Leukemia, chronic, volume of blood and plasma in	1027
Lipemia retinalis	*995
Lumbar region, treatment of pains in....	1037
Malaria, colloidal shock in relation to....	1033
Malta fever, unusual case of.....	1032
Marriages	1020
Masseurs, granting of diplomas to.....	1018
Medical Education, Registration.....	1009, 1024
Medicine, art of.....	ab-1010
Medicolegal	1026
Meinicke reaction, modified.....	1034
Meninges, regeneration of.....	1028
Menopause, preclimacteric corpulence....	1037
Mercuriochrome-220 soluble, caution in use of	C-1023
Metabolism, change of cell metabolism....	1034
intensity of, and diuresis.....	1034
Motor underdevelopment of intellectually normal children	1036
Mouth, disinfection of	1034
Muscles, nourishment of.....	1024
Myocarditis, chronic, and so-called hypertension heart	*981
Myositis purulenta tropica.....	1032
Narcotics, embargo on, modified.....	1014
Nephritis, hematemesis in.....	1027
urcemia and nitrogen retention.....	1035
Neurasthenia, test for fatigue in.....	1038
New and Nonofficial Remedies.....	1003
News	1011

Obesity, preclimacteric corpulence.....	1037
Occupational therapy	1033
Opium, international opium commission to meet again	1014
Osteomyelitis of ilium.....	*991
Owl Enamel Toilet Cream.....	P-1022
Parathyroid tetany.....	1027
Pasteur, ceremonies in honor of.....	1020
Perineum, traumatic laceration of.....	1029
Peyote, traffic in, prohibited.....	1014
Physicians, second annual clinical tour....	1014
wanted for Indian Service.....	1015
Pigmentation and fatty change in cell degeneration	1031
Pituitary tumor and diabetes insipidus....	1035
Plague in East Indies.....	1020
Pneumothorax, spontaneous, double.....	1028
Polycythemia vera, case of.....	1029
Pregnancy, extra-uterine	*989
food consumption of rats in.....	1036
vomiting of	1035
Prohibition in Turkey.....	ab-1003
in Great Britain.....	1016
Propaganda for Reform.....	1022
Protein feeding and hypertension.....	1028
lyophil and lyophobic proteins as antigen and antibody	1034
therapy, nonspecific, scientific basis for.	1031
therapy, specific and nonspecific.....	1038
Psychic energy and mental insufficiency..	1038
Pyelitis, autogenous vaccines in.....	1038
Pylorus, cancer, diagnosis of metastasis of.	1033
stenosis of, caused by corrosive substances	1036
Queries and Minor Notes.....	1023
Reflexes, myoclonic	1037
Renal vein, rupture of, by slight injury..	1031
Retina, lipemia retinalis.....	*995
Ribs, resection of, and puncture of thorax.	1034
Roentgenologist's report, scope of.....	*999
Roentgen's monument.....	1015
Salt and kidney tests.....	1032
Schistosomiasis	1031
Scurvy and general dystrophy.....	1036
metabolism in	1035
Sex education in lycées, or secondary schools	1018
Sinus, sphenoidal sinus disease.....	1035
Skin, tuberculosis of, x-ray treatment of....	1035
Smallpox	1019
Society Proceedings	1026
Sodium chlorid, action of.....	1035
Sprue, tropical	1027
State Board Examinations.....	1024
Sterility, defective diet as a cause of.....	*978
Stomach, cancer of.....	1034
dilatation of, acute, after childbirth.....	1037
oats in tubercles in stomach wall.....	1031
operative treatment of.....	1035
ulcer, alkaline treatment of.....	1028
Student strikes, government intervention in	1019
Suicides, juvenile.....	1013
Suprarenals, emergency function of....E-1007	
Syphilis, puncture of lymphatic glands in syphilitics	1034
fight against	1018
Tachycardia, paroxysmal ventricular.....	1028
Therapeutics, grants for research in.....	1008
Thorax, puncture of, and resection of ribs.	1034
Tonics and Sedatives.....	Adv. page 22
Trichomoniasis, intestinal	1023
Tuberculosis, action of lymphocytes in....	1037
bacilli in blood.....	1034
fight against	1020
infection in	1035
of infants	1035, 1036
prophylaxis against	1018
pulmonary, surgical treatment of.....	1033
sanatorium, reorganization of.....	1019
treatment of	1035
Tumors in Dutch East Indies.....	1020
Typhoid, autolysate-precipitin reaction in.	1027
Uremia and nitrogen retention.....	1035
Urethroscopy, fatal air embolism during....	1017
Urine, acidity of, and food.....	1035
effect of meals on urinary constituents....	1030
hippuric acid in formation of.....	1037
undetermined nitrogenous compounds of	E-1004
Urology, French	1012
Uterus, deep x-ray therapy in inflammations of adnexa.....	1037
hemorrhage	1035
Vaccination, validity of ordinances requiring	Ml-1026
Vital statistics, mortality among women.	1020
Vitamin A and blood platelets.....	1030
C and bacterial infection.....	1031
Wassermann reaction, prognostic value of.	1037
Weight, relative weight of parts of body....	1024
Zonite	1024

BOOKS

Medical Works of All Publishers. All American and English Monographs. One Order, One Remittance. Get Our Latest Bulletin. CHICAGO MEDICAL BOOK CO., Congress and Honore Sts., Chicago

HAVE YOU SUBSCRIBED FOR **HYGIEIA** See Page 17

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 14

CHICAGO, ILLINOIS

APRIL 7, 1923

EARLY RECOGNITION AND ECONOMIC ASPECTS OF HEART DISEASE*

ROBERT H. HALSEY, M.D.

NEW YORK

It is the acquirement of skill in perception and logical deductions therefrom that justify the restrictions of public health measures, which are often so irksome and irritating to the individual. More accurate and more detailed knowledge of disease requires wider gathering and immediate recording of information by trained observers.

Experience teaches the value of learning what organ or function is impaired when a person is incapacitated, but the importance of applying the same known principles of investigation in public health problems is not widely recognized.

Just now it is my desire to direct attention to the incapacity and increasing number of deaths due to disease of the heart.

It has become a routine to examine a patient for the evidence of impairment of the heart during, or soon after, the occurrence of diseases such as tonsillitis, rheumatism, chorea, bone or joint pains, scarlet fever, diphtheria, pneumonia, typhoid, syphilis or gonorrhea; but in many instances active diseases or actual defects do not cause incapacitating effects until long after the destructive process was initiated and skilled observers could have recognized it. Yet it is not common for the apparently well to be examined.

To illustrate how insidious the source of the infection of rheumatism may be, it was stated recently,¹ at an interhospital conference in Budapest, that acute rheumatic fever was an infection passed to children in breast milk. St. Lawrence,² in a study of 100 cases of heart disease in 100 separate families, found that there were 480 other persons, adults and children, in these families, who could be considered as exposed. In the group of 580, excluding the original 100 with heart disease, he found that seventy-one, or 14.8 per cent., had had acute rheumatic infections; forty-nine, or 10 per cent., had had acute rheumatic fever, and thirty-eight, or 8 per cent., had heart disease. That is, for every hundred children with heart disease, he found thirty-eight others in the families exposed, and not all of them knew of their condition until after his examination. These figures are instructive, and are suggestive of the possibility of an actual infection dis-

tributed by contact. It does not, of course, exclude the possibility of simultaneous exposure to similar climatic and weather living conditions and to the same sources of an infection with a selective affinity for the myocardium. One can venture safely the remark that few of the exposed described above are examined regularly or frequently for evidence of active or past infection. This finding is a definite indication for the careful, general, periodic examination of all those living in contact with persons having rheumatism or heart disease, at least, until other findings corroborate or refute these.

The examination of large numbers of children attending the schools of New York City shows that there are somewhat less than 1 per cent. with organic heart disease. Assuming this morbidity to apply to the schoolchildren of the whole country, there would be approximately 200,000 children with heart disease between the ages of 6 and 16 years. Most of these children enter school with the handicap; therefore, it is clear that there is a large group of children of pre-school age with heart disease.

During the war there were, up to December, 1917, 3,764,000 men sent to camp from civil life,³ of whom 550,000 were rejected because of defects, of which 11.5 per cent. were cardiac defects, while other circulatory defects brought the percentage up to 15, which makes circulatory defects rank second as a cause of disqualification in the whole group. Organic heart disease disqualified 3.1 per cent. of all the drafted men in the second, third and fourth decades of life.

Examination of those working in industry and of those applying for life insurance finds two in every hundred handicapped by organic heart disease. Children of preschool age, schoolchildren, young men and industrial workers all show the presence of a relatively large percentage of defects due to the circulatory system.

A survey recently completed by the Association for the Prevention and Relief of Heart Disease of ten hospitals of New York City, having 7,799 beds, representing nearly 25 per cent. of the hospital beds (32,000) of the city, showed that there were cared for 4,831 patients, requiring 244,521 bed days, or nearly 10 per cent. of the total capacity (2,836,635 bed days) of those hospitals. The average daily cost was \$2.69, and amounted to a total of \$658,379.10, an average cost for each patient of \$1,961.17.

Nov. 1, 1922, there were registered in forty-three cardiac clinics in New York 5,904 patients, or approximately 25 per cent. of the patients visiting all the outpatient departments of the city in one month. This proportion is somewhat larger than one person in

* Read before the Section of Social and Economic Sciences, American Association for the Advancement of Science, Boston, Dec. 28, 1922.

1. Acute Articular Rheumatism in Children, Budapest Letter, J. A. M. A. 79: 1441 (Oct. 21) 1922.

2. St. Lawrence, William: The Family Association of Cardiac Disease, Acute Rheumatic Fever, and Chorea, J. A. M. A. 79: 2051 (Dec. 16) 1922.

3. Ireland, M. W.: Physical Defects Discovered in Selective Draft Men During the World War, J. A. M. A. 79: 1579 (Nov. 4) 1922.

recently introduced methods of cardiographic examination often yield evidence of unsuspected heart conditions; conditions which, were they to continue until the age of perhaps 45, would by that time have so progressed as to be manifest in physical signs of heart fault sufficiently pronounced to constitute cause for rejection of the applicant. It is well known that there is an increased percentage of rejections for cardiovascular cause at 45 years, over similar rejections during the third decade of life; and a quite likely explanation is that, as the years advance, the wear and tear on a heart that has been resisting the effects of focal infection or resisting a heritage from the "innocent" infections of childhood may be uncovered by the manifestation of physical signs.

PHYSIOLOGIC IRREGULARITIES AND HEART PROTESTS

On the other hand, there are certain irregularities which are characteristic of the youthful heart (Figs. 1 and 2) and which are at times accompanied by auscultatory phenomena that cause the cautious examiner to reject the applicant as a potential heart risk, even though the life histories of persons similarly affected have, time and again, shown the error of such judgment. A heart record made at the time of examination would have identified the irregularity as physiologic; the acceptance of the applicant would have been warranted and the clinical judgment fortified by the physiologic record written by the heart itself. Again, it is perfectly possible for the more severe focal infections and toxins (Figs. 3 and 5) to produce clinical symptoms of heart muscle inefficiency to a degree that simulates actual structural heart disease with the attendant physical signs of heart enlargement and abnormal sounds. Such symptoms and signs are present as long as the toxic causes are present and are sufficient warrant for the rejection of the applicant. But on removal of the cause, the heart no longer protests (Figs. 4 and 6), the symptoms abate, the physical signs disappear and the heart is amply able to support the individual indefinitely.

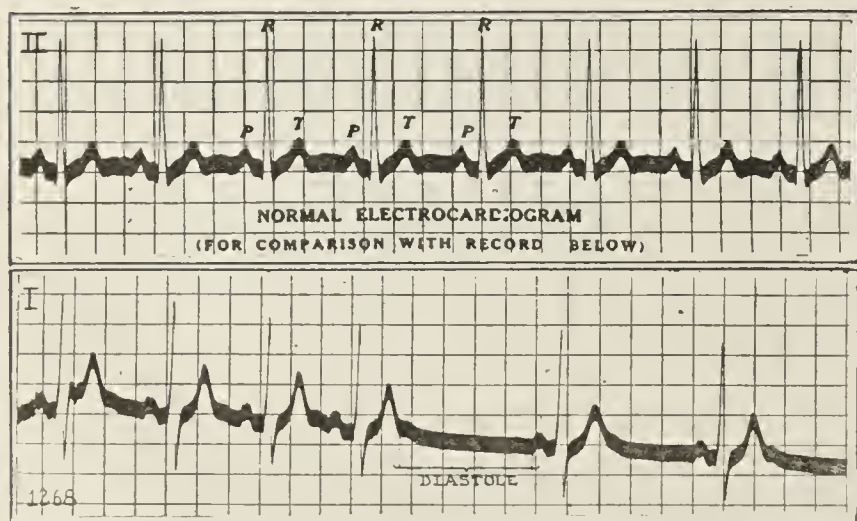


Fig. 2.—Sino-auricular block: In the middle of the lower record the diastole suddenly lengthens, as though a beat had dropped out. Here again the P-R-T sequence remains unchanged, as in sinus arrhythmia. Both irregularities are believed to be due only to a change in vagal tone.

ECONOMIC LOSS THROUGH INSUFFICIENT HEART APPRAISAL

In the first of the foregoing instances, that of the applicant rejected because of a physiologic irregularity, and in the second instance, that of the applicant rejected on account of remediable heart protests, profound economic losses have been sustained by the individual and by the corporation concerned. The applicant has not only been denied the protection which life insurance

affords him or his dependents: his efficiency is impaired by the thought that rejection for heart disease is a pronouncement sufficient to curtail his activities and limit all his undertakings. The insurance companies suffer an annual loss in premiums which, in the aggregate, must be enormous. Both sources of economic loss could have been avoided in many instances by the employment of cardiographic investigation. A further avoidable source of loss is that attendant on the payment of death benefits to insured persons who, at the time of

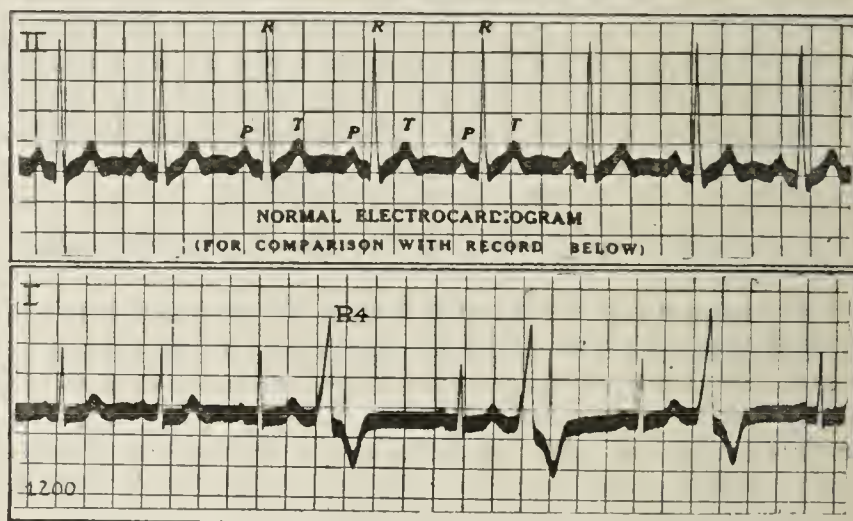


Fig. 3.—Ventricular premature contractions: The fourth R (ventricular) spike in the lower record is distorted and occurs in advance of its anticipated interval, shortening the usual flat rest period between beats. It is followed by a longer diastole than usual, called the "compensatory pause." R waves 6 and 8 are also premature.

examination, were free from the usual clinical signs of heart defect and were yet nevertheless victims of structurally defective heart musculature (Figs. 7, 8, 9 and 10), a fact which is being proved repeatedly by written heart records.

Consideration of a few recent cases will illustrate the points set forth above and will serve to establish the life insurance value of graphic heart records.¹

ILLUSTRATIVE CASES

CASE 1.—During a routine examination for life insurance, a young man was found to be in good physical condition excepting for an irregular pulse. The previous history was negative. There were no symptoms or signs referable to a possible heart defect, nor was the youth conscious of any physical limitations. It had been noted that the pulse was more irregular in rate at the beginning of the examination than it was half an hour later; therefore the applicant was referred for cardiographic study. The record (Fig. 1) identified the irregularity as sinus arrhythmia, which is a physiologic condition in youthful hearts, due to the effect of respiration on the vagus; the pulse rate increases on inspiration, decreases on expiration and remains unchanged when the breath is held. Naturally, the more rapidly a person breathes (as when under the excitement incident to the beginning of an examination), the more marked are the rate variations. On cardiographic determination of the innocent nature of the arrhythmia, the applicant was accepted.

1. In order to simplify the illustrations, only one of the customary three records is shown in each figure. (Illustrations are reduced one-third.) Each of the illustrations is surmounted by a normal record. When a heart record is normal, each group of movements begins with the P wave, which is associated with auricular contraction. This P (auricular) wave, two tenths of a second later, is followed by a tall spike called the R wave, which is associated with ventricular contraction. The R (ventricular) wave, which is synchronous with the first sound of the heart, represents that ventricular activity which produces the pulse at the wrist. The R (ventricular) wave is followed by a more slowly rising wave called T, which is also associated with ventricular activity. Following the T wave, the record is flat, and this flat line corresponds with the diastole of the heart. Every P-R-T event is a rhythmic repetition of its predecessor. Each wave is directed upward and is evenly spaced; that is, each wave occurs at a stated and regular distance from its fellows. Furthermore, every wave is the same shape and size. These features, in brief, constitute a normal electrocardiogram. The record is abnormal when one or more waves change in sequence, amplitude, direction, duration or distance.

CASE 2.—A very active youth of the athletic type had been refused life insurance on three occasions for the reason that the pulse was irregular after exercise. An agent for a fourth company was sufficiently impressed by the youth's physical powers and freedom from heart symptoms to refer the applicant for cardiographic study. The irregularity (Fig. 2) was

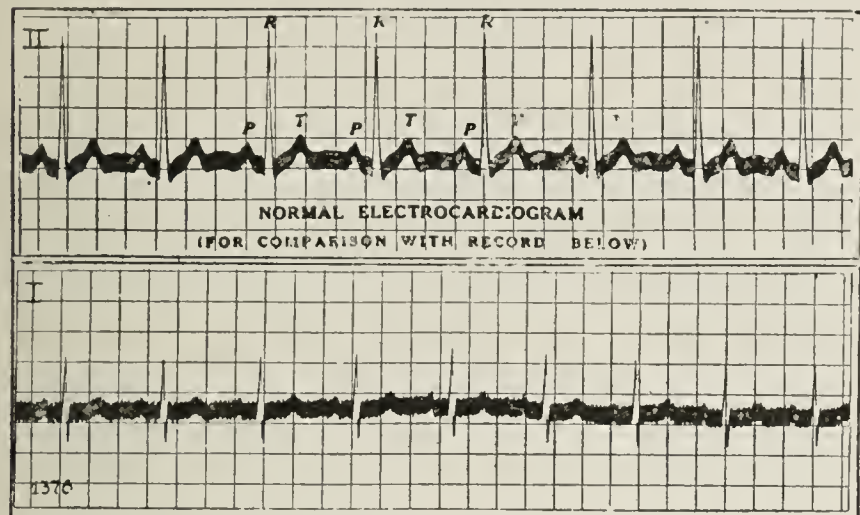


Fig. 4.—Disappearance of premature contractions: The lower record, taken several months later, demonstrates that the premature contractions shown in Figure 3 have completely disappeared, following the removal of a toxic cause; viz., infective tonsils. The record is now normal.

found to be due to "sino-auricular block," which is produced by a change in vagal control; no evidence of heart defect was found, and on submission of the record the applicant was "accepted for any amount up to \$100,000"; although one wonders why any limit whatever was placed on the applicant's insurability by the accepting company.

CASE 3.—The person whose record is shown in Figure 3 was advised not to apply for insurance, as the multiple premature systoles would produce a disturbance of the pulse and a synchronous alteration in heart sounds which might readily be considered as an evidence of structural heart muscle fault. Further physical examination and bacteriologic culture

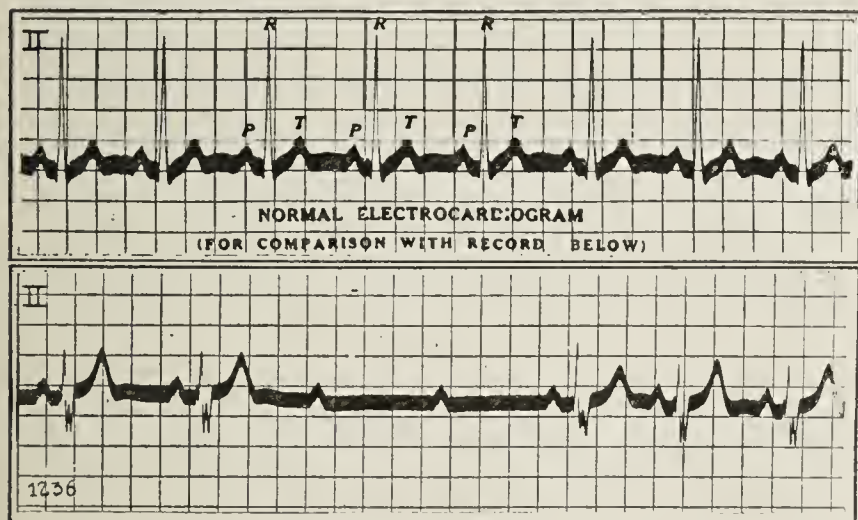


Fig. 5.—Actual dropped beats: In the lower record, the auricles continue to beat uniformly, but the ventricles fail to respond to the third and fourth auricular impulse. Following this long pause, the pulse begins to beat regularly again, as shown by the presence of the R waves.

revealed infective tonsils as a possible toxic cause of the heart disturbance, and the tonsils were removed. The pulse irregularity soon began to decrease in frequency following tonsillectomy, and after a few months disappeared completely (Fig. 4). As subsequent records remained normal, there was no cardiographic evidence of heart disturbance, and the person was advised that insurance might be applied for.

CASE 4.—The person whose record is presented in Figure 5 was considered a poor risk on account of an irregular pulse, and the graphic record established the cause of the irregularity to be actual dropped beats. The auricles contracted regularly, but at times the ventricles failed to respond. This ventricular silence was accompanied by an absence of the pulse at the wrist. The condition is a low grade heart block and may eventuate in block of higher grade; hence, it is not

an insurable condition. It seemed from the history that the irregularity was present only when the patient had been drinking liquor of undetermined source and purity; when the poisonous liquor was abandoned, the pulse irregularity disappeared (Fig. 6) and, from a cardiographic standpoint, the man became insurable.

CASE 5.—Figure 7 shows auricular flutter, in which the auricles are contracting regularly at 225 beats a minute, while the ventricles average 105 beats a minute. The irregularity is a serious one, impossible of recognition by clinical examination; electrocardiographic records alone can establish its presence. On detection of auricular flutter, I should reject, without further consideration, any person in whom it had once been graphically proved; for no matter by what means it is corrected, auricular flutter has a tendency to recur. The young man whose record is presented in Figure 7

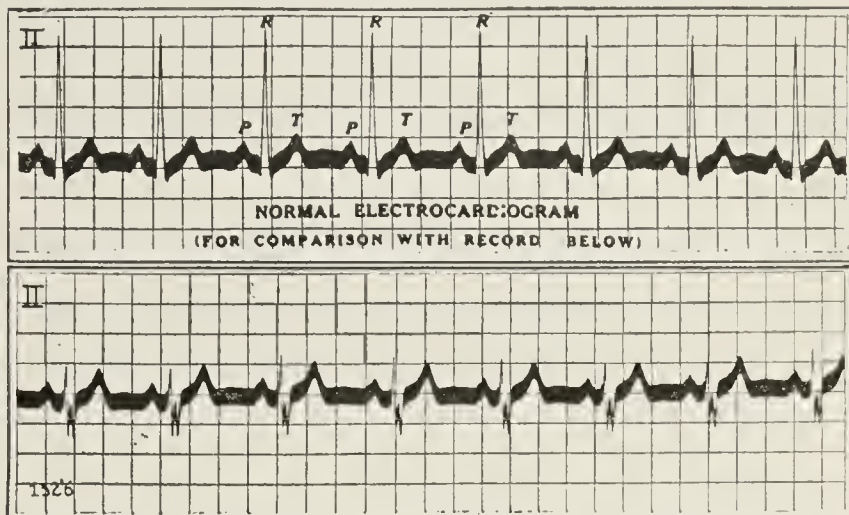


Fig. 6.—Disappearance of dropped beats: The lower record, taken a few weeks later, demonstrates that the actual dropped beats shown in Figure 5 have completely disappeared, following the removal of a toxic cause; viz., poisonous liquor. The record is now the individual's normal.

was conscious of "only a rapid beating of the heart when climbing stairs to the elevated train" and was surprised when his dentist insisted that the heart rate, during dental extraction, was too fast to be counted. Figure 8, taken after exercise, proves that the statement of the dentist was correct, for either excitement or exercise would cause the ventricles to respond to every auricular impulse, rather than to every other auricular impulse as before; and the pulse rate at the wrist was 255 beats per minute.

The insurance moral of this case lies in the fact that the man, two weeks previously, had been accepted by two insurance companies. It is left to the reader to estimate how long

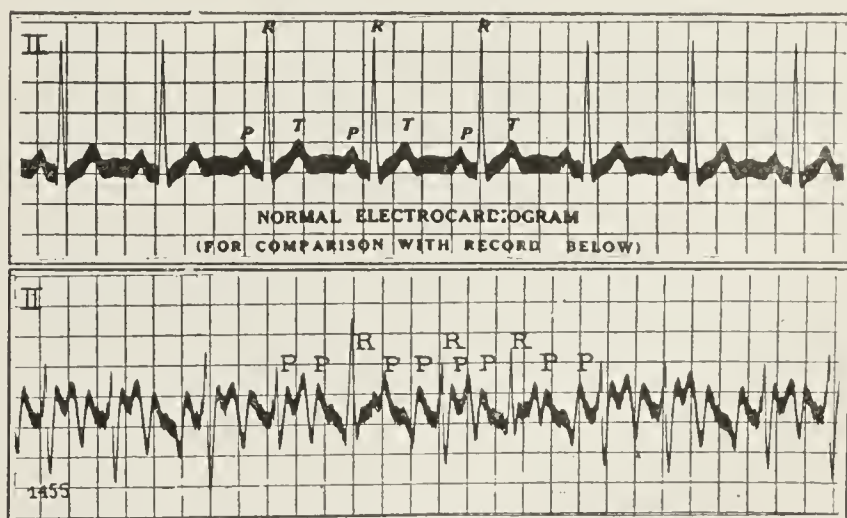


Fig. 7.—Auricular flutter: In the lower record, the auricles (P waves) are beating twice as fast as the ventricles (R waves), the rates being 255 and 105, respectively. It is impossible to establish this condition by clinical examination. Auricular flutter is indicative of serious heart muscle abnormality.

the heart may be able to respond to physical effort which raises the ventricular rate to 255 beats per minute. Certainly, an effective circulation cannot be maintained for long, and two insurance companies are likely soon to have to pay sick

benefits to a person invalidated by heart disease, or death benefits to a widow.

CASE 6.—The applicant in this instance was middle aged and sought a great amount of insurance. The previous history was good as far as ascertainable, and the pulse was fairly regular; but the graphic record established that auricular fibrillation was present (Fig. 9). Auricular fibrillation, as is well known, is indicative of grave heart muscle

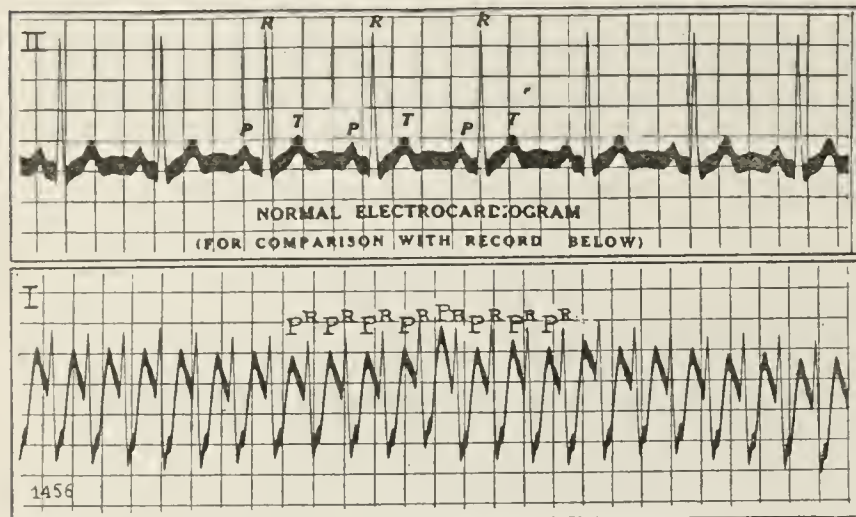


Fig. 8.—Auricular flutter aggravated by ordinary effort: The lower record shows a ventricular rate of 255 beats a minute, following the simple exercise test of stair climbing. In Figure 7, the ventricles responded only to every other auricular impulse; in this figure, the ventricles respond to each auricular impulse.

disease; in persons who are up and around, it usually signifies structural heart muscle damage, although it may occasionally be transient and of fleeting toxic origin. When confronted by the record, the applicant stated that electrocardiograms taken in Germany twelve years previously, and at intervals since, had established the same irregularity to his satisfaction, but that he had learned to modify his life so that he had no discomfort or inconvenience whatever, and had recently been insured by two insurance companies for large amounts.

The applicant, in deceptive health, was rejected on two premises: 1. Auricular fibrillation may terminate spontaneously at any time, and, when it does, emboli are likely to be set free from the enlarged right auricle, with resultant death from embolism. 2. The applicant was already middle aged, and the affected heart could not be expected to hold

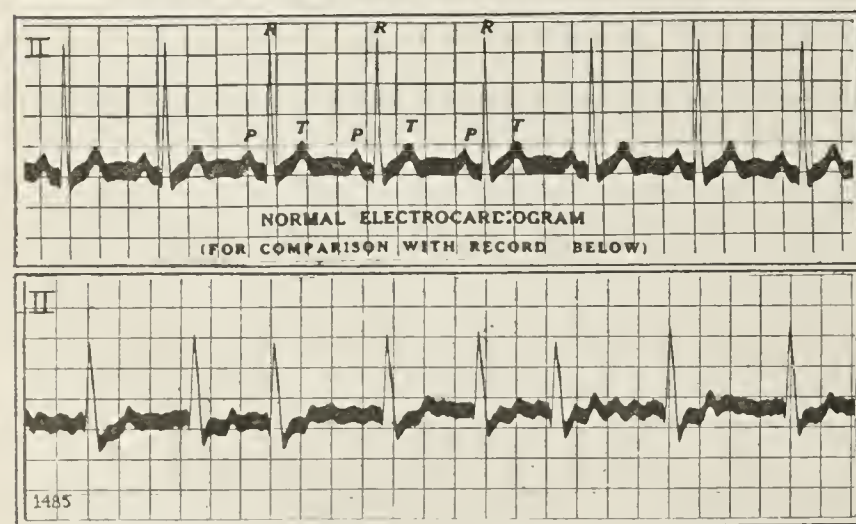


Fig. 9.—Auricular fibrillation: Despite the fact that the pulse beats in the lower record are fairly regular, as shown by the R (ventricular) spikes, auricular fibrillation is definitely established by the absence of regularly recurring, definitely formed and evenly spaced auricular (P) waves in front of the R spikes.

out as well in the future against the burden of advancing years as it had in the past, when the bodily recuperative powers were at a higher level.

CASE 7.—A man past middle age asked on his own account that a cardiogram be made, giving as his reason the fact that his curiosity had been aroused by an insurance examiner who, a few weeks before, had been "puzzled by the heart sounds."

The record (Fig. 10) showed that the ventricular muscle was so structurally altered that it delayed the passage of the contraction impulse and one ventricle contracted later than its fellow. It was a cause for rejection of the applicant, had the "puzzled" examiner but desired to avail himself of the information which written heart records can often give when the heart sounds are split or unduly prolonged. The policy, however, was delivered. That was fifteen months ago. The death benefits have since been paid.

CONCLUSIONS

1. It is possible, by written heart records, to detect heart affections that cannot be recognized by any other method of examination. Thus electrocardiography is of importance in any life insurance or other examination in which a knowledge of the physical fitness of the individual is of first consideration.

2. There are certain pulse irregularities that are not an evidence of heart disease, and graphic records that establish the physiologic character of such irregularities are additional warrant for the acceptance of the applicant for insurance.

3. The heart can protest, symptomatically and physically, against the effect of toxins without being structurally diseased, and such heart protests will often

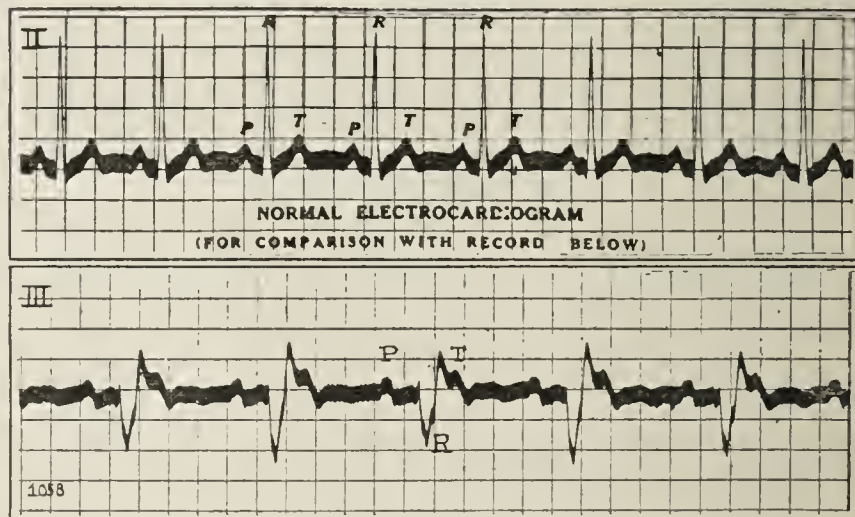


Fig. 10.—Structural change in heart muscle: "Chronic myocarditis": Because the ventricular muscle was diseased, the passage of the ventricular impulse was so delayed that the usually slender R spike (directed downward in this instance) is broadly spread out at its base; also, the distance from the beginning of the P (auricular) wave to the beginning of the R (ventricular) wave is much longer than normal, a further indication of delay in the passage of the impulse. Such a condition could be clinically suspected perhaps, but when it is established by a heart record, there is no longer room for doubt.

disappear on removal of the cause, thus rendering the applicant insurable.

4. The routine employment of cardiographic investigation will prevent economic losses to insurance companies in three ways: (1) by determining the innocent nature of certain pulse irregularities which might be considered cause for rejection by those insufficiently trained in modern cardiology; (2) by furnishing written evidence that a remediable heart fault has been corrected, and (3) by furnishing definite, indisputable evidence of structural heart muscle defect that is impossible of determination by any other method of examination.

323 South Eighteenth Street.

History of Medicine in America.—At the Sixth Latin American Medical Congress, held recently at Havana, Dr. D. Tamayo stated that, within eighty years after the discovery of America, four universities had been founded, and by the end of the third century there was a total of eleven. His address on the history of medicine in America is reproduced in *Vida Nueva* 14:261, 1922.

PARTIAL OBSTRUCTION AT DUODENO-
JEJUNAL JUNCTION AS CAUSE OF
ULCER OF DUODENUM

E. P. SLOAN, M.D.

BLOOMINGTON, ILL.

The most frequent cause of partial obstruction at the duodenojejunal angle is the mesocolic band, described by W. J. Mayo in 1908. Until that time the vicious circle following gastro-enterostomy was the terror of all operators. Since Mayo published his description of this band and advocated its separation before gastro-enterostomy is performed, the vicious circle after gastro-enterostomy has been rarely seen. However, he seemed to attach no importance to the presence of this band as the cause of duodenal ulcer.

My attention was drawn to its presence as a cause of duodenal ulcer in 1910. After separation of the band that extended down for $5\frac{1}{2}$ or 6 inches below the duodenojejunal flexure, the contents of the stomach and duodenum were seen immediately to pass down into the jejunum. The patient appeared to be dying on the table, and the abdomen was closed without the performance of a gastro-enterostomy, although the duodenum and the pylorus were apparently involved in a large ulcer, and many large gallstones were present in the gallbladder. The patient recovered from the operation, and was apparently clinically cured of the ulcer. Two years later, she was operated on again for the relief of recurrent attacks of gallstone colic. At the second operation, no evidence of ulcer could be seen. Cholecystectomy and appendectomy were done, and she has remained clinically well to the present time.

In 1911, I observed by fluoroscopy the last portion of the test meal remain in the duodenum for more than two hours. The stomach emptied in four and one-half hours, but enough of the last portion of the test meal remained in the duodenum to be plainly seen for two hours longer. The action of the duodenum was carefully watched. Five hours after the meal was swallowed, half an hour after the stomach appeared to be empty, quite a mass was in the transverse and ascending portions of the duodenum. Ten minutes later it had returned to the first portion of the duodenum. A fairly well defined cap was present. Some of the test meal passed back through the pylorus and was plainly seen in the stomach. The last portion of the test meal made the excursion from the pyloric region to the distal end of the duodenum and back again about every twenty minutes. Pain was always present while it was returning to the pyloric region. Six and one-half hours after the meal was taken, the patient became very hungry and faint. Another test meal was given, and the stomach commenced to empty rapidly. Three fluoroscopic examinations were made four weeks apart with practically the same findings. At operation we found, not the jejunosocolic band we expected, but a very strong ligament of Treitz that was kinking the intestine at the duodenojejunal flexure and holding it tightly against the head of the pancreas. Separation of most of the ligament of Treitz relieved the kink and afforded more room. Immediately the duodenal contents passed into the jejunum. Nothing more was done, although the large duodenal ulcer seemed to have invaded the pylorus. The patient made a good clinical recovery, and no duodenal stasis has since been discovered, although she has had several similar examinations.

Since that time we have demonstrated fifty-two times at operation that duodenal ulcer and partial obstruction at or near the duodenojejunal flexure were present at the same time, and that surgical relief of the partial obstruction permitted the duodenal contents immediately to pass freely down into the jejunum. This makes, with the two cases reported, fifty-four.

In fourteen, a definite jejunosocolic band was present. In ten, veils or light adhesions, seemingly of inflammatory origin definitely kinking the jejunum near its origin, were found. In nine, the obstruction was due to the irregular shape of the opening through the mesocolon or to the ligament of Treitz. In six of them the duodenum was ptosed to such an extent that a very acute angle was formed at its terminal portion. In fifteen cases the obstruction was due to more than one of these causes.

The operative procedure of the fourteen cases in which there were jejunosocolic bands consisted merely in separating this band up to the duodenojejunal flexure and covering over the raw surface on the under side of the mesocolon with peritoneum, and then attaching the jejunum to the under side of the mesocolon in such a way as to approximate the raw surface left on the jejunum after the separation of the band with the under surface of the mesocolon in such a position as to eliminate the kink. In all these cases it was turned to the left, while before operation it turned sharply to the right. The appendix was removed in five cases, the gallbladder in four; both appendectomy and cholecystectomy were done in two. Nothing else was done in three cases.

In the ten cases due to veils or inflammatory bands, the kinking seemed to be due more to twisting of the jejunum than to angulation. In two of these ten cases the bands extended entirely around the jejunum, making a definite and inelastic ring that narrowed the caliber of the intestine. Cholecystectomy was done in four of these ten cases, cholecystotomy in two, appendectomy in two, and both appendectomy and cholecystectomy in two.

In the nine cases due to irregularities in form at the mesocolic opening, the condition seemed to be aggravated in four cases by a very low pancreas, and in five by a large, irregular head of the pancreas. In two, severance of a portion of the ligament of Treitz seemed to relieve the interference at once. In four, it was necessary to notch the edge of the opening in the mesocolon and to anchor the jejunum in a different position. In three cases it seemed necessary to separate several small bundles of fibers that appeared to be narrowing the opening and constricting the intestine, and then anchor the jejunum to the mesocolon for a short distance from its origin. Cholecystectomy was done in two cases, appendectomy in one, and both cholecystectomy and appendectomy in one. In five there was no other surgical interference.

The six patients with ptosed duodenum were subjected to plication of the inferior layer of the mesocolon, notching of the edge of the mesocolic opening, and change in direction of the first part of the jejunum. Three of them were subjected to suspension of the right kidney. One had appendectomy, four had appendectomy and cholecystectomy, and one had cholecystotomy.

In the fifteen cases in which there were more than one cause for the partial obstruction, there were ptosis of the duodenum and acute angle from fixation by bands or veils of the jejunum to the right in seven.

Plication of the right mesocolon and notching of the edge of the opening and anchoring of the jejunum to the left were done. In four there was general enterop-
tosis, and the intestine was kinked at the flexure like a rubber tube hung on a nail. In these four cases the mesocolic opening was notched, and the jejunum anchored in the left position. A Bainbridge intestinal stasis operation was performed, with a colon, kidney and liver suspension by the Hazen method. One patient had a strong jejunosocolic band 6 inches below the flexure, and many slight adhesions above that point, with thickening and dilatation of the jejunum proximal to the band. One had an apparent hernia of the terminal portion of the duodenum down through the opening. It appeared to be fixed at the right side of the opening but not at any other point; about 1½ or 2 inches of the left side seemed to slide down through the opening. Narrowing of the opening, anchoring of the jejunum to the left and severance of several adventitious bands were done.

The other two patients had, in addition to jejuno-
mesocolic bands, an irregular mesocolic opening that caused the intestine to pass for a distance of 1½ inches between the folds of the mesocolon before it emerged from between the layers. As some large blood vessels were in the edge of the folds, the mesocolon was split anteroposteriorly and the peritoneum tucked into the enlarged opening and sewn in place. The jejunosocolic band was severed and the jejunum fixed to the left. Four appendixes and two gallbladders were removed, and stones were removed from the common duct in one case. Nothing else was done in three cases.

These fifty-four cases of duodenal ulcer in which gastro-enterostomy was not done were selected from a series of 264 consecutive cases of duodenal ulcer. In the other 210 cases, gastro-enterostomy was done.

During the same period of time, gastro-enterostomy was done in thirty-two cases of ulcer of the stomach. When any obstruction is present at the pylorus, we consider gastro-enterostomy absolutely necessary.

During this period of time, while the abdomen was open for other procedures we severed a jejunosocolic band, separated adhesions, or notched the edge of the mesocolic opening or the ligament of Treitz 310 times, when the preoperative diagnosis included "probable ulcer of the duodenum," but ulcer could not be definitely demonstrated at operation. Doubtless, ulcer was present in many of these cases but could not be demonstrated.

These fifty-four cases were carefully selected. All but eleven patients had some other operative interference at the same time, but the final clinical recovery from ulcer in all of these cases has been so satisfactory that we believe that obstruction at or near the duodeno-
jejunal angle is at least one of the causes of duodenal ulcer.

Nine different times during the last two years the bismuth solution has been observed passing up into the bile ducts while the duodenum was being injected. In one case the gallbladder entirely filled, and its outline was definitely seen by the fluoroscope. By the time that a roentgenogram could be made, most of the solution had disappeared from the gallbladder and from the duodenum. Some very fine, soft stones were present in the gallbladder, and these showed up beautifully in the roentgenogram. They were doubtless still covered with a fine film of bismuth.

CONCLUSIONS

Partial obstructions at the duodenojejunal junction are sometimes the cause of duodenal ulcer, or make the conditions favorable for its development. In some appropriate cases, removal of these partial obstructions without gastro-enterostomy will be sufficient for the cure of the ulcer.

DEFECTIVE DIET AS A CAUSE OF
STERILITY

FINAL REPORT OF FERTILITY STUDIES IN THE
ALBINO RAT *

DONALD MACOMBER, M.D.
BOSTON

In 1920 and 1921, working at the Bussey Institution in collaboration with Dr. Edward Reynolds ¹ of Boston, I carried out certain experiments with rats to determine the effect of deficient diets on breeding and to see whether we could produce sterility by this method. The work had been suggested to us by certain effects of deficient diet as reported by Dr. E. V. McCollum ² of Johns Hopkins University. He had found that rats on

TABLE 1.—Composition of Diets

Stock Diet—Normal	
Hominy.....	33.25
Skim milk powder.....	11.0
Rolled oats.....	33.25
Salt.....	0.5
Meat scrap.....	22.0
In addition, unlimited amounts of special "dog" bread with analysis: carbohydrate, 65%; protein, 15%; fat, 7%; calcium phosphate, 6.7%; fiber, etc., 6.3%.	
Diet A—Low in Calcium	
Whole wheat.....	67.5
Sodium chlorid.....	1.0
Casein.....	15.0
Inert substance.....	1.5
Whole milk powder.....	10.0
Cod liver oil.....	5.0
Diet B—Low in the Fat Soluble Factor	
Rolled oats.....	40.0
Salt mixture (McCollum).....	3.7
Gelatin.....	10.0
Dextrin.....	40.3
Casein.....	5.0
Cod liver oil.....	1.0
Diet C—Low in Protein and Calcium	
Wheat whole.....	60.0
Dextrin.....	32.5
Sodium chlorid.....	1.0
Cod liver oil.....	5.0
Inert substance.....	1.5
Diet D—Generally Deficient Diet	
Wheat bran.....	20.0
Gluten meal.....	10.0
Wheat middlings.....	14.0
Meat scrap.....	12.0
Ground oats.....	13.0
Alfalfa meal.....	20.0
Corn meal.....	9.5
Powdered chalk.....	1.5

deficient diets not only failed to make satisfactory growth but often failed to reproduce. The diets used in our experiments were so designed as to permit growth (Table 1). They were, however, deficient in one or more important elements.

The result of these early experiments bore out what might have been anticipated, and we did actually produce a certain number of completely sterile animals. Postmortem examination showed that there were no gross anatomic abnormalities, and sections of ovaries and testicles failed to show any noteworthy changes in these organs. We had used for our work a strain of albino rats that had been inbred by Dr. Helen D. King ³ of the Wistar Institute for thirty-three generations,

* This work was aided by a grant from the Elizabeth Thompson Science Fund.
1. Reynolds, Edward, and Macomber, Donald: Defective Diet as a Cause of Sterility, J. A. M. A. 77: 169-175 (July 16) 1921; Certain Dietary Factors in the Causation of Sterility in Rats, Am. J. Obst. & Gynec. 2: 379 (Oct.) 1921.
2. McCollum, E. V.: The Newer Knowledge of Nutrition, New York, the Macmillan Company, 1918; Ed. 2, 1922.
3. King, Helen D.: J. Exper. Zool. 26: 335, 1918; 27: 1, 1919; 27: 29, 1919.

brother and sister mating. She had found that inbreeding at first much reduced health and fertility, but that if the individuals chosen for continuing the strain were selected for vigor, the fertility and health of the stock became restored, though at a somewhat lower level than for controls. In order to accumulate a sufficient number of these rats for our experiments, it became necessary to continue the inbreeding.

In this way we accumulated records of a good many matings of rats on normal diet. We found that there was the greatest possible difference in the fertility of the various individuals. For instance, the matings of certain individuals were practically invariably successful, whereas in other cases only one or two out of a number might be positive, and there were all degrees of variation between them. We were forced, therefore, at the outset to the conclusion that, even in this closely inbred strain, individuals varied as to fertility as well as in other characteristics. As stated above, we found that the effect of deficient diets was to produce some actual sterility; but when we came to consider the breeding records of the animals placed on these diets, we discovered that we had made all of them less fertile than those raised and kept on the stock diet. It seemed at first that we had produced a great deal of sterility. Our method had been to keep the animals on the diets at least one month, and then to mate them while still on the diet with other animals treated in a similar manner. A very large proportion of these matings was unproductive. We did not feel, however, that it was fair to conclude that the animals were sterile unless further matings had been tried. For this purpose we used highly fertile animals which had been raised and proved to be fertile on the stock diet. The result of these rematings in many cases was immediate reproduction. In thirty-seven cases it proved that both of the animals supposed to have become sterile through diet and which were unable to have young together proved to be promptly fertile when remated with these new and highly fertile partners. In many other cases, one of the original pair proved fertile.

It seemed impossible to explain these results with any knowledge at our command, and we were forced to formulate an hypothesis of relative fertility. The problem was how to explain the fact that two individuals who might have a sterile mating together would promptly reproduce with other partners. They must have been fertile in some degree all the time; but, apparently, their degree of fertility was not sufficient when combined to produce young, and yet was sufficient for reproduction with more highly fertile partners. Our theorem, in brief, was that the fertility of a mating could be expressed as the product of the fertility of the individuals concerned, and that if this mating fertility was below a certain level, which we called the threshold for reproduction, no young would result, but that if it was above this level the mating would be positive. This hypothesis we advanced in a tentative way, for we realized that we had not sufficient experimental proof to confirm it in any conclusive way. It seemed advisable to collect a large number of breeding records to test it out. As controls, we had the records of 1,381 rats bred by Dr. Castle on stock diet. They were of many varieties as far as genetic constitution is concerned, and were as a whole highly fertile. Out of 1,172 females, 1,109 were fertile, four were completely sterile, fifteen were doubtful, and forty-four were killed or died from disease or other cause. Of 209 males, 190 were fertile, seven were sterile, nine were

doubtful, and three died or were killed. The fertility of this stock was therefore very high, and is to be contrasted with that of the inbred rats, in which the percentage of sterile and doubtful cases was very much higher.

We now proceeded to mate these animals with our rats of decreased fertility. As stated above, the effect of diet on the inbred animals had been to reduce fertility still further and to increase the amount of sterility. We have records of 622 matings of these inbred rats. Some of the matings were between rats whose fertility had been artificially lowered by deficient diet; some were between inbred rats naturally of lowered fertility, and some with proved animals from the control stock. Thus, every possible combination was made in our matings.⁴ An analysis of these records shows that there were forty-six rats which were mated five or more times; nineteen, four times; thirty-three, three times, and forty-two with only one or two matings each.

If we for the moment disregard all those rats which had less than five matings, and classify these forty-six animals according to the percentage of successful matings which each had, we can get perhaps a rough indication of their comparative fertilities. There were only two in which 80 per cent. or better of the matings were successful; in five, between 60 and 80 per cent. were successful; in ten, from 40 to 60 per cent.; in ten, more than 20 to 40 per cent., and in five, less than 20 per cent. In addition to these, thirteen other animals proved to be completely sterile.

This immediately gives us a rough method of classifying the fertility of these individuals, but it will, of course, give a false picture to this extent, namely, that the other partner of each mating must be taken into consideration, and that a negative mating with a rat all of whose matings are equally negative should not be counted as necessarily detracting from the fertility of the first individual. In other words, the breeding record of every individual must be considered in conjunction with that of the individual with which he has been mated, and the latter in turn with the records of those other rats with which they have been mated. It will be seen that it is possible by a method of trial and error and repeated revaluation gradually to approximate figures which will represent the degree of fertility for all individuals concerned. It is convenient to make these estimates as percentages; when fertilities are so estimated, it is found that in practice the figures so obtained can be used to calculate the fertility of a mating, and to predict whether it will be a productive or an unproductive one. If equations are made, substituting for these individual fertilities as calculated, figures will be obtained giving various mating fertilities. When these are arranged in a series, it will be seen that the value for all matings found experimentally to be positive is above a certain figure, and, on the contrary, all those that proved to be unproductive will be below that figure.

This figure proves to be in the neighborhood of 0.50, or 50 per cent. We gave it the name of the threshold for reproduction. There were, however, certain exceptions to the general rule, but it was found that they were grouped closely about this level. In order to explain these anomalous cases, we put forward the suggestion that, instead of a rigidly fixed value, such as 50 per cent., for the threshold, there is rather

4. These records are being published in greater detail in an article to appear shortly in the *American Naturalist*.

a doubtful zone extending above and below it. With this change we can now state definitely that all matings above the doubtful zone were positive, and all matings below were negative. With our present rough methods of estimating individual fertilities, it is impossible to predict certainly whether a given mating will be positive or negative if it falls within this zone.

If this theory of the threshold value for fertility is accepted as a working hypothesis, it proves to be of the greatest help in further correcting some of the estimations of individual fertilities.

These estimated values have been gathered together in Table 2 and arranged in five columns. The first column is made up from 1,300 odd breeding records furnished us by Dr. Castle as controls. These were

TABLE 2.—Fertility Distribution *

Castle Rats on Stock Diet	King Rats on Stock Diet	Fertile Adults on Deficient Diets	Growing King Rats on Deficient Diet	Growing King Rats on Special Defi- cient Diet
100 1,299 individuals	1, 3, 4, 5, 6, 9, 12, 24, 25, 26, 45, 48, 49, 50, 51, 52, 67, 69, 70, 118, 53		87a, 95b	
90		-3b.		
	66, 80		35b, 54b, 57a, 62a, 72b, 97b, 58b, 92a	122, 123, 125, 130, 132, 137
80				
1 individual		4b, 5b, 26b, 67b, 25b, 48a?	27b, 36b, 37b, 71b, 74b, 75b, 77b, 83c, 84c, 86c, 93a, 94b, 104a, 59b	94, 124, 128
70				
	44, 63, 64, 68	6c, 12c	16a, 61c, 76a, 78a, 101a, 103a, 105a	131
60		9c?		
8 individuals	43		32Fb, 55b, 73b, 88a, 96b, 106b, 107b, 108b, 15c, 21a, 28b, 17c, 85a, 99a, 100b	120, 126, 146
50	-65, 79			
8 individuals				
40				
	116		13c, 14c, 18c, 19c, 20a, 29a, 30b, 32Ma, 34b, 38a, 39a, 56c, 60c, 81c, 82c, 98b, 102a	119, 121, 127 129, 136, 143
10 individuals		24b, 50c, 51b, 52c, 69c, 53a		
	Spontane- ous varia- tion in fertility of inbred (King) rats	Effect of deficient diets on fertility of inbred adults	Effect of deficient diets on fertility of growing inbreds	Effect of generally deficient diet on growing inbreds
0				

* Numbers are experimental numbers assigned individual rats. When followed by a small letter a special diet is indicated; a stands for Diet A; b stands for Diet B, and c for Diet C. For the explanation of this table, the reader is referred to the text.

between vigorous animals raised and mated on the stock diet. Their genetic constitution was, as stated, of the most varied type. The second column is made up of all the inbred albino rats on the stock diet of which we had definite records. The last three columns show the effect of various deficient diets on the fertility distribution among the inbred rats. The third column is for adults which had been raised to maturity on stock diet, and whose fertility had already been proved before they were submitted to the deficient diets. The fourth and fifth columns show the distribution for young inbred albino rats that were allowed to grow to maturity on the deficient diets (compare Table 1, Diets A, B, C and D). As will be noted, the control animals are recorded by totals only, whereas the experimental number of each of the other rats is given. These numbers are arranged on a fertility scale from 100 per cent. down to zero. The small letter after each number designates the particular diet to which that rat was

submitted, and an analysis of these diets is given in Table 1.

Study of Table 2 brings out several interesting facts. The typical fertility distribution for highly fertile animals on a normal diet is shown in the first column. It will be observed that a good 95 per cent. are in the most fertile class; that there are a few animals which are of lesser degrees of fertility, and that there are a few more which are sterile.⁵

Column 2, while showing a somewhat similar distribution to the preceding, has more animals that are relatively less fertile. The series is too small to form a basis for deciding on the percentage of actual sterility developed by inbreeding; furthermore, when one considers the method by which these animals had been bred (only from those selected for vigor), it will be seen that this will be no true guide as to the effect of inbreeding on the production of sterility. Columns 3, 4 and 5 show that the effect of deficient diets on fertility is greatly to increase the numbers of relatively infertile and sterile animals, and this is true for adult animals as well as for growing animals, though to a lesser extent. The effects of the individual diets do not vary materially, except that the effect of Diet C, which is defective in two elements, is much greater than for either A or B, which are defective in only one. The diets used with the rats in Column 5 were generally deficient and were not specially designed, as were Diets A, B and C. They were made up chiefly of cereal products, and were lacking in vitamin content and succulence (Diet D, Table 1, gives the typical analysis).

The kind of dietary deficiency, therefore, is not important. It seems rather to be the degree, since, the greater the deficiency, the larger the proportion of sterility. The way in which the diet seems to affect sterility is through its general effect on the health of the individuals. The less the effect on health, the less on the average the effect on fertility.

CONCLUSIONS

There may be great individual variation in fertilities. Such variation is increased by inbreeding and by deficient diet. When the variation is great, the amount of sterility is also great. There are individuals whose fertility is so low that they are unable to reproduce with one another, but whose fertility remains sufficiently high to allow immediate and successful reproduction with highly fertile individuals. We have formulated a theory of fertility to explain these facts. It may be thus summarized: The fertility of a mating is the result of the product of the fertility of the two individuals concerned. If this mating fertility is above a certain level, the mating is productive; if not, it is unproductive. This level we have called the threshold of reproduction. A fairly large series of further matings and rematings has seemed to confirm this theory, at least in its general aspects. The subject requires further experimental study, and it would be interesting to determine whether there is any hereditary factor involved in fertility.

321 Dartmouth Street.

5. Postmortem examinations of these ten sterile rats showed nothing abnormal except pyometra in one female, and pus in the seminal vesicle in one male.

Phases of Hospital Work.—There are two main phases of hospital work to be kept in mind. The first is concerned with the advancement of medical science, the second with the care and cure of those who apply to the hospital for healing.—Howard and Lennox, *Mod. Hosp.* 20:119 (Feb.) 1923.

HYPERTENSION HEART

THE MOST COMMON FORM OF SO-CALLED CHRONIC
MYOCARDITIS *

GEORGE EDMESTON FAHR, M.D.

MINNEAPOLIS

Preventive medicine has scored great triumphs in the realm of epidemic and infectious diseases, reducing the death rate from these diseases in civilized countries remarkably. This reduction is largely due to the accurate knowledge of the etiology of these affections gained through scientific studies on their causative organisms.

Whereas the death rate from epidemic diseases in consequence of our knowledge of their pathogenesis has on the whole been falling, the death rate from chronic diseases, notably cancer and heart disease, has been rising, 124,000 persons having died of organic heart disease, exclusive of acute endocarditis and pericarditis, in 1920.¹ Heart disease has now become the leader of the forces of death.

If we are to prevent heart disease in the future, or even increase the expectancy of persons having it, we must increase our knowledge of the factors concerned in its production. In this paper I shall attempt to prove that hypertension is the most important factor in the etiology of chronic heart muscle disease.

Chronic heart disease usually developing after the age of 40, due to a primary failure of the heart muscle and unassociated with valvular defect,² is generally termed chronic myocarditis.³ Foci of chronic infection somewhere within the organism are most frequently assumed to be the cause of this heart muscle weakness. The greater majority of these hearts show marked hypertrophy and dilatation of the left ventricle, and diffuse connective tissue proliferation between the muscle bundles as well as into the muscle bundles. In addition, cicatricial patches are found, though much less frequently than generalized connective tissue proliferation. The above mentioned histologic changes are found in the heart muscle of those chambers of the heart that are called on to do increased work, and apparently are not due to inflammatory processes to any great extent.

For example, I found a great hypertrophy of the muscle of the right ventricle and auricle, the typical interfascicular and intrafascicular increase of connective tissue and large scars in the right ventricular musculature in two cases of marked pulmonary stenosis of congenital origin recently seen at necropsy. There was no microscopic evidence of active inflammation or of healed inflammatory processes in the heart muscle, and no history of any more than the usual amount and kind of childhood infections, as measles, mumps and an occasional cold. Both children had lived until late adolescence. Both had attempted to keep up so far as possible in work and play, and had shown signs of gradually increasing myocardial weakness. Here the chambers of the heart called on to do an excessive amount of work, and only these, had responded by hypertrophy, connective tissue proliferation and scarring. The left ventricles were slightly atrophied. To assume that a chronic infection extending over

fifteen years and localizing only in the right ventricles and auricles was the cause of the histologic changes and heart failures in these cases is to do violence to our sense of logic.

The medical department of this university recently saw a patient with bronchial asthma of apparently great severity present since the age of 3 years, who died of heart failure at the age of 19. Necropsy revealed a marked hypertrophy and dilatation and some slight connective tissue hyperplasia of the right ventricle and auricle only. There were no signs of infective processes in the heart muscle. The left ventricle was normal. Here, again, that part of the heart called on to do increased work in overcoming the increased peripheral resistance in the alveolar circulation during forced expiration showed the most common findings of chronic heart muscle disease.

In cases of arteriosclerosis of the finer pulmonary arteries of such a degree that an increase in the pressure of the lesser circulation is necessary to keep up an adequate blood flow, hypertrophy and connective tissue hyperplasia are found in the right ventricle. The left ventricle of these patients usually shows no change. In valvular disease of the heart, the hypertrophy and connective tissue increase of the heart muscle are always found at necropsy in those chambers doing increased work.

It is true that in some hearts coming to necropsy with the diagnosis of chronic myocarditis, focal lesions strongly indicative of inflammatory processes are sometimes found. But, as Aschoff⁴ has remarked, after a most careful examination of 150 hearts, the amount of apparent anatomic damage due to inflammatory processes both in chronic heart muscle insufficiency and in rheumatic fever heart disease is usually so small that other factors must be invoked to explain the progressive heart failure resulting finally in these conditions.

Stadler⁵ has produced myocardial changes, such as hypertrophy, interfascicular and intrafascicular fibrosis and the cardiac edema and lymphatic infiltration described by Letulle,⁶ by aseptically producing aortic and tricuspid valve lesions in animals which were kept alive for months after the operations. The myocardial changes were always found in the chambers called on to do increased work. The myocardium of these hearts corresponds histologically very closely to the usual picture of heart muscle in chronic heart muscle disease. Only the small and large scars frequently seen in so-called chronic myocarditis and due to small and large vessel thrombi are lacking in the heart muscles of these experimental animals.

No one has ever produced experimentally by inoculation with micro-organisms cardiac hypertrophy and interfascicular and intrafascicular fibrosis, the most common histologic changes in so-called chronic myocarditis. I therefore believe that there are no good grounds for assuming that chronic infections are the most important or the primary etiologic factor in the production of chronic heart muscle disease. On the other hand, I do not wish to be misunderstood. I recognize certain types of chronic heart muscle disease, as, for example, abscess in the walls of the heart, rheumatic fever nodules of Aschoff, and parenchymatous degeneration, due to invasion of micro-organisms. But the cases are rare in which a heart muscle is so extensively invaded by

* From the Department of Medicine, University of Minnesota Medical School.

1. Mortality Statistics, 1920.

2. Relative mitral insufficiency or relative tricuspid insufficiency is not included under valve defect. The valve is not damaged, but the muscle narrowing the insertion of the valve leaflets is ineffective in narrowing the ring to its normal systolic diameter.

3. Christian: Chronic Myocarditis, Tr. A. Am. Phys. 33: 67, 1918.

4. Aschoff: Die heutige Lehre von den pathologisch-anatomischen Grundlagen der Herzschwäche, Jena, 1906.

5. Stadler: Experimentelle und histologische Beiträge zur Herzhypertrophie, Deutsch. Arch. f. klin. Med. 91: 98, 1907.

6. Letulle: Recherches sur les hypertrophies cardiaques secondaire, Thèse de Paris, 1879.

inflammatory processes that these areas are sufficient to explain the myocardial insufficiency. It is therefore necessary to seek for other etiologic factors for chronic heart muscle disease not accompanied by valve defect.

INCIDENCE OF HIGH BLOOD PRESSURE IN FAILURE OF HEART MUSCLE

Dr. E. T. Bell of the department of pathology of the University of Minnesota suggested to me that hypertension must be associated with most of the cases of chronic heart muscle disease unassociated with chronic valvular disease. Following his suggestion, I have investigated the subject and have come to the conclusion that approximately three fourths of all so-called chronic myocarditis is due to a primary hypertension. Allbutt⁷ and others have emphasized the frequency of heart failure in hyperpiesia, but I know of no one who has attempted to explain the majority of heart muscle failures unassociated with valvular defect on the basis of chronic hypertension and its effects on the heart muscle.

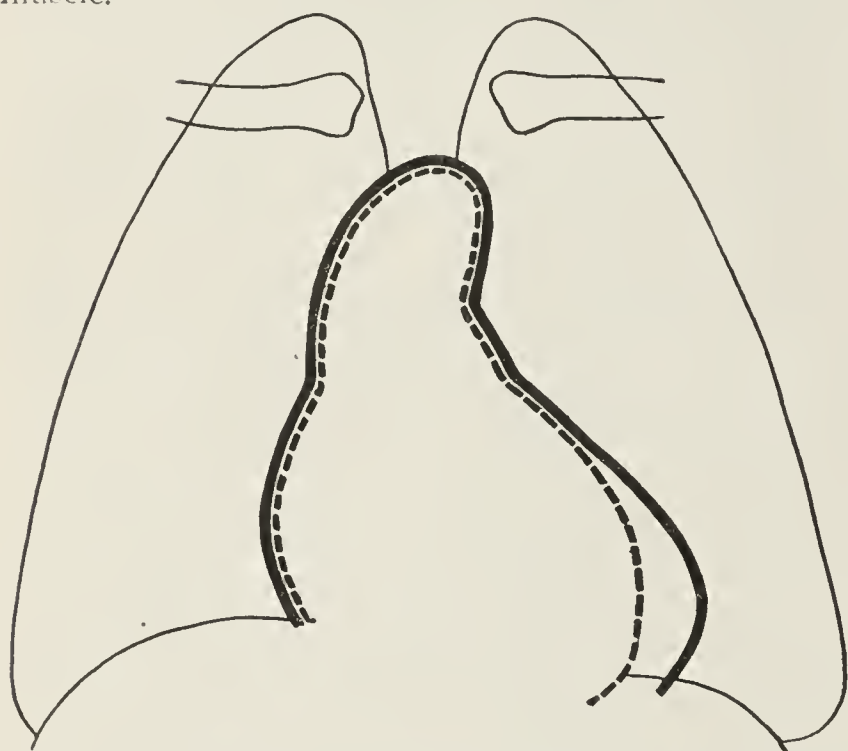


Fig. 1.—Frontal projection of pure left ventricular dilatation: solid line, aortic and hypertension heart outline; broken line, normal outline.

In 1918, Christian³ showed that in 45 per cent. of 400 cases so diagnosed at the Peter Bent Brigham hospital, there was a systolic pressure of 170 mm. of mercury or higher.⁸

I have examined the records of 142 cases diagnosed "myocardial insufficiency" or "hypertrophy and dilatation of the heart" at the Minneapolis General Hospital and at the University Hospital during 1922, and find that 109, or 75 per cent., had a systolic blood pressure record of 170 or over, and a diastolic pressure of 100 or over. About 10 per cent. of these cases came to necropsy and showed marked increase in weight of the heart, largely due to left ventricular hypertrophy.

It is well known that blood pressure not infrequently falls in hyperpiesis when cardiac insufficiency sets in. Moreover, blood pressure tends to fall in later stages of hyperpiesis, especially when arteriosclerosis of the larger vessels predominates, and tends to lower resistance. Some of our patients with chronic myocarditis were in the last stages of heart failure when they entered the hospital, and the blood pressure record taken only a few hours before death showed a pressure lower than 170

systolic, in consequence of which the case counted in our statistics as unassociated with high blood pressure, despite the fact that the patient may have had a very high blood pressure for years previous to the period of heart failure. Two of these cases in which there was a systolic blood pressure of only 140 were demonstrated at postmortem by Bell to present the typical picture of arteriosclerotic kidneys in the moderately advanced stage, so that there can be no doubt that these patients carried around with them high blood pressures for several years. I do not hesitate, therefore, to assert that our figures are probably lower than the actual incidence of high blood pressure in cases of chronic heart muscle failure at these two hospitals for 1922.

Traube and Sahli⁹ have emphasized hypertension as a result of heart failure. The mechanism whereby increased blood pressure would result from heart failure was assumed to be an asphyxia of the medullary vasomotor center in consequence of lowered oxygen and increased carbon dioxide content of the arterial blood. In my estimation, high blood pressure of this type is an exceedingly rare condition. As a rule, the blood pressure falls somewhat during decompensation and rises during compensation in chronic heart muscle disease. This was the rule in our cases whenever blood pressure records were taken systematically over the period of compensation and decompensation. There was not a single instance in which the evidence favored a diagnosis of high blood pressure in consequence of stasis. We know that rest in bed results frequently in a drop in blood pressure in hyperpiesis, and it seems probable that some of the instances of supposed "high blood pressure of stasis" are simply those of a fall in pressure due to rest in bed with concomitant improvement of the heart. The systolic blood pressure in the majority of our cases was over 200. When the high blood pressure of medullary asphyxia results only in an increase of a normal systolic pressure of from 120 to about 160, the pulse frequency falls about one half. There was no evidence of vagus slowing in our records. It would seem that an increase in blood pressure due to heart failure is a factor of little importance in our statistics.

HIGH BLOOD PRESSURE AS PROBABLE CAUSE OF HEART MUSCLE FAILURE

Having pointed out the high incidence of high blood pressure in chronic heart muscle failure, it becomes necessary for me to show that it is the probable cause of heart failure. Allbutt,⁷ the best informed student of hyperpiesis, remarks on the frequency with which these patients develop heart failure. Krehl,¹⁰ in his treatise on heart muscle disease, attributes a certain amount of heart failure to high blood pressure. Romberg,¹¹ in his treatise on heart disease published in 1921, states that 35 per cent. of all chronic heart muscle disease is associated with arteriosclerotic kidney, which is equivalent to saying that at least 35 per cent. of chronic heart muscle disease is associated with chronic hypertension.¹² Forty-five per cent. of 117 patients with nephrosclerosis who came to necropsy in his clinic died of heart failure; 44 per cent. died of apoplexy, and only 11 per cent. died of uremia. His percentage for apoplexy seems very high. Bell, in reviewing the necropsy findings of some 4,000 necropsies performed here, finds that in approximately 70 per cent. of all those cases that could be proved to be cases of hyper-

7. Allbutt: *Diseases of the Arteries*. London, 1915.

8. It is only fair to Christian to state here that he did not attribute much importance to the blood pressure as a cause of chronic myocarditis in his cases.

9. Sahli: *Tr. XIX Kong. f. inn. Med.*, 1901.

10. Krehl: *Die Erkrankungen des Herzmuskels*, Wien, 1913.

11. Romberg: *Krankheiten des Herzens*, Ed. 3, Leipzig, 1921.

12. The mean blood pressure in Romberg's cases of arteriosclerotic kidney was 184 systolic and 102 diastolic.

tension¹³ by clinical records or shown with reasonable surety to be such by the pathologic findings, the patients died of heart disease. My own series of cases of hypertension not associated with glomerulonephritis contains a large proportion of early cases, so that it does not give an accurate idea of the proportion of cases that will finally end in death from cardiac failure. Despite the fact that many of my patients are in the earliest stages of hyperpiesis, 75 per cent. of them show definitely dilated hearts on accurate roentgen-ray examination. About 30 per cent. show mild or severe degrees of heart failure, as dyspnea on exertion, edema of the lower extremities, winter cough, paroxysmal attacks of cardiac asthma, enlarged liver, and angina pectoris. Not 5 per cent. show marked renal insufficiency at the present time. It looks very much as if the greater majority of these patients are destined for a death from heart failure.

Pathology offers some very good indirect evidence that chronic heart muscle failure is frequently associated with hypertension. Hecht,¹⁴ in analyzing the results of 4,000 necropsies, finds that if valvular disease and chronic glomerulonephritis are excluded, 72 per cent. of all hearts showing hypertrophy and dilatation of the left ventricle are associated with arteriosclerotic kidneys. As arteriosclerotic kidney of this type is always associated with hypertension, it is clear that something like at least 70 per cent. of all chronic heart muscle disease must be associated with hypertension. Bell, in reviewing the necropsy findings of 4,000 necropsies performed here, finds that something like 70 per cent. of all the hearts of bodies showing the anatomic signs of cardiac decompensation and weighing over 400 gm. show left ventricular hypertrophy and dilatation, and no valvular defect to explain this hypertrophy. Increased blood pressure alone could give left ventricular hypertrophy and dilatation when aortic disease is excluded, for increased work of the heart due to increased minute volume must affect all chambers equally.

There is very good roentgen-ray evidence also that most of the so-called myocarditis or chronic myocardial insufficiency is associated with hypertension. I have now followed a large number of hypertension cases over varying periods of time with accurate roentgen-ray examinations. Some of these patients have been examined by the orthodiographic method and some by the teleroentgenographic method. The most common finding is the so-called "sabot" shaped heart (Fig. 1). This shape of heart is also found in aortic regurgitation. It represents a left ventricular dilatation without right ventricular dilatation. When these hearts fail, they frequently assume the form shown in Figure 2, which represents right ventricular as well as left ventricular dilatation. The failing heart in aortic regurgitation frequently assumes the form of Figure 2 also. I have seen a normally shaped heart under the influence of hypertension assume the form of Figure 1, and have seen Form 1 go over into Form 2 within one month's time during the development of a severe and fatal heart failure. Figure 1 can therefore be taken to represent the form of hypertension heart as well as that of the aortic heart. Figure 2 can be taken to represent the end stage of hypertension heart and aortic heart, though cases of both aortic disease and hypertension heart may prove fatal before Form 1 develops into Form 2.

Eight years ago, while practicing orthodiagraphy at Bad-Nauheim with Professor Weber, I was struck by the number of "sabot" shaped hearts among patients with chronic myocarditis. I have followed this subject for about eight years, and find that at least 75 per cent. of all hearts diagnosed "chronic myocarditis" "myocardial insufficiency" or "myocardial degeneration" show this type of heart. A few show the Type 2 form, mostly badly decompensated cases. Only hypertension and aortic disease can produce Type 1, for it represents a nearly pure left ventricular dilatation. As soon as mitral incompetency develops, the form approaches Type 2, which represents left ventricular dilatation, bulging at the conus pulmonalis area, right ventricular dilatation and right auricular dilatation. It is very interesting and suggestive that practically all our cases of hypertension heart roentgenographed this year by a most competent radiographer were diagnosed "aortic type of heart" by him when the heart was of Type 1, and "mitral disease" when the form approached Type 2.

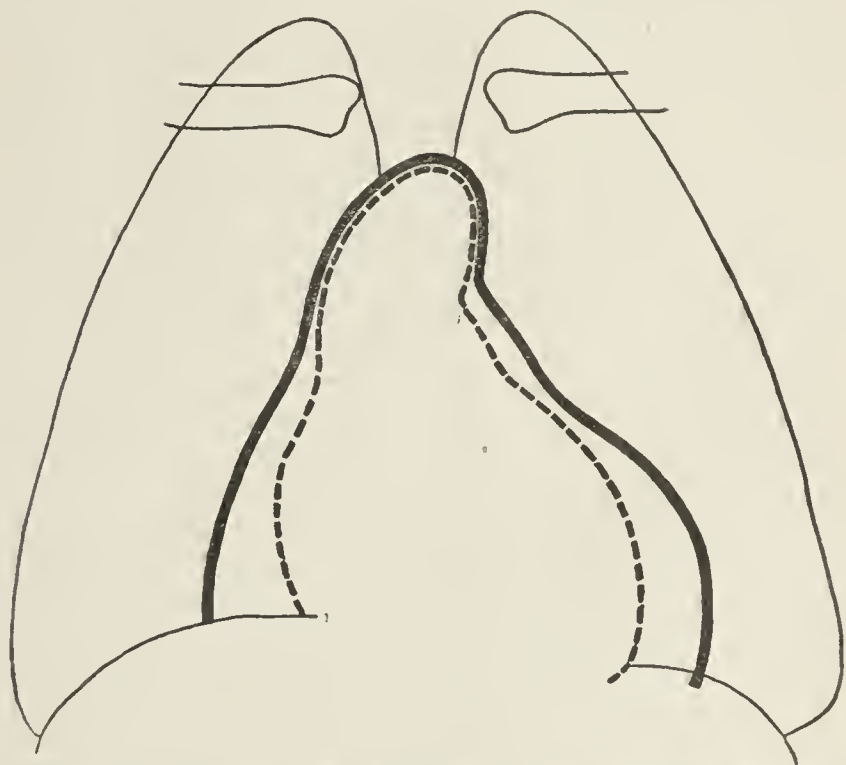


Fig. 2.—Frontal projection of left and right ventricular dilatation: aortic and hypertension heart outline in later stage after relative mitral insufficiency has developed; stippled line, normal outline.

I feel that the roentgen-ray evidence at present proves that about 75 per cent. of all heart muscle disease is associated with hypertension when valve defect is not present.

WHY THE HYPERTROPHIED HEART FAILS

I feel that the foregoing evidence proves that at least 75 per cent. of all chronic heart muscle disease unassociated with valve defect is due to hypertension. Why the hypertrophied heart fails, we can only conjecture at the moment. I am engaged on experimental work designed to get at the solution of this problem, and at present care only to point out that the heart in hypertension performs an amount of work far in excess of the work performed by the hearts of most athletes. It is to be remembered that the blood pressure in hypertension remains elevated throughout the day, dropping to nearly normal only during the night in early cases. Later on it remains above normal during the night also. If we assume a systolic blood pressure of 200 and a day of sixteen hours, then the hypertension heart performs approximately 65 per cent. more work during the sixteen hours than a heart in which the blood pressure is 120. Krogh has shown that the minute volume in severe exertion can be increased seven

13. Hypertension associated with glomerulonephritis was excluded from these statistics by microscopic examination of the kidneys.

14. Hecht: Statistisches über die Ursachen der Herzhypertrophie, Zentralbl. f. Herz- und Gefässkrankheiten 10: 169, 1918.

severe exertion the blood pressure rises to 160, then it is easy to see that only when this severe exertion is performed continuously for about two hours and fifty minutes every day does the increase in work done by the heart equal that done by the hypertension heart. The increase in work done by the heart of the average athlete does not compare with the increase in work done by our hypertension heart. The factor of fatigue may very well be one of the factors in finally bringing about heart failure in hypertension.

Hill¹⁵ has shown that the efficiency of the isolated voluntary muscle is less at high than at low tensions. Palmen¹⁶ has shown that fatigue takes place sooner in a muscle doing the same amount of work per minute when the weight lifted is greater and the path shorter than when the path is longer and the weight correspondingly lighter. Finally, Evans¹⁷ has shown that increasing the work of the heart by increasing the systolic pressure from 120 mm. to 160 mm. of mercury decreases the mechanical efficiency of the heart about 8 per cent., whereas increasing the work of the heart an equal amount through minute volume increase decreases the mechanical efficiency only about 2.5 per cent. In other words, a given increment of heart work probably causes greater fatigue when brought about by raising the pressure than when brought about by raising the minute output. Unquestionably, the rapid reduction of the mechanical efficiency of the heart muscle when it is forced to work against increased pressure is an important factor in inducing fatigue of the heart muscle.

In addition to this, I wish to point out that the hypertrophic heart muscle fiber is placed at a disadvantage in metabolism. All anabolic substances, as well as catabolic products, must enter or leave the cell through the cell membrane by diffusion. When a fiber enlarges, it does so only in diameter and not in length. The volume of the cell increases as the square of the diameter, the cell surface only as the diameter. If, therefore, the metabolic processes are proportional to the volume, the hypertrophic muscle fiber is placed at a disadvantage in the exchange of nutritive substance and waste products. The heart muscle remains contracted a larger fraction of the heart cycle when increased pressure is to be overcome, and it is possible that the consequent increase in the time during which the coronary flow is shut off is also a factor.

My examination of the case records used in my statistics revealed no evidence for the assumption that infections are an important factor in the production of heart failure in chronic heart muscle disease. Most of the patients showed no fever or leukocytosis. When there was fever, bronchopneumonia was usually diagnosed by the intern or attending staff man. On the other hand, I have frequently seen a case of hypertension holding its own up to the time of onset of severe upper respiratory infection, when decompensation would set in abruptly and terminate the case in a few weeks. That acute infections may cause enough damage to bring about severe decompensation in already weakened hearts is a fact of such universal observation that it can hardly be questioned. It is possible that chronic foci of infection do have an adverse effect on the overworked heart in hypertension. It remains for some one in the future to demonstrate this conclusively

and to show quantitatively how great this factor may be. At present, the effect of chronic foci of infection on the heart in hypertension is more a matter of belief than of demonstration.

IMPORTANCE OF HYPERTENSION HEART TO THE PHYSICIAN

In 1920, more than 96,500 persons 45 years of age or older died of organic heart disease exclusive of acute endocarditis and pericarditis, 18 per cent. of all deaths in persons 45 years or over being due to this cause, according to the official mortality statistics. From a careful study of necropsy data as well as statistical data which I have collected on the incidence of valve defect, I believe that if we allow 6 per cent. of all deaths for valve defect and syphilitic aortitis, we are allowing more than is justified. This would leave 60,500 deaths for chronic heart muscle disease. Assuming that our figure of 75 per cent. is fairly accurate, we may reckon that 48,500 persons 45 years of age or older died of hypertension heart in 1920. In the same year, 60,500 persons 45 years of age or over died of cancer and other malignant tumors. The importance of hypertension heart is of the same order as that of cancer.

CONCLUSIONS

1. Hypertension is the most constant and most important factor in causing chronic heart muscle disease, often called chronic myocarditis.
2. About 75 per cent. of all cases of chronic heart muscle disease are associated with hypertension, or follow in its wake.
3. Chronic or acute infection plays a minor rôle in the production of heart muscle disease. Acute infection is an adverse factor in chronically weakened hearts.
4. Approximately 50,000 persons in the United States die of hypertension heart every year.

THE SURGICAL MANAGEMENT OF PATIENTS WITH GOITER *

W. D. HAINES, M.D.

Assistant Clinical Professor of Surgery, University of Cincinnati
College of Medicine
CINCINNATI

Perhaps in no other morbid condition does pre-operative management count for more than in the patient with toxic goiter. In many respects, such patients react to surgical intervention not unlike epileptic and other neurotic patients; that is to say, one should be prepared for the unexpected. Despite intensive, continuous studies by the clinician, the goiter problem has baffled all attempts at standardization.

Disease of the thyroid is marked by distinct periods of rise and fall in the severity of the symptoms and intervals of quiescence. It is chiefly in the misinterpretation of the ebb and flow of these clinical phenomena that we ride to a fall in the management of patients with goiter. The history sheet should indicate the status on admission, i. e., whether the symptoms are increasing in severity, becoming less annoying, or are stationary.

One should determine as fully as the means at his command will admit the physiologic condition of the patient, with especial reference to the functional activity of the heart, liver, kidneys and nervous sys-

* Read before the Mississippi Valley Medical Association, Rochester, Minn., Oct. 10, 1922.

15. Hill, A. V.: J. Physiol. **46**: 435, 1913.

16. Palmen: Ueber die Einwirkung verschiedener Variablen auf die Ermüdung, Skand. Arch. f. Physiol. **24**: 198, 1910.

17. Evans and Matsuoka: The Effect of Various Mechanical Conditions on the Gaseous Metabolism and Efficiency of the Mammalian Heart, J. Physiol. **49**: 378, 1914.

tem, before suggesting any line of treatment. Laboratory methods for determining metabolic rate and calcium content and the clinical reaction of the patient to epinephrin have, in a limited personal experience, been disappointing in results. Definite knowledge of the urinary output and of the intake of food, and its digestion and assimilation, is highly essential to success in the management of these patients. Observation of the patient's ability to withstand work and the influence of exercise and rest on the musculature of the heart is of signal value in determining the course of treatment necessary to bring such patients to the operating table in the best possible condition.

The history of the reaction of the patient's nervous system to the strain of his daily duties will give valuable evidence relating to the extent to which pathologic change and functional derangement have taken place in the various organs. An experienced clinician subconsciously observes the appearance of the eyes, skin, hair and nails in his attempts at interpreting the patient's physical condition.

The correlation of clinical and laboratory evidence will be of greatest value when we cease to give the latter precedence if it conflicts with the clinical history and physical findings. By far the greater number of patients with toxic goiter are suffering from acidosis; furthermore, the physical exertion which such patients put into their daily lives is not commensurate with the wear and tear they experience.

Mental and physical rest is the chief requisite in the preoperative management of toxic patients. In order to secure the fullest benefits from this measure, the physician must possess the unqualified confidence of the patient, and establish a mental repose wherein the patient becomes subservient to the persuasive commands of the physician, whose directions he obeys implicitly without asking why. In gaining this influence, the first move on the part of the physician should be directed toward disarming the patient's mind of all apprehension relative to final recovery from the disease. This is the stepping stone to controlling the mental trend and physical action of the patient.

The marked change for betterment in symptoms that follow a few hours of mental calm and physical relaxation are evidence of the merits of this plan. Manifestly, such patients should never be placed in the ward amid the confusion attendant on the going and returning of patients to and from the operating pavilion, and their recovery from anesthesia.

Physiologic repair and its ancillary rest, at best only relative terms, are insufficiently comprehended by physicians in their relation to the management of patients with toxic goiter. Rest, to be beneficial, must include repose not only of the body but also of the mind and the diseased organ. From this point of view, rest becomes, indeed, the balmy restorer, whose purpose it is to check needless expenditure of nerve force and other tissue exhaustion, to stay excessive chemical action and facilitate repair of damaged organs. The devitalizing influence of loss of sleep, with its attendant mental and physical fag, predisposes the healthy to disease, and the sick to despair. Our efforts to obtain relaxation are enhanced by cheerful surroundings and complete change in the mode of living. The addition of soothing strains of music and light stories has a place in the restoration of nerve force, muscular fatigue and cell waste.

Heretofore, our greatest concern in the preparation of the toxic patient has been for the restoration of

heart function, omitting attention to skeletal muscular weakness, and altered liver, kidney, skin and gastrointestinal secretions.

The frequency with which altered secretions, as evidenced by jaundice, acidosis, constipation and scanty urine, complicate the history of such patients should serve to withdraw the attention of the clinician from the classic flamboyant syndrome of nervousness, tachycardia and exophthalmos. They are but so many notes in the physical disaster which involves the patient: local expressions of a central complaint demanding attention and correction for the safety of the patient.

Rest and relaxation in the horizontal position lessen the amount of force requisite to supply the tissues with blood, and this, in turn, decreases the frequency of the pulse rate and prolongs the interval of heart rest.

When drugs are required, opium, properly administered, becomes our sheet anchor in the production of rest for this organ.

Continued effort on the part of the attendants to solve the mental make-up of the patient, and the application of knowledge thus gained, will usually prove highly beneficial in allaying the patient's fears relative to his recovery, and permit him to glide into a mental poise that will induce coordinate action on the part of the patient to the suggestions of his attendants. In some of the highly toxic patients, this becomes a long and tiresome task; but diligence, perseverance and gentleness are usually successful.

Diet should be selected with special reference to overcoming the rapid oxidation which marks all toxic processes; the food should be light, agreeable and easily digestible, and the carbohydrates should predominate in the selections.

An elevation of temperature is frequently present in such patients; this aggravates the nervousness, and induces sleeplessness. Marked improvement follows the use of cold sponging, the application of the ice cap and the free use of alkaline drafts. In patients with myocardial degeneration, scanty urine, cloudy sclerae, dry skin and sluggish returning circulation, the full physiologic influence of digitalis renders signal service.

The drug must be employed with understanding, and the patient should be under the constant surveillance of one familiar with its practical application.

Digitalis, when indicated and properly administered, has a beneficial influence, not alone on the musculature of the heart but likewise on the skin, liver and kidney.

Constipation and disordered digestion are present in consequence of damaged musculature of the gastrointestinal tract, and altered stomach, biliary and pancreatic secretions. Constipation should be overcome, preferably by diet, fruits, cereals and alkalis.

Small doses of sodium salicylate will best serve our purpose as an hepatic stimulant. For many years I have taught my students to be alert for three common diseases: the red, the white and the black plague—that is to say, syphilis, tuberculosis and malignancy. Their frequency, clinically, occurs in the order in which I have written them. Such complications always have an important bearing on the complaint for which the patient consults a physician. Latterly, focal infections have been added to this list, and one finds an ever increasing demand for recognition and appropriate treatment of any member of this group, when present, in the management of patients with toxic goiter.

In syphilis complicated by toxic goiter, mercury is more efficient than the iodids, the latter in some instances increasing the severity of the symptoms of

toxicity to an alarming degree. Inunctions of the skin covering the thyroid with ointment of red mercuric oxid, from 4 to 30 gm., followed by direct exposure to the sun's rays, have a highly beneficial effect in reducing the activity of the gland.

Two or three per cent. of the thyroids removed will show, on examination, evidence of tuberculous infection. The postoperative management of such patients becomes a subject for protracted supervision by the family physician. Malignancy of the thyroid is well-nigh hopeless. Hertzler has not seen a single recovery from this malady.

In the successful management of patients with toxic goiter, one must visualize the far reaching influence of the toxic process. There is not a vestige of tissue or a cell in the entire body but may be damaged and functionally crippled by the influence of thyrotoxin. The outcome in a given patient will depend largely on the clinician's ability to determine how hard the patient has been hit, and the success with which toxic symptoms are combated prior to operation. Removal of focal infections, and the resultant changes which quickly follow, are common observations; but the excitation following such procedures almost invariably has a bad effect on the patient with toxic goiter.

According to one of the most acceptable theories of hyperthyroidism, one of the functions of thyroid secretion is to combat infection; with the acute manifestations of infection under control, the gland, in some instances, continues in the overproduction of thyroid secretion, establishing a vicious circle wherein that which was a prophylactic measure may become a menace to the life of the patient.

Experience has taught us to deal with the goiter first, leaving removal of focal infections for the future.

A definite knowledge of the structures of the neck, gentleness, celerity and thorough hemostasis are essential in operating for the removal of the thyroid. Perhaps in no other region of the body is shock following operation so out of proportion to the amount of trauma as in the neck.

While operating, one should remember the neck as a privileged region. Notwithstanding the dictum of the mordacious old historian Carlyle that men everywhere are the born enemies of lies, I am mistrustful of the average report on goiter cure percentages. Figures will not lie, but they may become very enthusiastic when not zealously guarded.

This iconoclastic spirit is born of a generous personal experience in the operative treatment of goiter and in checking the postoperative history of many of the patients over a period of nearly two decades. The high percentage of cures becomes greatly modified in the course of time.

Hyperthyroidism or myxedema may follow operation in consequence of the removal, respectively, of too little or too much of the gland; but the bone hard fact remains that a number of cured patients do not remain cured, regardless of the alibi the surgeon may claim. End-results of many a well timed and successful thyroidectomy have been defeated in consequence of negligence pertaining to the postoperative care of the patient.

It would require an experienced pen, directed by a trained mind and a rare vision indeed, to predict what the future will develop for the relief of the goitrous patient. From the present status of the subject may we not conclude that a disease so freakish in symptoms,

so disastrous in tendency, may not long be safely entrusted to other than radical treatment by removal of the most prominent factors in the production of the goitrous syndrome, which, unchecked, will end in morbidity or death of the patient?

Furthermore, although I am not convinced that operation is the ideal treatment in the management of goitrous patients, it is the best treatment that has been employed.

1606 Freeman Avenue.

ORIENTAL SORE (CUTANEOUS LEISHMANIASIS) IN THE UNITED STATES *

ROBERT A. LAMBERT, M.D.

NEW HAVEN, CONN.

The importance of a wider knowledge of oriental sore, or cutaneous leishmaniasis, on the part of American physicians and public health officials is indicated by the fact that in the last two years at least eight cases of this infection have been reported in this country and Canada.¹ While all of the patients were newly arrived foreigners, it is quite possible, as Faber and Schussler² have recently pointed out, that, with the repeated importation of cases among immigrants, particularly from southern Europe and the Near East, the disease may soon become established in the United States. From our knowledge of the transmission of the infection, there would appear to be no reason why it should not become implanted here.

The usual mode of infection has not been definitely established, but clinical and experimental observations have indicated certain possibilities. First of all, it has been proved, through the autoinoculation experiments of Wenyon and Marzinowsky, that direct infection may take place through the abraded skin. Secondly, the selective localization lesions on the exposed parts—face, hands, arms and feet—indicate transmission by a biting insect. Several species of insects, including the house fly, sand fly and mosquito, have been incriminated. Regarding such transmission, two possibilities are considered: (1) mechanical transfer of the virus by one of the various biting insects; (2) the existence of a specific, intermediate insect host, in which, as in malaria, the organism passes through a developmental cycle. The wide geographic distribution of the disease is in harmony with the first conception; whereas, the strikingly high infection rate in certain districts may be considered as favoring the latter view. It is conceivable, as Manson and others have suggested, that both methods of transmission obtain.

This brief statement regarding the manner of spread is sufficient to make clear the danger referred to in the beginning. Early recognition of the lesion, therefore, is particularly important, if the establishment of the disease in the United States is to be prevented. It is probable that cases frequently pass the immigration authorities unrecognized, as apparently happened

* From the Department of Pathology and Bacteriology, Yale University School of Medicine.

1. Spencer, R. D.: A Case of Oriental Sore (of Italian Origin) Encountered in the United States, *J. A. M. A.* **76**: 1494 (May 28) 1921. Smith, D. K.: Oriental Sore: Report of Four Cases, *Arch. Dermat. & Syph.* **5**: 69 (Jan.) 1922. Fox, Howard: Two Cases of Oriental Sore (Cutaneous Leishmaniasis), *New York M. J.* **116**: 365 (Oct. 4) 1922. Faber, H. K., and Schussler, Hermann: Leishmaniasis in the United States, *J. A. M. A.* **80**: 93 (Jan. 13) 1923.

2. Faber, H. K., and Schussler, Hermann: Footnote 1 (fourth reference).

with six of the eight recently reported cases. Furthermore, owing to the occasionally long incubation period, the lesion may not develop until some time after the infected person has entered the country. One of two cases that were recently referred to me for diagnosis illustrates very well this possibility. The case brings out certain other characteristics of the disease which make it worthy of detailed report.

REPORT OF CASES

CASE 1.—An Armenian boy, aged 17 years, left his home in Aintab, southern Asia Minor, June 1, 1920, en route to America by way of Aleppo, Beirut and Marseilles. He stopped two weeks in Killis, near Aleppo, a district in which "Aleppo button"—a local name for oriental sore—is very common. He remembers that while there he went about without shoes and stockings, and flies and mosquitoes were prevalent. After leaving Killis, he wore shoes and stockings regularly. He spent two months in Beirut, leaving there early in August, 1920. He was six weeks in Marseilles, and arrived in New York about Nov. 1, 1920. He went immediately to New Haven, where he has lived ever since.

About Feb. 1, 1921, he first noticed a pimple on his left ankle, about the line of his shoe top. This was three months after his arrival in the United States, six months after leaving Syria, and nearly eight months after leaving Killis, where he had commenced wearing shoes regularly. The pimple gradually increased in size, and after some weeks became ulcerated. There was some local tenderness, with consider-

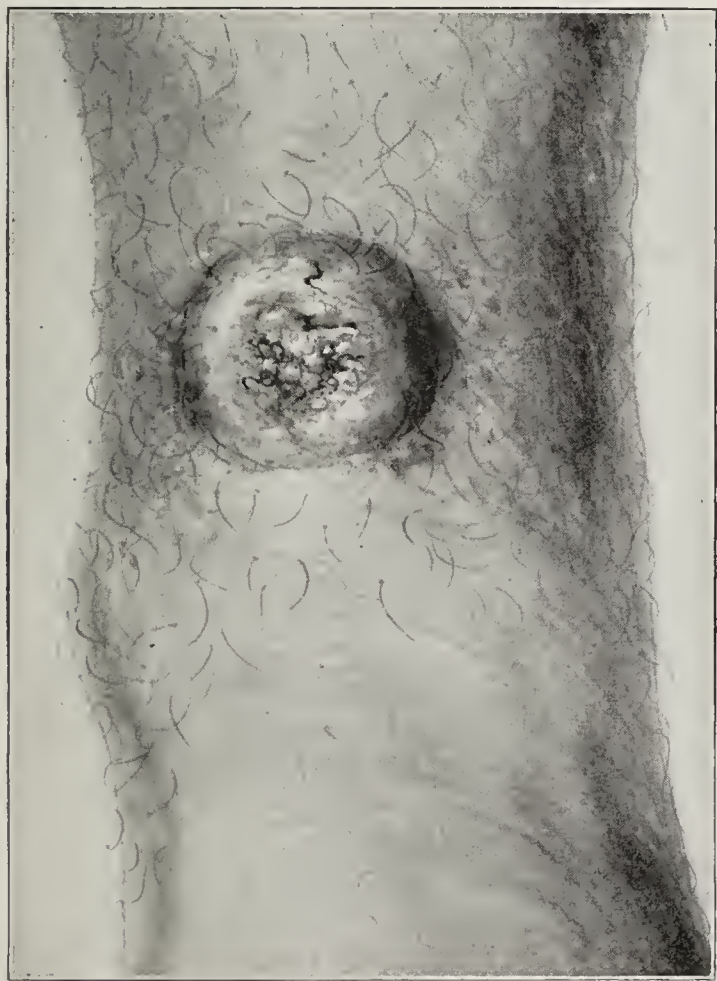


Fig. 1 (Case 1).—Oriental sore on ankle. The characteristic circular form and the prominent indurated margin may be noted.

able discomfort from the rubbing of the shoe. About June 1, 1921, several months after the appearance of the lesion, he consulted a physician, who excised it. The result was a larger and a very angry looking sore. The rapid recurrence led the physician to make a diagnosis of sarcoma, and the patient was referred to a surgeon for radical operation. The patient demurred and went to an Armenian physician, who, suspecting that the lesion was an "Aleppo button" and not a neoplasm, referred the patient to me for examination of the tissue.

The size and general appearance of the ulcer at this time, July 1, 1921, are shown very well in Figure 1. After removal of the superficial exudate, smears were made from the granula-

tions, and a piece of the indurated margin of the ulcer was excised. Both smears and sections showed typical Leishman-Donovan bodies. The entire margin of the ulcer was then excised to provide tissue for further histologic study and for animal inoculation. Three roentgen-ray treatments were given at weekly intervals, and after preparatory irrigation with surgical solution of chlorinated soda (Dakin's solution), autoplasmic Riverdin grafts were applied.³ Healing was complete after about four weeks, and there has been no subsequent trouble. The Wassermann reaction was negative; the leukocyte count, 8,800; differential count: polymorphonuclears, 59; large mononuclears, 15; small mononuclears, 26.

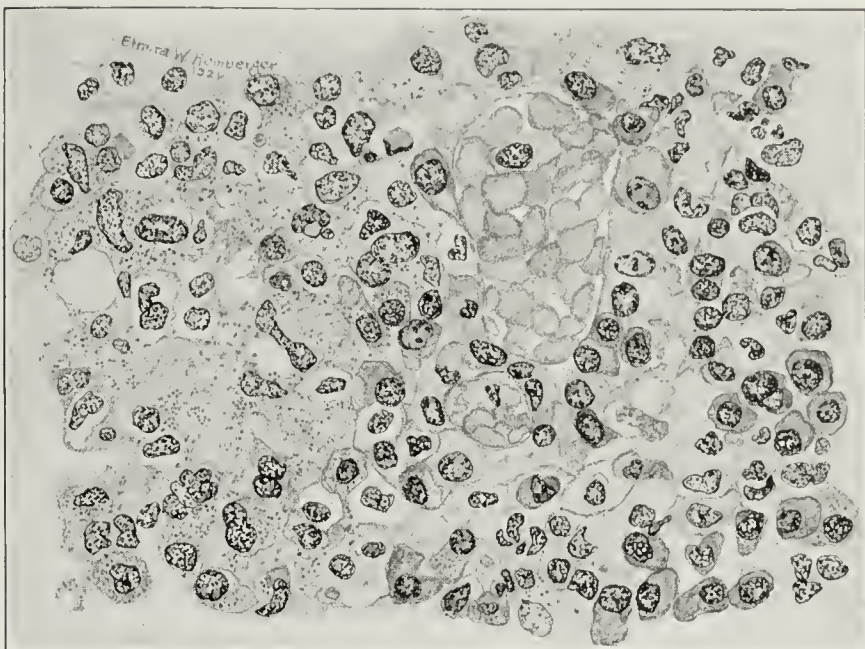


Fig. 2 (Case 1).—A section through the margin of the lesion showing a mononuclear cellular reaction, with numerous organisms (leishmania) in the cytoplasm of the large cells of the endothelial type. Lymphocytes and plasma cells do not contain organisms.

The case presents several interesting features. In the first place, the history indicates that the infection was acquired before the patient left Turkey; that is, about eight months before the appearance of the lesion. It is possible that inoculation may have occurred in Beirut, Syria, the port of embarkation, where the disease is endemic. But this would still make the incubation period at least six months. The fact that after leaving Turkey the patient had worn shoes and stockings regularly is a strong point in favor of the longer period of infection. While the period of incubation in this case is considerably longer than is generally recognized, from a week to two months being the figures usually given, it is probable that similar instances of latency are not rare. It may be recalled that in Wenyon's self-inoculation experiment the lesion did not appear until six and a half months after infection. Manson reports a case in which the interval was five months, and refers to another with an incubation period of fifteen months.

A second interesting feature of this case was the rapid recurrence, after excision, which led to a diagnosis of malignancy. This error might have been avoided, of course, if the tissue first removed had been examined histologically.

The study of the case brings up still another point which we believe should be emphasized, namely, the possible advantage of biopsy over smears for the demonstration of the specific organisms. In spite of our efforts to obtain good deep smears from the granulations, considerable search was required to

3. The skin grafting was done in the New Haven Hospital by Dr. Beverly Douglas; the roentgen-ray treatments were given by Dr. C. R. Scott, and the patient was cared for in the New Haven Dispensary by Dr. Isao Hirata. I am indebted to these physicians for the use of their notes. The case was referred to me by Dr. A. S. Apclian.

demonstrate the organism, whereas every well stained section showed enormous numbers of parasites. The large mononuclear cells of the endothelial type, the chief element in the inflammatory reaction, were crowded with organisms (Fig. 2). Under low magnification, the cytoplasm of these cells presented a uniform granular appearance, the granules being the double nuclei of the organisms (Fig. 3). There is further advantage in excision in that a small piece of tissue embedded in paraffin will yield from 25 to 200 sections, thus permitting use of various stains or other modification in technic on identical preparations. On the other hand, the morphology of the parasite is not so easily studied in sections, and by the untrained observer identification may not be easy. A combination of methods is, therefore, desirable in such cases. For sections, a prolonged Giemsa stain (from twelve to twenty-four hours), with careful differentiation, gives excellent results. Zenker fixation is a necessary prerequisite. We were able, however, to see the organisms clearly in hematoxylin-stained frozen sections, after formaldehyd fixation. The double nuclear bodies in the organism and the intracellular position of the parasites in sections constitute safe diagnostic criteria.

CASE 2.—An Armenian girl, aged 15 years, in 1915, was deported, with other Armenians, from her home in Harpoot, Turkey, to Aleppo, Syria, where she remained until Jan. 1, 1920. From Aleppo, she came to America by way of Egypt, arriving in the United States in the latter part of the same year. She noticed several pimples on the right arm and the left wrist before leaving Aleppo. These developed into typical "Aleppo buttons," and were treated with red mercuric oxid. After more than a year, the lesions began to heal.

When the patient was first seen by me, healing was progressing satisfactorily (Fig. 4). No organisms could be demonstrated in the scanty secretion. Biopsy did not seem justified, owing to the advanced state of healing, and to the fact that there was no doubt as to the diagnosis.

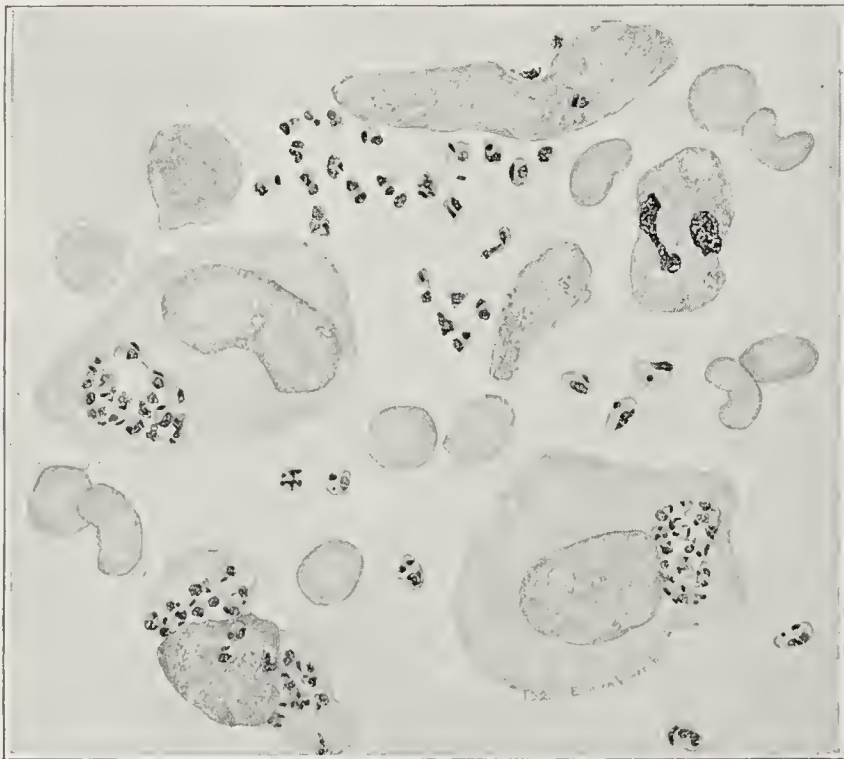


Fig. 3.—*Leishmania tropica* in smear preparations. Characteristic double nuclei may be noted.

This case presents no unusual features and is cited simply as another example of leishmania infection which would ordinarily pass unnoticed.

COURSE AND TREATMENT

As is well known, the disease is self-limited, and, even without treatment, healing generally takes place from six months to a year and a half after the appear-

ance of the lesion. Occasionally, severe secondary infection or some other unfavorable condition may retard the healing process. Recurrence and reinfection are rare, one attack conferring a permanent immunity, a fact that is said to have led to the custom among the Bagdad Jews of inoculating their children on the legs,

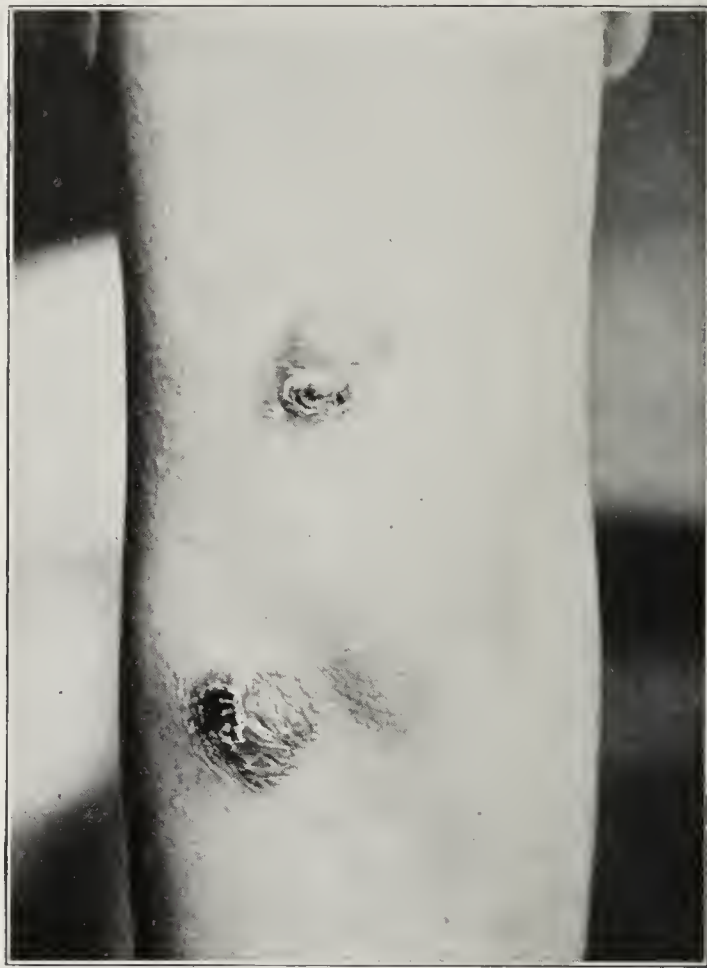


Fig. 4 (Case 2).—Healing oriental sores in region of elbow.

in order that disfiguring lesions on the face, resulting from infection acquired in the usual way, might be prevented.

In spite of the self-limited course, active treatment of the lesions is justified to (1) shorten the course; (2) prevent autoinoculation; (3) lessen the tendency to disfiguring scar formation, and (4) prevent the spread of the infection to other individuals.

Of the various methods of treatment proposed, only three or four warrant mention. A number of reports during the last few years indicate that antimony, in the form of antimony and potassium tartrate (tartar emetic), administered intravenously, is practically a specific. Roentgen-ray therapy, advocated by several observers, has an advantage over antimony in that hospitalization is not necessary. When the lesions are superficial, freezing by carbon dioxide, strongly recommended by Adams of Beirut, seems to give very satisfactory results. In the case of very early lesions, such as are frequently called to the attention of physicians practicing in areas where the disease is endemic, it is claimed that prompt excision and cauterization is effective.

SUMMARY

1. The two cases of oriental sore in the United States here reported make a total of ten cases recorded in the last two years.

2. There is a possibility of a long incubation period. In one of the reported cases, the lesion did not appear until three months after the patient's arrival in the United States, and probably eight months after infection.

3. Biopsy is to be advocated in suspected cases, the specific protozoa (*Leishmania tropica*) being more readily demonstrable in properly stained sections than in smears.

SUBCUTANEOUS IMPLANTATION OF THE HUMAN OVUM*

GEORGE L. STREETER, M.D.

BALTIMORE

Rare cases of extra-uterine pregnancies have been described in which the fetal mass is found lodged in a hernial sac, projecting as a surface swelling in the inguinal region.¹ A few cases of perforation of old tubal pregnancies, in which the remnants of the fetus escaped into the urinary bladder, have been encountered.² But, as far as I can learn, no case has ever before been reported in which the human ovum became implanted and underwent development entirely outside the abdominal cavity, as happened in the instance about to be described. As a curiosity, the case appears to be unique; but over and above that, what really merits our attention is the astonishing fact that the human chorion is capable of developing to the size of a hen's egg in such an environment as is furnished by the superficial fascia of the abdomen.

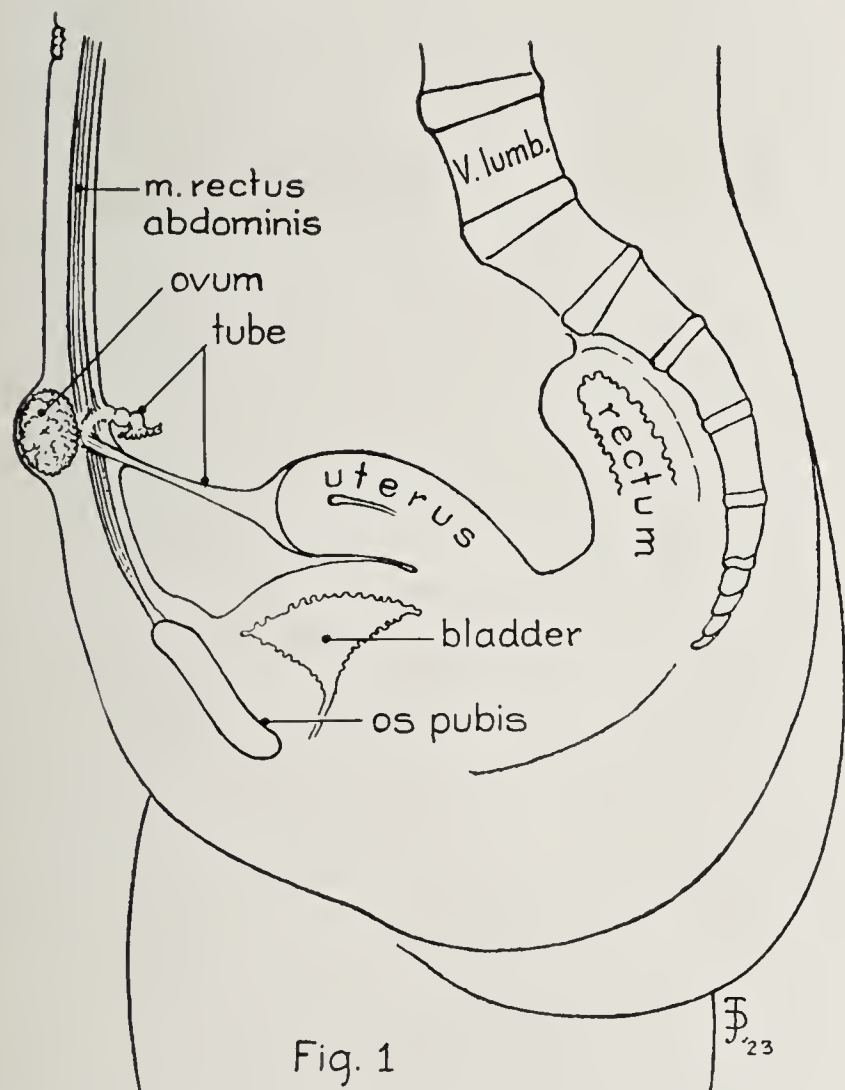


Fig. 1.—Seat of implantation of ovum, and probable relations of the deeper parts.

The patient, aged 25, who had been married four years, with no children and one abortion, when first seen by Dr. George Lenz of Gloversville, N. Y., exhibited a mass the size of a cherry in the lower abdominal region at the upper end of a

scar from a previous operation. A provisional diagnosis of wound-hernia was made. When seen two weeks later, the swelling had doubled in size, and on account of its rapid growth an exploratory examination was decided on. This was performed by Dr. Lenz four weeks after the patient had first come to him, and by that time the enlargement had reached the size of a hen's egg. Operation disclosed, just beneath the skin, embedded in the superficial fascia, a relatively thin-walled and partially transparent cyst, which on removal proved to be an intact chorionic sac, and on being opened was found to contain a well-formed embryo. Naturally, this was a most unexpected type of tumor. The operative area was thereupon carefully examined, but no



Fig. 2.—At left, collapsed chorionic sac, covered with a rich growth of normal appearing villi. Near the millimeter scale is the embryo, broken in the neck region, with the heart exposed and projecting upward. Natural size.

opening through the deep fascia or connection with the abdomen could be found. Nor was there any enveloping capsule or any structure other than is normally present in the abdominal fascia, although there seemed to be some enlargement of the blood vessels leading to the area of implantation.

On searching for an explanation as to how the ovum was able to reach this site, it turned out that two years previously another surgeon had performed a ventral fixation of the uterus, adopting the procedure in which the round ligaments are pulled through the rectus muscles. As it is possible to mistake the fallopian tube for the round ligament, it is to be supposed that either this mistake was made or that the tube was drawn through the rectus muscle along with the round ligament. In either event the topography of the tube would be somewhat as is shown in Figure 1. In the course of two years the uterine portion of the tube would be stretched out, although still permitting the passage of spermatozoa. The ovum, entering the fimbriated end, would thus be fertilized. It is to be supposed that the fertilized ovum in this case was arrested at the tubal kink and, eroding through the mucosa of the tube wall, continued its development in the loose tissues superficial to the rectus muscle.

Dr. Lenz, recognizing the great embryologic importance of the specimen, generously placed it at the disposal of this laboratory. It can be readily understood that the detailed study of the specimen was approached with great eagerness, for here is an experiment in which it is possible to determine the histologic reaction of the developing ovum under the circumstances of a very simple type of environment. I may say at once that the chorion and its contained embryo appear to have grown, up to the time of their removal, about as well as they would have done had the implantation occurred in the uterine mucosa. In general form and microscopic structure they cannot be distinguished from normally implanted ova of the same stage of development. The tissues of the embryo, however, show beginning degenerative changes, indicating that it had reached its maximum development and that the heart had stopped beating before the time of operation. On its arrival at the laboratory, the embryo had been broken apart and mechanically injured in the region of the neck and upper thoracic wall, as shown in Figure 2. With the two parts placed in position it is 22 mm. long. The relative development of the hands, feet, ears, eyes and mouth region is

* From the Carnegie Embryological Laboratory, Johns Hopkins Medical School.

1. Jordan: Tubargravidität in einer Leistenhernie, München. med. Wehnschr. 44: 7, 1897.

2. Haggard, W. D.: Removal by Vaginal Cystotomy of Skeleton of Ectopic Fetus Ulcerating into Bladder, Am. J. Obst. 50: 690, 1904.

normal for the length of the embryo, and corresponds to about the end of the eighth week. The external genitalia are developed in proportion to the other parts of the body and are female in type, the urogenital opening extending well in front of the coronary sulcus. Whereas the embryo shows a development of eight weeks, the clinical record obtained from the patient at the hospital gives a menstrual age of ten weeks. This discrepancy of two weeks is what we would expect with retardation and arrest in development, as seems to have occurred ultimately in the case of this embryo.

The chorionic sac, as can be seen in Figure 2, is everywhere covered with a thick growth of normal appearing villi. There is no trace of a decidual membrane. When the villi are examined under a lens or binocular microscope there are numerous Langhans' or villous nodules present, perhaps more than are usually present in chorions of this size. Two of these can be seen in Figure 3 as black masses and their frequency can be judged, as the section is 15 microns thick. When sections of the chorion are studied under higher magnification, the villi are found to be well vascularized and the stroma appears to be normal, aside from the fact that some of the stroma cells stand out conspicuously as Hofbauer cells. The ectoderm covering the villi shows a marked proliferation of the syncytial layer, but this is commonly seen in normal chorions of this size. The proliferation of the Langhans layer in the form of villous nodules is shown in Figure 4, and it illustrates the striking resemblance these cells bear to decidua. At its periphery the nodule is partially covered in by irregular masses of syncytial tissue. The centers of most of the nodules show areas of marked degeneration, consisting of a diffusely staining mass peppered with nuclear fragments of cells, the outlines of which are mostly lost. Toward the

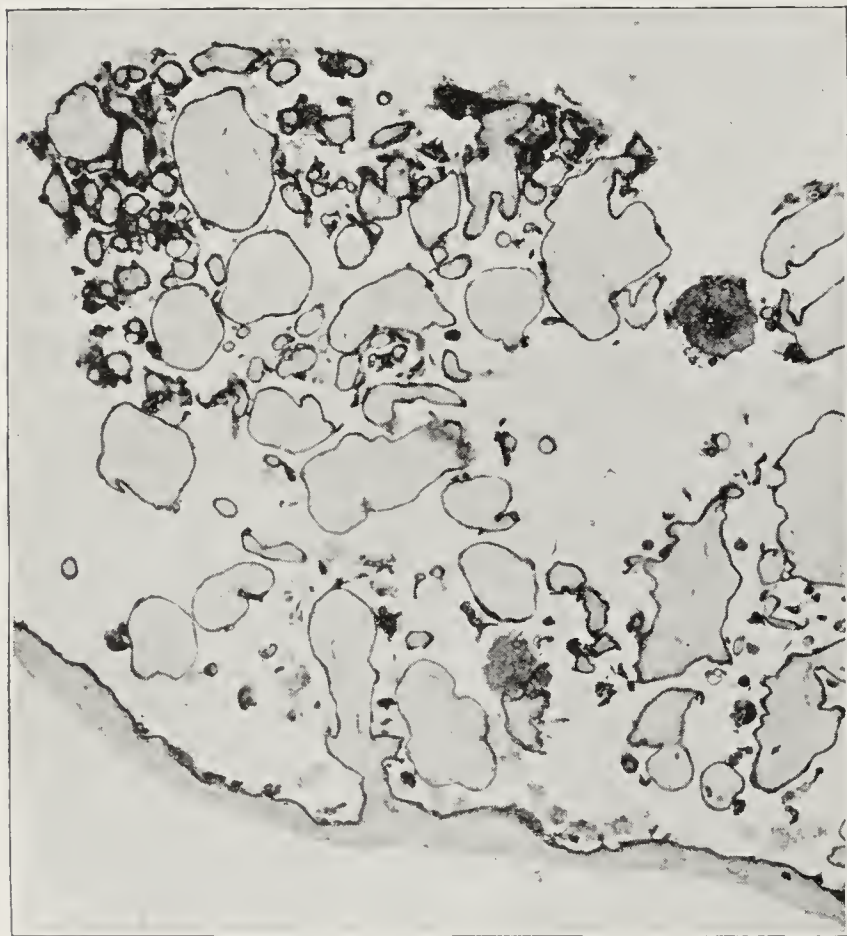


Fig. 3.—Section of chorion, showing chorionic membrane with a villus arising from it. At the periphery there is a thick cluster of smaller villi. Owing to the exuberant growth of their syncytial layer, they tend to adhere and form a surface crust. Two villous nodules can be seen, one of which is shown under greater magnification in Figure 4. Section 15 microns thick, enlarged 20 diameters.

surface of the chorion the villi give off many small branches, and their syncytial layer tends to agglutinate them into crust-like, adherent areas, which are the nearest approach to a decidual capsule that the specimen presents. Over some areas there is a thin coating of old bloodclot, with many pigment granules. Some of these granules had been ingested by the syncytial cells, and can be seen in them as large granular aggregates. Some cells are so laden with pigment that their

nuclei are obscured. From the age of the clot it is evident that small hemorrhages occurred around the ovum preceding the operation, though this phenomenon was much less marked than is usual in tubal cases.

The chorionic sac was certainly growing up to the time of the operation, and its histologic condition is compatible with still further growth, although the prominence of the so-called Hofbauer cells is a signal of an approaching arrest in development. It thus

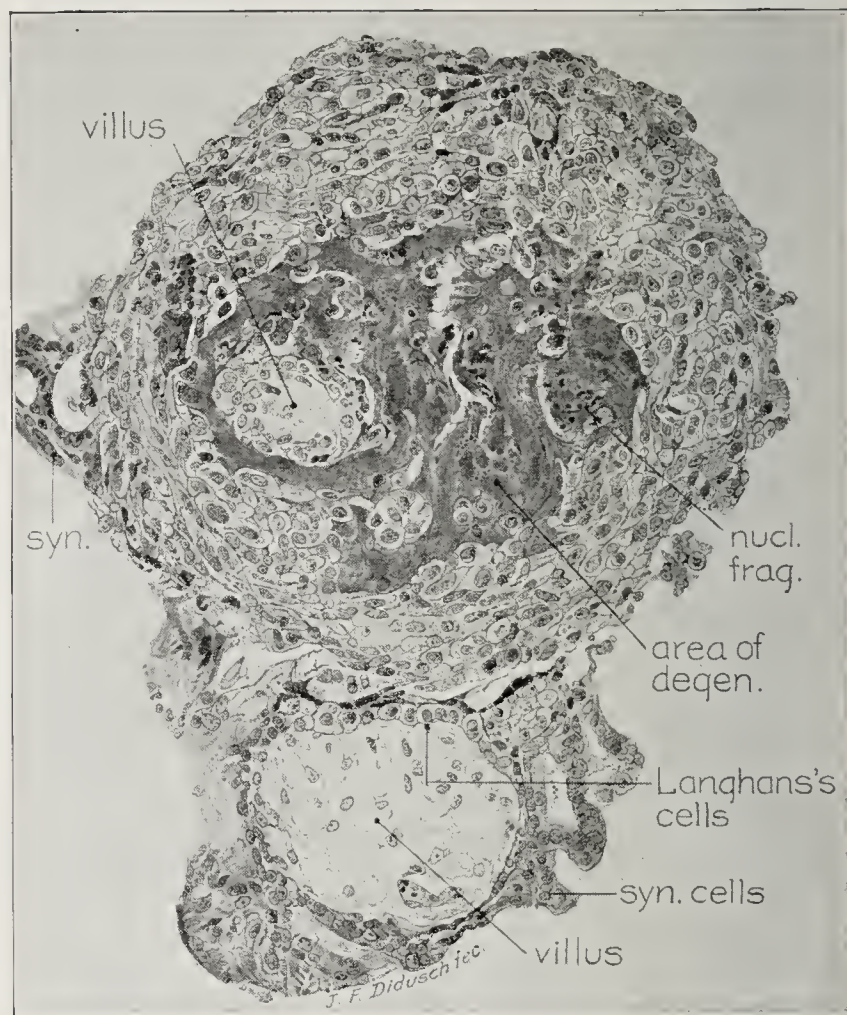


Fig. 4.—A typical villous nodule surrounding a small villus and adherent to another. It is made up of cells which resemble decidua but which are derived from the Langhans cells of the villi or chorionic membrane. In reality, it is a minute, self-limiting epithelial tumor, the center of which soon breaks down and is seen as a diffusely staining mass with here and there fragments of nuclei. The surface of the nodules is partially covered in by islands or streamers of syncytial cells. Enlarged 165 diameters.

follows that, under these circumstances, the growth of the sac tends to continue longer than that of the embryo. This conforms to the experience we have had in this laboratory with abortion material in general—the chorion is proportionately farther developed than the embryo rudiment. It is to be remembered that the fascia in this region is not so profusely vascularized as are the tissues surrounding the tube and uterus, and this might have played a part in the arrest in development. We can only speculate on what would have happened if the mass had not been removed. It is not likely that it would have grown much larger. Reasoning from tubal specimens, we might expect further hemorrhages, although not serious ones, and in the end the whole structure might have been slowly absorbed. On the other hand, there is the remote possibility of the villi giving origin to a malignant chorio-epithelioma. The case is a very suggestive one to the experimental embryologist.

Top Minnows.—It is said that 750,000 top minnows were employed in the recent successful campaign in Peru against yellow fever.

OSTEOMYELITIS OF THE ILIUM IN
CHILDREN

CARL BEARSE, M.D.

BOSTON

While infection of the iliac bone is not common, it is far from rare. When it occurs in children, it is a particularly serious condition, because the diagnosis at first may be difficult. Since immediate prognosis, prevention of complications and shortening of convalescence depend on early treatment, early diagnosis is essential.

This condition has been looked on as infrequent from such published reports as that of Monsaigeon,¹ who was able to compile only fourteen cases during a period of thirteen years in one of the large clinics in Paris, and of Simmons² who, in his report of ninety-seven cases of general osteomyelitis in the Massachusetts General Hospital, listed only two cases of ilium infection. In addition, at the German Surgical Congress,³ Lücke reported twenty-four cases of osteomyelitis, including one of the ilium; Volkman, twenty-nine, including none of the ilium; Schede, twenty-four, including two; Kocher, thirty, including one; and Heidenhain, forty-six, including one.

On the other hand, Geist⁴ recently reported from Minneapolis three cases of osteomyelitis of the ilium seen by him within a period of three years, and I have had two such cases within a period of three months.

When infection of the short and flat bones alone is considered, the ilium is one of the bones most frequently involved. Fröhner,³ in analyzing fifty-one such cases out of a total of 545, found involvement of the ilium to be second in frequency. In considering infections of the bones of the pelvic girdle alone, he found it to be the most frequent, as in his series he had ten cases of ilium infection, four of the pubis and none of the ischium.

REPORT OF CASES

CASE 1.—History.—P. S., aged 9, referred by Dr. A. S. Troupin, seen, July 19, 1922, for the last six years had been under treatment at various institutions, first for osteomyelitis of the radius and sternum, and then for the infection of the right ilium. The parents were recent immigrants, and for long periods at a time kept the boy away from clinics for the trial of home remedies. From the onset, there had been a draining sinus. For the previous two weeks, he had been at home, having been taken out of an institution where he had been kept for one and a half years. Two days previously, a swelling appeared at the right hip, with fever and prostration.

Examination.—The boy was fairly well developed but somewhat undernourished and of sallow complexion. The temperature was 102.4 F., the pulse, 120. The abdomen was markedly distended, but soft and not tender, and contained no fluid. The liver was markedly enlarged and firm, the lower edge being at the pelvic brim. The sternum and left forearm showed old scars, the result of the healed bone infections at these sites. Over the right ilium was a fluctuant abscess, the size of an orange, and below it a sinus discharging considerable watery pus. Motion at both hips was normal, and the spine was normal. The right leg and hip were drawn up in extreme flexion.

Operation.—Under ether anesthesia, the abscess was incised. A cupful of pus was obtained. The wound was explored, and

a hole was found in the ilium near the crest, large enough to admit a thumb. The abscess was drained. The convalescence thus far has been uneventful. The operation wound has contracted down to a small sinus, and at the present time, six months later, is still draining pus.

Outcome.—The postoperative treatment has been quite unsatisfactory, as the parents refuse to send the boy to an institution, and the home environment is unfavorable.

CASE 2.—History.—R. L., aged 13, referred by Dr. G. A. Haines, seen, Oct. 24, 1922, had fallen, striking the right hip, one week before while playing football. He walked home, but owing to the intense pain had to go to bed. The following morning, because of the continuation of the pain in the right hip, together with fever and voiding of bloody urine, the family physician was called. He found the temperature 104 F., and the right hip so sensitive that the slightest motion was exceedingly painful. The urine examination showed only red blood cells. After six days of observation with conservative treatment, and with no relief, I was requested to see him in consultation.

Examination.—The boy was well developed and well nourished. The face was flushed and hot to the touch. The tem-



Fig. 1 (Case 1).—Appearance of ilium.

perature was 101.8 F. There was full range of motion in both hips, but the right ilium was exquisitely tender. When, after palpation of the sacrum and sacro-iliac joint, which were not sensitive, this ilium was touched, the patient reacted with immediate outcry of pain. The right hip was so sensitive that the patient for the last six days had insisted on lying on the left side, keeping both legs and thighs fully flexed. There was no swelling and no redness or local heat. An immediate operation was advised, but was deferred by the parents for two days. The night before operation, which was nine days after the injury, a roentgenogram was taken, but showed no pathologic condition.

Operation.—Under ether anesthesia, a 4 inch (10 cm.) incision was made over the most tender spot of the ilium. Within the last two days a swelling had appeared at this area, so that the focus was well localized. When the fibers of the gluteus maximus muscle were divided, there was an escape of about 4 ounces (120 c. c.) of pus. The ilium was explored and a bare area about the size of a silver dollar was found, in the center of which was a perforation large enough to admit a lead pencil. Ample drainage was established. A culture showed the growth to be pure *Staphylococcus aureus*.

1. Monsaigeon, Maurice: De l'ostéomyélite aiguë de l'os iliaque, Paris theses, 1911-1912.

2. Simmons, C. C.: The Treatment of Osteomyelitis, Surg., Gynec. & Obst. 20: 129, 1915.

3. Quoted by Monsaigeon (Footnote 1).

4. Geist, Emil: Osteomyelitis of the Pelvic Bones, J. A. M. A. 77: 1939 (Dec. 17) 1921.

Outcome.—The convalescence was uneventful and rapid, and at present, three months after the operation, the patient is back in school and his general condition is excellent. There is still a scanty discharge from the sinus, which is appreciably diminishing.

COMMENT

These cases, the two most recently seen by me, are illustrative of the sequence of a neglected case, on the one hand, and of an early recognized case, on the other hand. The first patient, owing largely to the ignorance of the parents, has developed an amyloid liver because of the long continued suppuration. His condition is such that, even if the local condition quickly cleared up, he has this permanent damage to his liver. His infection of the ilium is of the metastatic type, following infection of the radius and sternum. Previous infections have conferred on him a certain immunity, for, as is shown in the roentgen ray, the process is localized; whereas, usually the disease spreads by extension.

The second case shows the result of early operation. The recovery was rapid and the amount of involvement

but once the disease process is localized, the roentgen ray is an aid in watching the progress of the disease.

The course of the disease in the ilium is similar to that in other flat bones. It is evident that, in an infection of a flat bone with a thin cortex, there will be early perforation; if the disease progresses, there will be extension of this perforating destruction or a new perforation will appear nearby. By roentgen ray, this is at first evidenced by a punched out appearance or rarefaction, which may gradually increase in size. In advanced cases in which there are several perforations, the bone may take on a mottled or "moth-eaten" appearance.

Complications are frequent. I have had under my care, in all, four cases of this condition. Of these, one had such extensive destruction of the ilium that the head of the femur slipped out of the acetabulum. Another had subsequent metastatic infection in three other bones. A third, because of long continued suppuration, developed amyloid liver. Other complications that have been recorded are arthritis of the hip, erosion of the femoral artery, which required ligation, phlebitis of the iliac vein, and the development of pus pockets.

The treatment is based on general surgical principles, and varies with the condition found. When the bone lesion is adequately drained through a perforation in the cortex, incision of the abscess may be sufficient. If perforation has not taken place, or if bone drainage is inadequate, trephining is the operation of choice.⁶ If the process is diffuse, a partial or total resection⁷ of the dead bone should be done, depending on the amount of involvement.

CONCLUSIONS

1. Osteomyelitis of the ilium is more common than is generally supposed, and should always be borne in mind in a case of painful hip that permits motion.

2. The local symptoms are often referred to the hip joint, and not to the ilium.

3. The important factor in diagnosis is tenderness over the ilium, without restriction of motion at the hip joint. The roentgen ray is at first of no help, but is later of decided aid.

4. Owing to the structure of the ilium, there is early perforation, and if the disease extends there are further perforations.

5. While the prognosis in this condition is grave because of proximity to the hip joint and the peritoneal cavity, early recognition and treatment renders it more favorable. Serious complications may arise at any stage of the disease.

6. The treatment is early operation with adequate drainage, and removal of dead bone, even if it means resecting the whole ilium.

483 Beacon Street.

6. Skillern, P. G.: Acute Pyogenic Osteomyelitis of the Ilium with Iliac Fossa Abscess, *Internat. Clin.* **4**: 1319, 1917.

7. Bergman: Resection of the Ilium for Acute Osteomyelitis, *Arch. f. klin. Chir.* **504**, 1906.

The Physician in Court.—The physician in court, whether as a party or as a witness, has impressed me as a man who is not thoroughly enjoying himself—he appears irritated by the interruption of his professional labors, impatient with the lay ignorance of his science evidenced by court, counsel or jury, or disgusted with the possibility of grave injustice that may be visited upon him. These feelings may be mixed with a strong self-confidence springing from a realization of his professional skill, that may cause him to assume toward the court an attitude of condescension or superiority.—G. W. Whiteside, *New York State J. M.* **23**:73 (Feb.) 1923.



Fig. 2 (Case 2).—Appearance of ilium three months after operation.

small. This infection without question was due directly to trauma, and since the boy had no previous infection to give him any immunity, it is fair to assume that had the operation not been promptly performed, the destruction might have kept on.

GENERAL CONSIDERATIONS

The causes of osteomyelitis in the ilium are the same as in osteomyelitis of other bones. The systemic manifestations are also the same, but the local symptoms are likely to be deceptive in that they are usually referred to the hip joint, and not the ilium. The diagnosis is made on the localized tenderness in the acute cases, and on the swelling in the chronic case; and there may be spasm of muscles of that buttock and also below it. There are pain and spasm in that hip on attempted motion, but with care motion can be obtained. The roentgen ray is a decided aid in old cases; in early cases, it often shows nothing. Stereoscopic plates⁵ may help,

5. LeWald, L. T.: Perforative Osteomyelitis of the Iliac Bone, *American Atlas of Stereoroentgenology*, Troy, N. Y. **2**: 60, 1917.

KERATODERMIA BLENNORRHAGICA

HERMAN L. KRETSCHMER, M.D.
CHICAGO

Keratoderma blennorrhagica is a very rare complication of gonorrhea, and because of this fact one would naturally expect the literature on this subject to be decidedly limited. This is especially true of the liter-



Fig. 1.—Extensive involvement of soles of feet and little toe of left foot.

ature of this country. According to Simpson and Beeson,¹ the first American case was reported by Simpson² in 1912, and, in 1917, Simpson and Beeson jointly reported two cases. In addition to the cases just mentioned, Roark,³ Haase,⁴ Gager⁵ and McDowell⁶ in this country have reported cases—seven in all.

In the foreign literature, cases have recently been reported by E. Graham Little,⁷ Little and Hayne,⁸ Montpellier,⁹ Gougerot and Cara,¹⁰ Brown and Davidson,¹¹ Brown and Hargreaves,¹² Lundie,¹³ Lévy-Franckel,¹⁴ Dyke,¹⁵ Isaac,¹⁶ Adamson,¹⁷ Allport,¹⁸ Doble¹⁹ and Lindeman.²⁰

1. Simpson, F. E., and Beeson, B. B.: *Kératodermie Blennorrhagique*, J. A. M. A. **68**: 1169 (Aug. 21) 1917.

2. Simpson, F. E.: *Kératodermie Blennorrhagique*, J. A. M. A. **59**: 607 (Aug. 24) 1912.

3. Roark, B. H.: *Blennorrhagic Keratosis*, J. A. M. A. **59**: 2039 (Dec. 7) 1912.

4. Haase, M.: *J. Cutan. Dis.* **34**: 817 (Dec.) 1916.

5. Gager, E. C.: *Keratoderma Blennorrhagica*, J. A. M. A. **78**: 941 (April 1) 1922.

6. McDowell, J. E.: *New York M. J.* **115**: 518 (May 3) 1922.

7. Little, E. G.: *Practitioner* **97**: 531 (Dec.) 1916; *Proc. Roy. Soc. Med., Sec. Dermat.* **14**: 90, 1920-1921.

8. Little and Hayne: *Tr. Roy. Soc. Med., Sec. Dermat.*, June, 1916.

9. Montpellier, J.: *Ann. d. mal. vén.* **12**: 309, 1917.

10. Gougerot and Cara: *Ann. d. mal. vén.* **12**: 108, 1917.

11. Brown, W. H., and Davidson, A. M.: *Brit. M. J.* **2**: 453 (Oct.) 1917; *J. Cutan. Dis.* **36**: 225 (April) 1918.

12. Brown, W. H., and Hargreaves, H.: *Brit. J. Dermat.* **29**: 107 (April-June) 1917.

13. Lundie, Crawford: *Brit. J. Surg.* **5**: 389 (Jan.) 1918.

14. Lévy-Franckel, A.: *Ann. d. mal. vén.* **13**: 386, 1918.

15. Dyke, S. C.: *Lancet* **2**: 328 (Aug. 23) 1919.

16. Isaac, C. L.: *Brit. J. Dermat.* **32**: 195 (June) 1920.

17. Adamson, H. G.: *Brit. J. Dermat.* **32**: 183 (June) 1920.

18. Allport, A.: *Proc. Roy. Soc. Med., Sec. Dermat.* **14**: 91, 1920-1921.

19. Doble, F. C.: *Proc. Roy. Soc. Med., Sec. Dermat.* **14**: 91, 1920-1921.

20. Lindeman, Grant: *Med. J. Australia* **9**: 126 (Feb. 4) 1922.

Because of the rare occurrence of this condition, and also because of the scarcity of case reports, it seems desirable to report a case that recently came under my observation:

History.—F. B., a man, aged 22, referred by Dr. W. W. Ross of La Porte, Ind., had had measles, mumps and chickenpox in childhood, and smallpox two years before I saw him. He contracted gonorrhea two and a half years before, for which he had since been under treatment. The patient entered the Alexian Brothers Hospital, May 6, 1922, complaining of pain in the right wrist and finger joints, swelling of the joints, nocturia, skin lesions, and loss of function of both knees. He stated that about eighteen weeks before he had some pain and swelling in the left toes which afterward spread, in the order named, to the joints of the right great toe, right hand, fingers, ankles, knees, elbows, left hip, and at present to the right wrist and right index and middle fingers. Pain and swelling of the right wrist and fingers occurred, May 2, 1922. This was the third exacerbation of the process in the right wrist and fingers, the first occurring three weeks, and recurring two weeks, previously. Nocturia had been present since the onset, two and a half years before. At present the patient voided two or three times during the night. Skin lesions appeared several weeks after the joints became involved, or about fifteen weeks before entrance. At first they were noticed on both heels as small pimples with a hard center. They gradually became worse and were scattered over both legs and hands, but less so on the thighs. There was loss of function of both knees for about seven weeks; immediately after the loss of function there was swelling, with much pain. The patient was confined to bed; there was no exercise of the knees.

Physical Examination.—The patient was very pale and anemic; evidently he had lost much weight as a result of his long illness. The scalp, ears, eyes, nose, nostrils, mouth, throat and tonsils were normal. The muscles of the upper and lower extremities had undergone marked atrophy from disuse, this being particularly noticeable in the lower extremities.

The right wrist was enlarged, swollen and tender, showing evidence of recent arthritis. The right first phalangeal joint was enlarged, red and swollen, as was the same joint of the middle finger. The right forearm just above the wrist showed a lesion, and another was seen over the left knuckle and one over the first phalanx of the middle finger. Two lesions were seen over the dorsum of the left hand: one over the first phalanx of the middle finger and one over the fourth metacarpal bone; and another lesion was situated over the middle of the right radius on the anterior surface. The skin of the trunk was free.

There was a slight discharge from the external urethral orifice; this was negative as regards gonococci. On the right side, the glans and sulcus were covered with superficial cysts. Along the line of incision of the circumcision and in the coronary sulcus there were small pustules, and a similar condition existed on the scrotum on this side. Evidently the patient had



Fig. 2.—Extensive involvement of nail of left great toe.

had similar lesions on the other side; but they were healed, or nearly healed, on admission to the hospital.

The lower extremities presented by far the largest number of lesions of the typical character. There were a few lesions on the outer aspect of the thigh, and a smaller number in the popliteal space. The muscles of the lower extremities were decidedly atrophic. The right leg had two large lesions on the outer aspect, and similar lesions were on the left leg. The dorsum of the right foot was covered with many lesions; in one area they were confluent, but in other areas a large number were isolated. On the dorsum of the left foot, however, the isolation of the lesions was more evident. They were also seen on the posterior side over the Achilles tendon, and were particularly marked over the heels, though some were also seen along the toes. The toe-nail of the left great toe consisted entirely of a large horny structure, the nail evidently having undergone complete cornification; and there was a large, horny lesion on the fourth toe of the left foot on its median aspect. The little toe of the left foot, in its entirety, had undergone almost complete cornification, for nothing that resembled a nail could be seen. There was a similar lesion on the median aspect of the little toe of the right foot. On the soles of the feet were the largest lesions, evidently the oldest ones and the ones that presented the most advanced cornification. There were three lesions on the left sole and three on the right.



Fig. 3.—Lesions on dorsum of feet; muscular atrophy of lower limbs.

The lesions were yellow, greatly resembling the color of beeswax, were hard, not tender, and varied in size from $1\frac{1}{4}$ to $1\frac{1}{2}$ inches (3.2 to 3.8 cm.). The largest was $1\frac{1}{2}$ inches in diameter. Some of the lesions of the soles of the feet had a lamella-like formation, but on the dorsum their outline was more or less rounded, a hyperemic zone encircling them, beyond which the color was rather white, with the center thicker than the periphery and of distinct waxy appearance. Evidently the cornification took place in the center. When

the crust was pulled off, an area, which appeared moist and had a reddish hue, remained.

The prostate was broad and flat, not tender and not very much enlarged; the seminal vesicles were thickened.

Blood examination revealed: erythrocytes, 4,400,000; leukocytes, 12,000; hemoglobin, 90 per cent. The differential leukocyte count was: polymorphonuclears, 71 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 4 per cent.; eosinophils, 1 per cent.; transitional cells, 4 per cent.



Fig. 4.—Large lesion over heel.

The blood Wassermann test was negative; the gonococcal fixation test was ++.

The patient left the hospital at the end of two weeks. His condition was unimproved, and the final result is not known.

SYMPTOMS

Keratoderma blennorrhagica occurs, with few exceptions, in the male sex, only one¹⁶ of the recent case reports being in the female. It is characterized by three cardinal symptoms; namely, urethritis (either recent or remote), arthritis, and the presence of hyperkeratosis.

Urethritis.—As a rule, a urethral discharge, which has repeatedly been described as mucopurulent, is noted. Brown and Davidson, Franckel and Dyke, Lindeman and McDowell have reported gonococci in the discharge. A history of previous attacks of urethritis can frequently be obtained. In the absence of an active discharge, filaments can be seen in the urine, and exploration of the urethra may show stricture formation. No gonococci were found in the discharge in the case reported here.

Arthritis.—On account of its constancy, arthritis is regarded as one of the three cardinal symptoms. It is nearly always multiple. The knee-joint is most frequently involved, and one or both joints may be affected,

ankle-joints being second in point of frequency. Wrists and feet are less often attacked. Involvement of the acromioclavicular joint was reported by Isaacs, and the vertebrae were involved in Doble's case. In McDowell's case the joints involved were shoulder, elbow, wrist, hip and ankle. In the case reported in this paper the joints affected were the toes of both feet, the right wrist, the fingers, both ankles, both knees, both elbows and the left hip. From this, it would appear that the arthritis is generally multiple.

Hyperkeratosis.—The extent or distribution of the lesions is variable with a seeming predilection for the feet, particularly the soles. At times the lesions are found on the feet only, plantar or dorsum surface or both. In a case reported by Brown and Davidson, the lesions were limited to the penis; likewise in a case reported by Jeanselme and Blamontier. In Lévy-Franckel's case the lesions were found on the lower limbs and soles of the feet, as well as on the penis. Involvement of the nails was reported by Lindeman, by Dyke, and also in the case reported in this paper.

As examples of extensive distribution may be mentioned the heel, soles, nails, face, shoulders, arms, trunk, scrotum, buttocks and legs (Lindeman); knee, thighs, hip, leg, back and soles of feet (McDowell).

TABLE 1.—Summary of Diet in Twenty-Seventh Case by Averages for Weekly Periods, with Blood Fat at End of Each Period (Joslin Case No. 2216)

Period No. of Days	Average Daily Diet					Weight, Kg., Net	Urine		Alveolar Carbon Dioxid Mm. Mercury	Blood Before Breakfast, per Cent.	
	Carbo- hydrate, Gm.	Protein, Gm.	Fat, Gm.	Calories	Calories per Kilogram		Sugar, Gm.	Diacetic Acid		Sugar, Folin-Wu	Fat, Bloor
Adm. ....	..	..	..	...	...	30.0	85	+++	31	0.31	5.12
8.....	36	27	4	288	8.8	32.8	0	0	38	...	2.54
6.....	13	33	29	445	14.8	30.0	0	0	..	...	2.20
7.....	17	38	47	643	22.3	28.8	10	0	36	...	4.24*
7.....	12	29	41	533	17.3	30.8	0	0	..	...	4.70
12.....	12	29	41	533	17.3	31.8	0	0	38	0.20†	

* Ophthalmoscopic note by two persons: "Arteries and veins have a creamy appearance, evidently due to lipemia."

† At discharge.

Rarely do lesions of the eye occur, though iritis has been noted in cases reported by Isaac and Lundie.

Muscular atrophy, due to loss of function, may become quite marked, as in the case here reported.

DIAGNOSIS

The diagnosis can be made quite readily from the presence of urethritis, arthritis and hyperkeratosis. This clinical entity has been confused with other skin lesions. Adamson raises the question whether keratoderma blennorrhagica is not a form of psoriasis. His observations have shown that: (1) There are cases of arthropathic psoriasis in which the lesions on the palms and soles strikingly resemble those of gonorrheal hyperkeratosis; (2) in many cases of gonorrheal hyperkeratosis there are eruptions on the limbs or trunk indistinguishable from psoriasis; (3) there are cases in which it is difficult to make a definite diagnosis between arthropathic psoriasis and gonorrheal hyperkeratosis; (4) there is a close similarity between the histopathology of psoriasis and of keratoderma hemorrhagica.

TREATMENT

Since the lesions are metastatic in origin, the treatment should be directed toward cleaning up the focus of infection in the prostate gland and seminal vesicles by massage, irrigations or instillations. Vaccines have been used, the results of their use being variously stated as beneficial or without effect on the skin lesions.

Arsenic in the form of neo-arsphenamin was followed by good results (Doble-Lees).

LIPEMIA RETINALIS*

HORACE GRAY, M.D.

AND

H. F. ROOT, M.D.

BOSTON

It seems time to draw to the attention of medical men a subject which has been discussed usually by ophthalmologists, and often too only in relatively inaccessible society transactions. We have been able to find only twenty-six cases reported so far.

REPORT OF A TWENTY-SEVENTH CASE

Mrs. R. was 50 years and 9 months old when the onset of diabetes was announced by blurred vision; this, with subsequent urinary incontinence, caused examination and diagnosis a month later. Almost exactly a year afterward, she came under Dr. Joslin's care. The twenty-four-hour urine then contained 85 gm. of sugar, and diacetic acid was +++; the alveolar carbon dioxide was 31 mm.; the blood before breakfast showed creamy plasma, with 5.12 per cent. fat (Bloor) and sugar 0.31 per cent.; the net weight was 30 kg., 46 per cent. below her maximum of 113 pounds (51 kg.) three months before the onset of symptoms. The weight at onset and the height were unknown. The diet is summarized in

Table 1 by averages for weekly periods, together with the blood fat at the end of each period; no relation is evident. After discharge from the hospital the patient was not seen again; despite a restricted diet at home, she failed and finally died in diabetic coma four months and nineteen days after recognition of the retinal lipemia.

REPORT OF A TWENTY-EIGHTH CASE

Mr. D. was 35 years and 11 months of age when the onset of diabetes was indicated by a gradual but distinct increase of his thirst over that of the men with whom he had been playing cards during the preceding fortnight of his vacation. Nocturia did not begin until two weeks afterward; and it was a month later that a cold took him to his physician, who, on hearing of the thirst, examined the urine and diagnosed the diabetes. Sugar and bread were omitted without material relief, so a fortnight later he was referred here for treatment. The urine then contained 6 per cent. in a single specimen four hours after a hearty meal, and in the night the twelve-hour amount, 3.9 per cent., or 55 gm., diacetic acid, ++; blood sugar before breakfast, 0.25 per cent.; blood fat, 0.53 per cent., and plasma not creamy. The weight was 57.7 kg. net, i. e., 13 per cent. below his maximum of 157 pounds net (71 kg.) six months before the onset; 12 per cent. below his weight of 145 pounds net (65.8 kg.) at onset, and 25 per cent. below the insurance average for his height and age. He was discharged eighteen days later, Oct. 13, 1922, sugar and acid free, with a fasting blood sugar of 0.10 per cent., and on a diet of: carbohydrate, 155 gm.; protein, 70 gm.; fat, 99 gm.; calories, 1,746; total glucose (Woodyatt), 206 gm.; weight, 56.8 kg., making 2.7 gm. of carbohydrate and 31 calories per kilogram.

* From the Service of Dr. E. P. Joslin at the New England Deaconess Hospital.

He returned to work in the midst of the autumn rush of business. Although he followed his diet and weighed his food, he became very tired. About December 21, work had become much heavier, and two days before Christmas he had to quit. In the attempt to gain strength, he increased his diet to: carbohydrate, 155 gm.; protein, 100 gm.; fat, 125 gm.; he showed sugar, and could get free only by reducing the fat or by fasting. Glycosuria and weakness caused him to return to the hospital four months after he had left it.

Events after readmission, Feb. 9, 1923, are shown in Table 2. Now the plasma was creamy and the retinas presented a grayish, hazy appearance, not sufficiently accounted for by the very moderately increased black pigmentation. The arteries and veins looked much alike. The white line was extremely prominent, and the usual contrast between it and the red artery was absent, while there was a silvery glow or sheen about the vessels.

Dr. F. M. Spalding reported that there was no question about this being a case of lipemia retinalis. The most prominent feature was the appearance of the arteries. They had a distinct yellowish color, in some places, almost whitish, with the silvery glow or sheen as described. The nerve heads were of fairly good color and did not show the waxy look as described in some cases. The veins had more of a chocolate color than the purple one would expect. The choroidal vessels were also more of a yellowish color.

recorded cases by Hardy and by Wagener. We have been able to extend the list of prior observers so that with the two cases here described, the total comes to twenty-eight: Case 1, Heyl¹ and Starr;² Case 2, White;³ Case 3, Reis;⁴ Case 4, Fraser;⁵ Case 5, Turney and Dudgeon;⁶ Cases 6 and 7, Krause;⁷ Cases 8 and 9, Heine;⁸ Case 10, Marx;⁹ Case 11, Hertel;¹⁰ Case 12, Köllner;¹¹ Case 13, Stoerk;¹² Case 14, Darling;¹³ Case 15, Ulbrich;¹⁴ Cases 16 and 17, Moore;¹⁵ Case 18, Moore;¹⁶ Case 19, Williamson;¹⁷ Case 20, Cohen;¹⁸ Case 21, Hardy;¹⁹ Case 22, McGuire;²⁰ Case 23, Benedict;²¹ Cases 24, 25 and 26, Wagener.²²

Nomenclature.—The name favored by the discoverer, Heyl of Philadelphia, was intra-ocular lipemia, but subsequent students have uniformly preferred his second choice: retinal lipemia or lipemia retinalis. Lipemia angioretinalis was suggested as more accurate by Cohen in 1921, but seems unlikely to supplant the original term of forty-three years' standing.

Eye-ground.—The diagnosis is based on the ophthalmoscopic aspect of the vascular net, (1) as to the color, variously described as light salmon (Heyl), strawberry and cream (White), milky (Heine), light pink

TABLE 2.—Course in Twenty-Eighth Case

Date	Diet					Weight, Kg., Net	Urine		Alveolar Carbon Dioxid, Mm. Mercury	Blood Plasma Before Breakfast, per Cent.		Insulin Units	
	Carbohy- drate, Gm.	Protein, Gm.	Fat, Gm.	Calo- ries	Calories, Kg.		Sugar			Dia- cetic Acid	Sugar, Folin-Wu		Fat, Blood
							Per Cent.	Gm.					
Feb. 9, 1923	..	..	..	...	....	....	5.8	..	++++	34	....	..
Feb. 9-10, 1923	..	..	..	...	....	50.9	5.0	12 hrs. 75	+++	..	....	9	
Feb. 10-11, 1923	66	24	37	689	14.0	50.7	0.7	41	0	..	0.29	6.30	15
Feb. 11-13,* 1923	49	30	61	853	16.7	51.1	0.5	17	0	..	....	....	13
Feb. 14, 1923	..	..	..	...	....	....	...	..	....	..	0.29	2.95	

* For February 11 to 13, inclusive, the figures given are daily averages.

A second ophthalmoscopic examination, February 14, revealed no evidence of retinal lipemia. This was confirmed by Dr. F. S. Thorne, who noted that the retinal changes were no longer characteristic of lipemia retinalis. The color of the vessels was now practically normal. The chief thing present was a haziness of the fundus, probably due to a low grade retinitis.

The interval before disappearance of retinal lipemia as hitherto reported was two months (White); two weeks (Hardy), and seven and five days (Wagener). This transitoriness rather than rarity is well emphasized by Wagener as the probable cause for the paucity of observations on retinal lipemia. The even shorter interval of four days in the present case enables us, like Wagener, to confirm Heine's estimate seventeen years ago as to the blood fat level necessary to produce the characteristics of lipemia retinalis: "I think, therefore, that with 4-5 per cent. fat content of the blood the diagnosis of lipemia becomes possible with the ophthalmoscope, while with 8 per cent. the changes are very outspoken."

The patient received a total of 63 units of insulin, during which time the blood sugar percentage was unchanged, but ketonuria disappeared and the percentage of plasma lipoids was reduced one half in four and a half days. Insulin treatment was very likely of great importance in bringing about the rapid improvement.

COMMENT

The excessive brevity of the description of the retina in our first case suggests the notion that other observers, too, may have missed the chance to make adequate records on this little known peculiarity of diabetes for like reasons: (1) the absence of stimulating information in the standard textbooks; (2) the difficulty of assembling the original sources of this information, and (3) the incompleteness of any summary yet compiled. Much the best are the tables of

(Köllner, Darling), creamy, waxy (Heine, Köllner, Darling, Moore), ground glass effect (Moore), malted

1. Heyl, A. G.: Remarks on Lipaemia Retinalis Occurring in a Case of Diabetes Mellitus, Philadelphia M. Times **10**: 318 (March 27) 1880; Intra-Ocular Lipaemia, Tr. Am. Ophth. Soc. **3**: 54 (July) 1880.
2. Starr, L.: Lipaemia and Fat Embolism in Diabetes Mellitus, M. Rec. **17**: 477 (May 22) 1880.
3. White, W. H.: Guy's Hosp. Gaz. **16**: 295 (July 19) 1902; A Case of Diabetic Intra-Ocular Lipaemia, in Which the Blood was Examined During Life, Lancet **2**: 1007 (Oct. 10) 1903.
4. Reis, W.: Zur Kenntniss eines bisher kaum beachteten Augenspiegelbildes bei Lipaemie in Folge schweren Diabetes, Arch. f. Ophth. **55**: 437 (March 24) 1903.
5. Fraser, T. R.: Lipaemia in Diabetes Mellitus, Brit. M. J. **1**: 1205 (May 23) 1903.
6. Turney, H. G., and Dudgeon, L. S.: A Case of Intra-Ocular Lipaemia Associated with Diabetes, J. Path. & Bacteriol. **11**: 50, 1906.
7. Krause, P.: Ueber Lipämie im Coma diabeticum, Verhandl. Cong. f. inn. Med. **23**: 521 (April 26) 1906; La lipémie dans le coma diabétique, Sem. méd. **26**: 225 (May 9) 1906; Zur Symptomatologie des Coma diabeticum, Deutsch. med. Wchnschr. **33**: 85 (Jan. 10) 1907.
8. Heine, L.: Ueber Lipaemia retinalis und Hypotonia bulbi im Coma diabeticum, Klin. Monatsbl. f. Augenh. **44**: 451 (Dec.) 1906; Augenspiegelbefunde bei diabetischer Lipaemie, Deutsch. med. Wchnschr. **33**: 85 (Jan. 10) 1907.
9. Marx, E.: Ein geval von lipaemia retinalis, Nederl. Tijdschr. v. Geneesk. **2**: 808 (Sept. 21) 1907.
10. Hertel, C.: Mikroskopische Präparate und Abbildungen von einem Fall von Lipaemia retinalis, Ztschr. f. Augenh. **21**: 551 (May) 1909.
11. Köllner, K.: Lipämie, Centralbl. f. prakt. Augenh. **34**: 212 (July) 1910; Mitteilung über Lipämie, Klin. Monatsbl. f. Augenh. **49**: 109 (July) 1911; Lipaemia retinalis, Ztschr. f. Augenh. **27**: 411, 1912.
12. Stoerk, E.: Ein Fall von hochgradiger Lipämie bei juvenilem Diabetes mellitus, Wien. med. Wchnschr. **61**: 1297 (May 13) 1911.
13. Darling, C. G.: Retinal Lipaemia in Severe Diabetes, Arch. Ophth. **41**: 355, 1912.
14. Ulbrich: Lipaemia retinalis, Tr. Ophth. Gesellsch. in Wien, Nov. 11, 1912, Ztschr. f. Augenh. **29**: 83, 1913.
15. Moore, R. F.: Lipaemia Retinalis, Lancet **1**: 366 (Feb. 20) 1910.
16. Moore, R. F.: Diabetes in Relation to Diseases of the Eye, Tr. Ophth. Soc. U. K. **40**: 15, 1920.
17. Williamson, R. T.: Ophthalmoscopic Appearances in Certain Rare Cases of Diabetes, Brit. M. J. **1**: 120 (Jan. 22) 1921.
18. Cohen, M.: Report of a Case of Lipaemia Retinalis with Hypotony in Diabetic Coma, Arch. Ophth. **50**: 247 (May) 1921.
19. Hardy, W. F.: Lipaemia Retinalis, Tr. Am. Ophth. Soc. **19**: 229 (June 15) 1921.
20. McGuire, H. H.: Observations in a Case of Lipaemia Retinalis, Tr. Am. Ophth. Soc. **20**: 235 (May 1) 1922; Am. J. Ophth. **5**: 862 (Nov.) 1922.
21. Benedict, W. L.: Discussion of McGuire's paper, Tr. Am. Ophth. Soc. **20**: 241 (May 1) 1922.
22. Wagener, H. P.: Lipemia Retinalis: Reports of Three Cases, Am. J. Ophth. **5**: 521 (July) 1922.

milk (Hardy), silvery sheen or glow (Case 28); (2) as to the size of the vessels, seemingly about twice the normal diameter (Heyl); (3) as to the similarity of arteries and veins (Heyl, Reis, Heine, Marx, Hertel, our experience); (4) as to the flat, ribbon-like aspect of the vessels accompanied by absence of the light streak (Heine, Marx, Moore, Hardy, Wagener); or (5) conversely as to unusual breadth of the light streak (Case 28).

Hemorrhagic points were noted by Czerny²³ twenty-four hours after the injection of fat into the veins of a dog with a normal fundus. This experiment was generously credited by Heyl with having shown "doubtless intra-ocular lipemia," but Czerny recorded nothing about the looks of the vessels, and later attempts at experimental reproduction of the condition have been unsatisfactory. Cohen did observe two small hemorrhages in his diabetic boy.

The retina itself may be tessellated from the lack of pigmentation frequently reported in diabetics (Cohen), but usually is commented on for its surprising normality.

The nerve head may be fawn color (Reis), chocolate color (Köllner) or waxy (Wagener), but it is usually normal, as are the media and the patient's visual acuity.

The iris pigment epithelium may exhibit glycogenous degeneration, indeed, to such an extent as to be characteristic of diabetes (Reis).

Illustrations of the ophthalmoscopic picture have been published by White, Heine,²⁴ Köllner, Darling, Dimmer²⁵ and McGuire. Those by the first two authors, especially Heine, are beautifully colored plates.

Differential diagnosis may be made from (1) leukemia by (a) the white cell count; (b) the exaggeration of the usual difference in size between the narrow arteries and wide veins (Heyl), and (c) tortuosity of arteries and particularly of the veins (Dimmer), and from (2) polycythemia by (a) the red cell count and (b) the deep color of the vessels (Heine gives a plate in parallel colors).

Coexistence of lipemia and leukemia was, however, demonstrated by Wagener in one of his cases, and the possible coexistence of lipemia and nephritis was considered by Moore²⁶ in 1922. He examined a series of 119 cases "as to their eye condition. Of these, four had well-marked lipemia or lecithinemia, but in none of them was it sufficiently marked to give rise to the ophthalmoscopic picture of lipemia retinalis."

Blood Fat.—The natural explanation for the appearance of retinal lipemia has been sought for by chemical determination of the ether-soluble fraction of the circulating blood. This was first done in one of these cases by Reis: total fat, 18.13 per cent.; cholesterol, 2.51 per cent. The former value has been recorded in seventeen of the twenty-eight patients cited, and in five of these the cholesterol also, though from the latter no interpretation has been drawn. The total fat in these cases averaged 9 per cent., and ranged from 26.25 (Köllner) down to 4.24 per cent. (in Case 27) and 3.50 per cent. (Wagener's Case 3).

When the blood fat diminishes, the retinal vessels appear much more normally pink (Köllner), or even perfectly normal (the facts are given in Table 3). In

Case 28, the shortness of the periods, together with the relative closeness of the fat figures, synchronous with the presence and absence of retinal lipemia, enables us to limit the threshold to between 3 and 6 per cent. of plasma lipoids by Bloor's method. More accurate fixation of the critical level will evidently require fat determinations daily or oftener, with due regard to the time elapsing between the last meal and the venipuncture.

The accuracy of such high fat values as those of Reis, Fraser and Köllner is questionable, as Wagener has already remarked.

Acidosis.—The data are not very complete. Ferric chlorid is positive in at least 57 per cent. (sixteen cases), and is not stated in ten cases; it is definitely negative in the pneumonia case and in Case 27. In Case 28 the strong Burgundy reaction in the twelve-hour amount ending just before the creamy blood was drawn had entirely disappeared in the ensuing twenty-four-hour collection. The extremes of the blood carbon dioxid were 56 per cent. by volume, i. e., normal, on admission when the retinal lipemia was recognized (Hardy); and 1 per cent. by volume five hours before death (Moore's first case). This last low figure may be skeptically received in view of the rarity of a value as low as 6 per cent. by volume.

TABLE 3.—Diminution of Blood Fat

	Blood Fats, per Cent.	Interval
White.....	26.25 → 13.50	2 months
Köllner.....	9.50 → 2.90	Not stated
Hardy.....	8.50 → 3.50	2 weeks
Benedict.....	8.20 → 1.90	Not stated
Wagener.....	6.30 → 2.95	24 days
Case 28.....		96 hours

Blood Sugar.—This was stated only in the reports of 1921 and later, in which it was given as 0.28, 0.18, 0.54, 0.42, 0.40, 0.31, and 0.29 per cent., averaging 0.34 per cent. Oddly enough, the figure 0.54 (McGuire) rose during eight weeks' observation to 0.65 per cent., at the same time as the blood fat fell to 3.7 per cent. and the fundi became normal.

Urine Sugar.—The data are defective. The amount in twenty-four hours exceeded 170 gm. (White), 300 (Turney), and 660 gm. (Fraser). The greatest glycosuria in Case 27 was 85 gm. for twenty-four hours, and in Case 28 was 75 gm. in the twelve hours following admission.

Age.—Retinal lipemia has been said to be "a terminal symptom of juvenile diabetes" (Köllner, Moore). The facts are: For the twenty-four patients whose age was stated, the youngest was 9 (Wagener), the average 25, and the oldest 51 years (Case 17).

Sex.—Four patients were women, the sex of two patients was not stated, and there were twenty-two males, that is, 79 per cent. of the series. Probably the factor of sex is of no significance.

Soft Eyeball.—Hypotonia bulbi as a sign peculiar to diabetic coma was first reported by Krause in 1904, and in conjunction with retinal lipemia was reported by the same observer in 1906, and then by Heine, by Hertel and by Cohen. Darling tested for it with a Schiötz tonometer and got normal figures, possibly because soft eye seems to be an agonal phenomenon and because his observation was made so long before death; namely, six weeks. The two signs appear to be quite independent.

Condition on Discharge.—The immediate outcome was death in 57 per cent. of the series; of the sixteen

23. Czerny, V.: Ueber die klinische Bedeutung der Fettembolie, Berl. klin. Wchnschr. 12: 593, 605 (Nov. 1 and 8) 1875.

24. Heine, L. (Footnote 8): Die Krankheiten des Auges, Berlin, 1921, p. 170.

25. Dimmer, F.: Der Augenspiegel, Ed. 3, Leipzig and Vienna, 1921, p. 338 (photomicrograph of the fundus of Ulbrich's patient).

26. Moore, R. F.: Medical Ophthalmology, Philadelphia, 1922, p. 168.

patients who died, one had pneumonia (Turney), while coma clearly claimed ten and probably also the remaining five.

Duration.—The duration of lipemia retinalis from diagnosis to death or, when that was unknown, to discharge from the hospital, varied from twenty hours (Moore, Case 2) to seven weeks (Heyl, Darling), nine weeks (Köllner), and four months, nineteen days (Case 27). These long intervals before death, together with the recoveries mentioned, prove that the outlook, while grave, like that of hyperlipemia in general, is by no means immediately alarming.

CAFFEIN INTRAVENOUSLY—THE BEST OF STIMULANTS

W. W. DUKE, M.D.

KANSAS CITY, MO.

In discussing the use of caffein as a stimulant, I wish to discuss it as a stimulant only, not as a permanent remedy. As a temporary stimulant, it is the one and only drug which in my experience never completely fails. Stimulants such as strychnin, atropin, strophanthin, digitalis intravenously, and the weak member camphorated oil have the unhappy faculty of usually failing when they are most needed—that is, in desperately ill patients. This we should expect. The poisons elaborated in many diseases are so much more potent than drugs that, in the majority of such cases, stimulating drugs seem to amount to little more than the water in which they are dissolved. Caffein does not come in this class, however, if given intravenously. If given subcutaneously, it fails as other stimulants do. My attention was first drawn to its usefulness by a case observed when I was a house officer in the Massachusetts General Hospital in 1911:

An old man with bronchopneumonia was admitted to the hospital one afternoon. His condition seemed good. I promised his relatives I would notify them if there seemed to be any immediate danger. This gratified them greatly, since there were several important matters which they wished to settle if his illness appeared likely to terminate fatally. I left the hospital for about two hours during the evening, and on returning found that the old man had suddenly taken a turn for the worse and was at that time apparently moribund. He was as deeply comatose as a living person could be. He was practically pulseless. Breathing was of the Cheyne-Stokes type and labored during the periods of dyspnea. Large, coarse, tracheal râles were audible throughout the ward, owing to accumulation of mucus in the trachea.

The patient had been given strychnin, atrophin, camphorated oil and strophanthin intravenously, and had shown no response to them whatever. At the time I saw him it appeared useless to give medication subcutaneously. In his state there seemed little likelihood of its absorption. For this reason, in a desperate effort to resuscitate him, he was given 2 grains of caffein sodiobenzoate intravenously. He opened his eyes almost immediately and began to talk. His recovery was so unexpected as to be positively uncanny. He began to breathe regularly and deeply, and was troubled no further with mucus in the trachea. The pulse became strong and regular. When his relatives arrived, he conversed with them brightly and intelligently, and arranged his business affairs. During the remainder of the night he had a good pulse, regular respiration, and was mentally as clear as one could wish for. This lasted until the following night, when he again lapsed into the state just described and passed away, this time in spite of further use of caffein.

This experience has been repeated many times with almost equally good temporary results. The drug has been used in moribund cardiorenal cases; in uremia associated with coma; in prostate cases with ascending infection; in uremia and coma; in bronchopneumonia with coma, and in general sepsis with coma. The result in the majority of cases has been temporary, and while the drug has often been repeated two or three times with good effect, the later doses have rarely been as effective as the first. In the case about to be reported, however, caffein was repeatedly used with the result that the patient recovered from an illness which otherwise would have almost certainly terminated fatally:

An old man for three years had been troubled with prostatic hypertrophy and infected residual urine. He lived a catheter life for about one month, and finally, on account of his serious ill health, gave his consent to operation. A suprapubic cystostomy was performed without much preliminary preparation. He got along well for several days, when one evening he rather suddenly lapsed into coma. I saw the patient then for the first time. He evidently had bronchopneumonia; the temperature was 103. This, with the fact that he was nearly uremic, made the outlook grave. In fact, he actually looked moribund. It seemed that the duration of life should be estimated in hours rather than days. His pulse was very weak and irregular; breathing was of the Cheyne-Stokes type and difficult because of mucus in the trachea. Coma became so deep that he could not be roused at all.

He was given intravenously two grains of caffein sodiobenzoate. The result was about like the one described in the previous case. He gained consciousness almost immediately, the breathing, pulse and color improved—in fact, his general condition improved to such an extent that there was no concern about his going through the night without difficulty.

The same comatose condition recurred the following evening and was again relieved with caffein. On the two days that followed, several doses of caffein were required both during the day and during the night. At the end of this time his temperature came to normal. The crisis had evidently occurred, and convalescence and recovery had begun. One month later the prostate was removed without untoward result.

In attempting to account for the splendid effect of caffein when given intravenously, it might be said that caffein is a time honored and recognized stimulant. It has been used by mouth, by rectum, subcutaneously and perhaps intravenously. Its subcutaneous use in my hands has not given striking results as a strong stimulant, and has had the unfortunate effect of interfering with sleep. In every case in which it has been needed sorely, it has failed when given subcutaneously.

The impression has been gained from its intravenous use that it is the best of drugs that can be used as a stimulant. Following its use, the mind usually becomes bright, and the depressed vital reflexes so important to the life and welfare of the individual become active and normal. The good effect of the drug has seemed to me to lie chiefly in the brightening up of consciousness with improved cortical control of the vital reflexes, and a resulting improvement in breathing, circulation and other fundamental functions which may have been impaired.

The chief sphere of usefulness for intravenous caffein lies in its employment in desperate cases when other remedies fail and when consciousness and reflex activity are at a low ebb; for example, in cases of coma, shock, collapse under anesthesia, and poisoning from morphin and other depressant drugs. The remedy should not be used unnecessarily, nor repeated unless indicated. I have never seen marked untoward effects

from its use, but one would think that the strain of a stimulant so powerful as intravenous caffeine should be avoided unless actually needed.

Waldheim Building.

THE SCOPE OF THE ROENTGENOLOGIST'S REPORT

CHARLES D. ENFIELD, M.D.

LOUISVILLE, KY.

There are two recognized extremes in the conception of what the report of a roentgenologic examination should include. The one extreme is typified by the report which describes in detail all that the roentgenologist sees in the film or on the screen, but does not tell what he thinks about it, what conclusions he draws from it, what it means to him. Such a report is, in its perfect form, a bald recital of roentgen signs, like the pathologist's description of a postmortem specimen, or a dermatologist's description of a skin lesion: at its best a perfect word picture but without meaning to one unable to interpret it. This form of report puts most of the burden on the stenographer; it commits the roentgenologist to nothing except accurate vision and good description; it is bound to be verbose; it tells much, yet almost nothing. It would be the ideal form of report from one roentgenologist to another; but, coming from the roentgenologist to the internist or the surgeon, it conveys information only in proportion as the recipient of the report knows technical roentgenology.

At the other extreme is the report which gives merely a roentgen-ray diagnosis. This may be done in a sentence; it is economical of time and effort, it commits the roentgenologist absolutely, but I think it is even a worse form of report than the other. Such a report, it is true, gives the roentgenologist's opinion; but it utterly fails to give his grounds for that opinion. If it is unwise to assume that the internist or surgeon is technically familiar with the finer points of roentgen diagnosis, it is equally unjustifiable to conclude that he is entirely unskilled in weighing roentgen-ray evidence. Any consultant in an obscure case is expected to give not only his opinion but also his method of arriving at that opinion and his evidence in favor of it; and the roentgenologic consultant should be no exception. Roentgen-ray diagnoses can seldom be made. I mean by this that it is relatively rare that the roentgen-ray evidence alone suffices to establish the whole truth about a clinical condition. Even in a recent fracture, it would be foolhardy to attempt to prescribe treatment and venture a prognosis without seeing the patient as well as the roentgenograms.

There is a negative form of this type of report which is also, in my judgment, very bad. I refer to the gastro-intestinal report, for instance, which says, "The gastro-intestinal tract of Mrs. Blank was examined by means of a barium meal and enema. No evidence of intrinsic disease was found." Such a report is extremely incomplete, even though, in the judgment of the roentgenologist, it is perfectly truthful. No roentgen-ray man, simply because a patient had been referred to him on suspicion of gastric ulcer, would fail to mention a gastric cancer if he found it; yet such a report as that cited may be almost equally misleading. The patient may have had a marked ptosis, or strongly

suggestive indirect evidence of gallbladder disease, or a spastic colon, or ileocecal incompetence without impairing the technical truthfulness of the report, if the examiner does not happen to attach much importance to these things. In short, such a report is only of as much value as the roentgenologist's unsupported opinion, and utterly fails to convey the detailed data which an analytic mind would require.

The roentgen-ray findings, to insure their most effective use, must be interpreted in the light of the clinical data. This does not mean that the roentgenologist must take an accurate and detailed history, or make a physical examination. Sometimes it is well that he should do these things; but, if they are done, they should as a rule follow, rather than precede, his plate or screen examination. The fact remains that, to derive from them their utmost value, the roentgen-ray signs must be correlated with the clinical aspects of the case. It is certainly not ordinarily the function of the roentgenologist to do this, but it is his function to aid the surgeon or the internist to the fullest extent in doing it. This function is not fully subserved by either of the forms of report dealt with.

The ideal report is one that embraces, from the clinician's point of view, the advantages, and from the roentgenologist's, the disadvantages, of both the types mentioned. It paints the word picture of what the roentgenologist saw on the screen or the plate as fully as the first form, and it gives conclusions, nay, even perhaps a diagnosis, as did the second type. It not only commits the roentgenologist as to his opinion, but it makes him give his grounds for that opinion. It involves more work on the part of both the writer and the reader than either of the other forms. It puts the roentgenologist out in the open where the clinician can shoot at him, and then provides the ammunition. But it does offer a fair chance to correlate the laboratory and the clinical aspects, and thus arrive at the truth.

If there are films and the clinician is to look at them, this type of report serves as a guide book and enables him, perhaps, to observe points of interest with less waste of time and more comprehension. If there has been a fluoroscopic examination, such a report enables the clinician to visualize it perhaps better than if he had been present; surgeons, particularly, are notoriously impatient about waiting for their pupils to dilate sufficiently to get the most from the fluoroscopic image.

The report should often include, if negative, a statement of the limitations of the particular examination conducted. For example, if the urinary tract is being examined for calculus, and none is found, it is mutually helpful for the roentgenologist to state that 25 per cent. of bladder stones, 15 per cent. of ureteral stones, and 10 per cent. of kidney stones are not demonstrable by roentgen methods. If the chest is examined fluoroscopically only, it should be mentioned that this sort of examination reveals only the grosser changes, and may entirely fail in revealing early lung changes. If films of the gallbladder region are asked for, and prove negative, it is well to state that only perhaps 30 or 40 per cent. of gallstones can be seen on the film, and perhaps 60 or 70 per cent. of diseased gallbladders; while, if a complete gastro-intestinal examination is made, positive evidence will be obtained in perhaps 80 per cent, or more of diseased gallbladders.

In certain examinations, topography is of as much importance as pathology, and should be fully entered into. This is particularly true in sinus and mastoid

examinations. The mere discovery that a frontal sinus is absent, that a sphenoid in a small child is large enough to be clinically important, or that the mastoid air cells are unusually extensive may aid materially in the solution of a clinical puzzle.

Wherever it is possible conservatively to do so, an estimate should be made of the activity and clinical importance of the pathologic changes revealed on the film or screen. Disease which has passed and gone often leaves an historical record in altered roentgen-ray densities, and it is particularly important for the clinician to be reminded that not all positive roentgen-ray findings mean active disease. The most common example of this is the almost universally present group of calcified hilum glands seen in adult chests. These vary in number and in density, and are simply a record of the universal early tuberculous infection. Instead of implying active disease, they are more likely to indicate a normal resistance to infection. As Bushnell has pointed out, the person who has had no tuberculosis is most unfortunate. Another commonly seen historical record of past disease is the increased density in an antrum shadow. Sinus infections of the more common type are accompanied by a thickening of the bony wall which remains after active infection is past. Such densities are properly interpreted as evidence of sinus disease past or present. If the walls of the air cells in the ethmoid labyrinth or in the mastoid are once broken down by infection, they do not regenerate. If spontaneous healing occurs, the roentgen-ray picture may be much the same five years later, as during the active course of the pathologic process; hence the necessity for stating that the part shows evidence of disease, but not that disease is present. Only the clinician can say that. On the other hand, it is possible with most tuberculous lesions of the lung to say whether or not there is present activity. The active duodenal ulcer can as a rule be distinguished from the scar of the healed lesion.

Another instance of the variable relation between roentgen pathology and the clinical aspect is the so-called silent urinary calculus. Not infrequently, large urinary calculi are discovered in the course of an examination of the spine, gallbladder or sacro-iliac joint. Such an accidental finding may somewhat overshadow the really important condition, in case the stone so discovered is of the silent variety and is not causing symptoms. On the other hand, in the course of the examination of the urinary tract, it is not unusual to find marked osteo-arthritis of the lumbar spine, which, however, may be making no trouble whatever. It is not the function of the roentgenologist to determine in the individual case whether such a condition of the spine can explain the symptoms present. It is, however, his duty to note and describe the condition. The point is that, incidentally and for the moment, any important pathologic change may in the films overshadow the really significant condition.

Occasionally, one finds, in a patient referred for fracture, not only the fracture suspected but also a bone cyst or tumor which far overshadows the fracture in importance, in that it is not only the cause of the present fracture but may lead to a general condition much more serious to the patient than a mere broken bone. On the other hand, the existence of marked obvious bone disease should not lead one to neglect, as it often has, the presence of a fracture without much displacement.

In roentgenology, as in other departments of medicine, there are controversial points on which opinion is still in the formative stage. The roentgenologist's report on any such condition is certain to be colored by his own attitude toward the controversy. It is right that this should be so; but it is particularly important, under such circumstances, that the report make clear the fact that the evidence in such instances is not universally accepted, or that its interpretation is still somewhat a matter of doubt. A particularly apt example of this situation exists in the present attitude of the roentgenologic fraternity toward roentgen-ray diagnosis of gallbladder conditions. About gallstone shadows there can, of course, be no question. If seen, they indicate with certainty the presence of gallstones and, by inference, past or present gallbladder disease. There are, however, two other types of positive roentgen-ray evidence with regard to the gallbladder which have assumed steadily increasing importance during the last few years. First in point of time is the so-called indirect evidence of gallbladder infection consisting in deformities of the duodenum, alterations in tone of the pyloric portion of the stomach, and fixation or other abnormality in the hepatic flexure of the colon. These phenomena are, of course, caused either by adhesions resulting from inflammatory processes in the gallbladder and ducts, or by reflex nervous disturbances originating in the same locality, or by both causes acting together. In their typical form they give a picture that is characteristic and convincing to a large proportion of roentgen-ray men. More recently, the effort to demonstrate the gallbladder itself on the roentgen-ray film has somewhat overshadowed these indirect signs. George and Leonard of Boston, and Kirklin of Muncie, Ind., have been largely responsible for the theory that any gallbladder which can be definitely shown on the film is pathologic. All have large and convincing series of cases in which their findings have been surgically confirmed. They believe that it is often possible to show a gallbladder which contains stones when the stones themselves are not shown. They believe that the normal gallbladder can never be shown as a distinct shadow on the film. I am told that the surgeons with whom they work accept their findings without much reservation, as a result of confidence born of a rather prolonged experience. However, I think that perhaps most surgeons, and I know that many roentgen-ray workers, are extremely dubious about accepting the fact of a gallbladder shadow as proof of gallbladder disease. The whole point is one which will require much more work and a much larger series of operative checks to clear it up to every one's satisfaction. In the meantime, reports of gallbladder examinations in which the gallbladder, but no stones, is shown, should indicate clearly that such a finding, while indicative of gallbladder disease with or without stones, latent or active, does not by any means imply that surgical interference is called for on that basis alone.

SUMMARY

It would seem that the ideal roentgen-ray report should present a careful and accurate description of the picture seen. It should offer whatever explanation of variations from the normal may be conservatively given on a basis of established roentgen pathology. It should give, when this can be conservatively done, an estimate of the activity and present importance of the lesion, such estimate, however, to be derived entirely from the roentgen signs. It should place in the hands of the

clinician all the information the roentgenologist has been able to obtain by his peculiar method of examination, and should offer it in such form as will most facilitate the correlation of the roentgen and clinical evidence.

Special Articles

THE CARE AND FEEDING OF INFANTS

(Continued from page 919)

[NOTE.—This article completes the series on the care and feeding of infants. These articles, with additional tabular matter and an historical account of the subject, together with illustrations, will be reprinted in book form. When the book is available, announcement will be made in THE JOURNAL.—Ed.]

FEEDING AFTER THE FIRST YEAR

The average infant fed on cow's milk mixtures will require as a minimum, per kilogram of body weight, during the later months of its first year, fat, 4 gm.; protein, 3.5 gm.; carbohydrates, 12 gm.; calcium oxid, 0.17 gm., and a total water content in its day's food including that contained in the milk equal to 125 c.c. per kilogram, which approximates one eighth of its body weight. (Per pound of body weight at 1 year: protein, 1.5 gm.; fat, 1.8 gm.; carbohydrates, 5.5 gm.; calcium oxid, 0.08 gm.; water, including that contained in the milk, equal to 2 ounces.)

A diet so constructed will furnish approximately 100 calories per kilogram, or 45 calories per pound of body weight.

In a study of the diets of a large group of normal infants and children, Holt and his co-workers found that the food requirements of older infants and children showed a gradual decrease per kilogram of body weight after infancy. The fat taken diminished to 3 gm. per kilogram by the sixth year, while the pro-

TABLE 30.—Amounts and Calories at One Year and at Six Years*

	Grams or Cubic Centimeters per Kilogram				
	Protein, G	Fat, Gm.	Carbo-hydrates, Gm.	Calcium Oxid, Gm.	Water, C.c.
At 1 year.....	3.5	4.0	12.0	0.17	125
At 6 years....	2.5	3.0	11.0	0.17	125

	Grams or Cubic Centimeters per Pound				
	Protein, G	Fat, Gm.	Carbo-hydrates, Gm.	Calcium Oxid, Gm.	Water, C.c.
At 1 year.....	1.5	1.8	5.5	0.08	60
At 6 years....	1.2	1.35	5.0	0.08	60

* The percentage distribution of the calories in the diet will approximate: protein, 15.0; fat, 35.0; carbohydrates, 50.0.
Note.—1 gram of protein = 4.1 calories; 1 gram of fat = 9.3 calories; 1 gram of carbohydrates = 4.1 calories.

tein intake decreased to about 2.5 gm. per kilogram at 6 years, and remained at this value or slightly below it until the end of growth. Of the protein, about 66 per cent. was in the form of animal protein from milk, eggs, meat, etc., the remainder being taken as vegetable protein. The carbohydrates should, to a large extent, be used to supplement the fat and the protein in the diet, the fat and protein, however, being first provided for. Holt believes on this basis that about 12 gm. of carbohydrates per kilogram at 1 year, with decreasing amounts to between 10 and 11 gm. per kilogram at 6 years, will properly balance the diets. The average of all ages showed that about 50 per cent. of the carbohy-

drate was taken in in some form of sugar and an equal amount of starch. (Per pound of body weight at 6 years: protein, 1.2 gm.; fat, 1.35 gm.; carbohydrates, 5.0 gm.)

At 6 years the diets will approximate 85 calories per kilogram, or 38 calories per pound of body weight.

The essential mineral salts will be contained in sufficient amounts to meet the child's requirements in a well balanced diet. The total fluid requirements also decreased to an average of about one eighth of the body weight, 125 c.c. per kilogram, 60 c.c., or 2 ounces, per pound.

While the average healthy infant will require a greater amount of food per pound of body weight to

TABLE 31.—Average Amounts of the Various Food Constituents Required by Children

Age in Years	Weight		Protein, Grams	Fat, Grams	Carbo-hydrate, Grams	Calories
	Pounds	Grams				
1	21.0	9,513	31.5	37.8	115.0	952
1½	25.3	11,400	38.0	45.5	140.0	1,153
2	28.0	12,684	39.2	47.6	154.0	1,235
3	32.9	14,905	42.5	52.6	164.0	1,336
4	36.1	16,353	46.93	54.15	180.0	1,434
5	41.2	18,663	49.4	57.7	206.0	1,584
6	45.0	20,385	54.0	60.75	225.0	1,709

meet its needs for growth and development, the average percentage distribution of the amounts and calories will remain approximately the same at the different ages.

ADDITIONS TO THE DIET AFTER THE FIRST YEAR

The diet of a growing child should be so constituted as to contain sufficient quantities of the following:

Whole Milk.—It has become our custom to postpone the feeding of whole milk without the addition of carbohydrates until after the first year. While there is no contraindication to feeding whole cow's milk by the beginning of the ninth month, or even earlier, when indicated, the milk being boiled or alkalized, the addition of carbohydrates above the amount contained in whole milk is of advantage to the infant, both from the standpoint of its metabolic needs and in lessening the tendency toward constipation in the artificially fed infant.

At no time is the infant to be fed more than 1 quart of whole cow's milk in twenty-four hours.

Unless the infant shows a tendency to take less than the required amount of milk in the form of a mixture, some water and 1 ounce of sugar are retained in the mixture until the infant is 1 year old. The water is gradually lessened from the tenth month so that by the end of the twelfth month only 2 to 4 ounces are retained—an amount sufficient to the sugar. The total fluid needs after the first year are a minimum of 2 ounces per pound of body weight daily. Water may be given from a bottle two or three times daily, although not essential if the diet contains sufficient to meet the infant's needs.

Cooked Cereals.—These should form a part of at least one or two meals. Those made from whole grain are the most valuable. The process of milling which removes the outer shell of the grain causes a loss of the greater part of the protein, mineral matter and vitamins.

Toast and Bread Crusts.—Toast and bread crusts which have been spread with butter or jelly may be given at the end of one of the meals.

Green Vegetables.—These are especially valuable because of their mineral salts and vitamins. They

also give a needed bulk to the food, thereby tending to prevent constipation. They may be classed in two large groups—the tubers, such as potatoes, turnips, beets and parsnips—and the green vegetables. Of the latter group the leafy vegetables, such as spinach, lettuce, cabbage, sprouts, chard, cauliflower, asparagus, celery, turnip and beet tops, have an especially high mineral and vitamin content, as well as being rich in iron. Peas and beans have a high protein content, but this is not sufficient to replace the animal proteins in the diet of the growing child. Tomatoes are especially valuable as an antiscorbutic. Whenever possible, the water in which the vegetables are cooked should be retained, as it contains a large part of the mineral salts of the plants.

Beef Juice.—Because of its high iron content, beef juice proves a valuable addition to the diet in the latter half of the first year. Beginning with one-half ounce, the quantity may be increased to 1 ounce or, at most, 2 ounces daily. It can be mixed to advantage with the vegetable purée.

Bacon.—A slice of crisp bacon containing very little lean may be given to advantage during the last months of the first year.

Broiled Lamb Chops; Scraped Beef; Chicken and Fish.—These may be added to the diet during the second year. All meats should be finely divided. Beef steak, roast beef and lamb are better withheld until the child shows a tendency to masticate its food. Even young children may be allowed to gnaw meat from bones, because of the beneficial influence on the teeth, gums and salivary glands. The flesh foods confer a desirable palatability on vegetable foods with which they are served. They should form only a limited part of the diet of young children.

Fruits.—Fruit or fruit juices should always be considered a necessary addition to the daily diet, and should form a part of at least one meal. They can be used to best advantage at the end of the meal. Raw fruits are of even greater value than cooked fruits. Scraped apple and banana may be given early in the second year.

Honey and Jellies.—These may be spread on toast and bread.

Eggs.—These contain every factor vital to the needs of the body for development, but nevertheless need to be combined with other foods to balance the diet properly. They can be started at the beginning of the second year, either in the form of coddled egg or as egg custard. Very small amounts should be given at the first feeding until it is ascertained whether the infant has an idiosyncrasy to egg. After the fourteenth month, a half egg or more may be fed every second day. It may be alternated with beef juice or scraped beef.

Cottage and Cream Cheese.—These may form a part of the diet at the end of the second year.

Desserts.—Simple desserts, such as custard, pap, junket, gelatins, tapioca and rice pudding, are recommended during the second year. Only moderate quantities should be served, and then only at the end of the meal. The child should be taught to consume the major items of the meal before taking the dessert.

FACTS TO BE CONSIDERED IN FORMULATING THE DIET

Children should be watched to see that they do not swallow their food without chewing it. It is stated

that when we chew fibrous foods we exert a pressure of one hundred or more pounds on the teeth, and this insures a good circulation of blood in the inner part, and is an important factor in developing the teeth and jaws. It is especially important for children that the last article eaten should be of such a nature as to cleanse the teeth.

Soft foods require little or no mastication, and therefore call forth a minimum secretion of saliva and are of no aid in developing the jaws and preserving the teeth.

Green vegetables require mastication, and therefore have a beneficial effect in the development of the teeth; and, because of their bulk and some of their constituents, they stimulate intestinal peristalsis. Bread-stuffs and meat have an added value in that they require mastication.

Carbohydrate residues tend to favor decay more than do meat and vegetable particles. It is therefore of great advantage to finish the meal with fruits, vegetables or hard crusts rather than with soft desserts and other sweets.

Eating Habits.—Young children should be fed at regular hours. Incessant eating is one of the greatest handicaps to proper development. The child should be taught what kind of a diet best promotes health, and encouraged to eat the food placed before it by the good example of the other members of the family. Eating between meals necessarily will result in a loss of appetite, and sooner or later the result becomes manifest in the child's lack of development. It often becomes necessary to cultivate slowly a liking for spinach and other vegetables. It is always to be remembered that milk, cereals and vegetables must take precedence over meats and sweets. The diet should be so constructed in the individual case as to overcome any tendency toward constipation.

Overeating.—This is less likely to occur when the number of meals is limited to stated hours. The combination of overeating and constipation is probably the most important factor in the development of anorexia in childhood. It has been established that a reverse peristalsis may follow, with a flowing of the contents of the intestine back toward the stomach, with nausea and belching. This abnormal nervous reaction soon results in repugnance to all foods. Carbohydrate fermentation and protein decomposition in the intestinal tract aggravate the condition.

Poor Hygienic Conditions.—Lack of fresh air, too limited exercise and sleeping in closed rooms all have a detrimental influence on appetite, digestion and physical development.

PSYCHOLOGY OF CHILD FEEDING

Two factors are of prime importance—inheritance and environment. In order to meet the needs of the many children with whom the physician comes in contact, he must remember that individual children develop and grow at different rates, and that many, by reason of bad heredity, are neurotic and anemic; and when improper feeding is added to their difficulties, the resulting problem calls for tact in its solution.

The high tension, nervous child is frequently the offspring of neurotic parents. A nervous mother has a direct influence on the development of the infant. In such an environment, unless the child is an exceptional one, there is great likelihood of the daily routine being broken to meet the whims of the child. The introduction of new foods and changes in the methods of

administering them often results in a rebellious attitude on the part of the child. These tendencies should be recognized in early infancy, and the importance of counteracting them impressed on the mother. The attitude that she is to assume toward the infant must be definitely explained, and, on her readiness to cooperate, the physician should base his opinion as to her fitness to have charge of her own child. If the child is placed in care of a nurse, the physician must painstakingly explain the requirements and handicaps of the individual case. It is self evident that a neurotic attendant does not improve the situation.

The modern tendency to provide an endless variety in foods for the growing child leads it to acquire false dietetic inclinations. The same may be stated about the more recent tendency to keep detailed notes on the calories consumed by the family. This habit in many instances is carried to the extreme, thus influencing the mother's better judgment. It should be the physician's duty to provide a suitable diet, and the mother's to serve it. To accomplish the desired result the child should be taught to enjoy proper exercise—rest periods should be maintained and good hygienic surroundings provided.

The appetite must not be considered a safe guide in the selection of food. The physician should consider it sound practice to prescribe what the child should eat, and the mother's duty to serve it.

A complete change of surroundings, such as moving from the city to the country, away from the influence of the parents, placing the child in charge of a proper attendant, commonly results in a speedy improvement in the general condition and stabilization of the nervous system.

Temporary hospitalization is sometimes necessary if the more ideal course cannot be realized.

THE END.

New and Nonofficial Remedies

ETHYLENE AS AN ANESTHETIC

Preliminary Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following statement on the experimental status of ethylene in medicine.

W. A. PUCKNER, Secretary.

A report on "The Physiologic Effects of Ethylene—a New Gas Anesthetic," by A. B. Luckhardt and J. B. Carter, was published in THE JOURNAL, March 17, 1923, p. 765.

Ethylene is a well known substance chemically, having the formula $\text{CH}_2:\text{CH}_2$. At room temperature and ordinary pressure it is a gas slightly lighter than air; it is not very soluble in water, is more soluble in alcohol, but is soluble in ether. A mixture of ethylene and oxygen explodes when brought in contact with a naked flame. It is solid below -169.4°C ., and boils at -103.9°C . It is generally prepared from alcohol by a so-called dehydrating action. The product reported in the paper was prepared by interaction of alcohol and orthophosphoric acid. So far neither the product prepared by the authors nor any commercial product has been examined in the A. M. A. Chemical Laboratory. As soon as a satisfactory market product is found, standards of purity will be elaborated.

The animal experiments reported by Luckhardt and Carter indicate that ethylene has a direct action on the nervous system when a concentration of 90 per cent. is used; that the motor reflexes are abolished at this concentration, and that the phenomena produced by the undiluted gas are partly

asphyxia, which factor can be removed by the addition of oxygen, when it is seen that narcosis results from the ethylene itself. The authors believe that the ethylene does not react with the hemoglobin of the blood.

The trials carried out by Luckhardt and Carter on human subjects appear to confirm the anesthetic value of ethylene, as demonstrated on animals. Their experiments indicate that deep surgical anesthesia can be induced without marked unpleasantness. Analgesia is reported to come on easily and apparently long before surgical anesthesia is established. The authors believe, as a result of the experiments, that ethylene will be found more desirable than nitrous oxid, because of its ease of administration and rapid recovery after long continued administration. However, the anesthetic results reported have been only on persons in normal health.

The available evidence for the value of ethylene as a new anesthetic is thus far limited to the report mentioned. Particular attention is called to the conclusion of the authors: "This must be considered as a preliminary report of experimental work which has not been carried far enough to warrant general clinical use." In view of this, the Council considered the report and recommended that confirmation of the work obviously is necessary before more than a tentative acceptance of ethylene can be accorded. Nevertheless, it is recognized that the status of ethylene as an anesthetic is such as to warrant further research with the substance; as preliminary to such research the quality of the product, particularly absence of toxic impurities, must be determined. The Council has deferred acceptance of ethylene for New and Nonofficial Remedies until proof has been furnished that the product is a useful addition to the list of already accepted anesthetics, and until a satisfactory product is on the market.

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

TINCTURE NO. 111 DIGITALIS-P. D. & CO.—A fat-free tincture of digitalis which, standardized by the minimum lethal dose frog heart method of Houghton, is 50 per cent. stronger than tincture of digitalis-U. S. P. Tincture No 111 Digitalis-P. D. & Co. contains alcohol 65 per cent.

Actions and Uses.—The same as those of digitalis. Tincture No. 111 Digitalis-P. D. & Co. was introduced at a time when the "fat" of digitalis was believed to cause gastric disturbances. At present this claim of superiority is not tenable and the preparation is sold simply as a standardized tincture of digitalis.

Dosage.—The average dose of Tincture No. 111 Digitalis-P. D. & Co. is 0.65 Cc. (10 minims) three or four times a day or oftener if indicated. To minimize deterioration through action of light and air, the preparation is marketed in one ounce amber vials and is saturated with carbon dioxide. It is claimed to retain its full activity for one year from date of manufacture (which is stated on the label).

Manufactured by Parke, Davis & Co., Detroit. No U. S. patent or trademark.

Tincture No. 111 Digitalis-P. D. & Co. is prepared by the method of the U. S. Pharmacopeia for tincture of digitalis, except that the drug is extracted with petroleum benzin before percolation. The finished product is standardized by the minimum lethal dose frog heart method and adjusted so that 0.5 Cc. contains one minimum lethal dose.

Rabies in Greece.—The *Grèce médicale* gives the report of the Pasteur Institute at Athens, since the foundation of the Lyssiatrium in 1894 to date. There have been 18,846 applicants, and treatment was given to more than 80 per cent. This, in proportion to the population of Greece, is five times the number of persons bitten by animals in comparison to France. The bite had been cauterized in only 13 per cent. of the cases. The total mortality was 0.4 per cent., but omitting those who died within two weeks, it was only 0.1 per cent. of the 15,170 treated.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, APRIL 7, 1923

SOME MISCONCEPTIONS ABOUT HYPERTENSION AND DIET

The study of some of the chapters of medical history are singularly illuminating, in that they show a steady progress, from time to time, in the direction of more adequate and dependable knowledge. This is true, for example, of the story of our information regarding the cause and treatment of some of the infectious diseases. The successive pages have usually disclosed additions to the sum of what was known before; but there are other fields of medical interest in which the years have not brought a gradual increment of understanding in the same way. In some of these, one will find that history presents a succession of dogmatic views, each replaced in turn by some other conception, supported more strongly by the confidence of its advocates than by the validity of objective evidence. Perhaps there is no serious injustice in saying that these comments apply in considerable measure to the problem of hypertension.

A few years ago, the dietotherapy of high blood pressure was directed to the exclusion of purin foods and alcohol from the regimen of the patient. When the purins with their end-product uric acid lost some of the terror with which they seized the clinician of the end of the last century, the dietary caution was extended to include high protein foods, with special emphasis on those of animal origin. Subsequently, the consideration of focal infections as a possible etiologic factor diverted attention somewhat from the diet in cases of hypertension; but, lately, therapeutic success has been made to correspond with restriction in salt intake. What the next fashion in dietary proscription will be remains to be learned. There are lipoids and vitamins and carbohydrates still left in the list of possibilities.

Most of the considerations involved in the foregoing proposals for the management of arterial hypertension hark back to a not very distant period when this symptom was assumed to be a sequence to arteriosclerosis and chronic nephritis. The overindulgence in purins

and proteins was believed to lead to these degenerative conditions in the blood vessels and kidneys. Of late, however, a critical consideration of the accumulating evidence is leading to the conclusion that certain types of high blood pressure—the so-called essential hypertension—may occur independent of the arterial disease or demonstrable lesions of the cardiovascular and renal systems. As a recent writer has indicated, the fact that patients with essential hypertension may later in life develop cardiorenal complications affords no justification for the conclusion that the primary cause of the high blood pressure lies in the organ or organs which secondarily show evidence of disease. He reminds us that a study of histories of patients, and careful continuous clinical observation, will reveal many patients with hypertension of fairly high grade and yet with no evidence of myocardial degeneration, arterial change or disturbance in kidney function. Furthermore, Moschcowitz has brought forward evidence—experimental and clinical—suggesting, if not actually proving, that, even in cases of frank nephritis, hypertension may be the earliest demonstrable symptom.

In consequence of such views, some writers are beginning to feel a hesitancy in connecting arterial hypertension in any way with the metabolism of nephritis. At any rate, there are numerous calorimetric studies which lead to the conclusion that the utilization of protein proceeds in the usual manner even in nephritis, in the majority of cases, at least. Sir Clifford Allbutt has denied the alleged remedial effects of the purin-free regimen. And Mosenthal¹ feels convinced that a low protein diet is not effective in lowering blood pressure or a high protein diet in raising it, judging by the effects observed in suitable patients over a period of weeks. Benedict has noted that the underfeeding of healthy persons for some time, so that reduction in weight ensues, is followed by decrease in metabolism and a lowering of blood pressure. But, as Mosenthal has remarked, such phenomena are likely to be the expression of a depression of vitality and efficiency that is of the general state of the person concerned, rather than the specific result of a low protein intake.

Most recently, Strouse and Kelman² have studied carefully the effect of diet on patients with hypertension and with varying degrees of damage to the cardiovascular or renal systems. Even when no impairment of renal function was detectable there were marked variations in blood pressure; and the latter bore no relation to the intake of protein food. In cases of frank progressive nephritis with hypertension, a diminution of protein intake sufficient markedly to lower the figures for blood nonprotein nitrogen and urea did not cause lowering of the blood pressure. Strouse and

1. Mosenthal, H. O., in Barker's *Endocrinology and Metabolism*, 1922.

2. Strouse, Solomon, and Kelman, Sarah R.: Protein Feeding and High Blood Pressure, *Arch. Int. Med.* **31**: 151 (Feb.) 1923.

Kelman regard their observations as further evidence to prove the existence of a clinical entity characterized by a primary hypertension. They further suggest that variations in blood pressure in this condition are the direct result of vasomotor disturbances. Perhaps it will lead to more rapid progress in the study of hypertension if we frankly admit that "at present there are no definite facts to point to any of the food substances as having a causative relation to blood pressure."

A CHEERFUL PROSPECT IN THE FIELD OF PUBLIC HEALTH ACTIVITIES

Courage is essential to many of the struggles which man must face, and they are not always confined to the conventional battlefield of contending armies. Good fights must often be fought in the course of every-day life. Nothing helps more to maintain courage in the face of severe obstacles than does a firm conviction in the rightness of the cause involved. It is doubly needed when the victory seems far away and the desired outcome is slow in arriving. It has recently been remarked that the question of living satisfactorily, in the present state of society, frequently resolves itself into combating the prevalent agencies of disease transmission. In addition to this, we are reminded further, are the dangers lurking in harmful foods, the hazard of acute poisoning, the menace of hereditary taint, the perils of degenerative disease, the attacks of pathogenic bacteria, and the deplorable functional disturbances. To face squarely the problems involved, Williams¹ adds, requires more courage than some can muster.

From day to day, or even from year to year, the efforts of modern preventive medicine sometimes appear to have made little, if any, progress. We are reminded of the wealth of investigation devoted to the problems of tuberculosis, while the disease is still with us. All the many cancer research institutes throughout the world, so the pessimist argues, have not decreased the incidence of the malady. Yet there are so many instances of great progress that one can easily recover courage and strengthen conviction through the mere enumeration of some of them. Against smallpox and yellow fever, the great victory has been sustained. Our latest annual summary of typhoid death rates in the large cities of the United States² shows a continuance of the typhoid decline which has been so striking a factor of the epidemiology of the disease for the last twelve years.

We have already remarked that the condition in the larger cities for the most part may now be regarded with pride instead of being pointed to with obloquy as awful examples. However forceful exhaustive statistics may be, they sometimes do not impress the individual so directly as the perhaps less accurate data

derived from a smaller range that comes within his personal observation. As an illustration of the changing health conditions in our American communities, we may cite an interesting personal experience recently recounted by a physician in one of the Southern states.³ Here is the striking testimony:

During the five summer months of 1909, I saw 158 town patients. During the same period of 1922, I saw 202 town patients. Of the 158 patients seen in 1909, ninety-six had well-defined cases of malaria, with chill, fever, sweats, etc.; fifteen had cholera infantum ileocolitis, or dysentery, with two deaths, and seven had typhoid fever, making a total of 108 out of 158 that should have been prevented. During the five summer months of 1922, I did not have in town a single typical case of malaria, typhoid fever or cholera infantum. I had one atypical case of malaria that was most probably contracted out of town. I had only one case of ileocolitis that lasted over five days, and this was the only case of dysentery or infectious diarrhea in town this summer. There has not been a case of typhoid fever since February, 1919. Malaria, typhoid and infantile diarrhea have about disappeared.

Nor does this tell the entire story. Hookworm disease has been controlled in that community, and people once "sallow, anemic, sick and thin" have become "healthy, prosperous and happy." Here is the record of a community in which some one or, rather, many who had both courage and the conviction of their hygienic precepts have labored, and not in vain. Who shall say that health is not a purchasable commodity?

PROPOSED TESTS FOR FATIGUE

There is obvious wisdom in the belief that any activity in which the human body plays so large a part as it does in industry must be organized on a physiologic basis before the highest degree of efficiency can be secured. During the World War, at a time when the most or the best was expected of every citizen, Lee⁴ reminded us that no factory mechanism approaches the human machine in its intricacy, the perfection of the correlation of its working parts, its combination of delicacy and strength, and its adaptability to the work required of it. None is so essential to industry. Nevertheless, as Lee has further pointed out, the present ways of handling the human machine are empiric and crude. Experience has taught most industrial managers what they believe to be the proper ways of dealing with the workers, and experience is conceived to be the best guide. The thought that the worker is a physiologic mechanism and should be treated as such, that the problem of the worker is a physiologic problem, is regarded as academic, fit for the laboratory, but not "practical" enough for the factory.

Every one realizes that the foremost limiting factor in work is fatigue, the antidote to which is rest. Incidentally, the condition of personal health is of great

1. Williams, J. L.: *Personal Hygiene Applied*, Philadelphia, W. B. Saunders Company, 1922, p. 351.

2. Typhoid in the Large Cities of the United States in 1922, J. A. M. A. 80: 691 (March 10) 1923.

3. Bagby, B. B.: Changes in a Small Town Brought About by the Health Department, *Pub. Health Rep.* 38: 456 (March 9) 1923.

4. Lee, F. S.: *The Human Machine and Industrial Efficiency*, New York, Longmans, Green & Co., 1918.

importance in the readiness with which fatigue ensues; and, conversely, some persons believe, with Sir James Paget, that fatigue has a larger share in the promotion or transmission of disease than has any other single causal condition. The admittedly important study of the phenomena of fatigue hinges on the availability of suitable methods of investigation. Fatigue must be detected with assurance and measured with some approach to reliability, if it is to be accepted as an index of bodily fitness, and if physical performance is to be gaged in accordance with its dictates.

Within recent years, a considerable number of physical tests have been proposed as indicators of fatigue in human beings. Some of them, which have found useful application in furnishing evidence of the changes in physiologic "fitness" attending pathologic states or exertion under extreme conditions of environment, have been referred to from time to time in these columns. There can be little doubt of the importance of having a procedure like Martin's "resistance strength test" or "spring balance muscle test" for measuring the muscular impairment in such conditions as infantile paralysis. It is one thing, however, to detect pronounced physical deterioration, and another to measure physical fatigue resulting from the usual routine of healthy work. In connection with the latter, Lee and Vanbuskirk⁵ of Columbia University have failed to find a reliable criterion of the daily physical fatigue of the individual in any of the tests heretofore proposed. The cardiovascular reactions depended on in the Crampton and Schneider tests fail when applied to ordinary strenuous exertion, however useful they may be in indicating the deterioration associated with disease, drugs or overwork. The human electrocardiogram likewise fails to reveal changes due to such exercise as walks of 14 miles entail in untrained persons. The vascular skin reaction was undependable in healthy persons, as were the respiratory observations employed in detecting incipient stages in the breakdown of aviators suffering under the stress of flying.

The preservation of normal functions and reactions in healthy persons, despite ordinary vigorous exercise, speaks eloquently of the factors of safety in the human body. As Lee and Vanbuskirk point out, the cardiovascular system, serving as it does the needs of the whole body, ought, in the interests of the organism, to maintain its efficiency and its capacity for work unimpaired as long as it is possible. Observations show that this indispensable condition is maintained, even after strenuous demands are made on this physiologic system. It is sensitive, and constantly reacts to a host of intrinsic and extrinsic influences. When these reactions are persistent and leave a continuing impress, they may be detected by appropriate tests; and here some of the tests that have been used appear to have proved practicable and valuable. But in the ordinary

affairs of life, the reactions are temporary and fleeting. It may therefore be futile, as the Columbia physiologists actually imply, to search among the physical manifestations of cardiovascular phenomena for an objective test for daily fatigue. If this is true, the findings of abnormalities by the current methods should gain all the more importance from the standpoint of their possible clinical usefulness.

Current Comment

A FRENCH SURGEON TURNS LITTERATEUR

Georges Duhamel, doctor of medicine, winner of the famous Goncourt prize in literature, is 38 years old. Before the Great War he was a physician; during the war he wrote "The New Book of Martyrs" and "Civilization"; today he is a writer with a world audience, for he interprets life as only a physician can see it, and he writes with the tone of the great artist. His human compassion seems endless. As Malcolm Cowley expresses it in an essay in the current *Bookman*, Duhamel studied science because of his passion for the truth, but it was human pity that made him a writer. Consider with the point of view of the physician the following phrases from the first named book of sketches:

Lerondeau has good strong teeth. Carré has nothing but black stumps. This distresses me, for a man with a fractured thigh needs good teeth. [Then comes a brief description of the dying man.] I look at the ash, the smoke, the yellow, emaciated face, and reflect sadly that it is not enough to have the will to live; one must have teeth.

Many a scientific treatise resulting from the experiences of war surgeons has taken thousands of words to say the same thing. Again:

Each sufferer has his characteristic cry when the dressing is going on. The poor have only one, a simple cry that does service for them all. It makes one think of the women who, when they are bringing a child into the world, repeat, at every pain, the one complaint they have adopted.

Who but a physician could have made this observation, and who but a Duhamel could have so well expressed it? Consider also these phrases:

It was fortunate that Carré brought such a stock of courage into the hospital, for he needs it all. Successive operations and dressings make large drafts upon the most generous supplies.

And tomorrow, and for many days after, Carré will have to be constantly calling up those reserves of the soul which help the body to suffer while it waits for the good offices of Nature.

The swimmer adrift on the open seas measures his strength and strives with all his muscles to keep himself afloat. But what is he to do when there is no land on the horizon, and none beyond it?

While I am adjusting the new trough, a solid comfortable one, but rather different in appearance, he casts an eloquent glance at the discarded one, and his eyes fill with copious tears. The change is a small matter; but in the lives of the sick, there are no small things.

Tricot had suffered greatly; only some fragments of his hands remained; but above all, he had a great opening in his side, a kind of fetid mouth, through which the will to live seemed to evaporate.

5. Lee, F. S., and Vanbuskirk, J. D.: An Examination of Certain Proposed Tests for Fatigue, *Am. J. Physiol.* 63: 185 (Jan.) 1923.

Thus, one may go on and on through the whole of this distinguished book, finding on every page living phrases which cry again and again the great call of human despair. As an army surgeon, Georges Duhamel partook of the suffering of every patient whom he served; and, passing with them through their travail, he wrote an immortal record. He expresses the most profound philosophy in that simple expression which is the greatest eloquence. A final quotation:

To make up one's mind to die is to take a certain resolution, in the hope of becoming quieter, calmer, and less unhappy. The man who makes up his mind to die severs a good many ties, and indeed actually dies to some extent.

THE UNDETERMINED NITROGENOUS COMPOUNDS OF THE URINE

Analysts who have dealt exhaustively with chemical examination of the blood and urine have long frankly recognized their inability to identify all the components normally present. In the case of the nitrogenous components, the unrecognized fraction is frequently referred to as "undetermined nitrogen." There has been much speculation concerning the nature of the substances represented. Although amino-acids are continually circulating in the blood and sometimes escape into the urine, there is little evidence for the occurrence of any noteworthy amounts of these protein fragments in the fluid secreted by the kidneys under normal conditions. The urine usually contains a small amount of colloidal nitrogenous material, not protein, which is said to be increased in certain types of malignant disease. In 1897, Bondzynski and Gottlieb of Heidelberg reported that they had determined the existence of a group of protein derivatives containing both nitrogen and sulphur, and apparently of high molecular structure. The substances seemed to be characterized by an acid nature, and received the name "oxyproteic acids." Since then, numerous investigators have attempted to differentiate what they have assumed to be a variety of more or less related nitrogenous compounds belonging to this category, with the result that the literature has become enriched with a number of newly coined terms, such as alloxypoteic acid, antoxypoteic acid, and uroferic acid—formidable words, if nothing more. Even the precursor of the urinary pigment urochrome has been considered to be related chemically to the oxyproteic acids. Some writers have been inclined to regard them as incompletely oxidized polypeptids or complexes of amino-acids which have escaped destruction in the processes of metabolism. A renewed investigation by Edlbacher¹ in the physiologic institute at Heidelberg makes untenable much of the earlier hypothesis with respect to the so-called oxyproteic acids. It has long been recognized that they give none of the identifying reactions of simple proteins. Those urinary products which he has examined critically are now shown to yield, at best, no more than traces of characteristic amino-acids. On the other hand, it is surprising to learn from Edlbacher's studies that some, at least, of the oxyproteic

acids yield considerable urea by simple chemical manipulation. Perhaps a new urea derivative characteristic of urine will presently be discovered. Such a possibility has occasionally been discussed in the past. As Fürth of Vienna wrote a few years ago, it will probably be a long time before the misty atmosphere at present enveloping these subjects, and, in fact, covering them as in thick clouds, will be dissipated. However, even here there is beginning to be a little more light.

ALCOHOL AND DISEASE

Since the debate regarding the prohibition of the manufacture and sale of alcoholic beverages has hinged largely on the scientific aspects of the liquor problem, every pronouncement on the subject is awaited with interest. Recently a statistical report regarding the possible influence of alcohol on the prognosis of pneumonia in a large municipal hospital was published in *THE JOURNAL*.¹ The data for nearly 3,500 cases of lobar pneumonia showed, with reference to the patients' habits of indulgence in alcoholic drinks, that the mortality was higher in moderate users than in light users or abstainers, and that the mortality in excessive users was much higher than in moderate users. It seems important to define the limits of interpretations to be made from these data. The investigators themselves insisted that their findings demonstrate only what a harmful effect the use of alcohol may have on the course of a disease. They have no bearing on the question whether legislation has or has not diminished the prevalence of drinking. In commenting on the paper referred to, a prominent newspaper pointed out further that the statistics have no bearing on the possible use of alcohol in therapy. It cannot be too strongly emphasized or too frequently reiterated that alcohol, like many drugs, may have a usefulness in medicine which by no means justifies the assumption that it is of equal value in dietetics. Strychnin is recognized as a helpful drug and also as a deadly poison. Hydrochloric acid can act as a violent corrosive; it may also facilitate gastric digestion. The contradictions are in the statements of persons, and not in the facts of science.

THE EMERGENCY FUNCTION OF THE SUPRARENALS

The hope that, with the discovery of an "active principle" in the suprarenal tissues, the physiologic function of these structures would be speedily elucidated has not justified itself. Despite the profound pharmacologic potency of epinephrin, it has not been possible to demonstrate conclusively that this "hormone" plays an important part in the every-day performances of the living organism. At any rate, the thesis that the secretion of epinephrin into the circulation is the determining factor in the maintenance of vigorous blood pressure has not substantiated itself, so that the suprarenal glands cannot be looked on as the preeminent regulators of vasomotor tone. Some

1. Edlbacher, S.: Ueber die Proteinsäuren des Harns, I, Die Oxyproteinsäure, *Ztschr. f. physiol. Chem.* **120**: 71, 1922.

1. Capps, J. A., and Coleman, G. H.: Influence of Alcohol on Prognosis of Pneumonia in Cook County Hospital, *J. A. M. A.* **80**: 750 (March 17) 1923.

of the more recent writers have even gone so far as to deny to epinephrin any action comparable with that of a true "internal secretion," and to place it in the category of excretory substances without routine physiologic effects.¹ In this country there has been a lively debate as to whether epinephrin is an agent in the mobilization of energy in times of stress. The latest contribution to the subject from the University of Buffalo² supports the general conclusion that strong stimulation of many varieties—reactions such as are likely to rise in difficult situations or unusual environmental conditions—increases the discharge of epinephrin into the circulation. The evidence has been secured by observations of the reaction of the denervated iris, which Meltzer showed to be particularly sensitive to epinephrin. The responses elicited with various types of stimuli fail when the suprarenals are eliminated. The evidence for the "emergency" function of the suprarenals has been strengthened by these findings.

Association News

GRANTS FOR RESEARCH IN THERAPEUTICS

The Committee on Therapeutic Research of the Council on Pharmacy and Chemistry will consider applications for grants to assist research in subjects which, in the opinion of the committee, are of practical therapeutic interest to the medical profession, and which research might not otherwise be carried out because of lack of funds.

Requests should state the specific problem which is to be studied, the qualifications of the investigator, the facilities available to him, and, if work is to be undertaken in an established research institution, the name of the individual who will have general supervision. The committee will also appreciate offers from research workers to undertake investigations of questions which may be suggested by the Council.

Applications should be addressed to: Chairman, Therapeutic Research Committee, Council on Pharmacy and Chemistry, 535 North Dearborn Street, Chicago, Illinois.

THE SAN FRANCISCO SESSION

Indiana Special Train

Dr. Ralph S. Chappell, 305 Terminal Building, Indianapolis, has been delegated by the Indiana State Medical Association to arrange for a special train for the accommodation of members of that association, their families and friends who will go to San Francisco to attend the annual session of the Association, June 25-29. This train will be assembled at Indianapolis and will proceed to San Francisco by way of St. Louis, Kansas City, Colorado Springs, the Grand Canyon and Los Angeles. Dr. Chappell will give information concerning the details of the tour to those who are interested.

Woman's Auxiliary of the American Medical Association

The Woman's Auxiliary of the American Medical Association, through its president, Mrs. S. C. Red, 817 Caroline Street, Houston, Texas, extends an invitation to the wives of all the members and Fellows of the American Medical Association to join this organization and take part in the first annual meeting to be held in San Francisco, June 25-29. The Woman's Auxiliary was organized at St. Louis in 1922. It has for its purposes the extension of the aims of the medical

profession, through the wives of physicians, to the various women's organizations which work to the advancement of health and education; to assist in the entertainment of those in attendance at medical conventions, and to promote acquaintanceship among physicians' families so that closer fellowship may exist. Any information that may be desired concerning the first meeting of the Woman's Auxiliary may be secured by writing Mrs. S. C. Red at the address given.

Associations of Alumni and Fraternities at San Francisco

The alumni of Jefferson Medical College in San Francisco are represented by a committee, which is arranging a program of entertainment for all visiting alumni of that institution during the annual session. The committee consists of Dr. W. P. Read, Flood Building, San Francisco; Dr. Claude A. Phelan, 760 Market Street, San Francisco, and Dr. Dudley Smith, Hutchinson Building, Oakland. Members of this committee will be glad to hear from Jefferson alumni in other parts of the country.

The Nu Sigma Nu Fraternity has arranged for a banquet to be held at the Bohemian Club at San Francisco, Thursday, June 28, at 7 o'clock. Dr. H. D. Crall, 1242 A-2d Avenue, San Francisco, will be in charge of arrangements for this banquet. Any members of the Nu Sigma Nu Fraternity who wish to attend should write to Dr. Crall.

Dr. Harry E. Alderson, chairman of the Committee on Entertainment, 806 Balboa Building, San Francisco, asks that members and Fellows of alumnus associations and medical fraternities send suggestions to him as to dinners or other meetings that they may wish to have arranged for during the annual session.

Official Transportation Representative

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements, San Francisco, announces that the American Express Company has been designated official transportation representative for that committee. This company has offices in all principal cities and is in close touch with all steamship, railroad and other transportation agencies. Their offices are in position to answer all inquiries and furnish information about any contemplated trip. In San Francisco, the American Express Company is located on the ground floor of the Balboa Building, in which the Local Committee of Arrangements has its headquarters. A branch office will be maintained at the Civic Auditorium during the week of the annual session.

An Invitation from the Pacific Northwest Medical Association

The Pacific Northwest Medical Association, through its president, Dr. J. Earl Else, 709 Stevens Building, Portland, Ore., extends a very cordial invitation to eastern physicians to visit the meeting of that association to be held in Seattle, June 19-21. The Pacific Northwest Medical Association embraces within its membership physicians of Montana, Utah, Idaho, Oregon and Washington, and the provinces of British Columbia, Alberta and Saskatchewan.

Northern Pacific Railway Special Train

The Northern Pacific Railway will operate a special train for the accommodation of visitors to the annual session who wish to return by way of the Pacific Northwest. The tour will be conducted personally by Dr. A. W. Ide of St. Paul. The train will be designated the "M.D. Special," and will leave San Francisco at 10:20 p. m., June 29, for Portland, where a day will be spent. Seattle, Tacoma, Rainier National Park, Spokane, Livingston and Yellowstone Park will be visited. From Portland, Seattle, Tacoma and Gardiner, trips will be taken for the purpose of visiting the points of scenic and historical interest. About two days will be spent in Rainier National Park, and three days will be spent in Yellowstone Park. The train will leave Gardiner at 7:30 p. m., July 10, and will arrive in Chicago at 9 p. m., July 12. Full particulars about this train and all stops and side trips may be secured by writing to Dr. A. W. Ide, 914 Northern Pacific Building, St. Paul, Minn.

1. Gley, E.: *Traité élémentaire de physiologie*, Ed. 4, Paris, 1919, p. 661.

2. Hartman, F. A.; McCordock, H. A., and Loder, M. M.: *Conditions Determining Adrenal Secretion*, *Am. J. Physiol.* **64**:1 (March) 1923.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 929)

TUESDAY, MARCH 6—MORNING

MEDICAL EDUCATION

DR. CHARLES P. EMERSON, Indianapolis, President of the
Association of American Medical Colleges, in the Chair

The Danger of the Stereotyped Curriculum

DR. CHARLES P. EMERSON, Indianapolis: We of the American universities have long been struggling to develop a standardized medical curriculum. Our student who, for illustration, earns fifteen semester hour credits in chemistry in one university can, if he changes schools, be credited with this number of hours in that subject in almost any other university of equal rank in the country. But here the analogy ceases, for we have developed a much too stereotyped curriculum, and it is this which is hampering the satisfactory evolution of medical education. This is in part the fault of our state medical boards, which in one examination try to test a recent graduate's ability in every possible medical subject; but more it is the rivalry of our special departments, all of which demand an opportunity to meet the medical students; and still more it has been due to a conservative tendency to hold all we have as we add still more courses, with the result that our curriculum is so overcrowded that to reach a minimum in each subject takes so much time that there is no chance to reach a maximum in any.

While it may be true that our medical students are better able on graduation than those of other countries who begin at once the practice of medicine, it may also be true that they are less able to keep abreast, year by year, of their profession. The stream of medical advance flows swiftly; can our students swim? Will this current, as in the past, carry them to medical worlds greatly unlike those in which they learned their medicine? Will they be able to grow and to accept new and strange ideas? What is more important, will they accept the responsibilities and the leadership which this progress imposes on them? For illustration: the young practitioners of 1885 were taught to pay strict attention to practice and to avoid publicity, and the laboratory men were eagerly advancing the new science of bacteriology. Neither felt any responsibility for the well public. "Let the quack make public lectures," they said. They would prove their ethical "regularity" by avoiding all such advertising. But the next few decades proved that these laboratory discoveries were of the greatest value to the public, for of them public health and preventive medicine were born, and it became the duty and privilege of the best medical men to lead in the education of the public, to struggle for better public utilities, better laws, etc., in order that the public might benefit by what was their right; for there is the general truth that to whom much is entrusted, of him, also, much shall be required.

Our curriculum is overcrowded, and it contains so many subjects that only a minimum can be required in each. We touch the high points of all the specialties, and our students learn some of the tricks of therapy in each. They give a good account of themselves for the first few years out of school, but unless they mastered the fundamental clinical branches, they do not grow with their subjects, but cling to the medicine with which they were graduated and even fight for legislation to prevent its further modification.

The inadequate preparation of our graduates is proved also by the quality of our postgraduate schools, the most of which are not postgraduate at all in the sense that their courses are built on those of the undergraduate years and carry the student to still higher professional levels, but are for the most part designed to bring the graduate of a few years ago up to the level of the undergraduate of today or to allow the practitioner to change his field of activity to some other specialty.

We would urge a curriculum containing three main clinical subjects: medicine, general surgery and obstetrics. We would double the time allotted to these, and in addition would allow the student the right to elect perhaps one specialty; we would urge a vertical rather than a horizontal line between the laboratory and clinical subjects. The latter idea, popular in this country thirty years ago, was borrowed direct from Germany. During the middle of the nineteenth century, Germany made little progress in the sciences because of the paralyzed influence of her so-called naturphilosophie. Let us break away from the applied naturphilosophie of this century and train our students to study patients. Let us limit our curriculum to that which we can teach well; get away from the dangers of a stereotyped curriculum, and graduate boys who not only are well trained now, but who can keep always abreast of the times, and lead the public as well as their patients in paths of right living.

Present Ideals of the Physical Plant in Medical Education

DR. CHARLES R. BARDEEN, Madison, Wis.: This article will appear in full in THE JOURNAL.

DISCUSSION

DR. G. CANBY ROBINSON, Nashville, Tenn.: When Vanderbilt University received a large gift for the reorganization of its medical department, it seemed to us that we ought not to do the conventional thing, but to make some experiment if it gave promise of success. This change has been in the physical plant, the success of which will depend on the future. We hope we are making a contribution to the subject of medical education from the point of view of the physical plant.

One question was in regard to the location of the medical school. At present it is about two miles from the campus of the university, and we decided that it would be wiser to scrap or vacate the old buildings, and erect a new plant directly on the campus of the university, so that the medical school would be not only in direct continuity with the main Vanderbilt University, but also adjacent to or just across the road from a college for teachers, perhaps the best endowed teachers school in the South. We do not know what that may hold for us and for them in the future. At any rate, we hope very much that we may cooperate.

One of the deans reported yesterday that correlation was becoming the watchword of the day, as we used to hear so much about science for science's sake. We are all interested in correlation, and it is along this line that we are endeavoring to construct the new plant at Vanderbilt.

The idea of correlation is not confined to America. Embryo attempts at correlation are now embodied in the curriculum which for the last two years has been going through the German universities. It has been accepted by eighteen of the twenty-three German universities. They are placing students in the outpatient department during the first year as orderlies during the summer vacation. They feel that clinical work should begin early. One professor in Berlin spoke of it as the American plan, so that we are beginning to have some influence on German ideas of American education. They are much interested also in England and Scotland, as evidenced by a report of the Pathologic Society of Edinburgh two years ago.

In Holland they are building a new plant at Leyden which will cost fifteen million dollars when completed. They put pathology and bacteriology in the same building. In this country we are very definitely cooperative in spirit. Therefore, we shall have the opportunity and spirit of forging ahead along the lines we have been discussing in the last two days.

Vanderbilt University Medical School is not going to be an elaborate affair, as compared with the plants Dr. Bardeen has gone over, especially those plants showing extensive future development. We have attempted to bring the laboratories and hospitals in relation to one another. We hope to spend two and a half million dollars on the new plant. Vanderbilt University has eight million dollars for medical education, and we have done our best to keep the cost of equipment down. If we can do that, we will be able to manage with a minimum amount of money expended for equipment.

DR. A. C. ABBOTT, Philadelphia: I should like to know whether any provision has been made for the teaching of public health.

DR. G. CANBY ROBINSON, Nashville, Tenn.: There is a series of rooms that are set aside for the teaching of hygiene and public health. There are three or four rooms which will be available for laboratory purposes, where public health, preventive medicine and hygiene are to be taught. These rooms are on the same floor as the department of clinical pathology.

DR. E. P. LYON, Minneapolis: I want to express sympathy with all that has been said here in a general way, but we can easily overdo in this direction as we have in the opposite direction. Our whole effort should be to keep a sane balance and to go forward carefully, and reasonably slowly. The water tight compartment is a very valuable feature in unification, although we would not advocate an absolute water tight compartment in education—the mind is not built on the principle of a water tight compartment. There is some tendency on the part of those who take extreme views to substitute another water tight compartment in which the diaphragm or neck, instead of being the boundary, is now put between the preclinical sciences and clinical sciences. I see as much danger in the one as in the other. One speaker who presented a paper yesterday left out physics, chemistry and biology as departments which were all to be affected by the relations of the clinical department, and I wondered why that was so. When a student is studying electricity, it would be considered of additional interest and advantage if the electrocardiograph was introduced and he was taught the applications that can be made of that instrument, and if he saw a few patients with heart disease and noted the changes in the records produced under those conditions. In studying physics and light, the student would be interested if the ophthalmologist demonstrated the anomalies of refraction. In the course in general chemistry, when calcium is taken up, it would be a great advantage for the student to know that calcium is a part of the constituent of bone and to have bones demonstrated to him, etc. I will not dwell on the practical difficulties which one would find if we should attempt to carry out an extreme scheme. Let us take biologic chemistry. Imagine what would happen if we should attempt to have four classes in the laboratories. An enormous equipment would be necessary which none of us would be willing to stand for, or we must have lockers for the whole four classes, and the practical aspect will make one hesitate and go slowly.

DR. ARTHUR DEAN BEVAN, Chicago: I think it might be helpful in this discussion if I present a brief summary of the ideas of a medical educator with a great deal of experience and very sound judgment, Dr. Charles H. Frazier of Philadelphia, who is absent on account of illness:

"At Pennsylvania we are so impressed with the advantages of early contact with clinical problems that we have introduced clinics into both the first and second years. On the question of correlation I feel very strongly. After all, the instruction given the student in the fundamental sciences, anatomy, physiology, chemistry and pathology, is selected with a view to its application to clinical problems. I am not in sympathy with the plan that crept into our educational program, by which these sciences were presented abstractly. If there are clinical applications to the laboratory phenomena, why should not this application be demonstrated synchronously with the laboratory demonstration? Let me cite an example: There are a number of demonstrations in the laboratory to illustrate shock; would the practical importance of these scientific laws not make a deeper impression on the student if, at the time, he were taken to the hospital to see shock in the patient and the treatment of it? Or let the subject be hemorrhage. The student makes a number of observations on the lower animals as to the effect of loss of blood, the constitutional effect on the animal, the change in the blood picture, etc. How telling these observations would be if, at their conclusion, the students were taken to the bedside of a patient, the subject of an acute or chronic anemia, observed the clinical aspects, and saw the influence of a blood transfusion. This dovetailing method might be applied to bacteriology, pathology and physiology.

"Instruction in a specialty should be restricted to the diagnosis of the more common lesions, emphasizing those which are an expression of systemic disease and those which, because of their grave potentialities and need for immediate treatment, require prompt recognition. To the postgraduate schools should be left the comprehensive study of any specialty.

"Surgery should be catalogued as a major specialty and, except for certain emergency operations, the student should not be burdened with the details of operative technic. He should know the significance of gallbladder disease and what may be accomplished by surgical intervention, but nothing more.

"As to how the medical student should be taught, speaking for the clinical subjects, I would urge the reduction to a minimum of didactic lectures and the expansion of the clinical program. To plan an ideal curriculum, we should wipe the slate clean and rebuild the curriculum without the handicap of any preexisting practices."

DR. WILLIAM DARRACH, New York: With reference to ideals of plants, no one will dispute the statement that the brain needs a compartment of its own. We also need the great clinical associates, the peripheral nervous system and general circulatory system to work in active cooperation in carrying on the work of the parent body. If we can apply this to the physical plant we shall have taken a great step in advance, as aptly illustrated in the plants for Vanderbilt and Rochester universities. We also have to take into account certain personal tendencies on the part of human beings. Department heads must have places in which to work so that they are disturbed as little as possible. There also seems to be an inherent quality that human nature will not travel very far in a horizontal direction if it can avoid it. We seem to have approached a happy solution in the Vanderbilt and Rochester plants, where the different clinical and laboratory departments are brought into potential contact, which can be taken advantage of if need be, and isolation can be taken advantage of if the desire is in that direction.

At the Bellevue Hospital, New York, we have tried to reduce the horizontal distance to that distance which men will travel if they desire contact, and at the same time make use of the vertical direction whereby all departments can be brought into potential elevator contact in a short time.

The Art of Medicine

DR. IRVING S. CUTTER, Omaha: During the last decade, it has become a rather popular diversion among too many of our teachers of medicine and surgery to decry the "art" or the methods of applying the fundamental facts of science to the relief of the sick individual. The abrupt dismissal of the usefulness of such teaching is startling and disconcerting.

Are those who are dealing directly with medical students, and who are largely responsible for the tendencies of the modern medical curriculum, keenly alive to deficiencies evident in the applications of science to practice? Are we so strenuously engaged in cramming the student with scientific facts—too frequently uncorrelated—that we defeat the fundamentals of education, namely, thought and the development of judgment? Are we compelling the student by precept or example in his undergraduate or intern years to form a proper concept of medical practice and of his relation to the public? It is easier to remember than it is to think, and to think to a logical conclusion is the most difficult of all. Reams of data may be gathered by the student, but until he is able to weigh the evidence, arrive at a safe conclusion and apply those conclusions to a given case, medical education falls short. To apply the science of medicine with the highest possible skill, the student must learn to think in terms of the patient. This can come only through thought and careful observation. We are too prone to bewilder the student in the heart clinic with the interpretation of electrocardiograms, when a proper evaluation of physical findings and the observation of a well correlated symptomatology would mean an accurate diagnosis, and make for a normal life for the patient. The student may know the pharmacologic action of digitalis, but, after all, the proper administration of digitalis must be determined by a careful study of the individual case, coupled with systematic

observations on the effects of the drug. That nice balance and discrimination which must be arrived at in the administration of digitalis means success or failure.

In our eagerness to teach scientific diagnostic methods based on laboratory examinations, we forget to study the daily life of the patient, his history, his environment, his relations to his fellows. Owing to overreliance on laboratory diagnostic methods, there is often slighted the bedside examination made with the full confidence of the patient and with his entire cooperation. One may justly fear for the future of medical practice with the apparent unthinking attitude of many of our graduates. They fail to look squarely at the patient. An appalling number of roentgen-ray examinations and laboratory tests on secretions, excretions and blood are made, together with examinations by specialists, and as a result the patient is told that he is physically sound, that there is nothing the matter, and that he may proceed to his home and forget his troubles—all this at a total fee for specialists and others that is often a serious factor. The fact remains that the patient is sick. He needs help and, because of the failure of the physician, he drifts into the welcoming arms of the theatrical healer. That functional disease is a distinct entity cannot be gainsaid. It destroys the efficiency of the individual, and renders him a burden to himself, his family and his friends, and the trained physician, conversant with every detail of modern medicine, too often fails to look squarely at his patient and recognize the disease. As a result of our training, a graduate is in a sense helpless, unless he is in immediate touch with a large laboratory, manned by skilled technicians. We have trained away from self-reliance, from accurate observation, owing to the sense of security and dependence created by the laboratory. It has shown the easy way to diagnosis. Present methods have had the effect of crowding graduates into the cities, where splendidly equipped laboratories, hospitals and expert consultants are immediately available. The very multiplicity of precision determinations constitutes a weakness. Too little do we teach that the patient is not made up alone of tissue structures but is a personality functioning in a given environment. Too often, hospital, outpatient and even office practice becomes a mere routine, and the attending physician fails to remember that every case represents a human heart, crushed to the point of despair by sickness and resultant poverty.

The cultivation of a bedside manner may, in the extreme, be an affectation; but personality and the attitude of the physician may mean the difference between life and death. To inspire groundless hope in a patient is criminal; but to give the patient a sense of your appreciation of his suffering, your hope for ultimate relief, and the feeling that you will do all that is possible, is but a natural justifiable and humane attitude. How much of all this does the student get in the medical curriculum or during his intern service? How coldly callous do many of our brilliant graduates appear? Modern graduates may wonder why the citizens of a community remain faithful to the "old fogey" doctor, as the old practitioner is termed, when they, with modern training and equipment, have so much to offer. A study of the methods of the old doctor and the application of many of them would mean greater success for the recent graduate. The apotheosis of pure science must give way to the larger conception of the conscientious care of the sick, and science for science's sake assume its most important but proper place. Evaluate pure science fairly, evaluate research sanely, and emphasize the skilful management of the sick individual. Teach those principles calculated to relieve human suffering. Stress the service side of the physician's job. Modern medicine must be the applications of science at the bedside—science so applied that every factor tending to restore the individual to a normal regimen of life shall be utilized. Science is the armament of the physician; and his skill in the use of this armament in overcoming disease reflects his training and his attitude toward his fellow man. Medicine must maintain its superstructure of service as its foundation of science. "Knowledge is proud that he knows so much. Wisdom is humble that he knows no more."

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Chiropractor Sentenced.—It is reported that H. C. Saunders, a chiropractor of Huntington Beach, was sentenced to four months in the Orange County jail by Judge Works, recently, for practicing medicine without a license.

The Physique of Mentally Superior Children.—Drs. B. T. Baldwin of the University of Iowa, Iowa City, and L. L. Terman of Sanford University, San Francisco began, March 20, an investigation of 1,000 mentally superior children in California to determine the relation between physical growth and mental development. Detailed measurements of each child will be made. The investigation is being financed by the Commonwealth Fund of New York.

Hospital News.—Work has been started on a new \$100,000 ward unit at the Santa Clara County Hospital at San Jose. It will contain fifty beds.—Plans have been prepared for the new eight-story and basement hospital building for the St. Vincent Hospital Association, Los Angeles, to be erected at a cost of \$1,250,000. The building will be of Spanish design and will contain 300 beds.—Formal opening of the U. S. Veterans' Hospital No. 24, Palo Alto, took place, March 12. This institution comprises nine buildings, having a capacity of 515 beds.

CONNECTICUT

Maternity and Child Welfare Conferences.—In cooperation with local physicians, the bureau of child hygiene of the state department of health is holding a series of maternity and child welfare conferences in counties of the state where the infant mortality rate is highest. Exhibitions will be given in the afternoon, at which model rooms will be displayed, home care by the public health nurse demonstrated, and a "well baby" conference held. Literature on communicable diseases and the care of mothers and children will be distributed, and evening lectures with stereopticon views bearing on maternal and child hygiene given.

DISTRICT OF COLUMBIA

Board of Trade Opposes Antivivisection.—The Board of Trade, Washington, went on record, March 22, as unanimously opposing any legislation designed to restrict the use of animals for experimentation.

Statistician Dies.—Richard Corcoran Lappin, for many years chief of the bureau of vital statistics of the bureau of the census at Washington, died, March 18. Mr. Lappin served as secretary of the vital statistics section of the American Public Health Association. His name is well known to the medical profession in connection with the annual vital statistics reports, the "Monograph on Cancer and Other Malignant Tumors in the United States," and the "Standard Nomenclature of Disease and Pathological Conditions, Injuries and Poisonings."

ILLINOIS

Physicians Close Offices in Afternoons.—Physicians of Decatur will close their offices every Thursday afternoon between May 1 and November 1, in accordance with a vote taken, March 14, which was later confirmed at the regular monthly meeting of the Decatur Medical Association.

Personal.—Dr. Louise H. Keator, Polo, has been appointed physician at the Dixon State Hospital for Epileptics, Dixon.—Dr. Oliver B. Simon, city health officer of Batavia, and his wife were seriously injured, March 21, when the automobile in which they were riding was struck by a train.

Addition to St. John's Hospital Completed.—The new 100 bed maternity addition to St. John's Hospital, Springfield, erected at a cost of \$250,000, is completed, and will be ready for occupancy this month. This gives St. John's Hospital a capacity of 520 beds, exclusive of the tuberculosis sanatorium at Riverton, which has 200 beds.

Chicago

Chicago Tuberculosis Institute.—The annual meeting and banquet of the Chicago Tuberculosis Institute, was held, March 26. Dr. Alice Hamilton, assistant professor of industrial medicine at Harvard University Medical School, Boston, was the principal speaker.

Illegal Practitioner Sentenced.—Reports state that Robert E. Parks, alias Treadwell, Chicago, was sentenced, March 30, to one year in the Bridewell, and fined \$200 for practicing medicine without a license. Park, it is stated, obtained a job in the U. S. Veterans' Hospital No. 30 on a fake diploma purporting to show that he was a graduate of Rush Medical College, 1901.

Society News.—At the April 23 meeting of the Chicago Society of Internal Medicine Dr. Leonard G. Rowntree, Rochester, Minn., will speak on "Water Intoxication." Dr. Norman M. Keith, also of Rochester will speak on "Studies in Experimental Dehydration."—Dr. F. B. Moorehead of Chicago, gave an address before the Vermont State Dental Association in Burlington, recently.

Physicians Urged to Back Sanitary Canal.—A resolution was adopted by the Physicians' Fellowship Club, all members of which belong to the Chicago Medical Society, March 30, that an appeal be sent to members of the medical profession throughout Illinois, Wisconsin, Minnesota, Michigan and Indiana, to the state boards of health, and other public health welfare societies to back the sanitary district in its fight against reduction of the flow of water from Lake Michigan through the drainage canal.

INDIANA

Illegal Practitioner Fined.—It is reported that Luther C. Rhee, Elkhart, was fined \$25 and costs in the superior court, March 19, when he pleaded guilty to a charge of practicing medicine without a license. A dissatisfied patient filed the complaint.

Physician Loses Malpractice Suit.—Delmar Clements, aged 16, obtained a judgment for \$30,000 in the superior court of Tippecanoe County, March 16, it is reported, in his suit against Dr. John Stuart of Monon, alleging malpractice. It was stated that Dr. Stuart treated Clements for rheumatism when the boy was suffering from osteomyelitis arising from a dislocated hip, and that as a result the boy is permanently crippled.

Health Council Organized.—A permanent state health council was organized, March 21, in Indianapolis, by representatives of state organizations, engaged in some form of public health work. The health council will follow the lead of the Massachusetts State Health Council, organized last summer, for the purpose of coordinating all state health work under one head. The following organizations and agencies were represented: Indiana Parent Teachers' Association, the Child Welfare Association, Indiana Dental Society, the state industrial board, the medical department of Indiana University, the state federation of women's clubs, the Indiana Tuberculosis Association, the nursing bureau of tuberculosis and child hygiene, Indiana Medical Association, and the state board of health.

IOWA

Personal.—Dr. Frank W. Mills, Ottumwa, has been appointed county physician to succeed Dr. L. A. Hammer. —Dr. George Donohoe has been reappointed superintendent of the Cherokee State Hospital. —Dr. John K. Kutnewsky has resigned as superintendent of the State Home and School for Feeble-minded at Redfield. —Dr. Wilbur M. Walliker, Clinton, was shot and seriously injured by a patient, March 19.

MAINE

Medical Examiner Appointed.—Dr. Frank N. Whittier, Brunswick, has been appointed medical examiner for Cumberland County.

Joint Medical Meeting.—The annual meeting of the Maine Medical Association will be held in Houlton, June 5-7, in conjunction with the New Brunswick (Canada) Medical Society. Members of both societies will be guests of the Aroostook Medical Society at Fort Fairfield, Me., and the Carleton Medical Society at Woodstock, N. B., at banquets.

MICHIGAN

Plan for School Medical Inspections Changed.—The Detroit Department of Health has reorganized the medical inspection of schoolchildren. Formerly, each physician took charge of

three or four schools and did all types of health work, including diagnosis, immunization, and physical examination. With forty or more physicians reporting a particular kind of work, it was impossible to compare one school with another. Under the new plan, one group of physicians does diagnostic work; another group does only immunization work, and a third group makes all of the physical examinations. During the school year 1921-1922, these physicians examined 58,000 children. Of 8,887 children underweight, nearly three fourths had one or more physical defects. It was found that Russian children had more eye defects than any other national group.

MISSISSIPPI

Physician Sentenced.—It is reported that Dr. Simon A. Miller, Jackson, was sentenced to serve five years in the penitentiary and to pay a fine of \$2,000, in the federal circuit court, March 24, for violation of the Harrison Narcotic Law.

NEW JERSEY

Academy of Medicine Dedicates Auditorium.—The new auditorium of the Academy of Medicine of Northern New Jersey, at Newark, was formally dedicated, March 21, the twelfth anniversary of the organization of the academy. The auditorium has a seating capacity of about 400. Dr. George E. de Schweinitz, Philadelphia, President of the American Medical Association; Dr. John M. T. Finney, professor of surgery at Johns Hopkins University, Baltimore; Dr. James Hunter, Westville, president of the Medical Society of New Jersey, and Dr. Edward J. Ill, first president of the academy, addressed the audience. Dr. Henry J. Wallhauser was elected president of the academy for the ensuing year: Dr. Maurice Asher, vice president; Dr. William Petry, corresponding secretary, and Dr. Henry C. Barkhorn, treasurer.

NEW YORK

Bill for Medical Care of Schoolchildren.—A bill is before the legislature which would provide medical service for all pupils attending public schools in this state. Dental care and the service of trained and registered nurses would be included. A clause is appended, stating that nothing in this bill is to be construed as limiting the power of a parent or guardian to determine what treatment or correction should be provided and the agencies to be employed for that purpose.

New York City

Hospital Project Halts City Improvement.—A plan to widen Riverside Drive between One Hundred and Fifty-Eighth Street and Fort Washington Park, recently submitted to the board of estimate, has been referred back to Borough President Miller, because it would take about 27 per cent. of the property acquired by the Presbyterian Hospital and Columbia University for a medical center. Dr. Walter B. James presented the point of view of the university and hospital, showing that the plan for the park would materially interfere with the projected medical center. Mr. Miller has been instructed to try to coordinate the city's plans with those of the hospital.

Hospital News.—The Sydenham Hospital will erect a new eight-story building at One Hundred and Twenty-Fifth Street and Manhattan Avenue. Dr. Siegfried Wachsmann, formerly medical director of the Montefiore Hospital, and professor of clinical medicine at Columbia University, New York, has been appointed superintendent of the new institution. —Plans have been made for a \$1,500,000 training school for nurses at Mount Sinai Hospital. The new structure will be the eighteenth building maintained and supervised by the institution. Half the cost has been promised by the trustees. The new school will accommodate 400 nurses, as against 220 housed by the present building. This announcement was made as a part of the annual report of the hospital, which showed that during 1922 the institution had expended \$923,286, whereas the income was but \$889,952.

Personal.—Mayor Hylan has appointed Dr. Aspinwall Judd as trustee of Bellevue and allied hospitals, to fill the vacancy made by the death of John G. O'Keefe. —Dr. Fridtjof Nansen, head of the League of Nations' Commission for Russian Famine Relief, will open a commissariat in New York, affiliated with the American Committee for the Relief of Russian Children. Dr. Nansen's committee is concentrating on child feeding, medical supplies and the purchase of seeds, stock and farm machinery. —Dr. Joseph A. Blake, formerly chief surgeon of the American Hospital in Paris, has accepted the position of surgeon-in-chief of the Reconstruction Hospital, to succeed Dr. Charlton Wallace, who resigned recently. —

Dr. William H. Pound has been appointed sanitary superintendent of the health department of New York City. This was the position held by Dr. Monaghan before his appointment to succeed Dr. Copeland.

NORTH CAROLINA

Orthopedic Clinics.—Following a census of crippled children taken by the state board of charities and public welfare, orthopedic clinics are being held in various points in the state. The first of these was held in Wilmington, March 29, under the auspices of the State Orthopedic Hospital, with Dr. Oscar L. Miller, Gastonia, in charge. The state board of health has the names of more than 700 crippled children in North Carolina who need treatment.

OHIO

Physician Fined for Violating Narcotic Law.—It is reported that Dr. George E. Kerns, Galion, pleaded guilty to violation of the Harrison Narcotic Law, March 13, and was fined \$100 and costs by Judge Glosser, at Crestline.

Chiropractors Fined.—Reports state that John Good, James A. King, E. A. Bellen and Frank Downing, chiropractors, all of Cincinnati, were fined \$25 and costs, each, by Judge Bell, March 20, for practicing medicine without a license. They were granted ten days to appeal.

Hospital News.—William Cooper Proctor will erect a \$500,000 hospital on Bethesda Avenue, Cincinnati, it is announced. —Contracts have been let for the new hospital building for Miami Medical College, Cincinnati, to be erected at a cost of \$85,000. —The \$150,000 addition to Middletown Hospital, Middletown, was formally opened, March 1.

OKLAHOMA

University Gets New Medical Building.—The Oklahoma legislature, March 29, voted an appropriation of \$100,000 for a new medical building to be located on the University of Oklahoma campus, at Norman.

Senate Opposes Evolution.—The Oklahoma senate, March 27, according to report, voted 16 to 12 against the teaching of evolution in the public schools of that state. The leader of the opposition is said to have referred to the measure as a return to the twelfth century in thought and action.

PENNSYLVANIA

Dr. Thomas S. Blair Resigns.—Dr. T. S. Blair, Harrisburg, chief of the bureau of drug control of the Pennsylvania Department of Health, has resigned and will move to southern California. A joint meeting of the Harrisburg Academy of Medicine and the Dauphin County Medical Society was held, March 30, to honor Dr. Blair.

A New Ice Cream Law.—A new ice cream law, which became effective, March 20, prohibits the use of coconut fat and other foreign fats and oils in the manufacture of ice cream, and the use of paraffin in chocolate-coated ice cream. The clause legalizing the use of gum tragacanth in ice cream making is omitted from the new law, and the sale of any imitation or substitute for ice cream under any coined or trade name is prohibited. It further declares unlawful the selling of ice cream from any cabinet or container which contains any article except ice cream, as, for example, oysters or fish. Cream and its products will henceforth be the principal ingredients used in the manufacture of ice cream. The secretary of the state department of agriculture has appealed to ice cream manufacturers to cooperate with the bureau of foods in carrying the provisions of the law into effect.

Philadelphia

Physicians Petition to Change Compensation Law.—Twelve hundred physicians of Philadelphia, March 22, forwarded to the medical legislative conference of Pennsylvania petitions calling on the members of the legislature to amend the state workmen's compensation act to provide for payment of fees for surgical and medical treatment. The petitions were forwarded by the Philadelphia County Medical Society to Dr. George A. Knowles.

SOUTH CAROLINA

Hospital News.—The Mullins Hospital, Mullins, was completely destroyed by fire, March 8, at an estimated loss of more than \$30,000. Drs. Lonnie M. McMillan and Frank L. Martin owned the institution.

SOUTH DAKOTA

Historical Society Honors Physician's Memory.—At its annual meeting in Pierre, the South Dakota Historical Society unveiled a portrait of Dr. Leonard C. Mead, in commemoration of his service to the state during his thirty years' work as superintendent of the State Hospital for the Insane, Yankton. Dr. Mead died in 1920.

VERMONT

Physician Loses Suit.—A verdict of \$7,000 against Dr. Frank M. Walsh, St. Johnsbury, was rendered by a jury, March 16, in a suit for \$23,000 brought by G. W. Cole, North Troy, for alleged malpractice.

VIRGINIA

Hospital News.—With the \$250,000 bequest left the Danville General Hospital by the late John E. Hughes, it is planned to erect a new building. The present institution will be sold and a new site selected, it is reported.

WISCONSIN

Physician Fined.—It is reported that Dr. Frank D. Millard, Milwaukee, was found guilty by Judge Page recently of being involved in an illegal operation and was fined \$500.

Free Clinics.—The fifth of a series of free chest clinics was held in Eau Claire, February 9, under the auspices of the Wisconsin Antituberculosis Association. Dr. A. A. Pelyte, Milwaukee, conducted the clinic, with the assistance of local physicians. —The first free clinic in Wisconsin, designed to give attention to orthopedic cases in rehabilitation work, was conducted at St. Mary's Hospital, Oshkosh, by Dr. Frederick J. Gaenslen, Milwaukee.

CANADA

Epidemic of Typhoid.—Reports state that one eighth of the population of Cochrane, a town in northern Ontario, has been stricken with typhoid fever, due to contaminated drinking water. Four hundred and fourteen cases have been reported, with three deaths.

Manitoba Medical Association.—At the annual meeting of the Manitoba Medical Association, held recently, the following officers were elected: president, Dr. Sidney J. S. Pierce, Brandon; vice presidents, Drs. David A. Stewart, Ninette, and Fortunat Lachance, Winnipeg, and secretary, Dr. Norman W. Warner, Winnipeg.

Dr. Klotz to Succeed Dr. MacKenzie.—Dr. Oskar Klotz, recently engaged in reorganizing the pathologic department of the University of Buenos Aires, under the direction of the Rockefeller Foundation, has been appointed to the chair of pathology of the University of Toronto Faculty of Medicine, left vacant by the death of Dr. John J. MacKenzie. Dr. Klotz was at one time director of the Magee Pathological Laboratory, Pittsburgh.

University News.—Application has been made to the Ontario legislature to amend the act of incorporation, changing the name of Western University Medical School, London, to the University of Western Ontario, the desire of the authorities being to make this university the educational center of the western part of the province. —Construction work on a new administration building for the University of Toronto, that will be erected south of Knox College, has been started. This building will provide accommodation for all the administrative offices.

GENERAL

Juvenile Suicides.—Dr. Harry M. Warren, president of the Save-a-Life League, in his annual report states that the total number of suicides tabulated for the year was 13,530, and that suicides among young people have practically doubled since the World War. From 477 juvenile suicides listed in 1919, the number increased in 1922 to 900.

Secretary of Interior to Visit Indians.—The Secretary of the Interior will make a trip in April through the Southwest to study problems affecting the Indians. Dr. Work is particularly interested in the improvement of health and sanitation among the Indians. He will be accompanied by Indian Commissioner Burke.

Appeal for Greek Refugees.—A letter has been sent out by the American Women's Hospitals of New York appealing

for funds for the relief of the Greek and Armenian refugees. At present, 8,000 people in quarantine are being cared for by the American Women's Hospitals on Macroni Island. Checks should be made payable to Dr. Sue Radcliff, treasurer, 637 Madison Avenue, New York City.

Society News.—The annual meeting of the American Physical Education Association will be held at Springfield, Mass., April 11-14.—The twenty-fourth annual meeting of the American Proctologic Society will be held in Los Angeles, June 22-23, under the presidency of Dr. Emmet H. Terrell, Richmond, Va.—The annual meeting of the National Academy of Sciences will be held in the U. S. National Museum, Washington, D. C., April 23-25.—The eighteenth annual meeting of the American Association of Museums will be held in Charleston, S. C., April 4-6.

Second Annual Clinical Tour.—The program of the second annual clinical tour for physicians of the United States and Canada has been announced. The main party will leave Montreal on the S. S. *Megantic*, June 16. The tour will include trips through Scotland, England, Holland, Belgium, France, Switzerland, Italy and Germany, with clinics at Edinburgh, Leeds, London, The Hague, Paris, Rome and Berlin. The clinical work will be under the supervision of Dr. Alexander J. MacKenzie.

Embargo on Narcotics Modified.—The embargo on narcotic drug importations was partially removed following a meeting of the Federal Narcotic Control Board and drug manufacturers at the Treasury Department. Manufacturers, under the agreement made at this meeting, may import narcotics in an amount equal to their imports during the corresponding period of the year 1922, pending a second conference to be held, July 1, to discuss subsequent supplies and demand. Illicit use of narcotics was not a major topic of the conference, which was confined to a consideration of the needs of the medical and drug professions, the supply for which has been materially reduced by the recent embargo.

Passengers' Liquor Allowance Questioned.—Passengers landing at New York from vessels arriving from foreign ports were authorized to bring ashore 1 quart of liquor for medicinal purposes, according to an order issued this week by Thomas W. Whittle, surveyor of that port. The validity of the order has been questioned by Assistant Secretary Moss of the Department of the Treasury, and it was indicated that it would probably be materially altered. Mr. Moss declared that the Treasury Department understood that the order was intended to permit passengers who were ill to bring alcoholic stimulants ashore with them when necessary, but that on the face it appeared to be a direct violation of the Volstead Act and of customs regulations prohibiting the inclusion of liquor as a part of a passenger's baggage.

Traffic in Peyote Prohibited.—The campaign of the Department of the Interior to suppress the use of peyote among the American Indians has been augmented by the passage of bills in Colorado and South Dakota which prohibit the manufacture and traffic in this drug. These states, with the number already having laws forbidding the sale of peyote, brings the total up to seven, the other states being Kansas, Montana, Nevada, North Dakota and Utah. Annual appropriations were made at the last session of Congress for the suppression of liquor and peyote among Indians. This drug was first used as a medicine by Indians in Mexico and in parts of Arizona and New Mexico, but its use has spread to Indian reservations throughout the Western states, particularly Oklahoma and Nebraska. Peyote is the dried flowering tops of the peyote cactus, which when chewed has an effect similar to that of cocaine.

International Opium Commission to Meet Again.—Information has been received that Dr. Rupert Blue, the American representative at the recent meeting of the International Opium Advisory Commission of the League of Nations at Geneva, proposed that all the nations concerned in suppressing the illicit traffic in narcotics adopt measures similar to the Harrison and Jones-Miller narcotic acts that are now in force in the United States, regulating the import, export and internal traffic. Dr. Blue found, according to the report submitted to Washington, D. C., that the laws of England are ideal but that India, a British possession, is more responsible than any other country for the large quantities of opium and its derivatives that are smuggled to other countries. The Geneva meeting, which was attended by representatives of the United States, Great Britain, France, China, Germany, India, Japan, the Netherlands, Portugal and Siam, adjourned to meet again some time during the present year.

Conference Board of Physicians in Industry Meets.—The thirty-seventh meeting of the Conference Board of Physicians in Industry was held, March 17. In a discussion of methods of resuscitation from carbon monoxid poisoning it was the consensus of opinion that no form of mechanical inhaler should be operated by an untrained person and that the use of these appliances should be restricted to those who have been specially instructed in their construction and operation. For general resuscitation, the conference reaffirmed its endorsement of the prone pressure method over all others. In injuries to the lower back, the importance of the fifth lumbar vertebra was emphasized by the conference. This vertebra is the most important of all the spinal segments as it is the last mobile segment above the sacrum and as such bears the greatest weight, owing to body movement. It is also the one most frequently fractured. Anatomic abnormalities of this segment, such as elongated transverse processes, malposition of the facets and undeveloped pedicles, together with elongated spinous processes, may be present. If the elongated transverse processes rest on the crest of the ilium, they are likely to produce pain. The variation in the lumbosacral angle is also of importance when these processes are of abnormal length. Malposition of the facets may cause a twisting of the vertebra, producing a strain. Contact between the elongated spinous processes of the fifth lumbar and the first sacral vertebra may also be the cause of discomfort. In early life, before ossification is complete, the spinal column is more mobile and may maintain its anatomic balance without producing symptoms, but if, after complete ossification, an injury occurs which disturbs this balance, it will be impossible for the patient to obtain a readjustment, and pain and disability will result.

Opportunities for Study at French Clinics.—There are available through the offer of the Medical Faculty of Paris twenty-four positions as foreign assistant in the clinics of the following professors: surgery (5): Professors Hartman, Delbet, Gosset, Lejars, Duval; medicine (6): Professors Gilbert, Widai, Achard, Chauffard, Vaquez, Sergent; pediatrics (2): Professors Nobecourt, Marfan; surgery of children (1): Professor Broca; gynecology (1): Professor Faure; obstetrics (2): Professors Couvelaire, Brindeau; dermatology and syphilology (1): Professor Jancselme; neurology (1): Professor Pierre-Marie; psychology (1): Professor Claude; contagious diseases (1): Professor Teissier; genito-urinary diseases and surgery (1): Professor Legueu; ophthalmology (1): Professor de Lapersonne; laryngology and otology (1): Professor Sebileau.

Besides these official positions, there are, in other clinics, numerous unofficial positions: gastro-enterology and bacteriology, at the Pasteur Institute; radiology, at the Curie Institute; roentgen-ray diagnosis and therapeutics at many clinics, and tropical medicine, at the Colonial school. These positions are given by personal appointment depending on credentials offered by the applicant. There are also offered each year one or more scholarships under the American Field Service Fellowships for research in medicine. There will be four rotating internships available at the American Hospital of Paris in 1924. Opportunities are available to visiting American physicians for the organization of private group instruction in the specialties under leading teachers in Paris for moderate fees. Detailed information can be obtained by writing the secretary of the American Medical Society of Paris, care of the American University Union, 1 rue de Fleurus, or the secretary in the United States, Dr. D. M. Stiefel, Massachusetts General Hospital, Boston.

Bequests and Donations.—The following bequests and donations have recently been announced:

Huntington Hospital, Huntington, L. I., \$100,000; Society of St. Johnland, for a cot in a children's hospital, \$10,000; New York Orthopedic Hospital and Dispensary, \$5,000; State Charities Aid Association, \$2,000; Home for Incurables, New York, \$1,300; American Red Cross, \$1,000, and St. Agnes Hospital, Raleigh, N. C., \$1,000, by the will of Miss Cornelia Prime.

St. Vincent's Hospital, Taylorville, Ill., \$55,000, from a drive for funds.

Georgetown University, Washington, D. C., \$50,000, for the nurses' home at University Hospital, by an anonymous donor.

St. Elizabeth's Hospital, Utica, N. Y., \$50,000, by the will of James A. Murphy.

Warren County Hospital, N. J., \$50,000, for the establishment of the institution, from a campaign for funds.

Oregon Tuberculosis Association, property valued at between \$50,000 and \$60,000 by the will of Mrs. Jean Holton of Portland, Ore.

Mount Sinai Hospital, New York, the residuary estate of Henry Lowy, amounting to about \$35,000.

Calvary Cancer Hospital of the Bronx, N. Y., \$33,788, by the will of Josephine N. Besson.

Roosevelt Hospital, New York, and the Masonic Hall and Asylum, \$20,000 each; the New York Eye and Ear Infirmary and the Manhattan

Eye and Ear Infirmary, \$10,000 each, under the will of Mrs. Jemina Sinclair Simms.

Associated Jewish Charities, \$18,000; United Charities, \$10,000, and the Michael Reese Hospital, Chicago, \$6,000, by the will of Adolph Nathan of Chicago.

Pennsylvania Missionary Society, \$10,000; The Babies' Hospital Philadelphia, \$10,000, by the will of William Thompson. One of the beneficiaries of the residuary estate plans to invest the funds for the benefit of the endowment fund of the University of Pennsylvania Hospital, Philadelphia.

Committee for Men Blinded in Battle, New York, \$10,000, and St. Michael's and All Angels' Home for Colored Cripples, \$5,000, by the will of Helen Smythe.

Goshen Hospital, Goshen, Ind., \$10,000, by the will of Charles F. Kelly.

Touro Infirmary, New Orleans, \$5,292, by E. V. Benjamin; \$2,500 by Silvan Newgurger, and \$1,000 by J. E. Bouden, Jr.

Long Island College Hospital, Brooklyn, Dr. Howard F. Whitney, \$6,000; Mr. Van Sinderen, Mrs. Walter Gibb and Mrs. J. Rogers Maxwell, each \$5,000; Mr. John F. Talmage, in memory of Dr. J. Sullivan Thorne, \$3,000, and Frederick Loesser and Company, \$1,000.

Fairview Sanatorium, New Lisbon, N. J., \$3,000 for a modern roentgen-ray laboratory to be known as the Benjamin F. Rowland Memorial Laboratory, in memory of her husband, by Mrs. Mary A. Rowland, of Metuchen, Conn.

Montefiore Home, Beth Israel Hospital and the Hebrew Sheltering Society, New York, and the Consumptive Relief Society of Denver, each, \$1,000; Home for Aged and Infirm Hebrews and the Jewish National Hospital for Consumptives, Denver, each \$500, by the will of William S. Slater.

St. Luke's Methodist Episcopal Hospital, Dubuque, Iowa, \$1,000 by the will of Anna Cook of Warsaw, Ind.

New York Academy of Medicine, his manuscripts and pamphlets on the history of medicine, by the will of Dr. Arpad Gerster of New York.

FOREIGN

Melbourne University.—The council of Melbourne (Australia) University has raised the fees in medicine from £23 per annum to £25 (approximately \$120).—The new anatomy building will be ready for occupancy about July or August. The present anatomy buildings will afford additional housing facilities for the medical school library.—The university is about to adopt a superannuation plan for all full-time officers of every grade. Professors will be able to retire at the age of 60, and other officers at 65.

Personal.—Surg. Commander Thomas B. Shaw, bacteriologist at the Royal Naval Hospital, Plymouth, has been appointed professor of hygiene and director of medical studies at the Naval Medical School at the Royal Naval College, Greenwich, to succeed Surg. Capt. Reginald Bond.—Sir Joseph J. Thomson, master of Trinity College, Cambridge; Prof. Frederick G. Donnan of the University of London, and James C. Irvinc, principal and vice chancellor of the University of St. Andrews, arrived in New York on the White Star liner *Majestic*, March 27, to attend the dedication of the Sterling Chemistry Laboratory at Yale University, New Haven, Conn., April 4.

Roentgen's Monument.—The fact that Roentgen never tried to capitalize his great discovery and that he lived on a small pension and died poor is said by our exchanges to be the greatest of all monuments to his memory. He even presented the Nobel prize conferred on him to the German Society for the Advancement of Science, the Naturforscher- und Aerzte-Gesellschaft, at a meeting of which in 1895 he told the news of his discovery. He was the first recipient of the Nobel prize in physics, in 1901, and was showered with other honors of all kinds. A Spanish exchange suggests that every one benefited by the roentgen rays in any way should make a point of telling his children about the glory of this modest professor of physics. Characteristic of Roentgen was his reply to the English scientist who asked what he thought when he saw the first roentgen-ray picture: "I did not think, I investigated."

Deaths in Other Countries

Dr. Norman Dalton, senior physician to King's College Hospital, March 9, in London.—Dr. David C. Alexander of Selkirk, Scotland, in Florida, U. S. A., February 17.—Lieut.-Col. Herbert S. Taylor, R. A. M. C., at Kampti, India, aged 53.

CORRECTIONS

Physicians' Licenses in Nebraska.—Competent Nebraska lawyers who have investigated the matter uniformly agree that no Nebraska physician's license issued since 1919 is in jeopardy in any way. The rumor to the contrary is thus set at rest.

Vienna Society Issues Statement Regarding "Blue Book."—In the letter published in THE JOURNAL, April 22, 1922, page 1219, certain statements are made concerning the relation of Dr. I. Lange to the American Medical Society of Vienna. Professors Holzknecht and Stoeck write that the

Society of Vienna Instructors did not defray the expenses of Dr. Lange on his homeward trip, nor did it pay for the issue of the "Blue Book."

Government Services

Hospitals Authorized

The authorization of Evacuation Hospital No. 25 (West Suburban Hospital Unit, Melrose Park, Ill.), has been amended to read Evacuation Hospital No. 25 (West Suburban Hospital Unit, Oak Park, Ill.).—Pursuant to instructions of the Secretary of War, the organization of a surgical hospital, organized reserves, to be known as Surgical Hospital No. 4 (Washington University Medical Unit, St. Louis) has been authorized.

Physicians Wanted for Indian Service

A call from the national civil service commission is being made for physicians to fill positions in the Indian Service. There are fifteen vacancies at various western schools and agencies.

Colonel Ashburn Goes to West Point

Col. Percy M. Ashburn, commandant of the Medical Field Service School, U. S. Army, at Carlisle, Pa., has been detailed surgeon at the West Point Military Academy, to become effective in August. Colonel Ashburn has been stationed at Carlisle for three years. He will be succeeded by Lieut.-Col. Charles R. Reynolds, from the Surgeon General's Office.

Physicians Qualify for Navy

The Surgeon General of the Navy announced this week the following appointments as assistant surgeons with the rank of lieutenant (junior grade) in the Naval Medical Corps: Drs. James Root, Jr., Temple, Texas; Roscoe E. Avery, Barre, Vt.; James F. Hays and John McL. Brewster, Philadelphia; James D. Vieceilli and Joseph D. Market, Denver; Earl S. McRoberts, Indianapolis.

Navy to Commission Recent Graduates

Sixteen students who will graduate from medical colleges this year have been examined and found qualified for appointment as medical officers in the Navy, and will be commissioned with the rank and pay of junior lieutenants. Twelve of these students are members of the graduating class of the Indiana University School of Medicine, Indianapolis, Ind.; two are from Jefferson Medical College, Philadelphia, and two from the University of Colorado Medical School. This is a departure from the usual policy of in Navy Department. There still remain approximately twenty vacancies in the Navy Medical Corps.

Additions to Medical Reserve Corps

Recent additions to the Medical Reserve Corps of the Army include Dr. Hubert Work, former Postmaster General and now Secretary of the Interior. Dr. Work, who was commissioned a colonel, was formerly president of the American Medical Association, and in the World War served as liaison officer between the Surgeon General of the Army and the provost marshal. Another public official recently commissioned in the Medical Reserve Corps is Representative John W. Summers of Walla Walla, Wash. Congressman Summers has practiced medicine for twenty-five years.

Posthumous Medal for Dr. Register

The War Department made the posthumous award of the Distinguished Service Medal to Lieut.-Col. Edward Chauncey Register, Jr., M. C., U. S. Army, February 27. The medal was presented to Mrs. Jeannie Register, widow of the deceased. Dr. Register died at Tarnopol, Poland, in January, 1920, of typhus fever, contracted while establishing a hospital for victims of a typhus epidemic.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 12, 1923.

Prohibition

In no country in the world, not even in the republics, does the individual enjoy so much liberty as in Great Britain. Regard for his rights has been carried in some cases to the point of national danger. Thus, we were the only power that fought for years in the Great War with a voluntary army, and only sheer necessity brought about conscription, gradually and with difficulty. Compulsory vaccination has been practically abolished out of regard for the opinions of the antivaccinationists. It will therefore be seen that the prohibition of alcohol as a beverage is not likely to come about, although we are keenly alive to its evils, and have had for more than half a century an active temperance party containing many of our greatest social reformers. What this party has agitated for is "local option," i. e., giving the local authorities the power of controlling and prohibiting the liquor traffic in their own districts. But the temperance party has never been large enough to make the proposal an issue of practical politics. However, the experiment of prohibition in the United States is being keenly watched here and has given rise to hopes among the temperance people and fears among those interested in the liquor trade. These fears are manifested by the founding of an antiprohibition league, whose views and arguments were well put forward at a recent meeting at the Mansion House (the official residence of the lord mayor). The president, Lord Lonsdale, who was unable to be present, wrote that, while he would gladly do all that he could to prevent excesses, he held that all Englishmen know best how to fit themselves for their respective spheres in life, and because there may be excesses at times, he does not see why the majority of temperate men should be dictated to in the interest of a minority. Prohibition would be a serious blow to all, and cause the creation of illegitimate poisons injurious to life. The chairman, Lieut.-Col. Cuthbert James, M.P., gave a lurid picture of prohibition in America: "Young people who before prohibition did not tend to alcoholic excess now drink cocktails out of soup plates and are doing all they can to evade the law. Outside the pharmacists' shops in the great cities, queues wait to get their doses of alcohol, be it wood or genuine stuff, of cocaine, morphia and other pernicious drugs, which do more injury, physically, morally and mentally, than the much condemned alcoholic refreshment." Lady Astor's bill (referred to below) was class legislation in its worst form. The children of the well-to-do could drink as much as they liked in their homes, but the bill prevented children of the poor from buying even a glass of cider or a glass of beer. The colonel concluded by reading a letter from a well known physician and teacher, Sir Thomas Horder, which must carry much more weight than the previous arguments. Sir Thomas wrote:

There is an unfortunate tendency among the advocates of prohibition to invoke the aid of science on their behalf. Science—and I include medical science—has no support to give them. Science is often prostituted by the quotation of ill-devised experiments, the results of which are said to be condemnatory of the use of alcoholic beverages even in moderation. Formerly it was common to hear about plants fed with alcohol; and because they withered and died, this was said to be proof that alcoholic beverages are prejudicial to health. Less crude experiments than this, but with fallacies nearly as gross underlying them, are being quoted today, and are being made arguments in favor of prohibition. No experiments have yet been devised which prove that the moderate use of alcoholic beverages is injurious to health. Experience shows that the output of the brain work, and the maintenance of life in our highly civilized conditions at its best level, are both of them assisted by the moderate use of these beverages. Let us not, therefore, be stamped into a false position by the ulterior motives of pseudo-scientists.

In the House of Commons, Viscountess Astor introduced a bill making it illegal to sell to any one apparently under 18 any kind of intoxicant for consumption in a saloon. She pointed out that the bill had the support of the medical profession. The period in a boy's or a girl's life from 14 to 18 was the most difficult one. The point of the bill was to develop self-control and the powers of resistance. The chief medical authorities were at one as to the dangers arising during adolescence. In 1921, 2,172 boys and girls between 16 and 21 were arrested for drunkenness. The bill was supported by the Labor party, and the first reading was carried by a majority of 338 to 56. In a letter to the *Times*, under the caption of "The Nation's Youth," four leaders of the profession—Lord Dawson, Sir Thomas Barlow, Sir Thomas Horder and Sir George Makins—support Lady Astor's bill. They regard it as a matter quite apart from the principle of general prohibition, saying that

There can be no doubt as to the desirability of employing all possible safeguards to prevent the danger of starting alcoholic habits in those who have just entered on the period of stress which puberty involves and are on the threshold of adult life. Rapidly developing organs, new functions, and increased activities require all the protection that can be secured for them during that period, when readjustments of vital importance have to be made. It is difficult to conceive any valid objection that can be raised against Lady Astor's bill.

Birth Control Libel Action

Birth control has come prominently before the public in the last few years, largely in consequence of activities of the "Society for Constructive Birth Control and Racial Progress," which held a congress on the subject last summer, as reported in *THE JOURNAL*. While the movement has received the support of many influential persons both inside and outside the medical profession, it has also encountered strong opposition, particularly from the Roman Catholic Church. The position is well shown by a libel action which has just taken place. Dr. Marie Stopes, a doctor of science of the University of London, of philosophy of the University of Munich, president of the society and author of several widely read books on sexual subjects, brought an action against a physician, Dr. H. G. Sutherland, because in a book entitled "Birth Control" he thus attacked her character:

Secondly, the ordinary decent instincts of the poor are against these practices; and, indeed, they have used them less than any other class. But, owing to their poverty, lack of learning, and helplessness, the poor are the natural victims of those who seek to make experiments on their fellows. In the midst of a London slum, a woman, who is a doctor of German philosophy (Munich), has opened a birth control clinic where working women are instructed in the method of contraception, described by Professor Mellroy as "the most harmful method of which I have had experience." It is truly amazing that this monstrous campaign of birth control should be tolerated by the home secretary. Charles Bradlaugh was condemned to jail for a less serious crime.

For the plaintiff, it was stated that her sole object was to prevent the unhappiness which arose from people having more children than they could properly bring up. Several leading members of the medical profession gave evidence on her behalf. Sir James Barr, F.R.C.P., consulting physician to the Liverpool Royal Infirmary, said that the plaintiff's clinic was doing an enormous amount of good. The information all wealthy people had at the present day should be given to the poor. The methods described were very safe. On cross-examination, he stated that Dr. Stopes' books "Married Love" and "Wise Parenthood" were more suited to the married than to the young, but he did not think that they were demoralizing. The plaintiff, in her evidence, stated that the object of her society was to counteract the steady reduction of the birth rate among the thrifty and sound, and the reckless breeding of persons at the other end of the social scale. Her clinic was founded to help overburdened women of the working class who were ignorant of the knowledge contained in her writings. Besides the midwife in charge, there was a visiting physician who saw patients. There had been no experiments.

Sir William Arbuthnot Lane, consulting surgeon to Guy's Hospital, gave evidence that he had seen intense misery and distress due to multiple pregnancies. Assuming cleanliness, there was no danger in the measures advocated by the plaintiff. He, himself, had advised numbers of women to use a contraceptive method. Mr. Harold Chapple, gynecologist to Guy's Hospital, approved the measures advocated by the plaintiff, stating that, if employed with average intelligence, they would not be harmful. Sir William Bayliss, F.R.S., professor of physiology in the University of London, said that he saw nothing objectionable in the plaintiff's books. They served the excellent purpose of instruction in a noble and elevating way in the mysteries of sexual relations which every one should know as soon as he or she began to get information on the subject.

For the defendant, Miss Louise McIlroy, professor of gynecology at the Royal Free Hospital, stated that the method recommended was the most dangerous form of contraception. The unrestrained use of contraceptives without medical advice was extremely bad. She admitted that one method of contraception was not harmful to women. She had known cases in which a woman could not have a child because of the previous use of contraceptives. She was not opposed to contraceptives for medical reasons. The defendant gave evidence that he wrote his book to make known arguments against birth control. He was a Roman Catholic, but it was not at the behest of any Roman Catholic that he wrote his book. Indiscriminate broadcasting of knowledge of sex and contraceptives would do no good. Dr. Stopes' writings contained a nauseating mixture of physiology and emotion instead of the cold language of physiology. Dr. A. E. Giles, gynecologist, said that the method recommended by Dr. Stopes might be attended with danger. Similar evidence was given by two other gynecologists, Dr. F. J. McCann and Mrs. Mary Scharlieb.

In summing up, the judge (the lord chief justice) said that the defendant had to show that his statement of facts was true and his comments fair. Nobody disputed the wisdom of explaining in innocent, helpful language to young persons the mysteries of sex, but controversy began as to the method. The next step was a kind of jump from this: that they should be taught about contraceptives because they were desirable for some persons in some circumstances. Then they came to the method recommended by Dr. Stopes, which had become a sort of panacea for social ills, both public and private. He noted the difference of opinion among the medical witnesses as to this method. The jury had the plaintiff's books submitted to it. Could it say that they fell short of being obscene? He submitted to the jury four questions which were thus answered: Were the words complained of defamatory? Yes. Were they true in substance and in fact? Yes. Were they fair comment? No. What should the amount of damages be? Five hundred dollars.

A legal argument took place as to which party was entitled to the verdict. It was contended for the defendant that if the libel was found true in substance and in fact, the question of justification did not arise. The judge agreed and gave judgment for the defendant. On the medical question of the harmlessness of contraceptives, the contradiction between leading gynecologists is noteworthy.

Fatal Air Embolism During Urethroscopy

At a meeting of the urologic section of the Royal Society of Medicine, Mr. R. Ogier Ward, first assistant of the directorate of surgery, St. Bartholomew's Hospital, described a remarkable fatality from air embolism during urethroscopy:

A man, aged 68, had stricture of the urethral bulb, the result of gonorrhea contracted forty years previously. During aero-urethroscopy, in which slight bleeding occurred and in which rather more than the

usual air pressure was necessary, the patient suddenly became dyspneic and cyanotic, had a convulsion and died. Cardiac massage failed to revive him. The heart could be felt to contain air. Froth issued from the right ventricle when, later, it was incised. All the chambers of the heart contained frothy blood. Bubbles were found in the aorta, common iliacs, pulmonary vein, inferior cava and other vessels.

The case showed the danger of aero-urethroscopy with laceration of the mucous membrane of the urethra and a tight stricture preventing the escape of air into the bladder. Mr. Ward suggested that the use of oxygen might give a greater margin of safety.

The Fatal Toy Balloon

For the second time in recent weeks, a child has been killed by a toy balloon. While a 5-year-old girl was trying to inflate a balloon, it slipped down into her larynx (evidently by inspiration), and she died from suffocation a few hours later. A physician who gave evidence at the inquest said that every time the child breathed, the balloon became partially inflated. Why an attempt was not made to save her life by operation is not stated. In the other case, the child was also a girl of 5.

Abrams Outdone: Diagnosis by Machine

The lay press is regaling its readers with a "discovery" which enables the physician to diagnose obscure cases. All that he has to do is to obtain a specimen of the blood or saliva and have it tested by an "uneanny instrument," the invention of a young Glasgow physician. The idea, we are told, originated with a San Francisco physician, Abrams, who discovered that every disease had its own special rate of vibration. The new instrument is termed "Boyd's emanometer" and is superior to Abrams' "oscilloclast," being more accurate and more sensitive. It is so sensitive that a strong light or even a strong scent puts it out of gear and interferes with the "disease reactions." Not only are disease conditions registered, but the exact intensity of each is measured, such maladies as cancer and tuberculosis being discoverable in their earliest stages, long before any other known method of examination would reveal them. Further, the patient's vital resistance is measured, and its increase or decrease at a subsequent test is a sure sign of progress or retrogression. But perhaps the greatest marvel of all is the power to find in each case exactly what medicine is needed.

PARIS

(From Our Regular Correspondent)

March 9, 1923.

Risks Incurred by Hospital Interns and Externs

Several deaths among hospital interns and externs, who succumbed to diseases contracted at the bedside of patients, have attracted attention to the risks incurred by these young men during the performance of their duties. Considerable surprise has been expressed that no legal provision has been made that will insure to interns and externs or their families adequate indemnities for sickness, accidents and death resulting from the practice of their profession. At the last meeting of the general council of the Association générale des médecins de France, M. Justin-Besançon, president of the Association professionnelle des externes et anciens externes des hôpitaux de Paris, recorded his dissatisfaction with this state of affairs. Nurses are protected by law against occupational accidents, because they are salaried persons. Interns and externs, however, are not considered as recipients of salaries, and are therefore not protected under this law, for the hospitals are public establishments and are not deriving any profits, whereas the law of 1898 in regard to occupational accidents deals only with industry and trade. Consequently, in order for an intern or extern to be entitled to an indemnity, he would have to prove that the disease was contracted

through some fault of the administration, which is a matter very difficult to prove. A hospital extern died recently, leaving orphans, who have no claim whatsoever to any indemnity. Another extern has been suffering from a phlegmon; he was planning to become a surgeon, but has now two contracted fingers, which prevents him from carrying out his purpose. Nevertheless, he has no right to an indemnity. Furthermore, the administration of the Assistance publique (public charities) has decided not to grant, henceforth, free hospital treatment to externs, unless they can show that their disease was acquired in the service to which they are attached. In view of the justified protests awakened by this state of affairs, the minister of public health has consented to examine into the situation as affecting the medical and surgical personnel of the hospitals.

The Fight Against Syphilis

Until the last few years, it was not permitted to speak in public of venereal diseases. Fortunately, public opinion has been undergoing a change in this regard. It is beginning to be recognized that venereal diseases constitute a real public danger, and that this menace has become especially threatening since the war. Professor Bayet of Brussels recently delivered an address in Paris, before a large gathering, on the fight against syphilis in Belgium and on the Union internationale contre le péril vénérien, which has just been founded in Brussels. This society is in the nature of a league of all the antivenereal societies throughout the world, including the league of the Red Cross societies. At Paris an attempt is being made to utilize motion pictures to instruct the general public in regard to what should be a matter of common knowledge with respect to antivenereal prophylaxis.

Granting of Diplomas to Masseurs

The minister of public health having demanded the creation of diplomas for masseurs, the administrative council of the Syndicat des médecins of the department of the Seine, acting in agreement with the Société des chirurgiens des hôpitaux de Paris, has filed a protest, in which it is set forth that massage applied to a patient is essentially a medical act, which is not without its dangers and presupposes the exercise of good judgment, for which reason the indications should always be formulated by a physician, and the massage should be given under his direction and control. Consequently, a masseur should be formally prohibited from applying massage, in any form, to a patient, except in accordance with a medical prescription. It is further urged, that to create an official diploma for "masseurs" or "surgical masseurs," or even to grant a certificate or to bestow any other analogous authority would result in encouraging the illegal practice of medicine, and would consequently cause serious detriment to public health. Such an innovation would be, furthermore, in contravention of the text and spirit of the law of 1892, which reserves to doctors of medicine the practice of the medical profession. The administrative council of the Syndicat des médecins utilized this opportunity to call the attention of the public authorities, and, more particularly, of the minister of public health, to the inadvisability and the danger of so-called paramedical diplomas in general, which, conferring, as they do, apparent scientific authority on mere aids of physicians, are of a character to deceive and work a detriment to the public.

Books for the War Blind

The American committee in aid of the war blinded, which is under the patronage of M. Millerand, president of the French Republic, President Wilson, and the king and queen of Belgium, is about to open shortly a large publishing house for books printed in the braille system. It is thought that the annual capacity of the plant will be around 30,000

volumes. The plates will be made of zinc and will be preserved. The work to be printed will be dictated by machines, and six or seven operators will be able to work simultaneously. The final proof pages will be read by a blind man. It has been found feasible to print the braille characters on both sides of the paper, an innovation which will permit a saving of 50 per cent. in paper, while the more extended use of abbreviations will mean a further economy of 30 per cent. Books in braille characters will thus be less bulky and more easily handled. The organizing committee estimates that it will be possible to publish a volume in less than twelve days. This publishing house will distribute gratuitously books published in the language desired to the blind soldiers of France and allied countries. It will also furnish to the civilian blind any surplus of books not needed by the war blinded. It will publish a journal in braille characters, and plans also to get out reading courses.

The Committee on Prophylaxis Against Tuberculosis

The American Rockefeller Mission, which, for several years, has been pursuing in France an active propaganda against tuberculosis, has just turned over its services and its activities to the Comité national de défense contre la tuberculose, which, under the direction of M. Léon Bourgeois, Professors Calmette and Léon Bernard and M. Georges Risler, president of the Musée social, will assume this publicity campaign, by means of lectures, motion pictures, etc.

The Dangers of White Lead

At the instigation of the Ligue des sociétés de la Croix-Rouge, a league which comprises today the national societies of forty-three countries, a special meeting was called recently in the large amphitheater of the Sorbonne, the object of which was to support the universal adoption of resolutions proposed by the third international conference of labor, held at Geneva in 1921, for the protection of workmen painters against the grave dangers connected with the use of white lead.

Practical Instruction in Child Welfare

M. Léon Bérard, minister of public instruction, and M. Strauss, minister of public health, recently addressed to the departmental prefects a circular letter concerning practical instruction in child welfare in the primary schools for girls. The circular emphasizes how essential it is for girls from 10 to 13 years old to know the main rules to follow and the elementary principles to be applied to promote the health of young children, especially in the fight against infant mortality. This instruction would not overload the curriculum if it were reduced to the imparting of a few well established facts, outside of class hours, by a woman who would assist the pupils every Thursday morning (Thursday is a holiday in the French schools) in a consultation hour for infants, a *crèche* or something of a similar nature.

Sex Education in the Lycées, or Secondary Schools

An inquiry has been instituted among the various associations whose membership is made up of the parents of the pupils in the lycées, in order to get an expression of opinion on the question of introducing into the course in natural science, as now given in the lycée, the study of the phenomena of human reproduction. Five such associations of parents (Angoulême, Calais, Cherbourg, Lyons and Lycée Janson de Sailly at Paris) have taken a pronounced stand against such instruction. Four associations (Bordeaux, Grenoble, Marseilles and Philippeville), on the other hand, have expressed themselves in favor of the modified course. Some associations have not as yet expressed an opinion, and others have expressed themselves in such doubtful terms as to make it impossible to classify them among either the advocates or

the opponents of the proposed plan. All the associations, however, are agreed that sex instruction is incumbent on the family as such, but, since it has been established that, for various reasons, most parents fail to perform their duty in this respect, some associations of parents hold that the schools should be asked to take over the task.

Eighth Congress of Legal Medicine

The eighth congress of *Médecine légale de langue française* will assemble in Paris, May 24-26, 1923, under the chairmanship of Dr. Pierre Parisot, professor of legal medicine of the *Faculté de médecine* of Nancy. The questions on the program are: (1) traumatisms of the spine and industrial accidents, papers by Professor Etienne Martin (Lyons) and Dr. Mazel; (2) the law in regard to industrial diseases, papers by Professor Balthazard (Paris) and Dr. Piédelièvre, and (3) international regulation of the sale of cocaine, paper by Dr. Courtois-Suffit of Paris.

BUENOS AIRES

(From Our Regular Correspondent)

Feb. 20, 1923.

Government Intervention in Student Strikes

Hardly had President Alvear assumed charge of the government, when it was realized that order and discipline would again prevail in the universities, which are here under government control. At Rosario, immediately after several unruly actions by medical students, the directing board applied disciplinary measures to those responsible. The rector of the university revoked these measures, but the faculty, considering the matter one purely under its jurisdiction, refused to pay any attention to the rector's decree. Then the rector, at the head of a number of students, presented himself at the school, demanding that the faculty obey his instructions. The dean again refused to yield, and the federal government sent a commissioner, Dr. B. Nazar Anchorena, to deal with the situation. An agreement was reached, but the rector refused to carry out his part of it. Dr. Nazar Anchorena was again sent from Buenos Aires, with full powers to decide the matter. On reaching Rosario, he found the dean and several professors besieged in their own office by a number of students, who had cut off both water and light. On the evening of Dr. Anchorena's arrival, he was hooted by a group of students headed by the rector and several professors. On receipt of Dr. Anchorena's report, the rector, a few other professors and the student ringleaders were dismissed. Thus all attempts to create trouble failed, in spite of some political encouragement. It is felt that the government will not put up with further disturbances, and that it will uphold discipline even at the cost of closing the school.

At Cordoba, the professors in the medical school and a great many other prominent persons have petitioned the government to investigate affairs at the school, as its management, they assert, is now in the hands of students who boast of being communists and antinationalists.

Reorganization of Tuberculosis Sanatorium

The Commission on Regional Homes and Hospitals, consisting of Drs. Cabred, Justo and Reibel, was compelled to reorganize the tuberculosis sanatorium at Santa Maria (Cordoba), as strikes by either patients or nurses, or serious internal disturbances, had become of daily occurrence. This was chiefly due to the fact that politicians had got hold of the administration. To put an end to such an anomalous situation, Dr. Luzuriaga was appointed acting superintendent so that he might reorganize the sanatorium. Once this was done, Dr. Roballos was appointed superintendent. The com-

mission is planning to build in the vicinity of the sanatorium a sufficient number of cottages to care for 1,000 patients.

At Rosario, a tuberculosis sanatorium was opened at Saladillo, one of the most populous suburbs of the city.

Control of Habit-Forming Drugs

The steady increase in the use of habit-forming drugs, such as morphin, and especially cocaine, is forcing the authorities to intervene in the matter. The provincial government of Cordoba has just approved a very rigid law to combat drug habituation, and the federal government is empowered by congress to assume charge in the whole country.

Colony for Deserted Minors

A large and up-to-date colony and reformatory for deserted minors has been opened at Olivera, Buenos Aires Province. The institution is well equipped, and has been placed in charge of the Commission on Regional Homes and Hospitals.

Smallpox

With the exception of sporadic cases at Corrientes and Embarcacion (Salta), smallpox has apparently disappeared. The Cordoba board of health states that it has vanished altogether from the province. The disease, however, persists in Chile and has just made its appearance in Uruguay, where it was imported from Brazil. It was so mild at first that it was diagnosed chickenpox. The physicians have confirmed the diagnosis of mild smallpox. Mortality has not exceeded 10 per cent. There have been several hundred cases in Uruguay, and the disease has spread to Montevideo, although the authorities there assert that the outbreak has come to an end.

Health Conference

At the call of the president of the National Department of Public Health, a meeting of national and provincial authorities will be held in this city, for the purpose of making the laws uniform, broadening the powers of the national government, and coordinating the efforts of the several authorities. The preliminary program is quite comprehensive.

Conference on Hygiene, Microbiology and Pathology

The Third South American Conference on Hygiene, Microbiology and Pathology was held in Montevideo, January 28-February 3. The first conference on medical pedagogy was held concurrently. Besides the many Uruguayan delegates, representatives from other countries included: Drs. F. A. Justo, A. Bachman, J. Carbonell, B. A. Houssay, G. Araoz Alfaro and A. Sordelli from Argentina; Drs. A. de Castro, S. Libanio, A. de Assos, G. Moura Costa and Toledo Dods-worth from Brazil; Dr. D. Fernandez Espiro from Ecuador; L. Migone from Paraguay, and J. Gonzalez from Peru. Many papers were presented on such subjects as hookworm disease, malaria, typhoid fever, venereal diseases and tuberculosis. Favorable comment was made on public health work at Minas Geraes by Sr. S. Libanio, and at Corrientes and Tucuman by A. Bachman. Valuable studies were submitted by Dr. A. Sordelli on antigangrenous polyvalent serum; by Cleaux and Assis on classification and preservation of meningococci, and by Houssay and Kraus, on snake venom.

At the meeting on medical pedagogy, two reports and three papers were presented. Aloysio de Castro sketched a general plan for the international exchange of professors. G. Araoz Alfaro insisted on the need of creating a special health corps, well paid and independent of politics. Dr. B. A. Houssay dwelt on the need of developing research institutes in medical schools, and of infusing the research spirit in students. A convention was signed at referendum,

creating at Montevideo an office headed by Professor Ricaldoni, which will have charge of correlating medical curriculums and establishing exchange of professors, and which will publish a journal with abstracts of all Latin American work on medicine and medical pedagogy. The next conference will be held at Buenos Aires in May, 1925.

HOLLAND

(From Our Regular Correspondent)

March 3, 1923.

The Campaign Against Diphtheria

The public health authorities of the Netherlands recommend the launching of a more active campaign against diphtheria. The royal serologic institute has on hand an adequate supply of toxin-antitoxin, which has been placed under the control of Professor Spronck, who has also succeeded in preparing a toxin the judicious use of which appears absolutely harmless to persons under examination. The minister of labor has authorized the free distribution of this toxin and of the toxin-antitoxin mixture to physicians who wish to apply the Schick test and immunization under the direction of the public health officer of the district. The purpose of the latter stipulation is, partly, the unification of methods, and, secondly, the securing of information that will make it possible to perfect the methods. Every physician who, on his own responsibility, may wish to employ vaccines prepared in a different manner is likewise, and for the same reasons, requested to take advantage of the cooperation of the public health officer.

Mortality Among Women

Dr. Sanders has published the results of his inquiry into the mortality statistics of married and unmarried women in Rotterdam. From the standpoint of social hygiene, this inquiry presents considerable interest for the reason that the statistics are quite extensive, covering, as they do, the period from 1913 to 1921. It appears from his report that the mortality among unmarried women, from 20 to 49 years of age, is 4.97 per thousand, whereas the mortality of married women is 5.65 per thousand. But the relation of the two figures is entirely reversed when we consider the mortality from tuberculosis, which, among the causes of death, was the most frequent. The mortality rate from tuberculosis among the unmarried women was 2.25 per thousand; among the married women it was only 1.58 per thousand. One peculiar fact is revealed when we compare the mortality rates during recent years; namely, that, during the years of the war, mortality from tuberculosis among unmarried women increased enormously as compared with the rate found among married women.

Tumors in the Dutch East Indies

An excellent study on the pathology of tumors in the Dutch East Indies has been presented by Drs. Guyders and Stroub to the Nederlandsche vereeniging voor tropische geneeskunde. Some general points deserve to be noted in this communication, more particularly the frequency of malignant tumors. The Javanese and Chinese coolies in the Dutch East Indies are affected by malignant tumors at least as much as persons inhabiting European countries. The writer does not seem to accept the aphorism of Hoffmann to the effect that the frequency of cancer diminishes as one approaches the equator. Certain peculiarities with respect to the classification of tumors are very remarkable. For instance, primary carcinoma of the liver is extremely frequent not only among the Chinese but also among the Javanese, occurring in 90 per cent. of the cases of cirrhosis of the liver. Cancer of the stomach is common in the Chinese but rare in the Javanese. In spite of the multiplicity of intestinal affections in the

tropical countries, malignant tumors of the gastro-intestinal tract are very rare. Melanomas and uterine fibromas are seldom found.

Ceremonies in Honor of Pasteur

Like most countries, Holland also was pleased to celebrate the hundredth anniversary of the birth of Pasteur. The Société hollandaise pour le progrès de la médecine appointed a committee to plan and take charge of the ceremonies, which were held at Amsterdam. Drs. Jacger, Kluyver and Spronck referred in their addresses to the threefold scientific activity of the great savant: chemical, microbiologic and pathologic. Dr. Calmette, assistant director of the Pasteur Institute in Paris, reviewed the principal events in the life of this eminent Frenchman. In the museum of the hygienic laboratory, an exhibition of engravings, relics and apparatus pertaining to the life of Pasteur was held. The committee also collected subscriptions toward the erection of the contemplated Pasteur monument at Strasbourg.

The Plague in the East Indies

The Koloniaal Verslag of 1922 contains some interesting facts on the subject of the cases of plague observed during 1921 in the Dutch East Indies. There had been only a few cases up to the middle of the year, but after July they increased until the incidence was five times what it had been at the beginning of the year, reaching the climax in December, in which month 1,800 cases were reported.

Organization of the Fight Against Tuberculosis

The government commission charged with the organization of the fight against tuberculosis has continued its important work, which includes the campaign against insanitary dwellings, the introduction of better methods of discovering the cases that exist, the amelioration of living conditions, and prophylaxis through education and through the adoption of stricter hygienic measures. In a supplement to its publications it outlines the methods employed in the fight against tuberculosis in the Netherlands. All the powers are centralized in the minister of public health. He has as his aids an inspector and a committee, composed of members of the Council of Hygiene, which is organized for the purpose of securing information. The organizations which are the effective factors in the fight against tuberculosis are formed by the local societies, with their offices of consultation, which are under the jurisdiction of the inspector and keep in close touch with the hygienic services of the district and with the directors of these services. Besides these services scattered all over the country, it is necessary to create an institute for scientific research in the field of tuberculosis. In addition, in the principal town of every district it is well to organize a central bureau of consultation with a modern, up-to-date equipment, much more complete than the consultation offices that function in each locality.

Marriages

FRANK VAN DOREN, Seaside, Ore., to Miss Josie L. Housken of San Francisco, February 3.

G. W. WAINWRIGHT to Miss Edith Anderson, both of London, Ont., Canada, January 17.

ERNEST W. ZUMSTEIN to Miss Margaret Vail, both of Delhi, Ont., Canada, recently.

MADISON J. KEENEY, Phoenix, Ariz., to Miss Cecile Boyd of Los Angeles, February 15.

CLAUDE MOSLEY BAKER, Minden, La., to Miss Lily Posner of New Orleans, March 20.

OLIVER BERNARD SIMON to Miss Edith Burr Baker, both of Batavia, Ill., recently.

Deaths

Lewis Coleman Morris ☉ Birmingham, Ala.; University of Virginia Department of Medicine, Charlottesville, 1892; professor of gynecology and abdominal surgery since 1912, and formerly dean at the University of Alabama Graduate School of Medicine, Birmingham; member of the American Association of Obstetricians and Gynecologists, and the Southern Surgical Association; past president of the Medical Association of Alabama; member of the board of health; aged 51; died suddenly, March 23, of heart disease.

William Robson Nichols, Winnipeg, Manit., Canada; Trinity Medical College, Toronto, Ont., 1886; F.R.C.S., England, 1902; L.R.C.P., London, 1899; president of the Winnipeg Clinical Society; examiner in surgery at the Manitoba Medical College, Winnipeg, in 1908; at one time house surgeon at Guy's Hospital, London, England; member of the American Association of Gynecology; aged 63; died recently, of cerebral hemorrhage.

Ernest Eugene Levers ☉ Sheridan, Wyo.; Ohio Medical University, Columbus, 1898; president of the Sheridan County Medical Society, and past president of the Wyoming State Medical Society; formerly member and president of the state senate; member of the state board of medical examiners; at one time medical director of the Wyoming General Hospital (Sheridan County Memorial Hospital), where he died, March 16, of septicemia, aged 51.

Robert M. Funkhouser ☉ St. Louis; New York University Medical College, New York, 1874; also a lawyer; formerly professor of topographical anatomy, pathology and clinical surgery, Beaumont Hospital Medical College, St. Louis; at one time president of the state medical association and the St. Louis Medical Society; served in the M. C., U. S. Army, during the World War; aged 73; died, March 13, of heart disease.

Charles E. Preston, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1904; L.R.C.S., L.R.C.P., Edinburgh, 1906; L.R.F.P.S., Glasgow, Scotland, 1906; served during the World War with the Canadian Army Medical Corps in France; aged 38; died, February 7, of pneumonia.

James Samuel LaBelle, Windsor, Ont., Canada; Detroit College of Medicine and Surgery, Detroit, 1897; Trinity Medical College, Toronto, 1898; for twenty years coroner of Essex County; member of the school board and the city council; aged 55; died suddenly, March 9, of heart disease.

Cummins E. White, Buckhannon, W. Va., Baltimore University School of Medicine, Baltimore, 1892; member of the West Virginia State Medical Association; formerly superintendent of the Weston State Hospital, Weston; aged 54; died, March 14, of carcinoma of the stomach.

John Edward North, Rock Rapids, Iowa; Hahnemann Medical College and Hospital, Chicago, 1895; member of the Iowa State Medical Society, and president of the Lyon County Medical Society; member of the board of education; aged 54; died suddenly, March 14, from asthma.

Howard Aiken Ijams, Knoxville, Tenn.; University of Michigan Medical School, Ann Arbor, 1897; served in the M. C., U. S. Army, during the World War; formerly city physician; aged 49; was instantly killed, March 7, when his automobile was struck by a street car.

Albert D. Lake, Gowanda, N. Y.; Western Reserve University School of Medicine, Cleveland, 1868; physician to the New York State Indian Agency and the Thomas Indian School on the Cattaraugus reservation since 1888; aged 77; died, March 14, of heart disease.

Levi B. Casey, Marion, Ill.; University of Louisville Medical Department, Louisville, Ky., 1885; University of Illinois College of Medicine, Chicago, 1888; member of the Illinois State Medical Society; aged 60; died, March 14, of pneumonia following influenza.

Archibald McLay, Woodstock, Ont., Canada; Victoria University Medical Department, Toronto, 1868; practitioner in Woodstock for half a century; member of the city council, board of education and for many years health officer; aged 80; died, January 28.

James Edward Keating, Portland, Me.; Medical School of Maine, Portland, 1895; formerly professor of clinical medicine at his alma mater; on the staffs of the Maine General

and Children's hospitals; aged 58; died, February 26, following a long illness.

Ralph Ellis Leidy, Boyertown, Pa.; Jefferson Medical College of Philadelphia, 1914; for three years president of the board of health; served in the M. C., U. S. Army, during the World War; aged 36; died, March 13, of pleuropneumonia.

Julius B. Ransom ☉ Dannemora, N. Y.; University of Vermont College of Medicine, Burlington, 1880; for thirty-four years chief physician at Clinton State Prison and Hospital for Criminal Insane; aged 68; died, March 15, of cerebral hemorrhage.

John Eugene Breglia, New York; Cornell University Medical College, New York, 1909; member of the Medical Society of the State of New York; formerly on the staff of the New York Post-Graduate School and Hospital; aged 36; died, March 19.

Otis Talbert Morey, Salisbury, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1898; member of the Missouri State Medical Association; served in the M. C., U. S. Army, during the World War; aged 46; died, March 8, of influenza.

Thomas Matthews Watson, Griggsville, Ill.; Eclectic Medical Institute, Cincinnati, 1874; member of the Illinois State Medical Society; secretary of the board of education for thirty-seven years; aged 71; died, March 18, of influenza.

James M. Raby, Windsor, Va.; University of Louisville Medical Department, Louisville, 1885; member of the Medical Society of Virginia; founder and president of the Farmer's Bank of Windsor; aged 62; died, February 28.

Mary Bridges White, Palo Alto, Calif.; Chicago Homeopathic Medical College, Chicago, 1880; Hahnemann Medical College and Hospital, Chicago, 1896; formerly a practitioner in Wisconsin; aged 66; died, March 17.

David S. Hollenback, Shamokin, Pa.; Jefferson Medical College of Philadelphia, 1882; member of the Medical Society of the State of Pennsylvania; Civil War veteran; aged 87; died, March 20, of senility.

Louis E. Barton ☉ Malta, Ill.; State University of Iowa College of Medicine, Iowa City, 1886; formerly president of the DeKalb County Medical Society; aged 63; died, March 20, of cerebral hemorrhage.

William Henry Neumeyer, Fort Wayne, Ind.; Bennett Medical College, Chicago, 1913; formerly a practitioner in Chicago; member of the Indiana State Medical Association; aged 60; died, March 14.

Carl Ernst Wilhelm Levin, New York; New York University Medical College, New York, 1895; member of the Medical Society of the State of New York; aged 58; died, March 15, of pneumonia.

Andrew B. Beattie, Anna, Ill.; St. Louis Medical College, St. Louis, 1859; Civil War veteran; for thirty-five years on the staff of the Anna State Hospital; aged 90; died, March 28, of septicemia.

Rolph Brown ☉ Toledo, Ohio; Detroit College of Medicine and Surgery, Detroit, 1897; member of the Michigan State Medical Society; aged 50; died, February 26, of cerebral hemorrhage.

Lewis Whaley ☉ Birmingham, Ala.; Atlanta Medical College, Atlanta, Ga., 1873; aged 75; was instantly killed, March 15, when the automobile in which he was driving was struck by a train.

Sidney P. Cooke, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1869; practitioner in Ottawa for more than half a century; aged 79; died, January 30.

William Campbell Hays, Lorain, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, Cleveland, 1901; aged 49; died, March 20.

John Holderread, Chicago; St. Louis College of Physicians and Surgeons, 1881; aged 65; died, March 6, of heart disease, and the effects of narcotics at the Cook County Hospital.

Theodore Fassitt, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1869; Civil War veteran; aged 78; died suddenly, March 12, of heart disease.

Frank P. Gillis ☉ Lake Helen, Fla.; Missouri Medical College, St. Louis, 1876; formerly a practitioner in Illinois; aged 68; died, March 12, following a long illness.

William Earley Burtless ☉ St. Clair, Mich.; University of Michigan Medical School, Ann Arbor, 1878; proprietor of the St. Clair Hospital; aged 76; died, March 11.

Ulrich H. Hon, Los Angeles; University of Louisville Medical Department, Louisville, 1875; aged 72; was instantly killed by an electric train at Alhambra, March 15.

Samuel W. Fariss, Lafayette, Ga.; University of Tennessee College of Medicine, Memphis, 1878; member of the Medical Association of Georgia; aged 68; died, March 12.

Robert Newton Greenfield Ⓢ Springboro, Pa.; University of Michigan Medical School, Ann Arbor, 1869; Civil War veteran; aged 80; died, March 11, of myocarditis.

Alonzo O. Blair, Pittsburg, Kan.; St. Louis Medical College, St. Louis, 1877; member of the Kansas Medical Society; aged 69; died, March 17, following a long illness.

Ernest T. Horton, Whitehall, N. Y.; New York Homeopathic Medical College, New York, 1881; aged 54; died, March 16, of epidemic (lethargic) encephalitis.

Robert H. Scott, New Westminster, B. C., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1905; aged 41; died, January 23, following a long illness.

Arthur Wilson Taylor, Glendale, Calif.; Medical Department of Columbia College, New York, 1880; captain, M. C., U. S. Army, retired; aged 66; died, March 8.

Louise Erich, Baltimore; Woman's Medical College of Baltimore, 1895; emeritus professor of orthopedic surgery at her alma mater; aged 60; died, March 6.

Elijah Wooley, Saybrook, Ill.; Hahnemann Medical College and Hospital, Chicago, 1880; Civil War veteran; aged 80; died, March 14, of cerebral hemorrhage.

Lewis S. Walter, Fife Lake, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1876; aged 74; died, March 13, of cerebral hemorrhage.

Orville Nalle, Elkwood, Va.; University of Virginia Department of Medicine, Charlottesville, 1884; aged 60; died, February 18, of cerebral hemorrhage.

D. Edgar Hutchison Ⓢ Downingtown, Pa.; Medico-Chirurgical College of Philadelphia, 1905; aged 40; died, March 12, following a long illness.

John A. Brown, Belgique, Mo.; Barnes Medical College, St. Louis, 1898; member of the Missouri State Medical Association; aged 46; died, January 12.

Alfred T. Livingston Ⓢ Jamestown, N. Y.; University of Buffalo (N. Y.) Department of Medicine, 1873; aged 73; died, February 18, at Baltimore.

Elias La Fontaine Burnham, Millbrook, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1865; aged 80; died, February 9.

Luther Reeve Hallock Ⓢ New York; New York University Medical College, New York, 1888; aged 74; died, March 18, of carcinoma of the liver.

Charles T. Kennedy Ⓢ Greenville, Texas; Georgetown University School of Medicine, Washington, D. C., 1892; aged 50; died, March 11.

James Dunlavy, Maramee, Okla.; College of Physicians and Surgeons, Keokuk, Iowa, 1870; Civil War veteran; aged 75; died, March 7.

Henry T. Knapp, Sackville, N. B., Canada; McGill University Faculty of Medicine, Montreal, Que., 1895; aged 51; died, January 31.

John D. Herman Ⓢ Conde, S. D.; Medical College of Ohio, Cincinnati, 1886; also a druggist; aged 64; died, February 24, of pneumonia.

John M. Linegar, Fairfield, Ind.; Louisville Medical College, Louisville, Ky., 1894; aged 61; died, March 12, of cerebral hemorrhage.

Harvey Shaw Clerke, Toronto, Ont., Canada; Victoria University Medical Department, Toronto, 1883; aged 70; died, March 22.

Dewitt F. Eskew, Poplar Bluff, Mo.; University of Tennessee College of Medicine, Memphis, 1877; aged 74; died, February 14.

Thomas Hazen Humphreys Ⓢ Kisse Mills, Mo.; Drake University College of Medicine, Des Moines, 1884; aged 59; died recently.

J. C. Wells, East Stone Gap, Va. (licensed, years of practice); Civil War veteran; aged 79; died, March 11, of acute indigestion.

Frank Campbell, Hepworth, Ont., Canada; Trinity Medical College, Toronto, 1885; aged 64; died, January 30.

Eugene Stanley Hay, Wyoming, Pa.; Detroit Medical College, Detroit, 1881; aged 64; died, March 17.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

OWL ENAMEL TOILET CREAM

A Poisonous Cosmetic Sold with No Warning to the Public

"Owl Enamel Toilet Cream" manufactured by the Owl Drug Co. of Kansas City, Mo., is sold for the alleged purpose of "Beautifying the Complexion and Rendering the Skin Soft and Velvety." The jar in which this preparation comes bears a label reading:

"Think of a remedy having the power of summoning instantly to the face and neck the color and brilliancy of youth! Just what you want to use before going to the theatre or shopping, as it may be applied as often as you choose during the day it gives the face instantly a soft beautiful flush and brilliancy."

Some months ago Dr. Henry W. Woltman of Rochester, Minn., sent to THE JOURNAL a report¹ of a case of lead poisoning in a woman who had been using Owl Enamel Cream. With his report Dr. Woltman sent an opened and partly used specimen of the preparation which he stated, on analysis, had showed a very high lead content. At the time Dr. Woltman's article was ready for publication in THE JOURNAL, the Propaganda department obtained from the Owl Drug Company of Kansas City some original unopened packages of Owl Enamel Cream which were submitted to the A. M. A. Chemical Laboratory for a more exhaustive analysis. The laboratory reported:

LABORATORY REPORT

An original, unopened package of Owl Enamel Toilet Cream (Pink), manufactured by the Owl Drug Co., Kansas City, Mo., was submitted to the A. M. A. Chemical Laboratory for analysis. No information was given on the label concerning the composition of the preparation. The package contained a pink, perfumed mass, having about the consistency of fresh putty. On standing the preparation became harder and apparently drier. Qualitative tests indicated the presence of a lead compound, a calcium compound, a carbonate, glycerin and traces of phosphate, iron and some substance insoluble in nitric acid which was probably talc. Bismuth salts, mercury salts, zinc salts, casein, fats, lanolin, petrolatum or starch, substances sometimes found in face creams, were absent. Analysis indicated that the composition of the preparation is essentially as follows:

Lead carbonate (basic).....	42.5 per cent.
Calcium carbonate.....	40 per cent.
Glycerin	7 per cent.
Insoluble matter (probably talc).....	0.5 per cent.
Iron, phosphate and coloring.....	traces
Water* (by difference).....	10.0 per cent.

It is evident from this analysis, therefore, that Owl Enamel Toilet Cream (Pink) is composed essentially of lead carbonate, calcium carbonate and glycerin.

The indiscriminate sale of a preparation of this sort is not merely a menace to the public health but a commentary on the laxity of our laws. It is notorious that certain salts of lead have for years been responsible for cases of chronic lead poisoning, due to their employment in cosmetics. As Peterson and Haines in their Text-Book of Legal Medicine and Toxicology said twenty years ago "the use of 'flake white' as a cosmetic has caused every form of chronic lead poisoning." In spite of this any concern, responsible or irresponsible, can sell for the indiscriminate use of the girls and women of the country a cosmetic loaded down with this poisonous ingredient, and they are not required to give any hint as to the potential dangers nor even to declare the presence of the poison.

1. Woltman, H. W.: Lead Poisoning from Face Enamel, J. A. M. A. 80: 1685 (Nov. 11) 1922.

Correspondence

CAUTION IN USE OF MERCUROCHROME-220 SOLUBLE

To the Editor:—Mr. E. J., who had been receiving injections of a 2 per cent. solution of mereurochrome-220 soluble into the bladder twice a week, complained of severe burning and inability to retain the solution, and stated that he would refuse further treatment unless the inconvenience could be controlled.

I then injected into the bladder 1 ounce (30 c.c.) of a 5 per cent. solution of procain, followed in five minutes by 1½ ounces (45 c.c.) of mercurochrome-220 soluble. He left the office in a few minutes without any discomfort. Three hours later he returned unable to urinate. I passed a No. 22 French catheter and withdrew 8 ounces (235 c.c.) of urine, together with numerous pieces of solidified mercurochrome. The catheter became plugged, so I withdrew it and introduced a 26 French metal evacuating catheter and proceeded to clean the bladder. Innumerable pieces of solidified mereurochrome were evacuated, but, as the process became very painful to the patient, I stopped and filled the bladder with 6 ounces (175 c.c.) of a 1 per cent. solution of sodium carbonate, which he retained for one hour. He urinated freely, and the solution was highly crimson with dissolved mercurochrome. I irrigated the bladder twice a day for three days; finally the solutions remained colorless. Later, cystoscopy revealed the bladder clear.

CHARLES E. STOLZ, M.D., Los Angeles.

"THE INTRACUTANEOUS GUINEA-PIG TEST FOR HUMAN SUSCEPTIBILITY AND IMMUNITY TO DIPHTHERIA"

To the Editor:—The tendency to attach names to surgical procedures, to clinical phenomena and to various laboratory tests is exemplified by the second paper of Dr. W. H. Kellogg (*THE JOURNAL*, March 17, 1923, p. 748) describing a "new" test for immunity to diphtheria. This test is a modification of the old established method of Römer's for the intradermal demonstration in the guinea-pig of small amounts of diphtheria antitoxin contained in human serum. Ten years ago I used successfully a similar but more accurate modification of this test, which I described later (*J. Infect. Dis.* **19**:557 [Oct.] 1916).

These antitoxin tests were made by me to establish some of the fundamental principles in the active immunization with toxin-antitoxin before Dr. Park and I introduced the Schick test as a part of the process of active immunization against diphtheria. We were only too glad to discard the routine use of the intradermal test in the guinea-pig, and to adopt the Schick test. This test is well known now for its great simplicity and extreme reliability when properly carried out. It is a direct test on the human being instead of a roundabout and complicated one in the guinea-pig. The very reliability of the Schick test, which has been confirmed now by many observers in different countries, is proof of its value. The so-called "Kellogg" test is simply a crude application of my own modification of Römer's method.

Dr. Kellogg's suggestion has one advantage, that when a physician does not know the Schick test and wishes to determine the presence or absence of antitoxin in an occasional child, "Kellogg's" application of "Zingher's" modification of Römer's test is of practical value.

Some of the objections that Dr. Kellogg raises to the Schick test are overdrawn. After making the test on more than 200,000 children in this city, I have become thoroughly convinced that the Schick reaction is the method of choice

in simplicity and reliability for the testing not only of large numbers but also of a single individual. It is up to the physician to demand from the manufacturing laboratories reliable Schick outfits and to learn the simple technic of the test and its interpretation. He will then not have to take samples of blood from his patients and depend on central laboratories for his knowledge whether these patients are susceptible or immune to diphtheria. He will also not have to fear the various sources of error that may so easily creep in to render the intradermal guinea-pig test unreliable and untrustworthy in its results.

ABRAHAM ZINGHER, M.D., New York.

Assistant Director, Bureau of Laboratories,
New York City Department of Health.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DOSAGE OF BETANAPHTHOL AND OF CARBON TETRACHLORID

To the Editor:—What is the dosage of (1) betanaphthol and (2) of carbon tetrachlorid?

OSWALD O. KAER, M.D., Edward, N. C.

ANSWER.—1. The dose of betanaphthol given in the U. S. Pharmacopeia is 0.25 gm. (4 grains). The dose used by Leach and Hampton (*THE JOURNAL*, Jan. 6, 1923) in the treatment of hookworm disease was 3.25 gm. (50 grains) in powdered form, administered on an empty stomach and without purge.

2. The dose of carbon tetrachlorid as used by Lambert in the treatment of hookworm disease (*THE JOURNAL*, Feb. 24, 1923) was 0.2 c.c. (3 minims) for each year of age up to 15 years. Adults were given from 3 to 4 c.c. (45 to 60 minims); with this dosage a total of 42,000 cases was treated without untoward results. There were three fatalities, however, in the last 8,000 of their 50,000 cases. While it was assumed that these deaths were due to using an impure drug, Lambert says, it is possible that the dose, as noted, is larger than is desirable. Smillie and Pessoa (*Am. J. Hygiene*, January, 1923) caution that larger doses than 3 c.c. are unnecessary and may be dangerous. Alcoholics are stated to be especially susceptible to the toxic effects of the drug, and partially intoxicated persons or those recovering from drunkenness should not be treated.

INTESTINAL TRICHOMONIASIS

To the Editor:—I should like to know the details of Escamel's treatment for intestinal trichomoniasis.

M.D., Necaxa, Mexico.

ANSWER.—Escamel has described two treatments for intestinal trichomoniasis in his book "La Trichomonosis Intestinal." In the one that he prefers, for three days a tablespoonful of this prescription is taken every two hours: pure oil of turpentine, from 2 to 4 gm.; camphorated tincture of opium, from 6 to 12 gm.; acacia, 120 gm.; syrup of acacia, 30 gm. Diet is restricted to carbohydrates, and liquid ingestion to rice water. In addition, from one to three enemas are given, alternated as follows: first, an evacuating injection; second, a retention enema comprising 4 spoonfuls of boiled water, a beaten egg yolk, 10 drops of tincture of opium and from 15 to 30 drops of oil of turpentine. After three days' treatment a fecal examination is made. If *Trichomonas* is not found, all treatment ceases and the diet is gradually changed to normal. If cysts are found but no living organisms, the treatment is continued, the dosage of oil of turpentine being gradually decreased until the cysts finally vanish. If there are living protozoa besides cysts, the treatment is pushed until *Trichomonas* disappears. Escamel has also used with success turpentine in keratin capsules. (See also abstract, *THE JOURNAL*, March 17, 1919, p. 1501.)

Escamel insists on the value of correct diagnosis, as the treatment must be modified, if the infection is mixed.

NOURISHMENT OF THE MUSCLES

To the Editor:—Please tell me how the nerves nourish the muscles. Is it by the blood? Why do the muscles not shrink more? The paralyzed muscle shrinks away from one-third to one-half its volume—why does it not continue to shrink if it is the only cause? Have the vasomotor nerves anything to do with it? Or the medulla oblongata?
D. O., Urbana, Ohio.

ANSWER.—The muscles obtain their nourishment directly from the blood as it circulates through them. A healthy nerve is, however, necessary for the health of the muscle, for the reason that when the stimulation of the muscle stops, as it does when the nerve is cut or otherwise interrupted, the muscle cells no longer have work to do and rapidly atrophy and disappear. The amount of wasting depends on the degree of loss of function, and this is completely lost only when the peripheral nerve is gone. If the paralysis is due to damage to the connections which exist between the brain and the peripheral nerve, the muscle can no longer be set in action through the will, but it can still be stimulated through the lower reflex centers in the spinal cord. Under these circumstances there is some loss of use and slight wasting. But when the peripheral nerve is gone, no stimulation at all is possible and the muscle wastes away entirely. Partial wasting to the extent mentioned by our correspondent is usually due to the fact that the nerve fibers to the particular muscles are not all interrupted. The vasomotor nerves go to the unstriated muscles of the walls of the blood vessels and assist in the regulation of the size of the vessel, and thus help in the control of the blood supply to the voluntary muscles. The medulla oblongata contains the cell bodies of some of the cranial nerves (the peripheral nerves of the tongue, face and lips, and also those which move the jaws). Damage in this part of the nervous system would therefore cause atrophy of the corresponding muscles, just as damage in the spinal cord will result in atrophy of the limb muscles that happen to be supplied from nerve cells lying in the part of the cord damaged.

ZONITE

To the Editor:—The subject "Zonite" was referred to me . . . to find out its true germicidal value. . . . I understand it is a trade name for what was formerly known as the Carrel-Dakin solution, except the new product is supposed to be much stronger and now used as a disinfectant for iceboxes, etc. It is in view of the latter that I am writing to you to ask for a report on Zonite.
D. H. S., New York.

To the Editor:—Will you kindly inform me as to the action of the Council on the preparation "Zonite," manufactured by the Zonite Products Company of New York. I have had numerous inquiries from patients as to its value.
C. W. FRIDY, M.D., Philadelphia.

ANSWER.—Zonite was first put on the market in 1916, the firm at that time being called the "Foosse Chemical Co.," Dayton, Ohio. Later it was advertised as a typical "patent medicine," the firm name being the "Zonite Products Co.," New York. Zonite is exploited as a new and wonderful discovery, based on the "Carrel-Dakin" solution; according to the advertisements which have appeared within the last year, it took six years after the announcement of the "Carrel-Dakin" solution before certain defects could be overcome, and the new product "Zonite" could be presented. This, of course, is quite at variance with the fact that Zonite was known in 1916. The propaganda for Zonite is, in effect, a capitalization of the work of Carrel-Dakin and others. The write-up purports to be that of the chemist who "perfected the process," but the name of the chemist is not given.

Chemically, Zonite, after dilution with an equal part of water, is claimed to be essentially the same as Surgical Solution of Chlorinated Soda (Carrel-Dakin) of New and Nonofficial Remedies. The action and uses of Surgical Solution of Chlorinated Soda, N. N. R., have been fully discussed in medical literature.

Zonite has been exploited to both the physician and the public. It has not been submitted to the Council on Pharmacy and Chemistry.

RELATIVE WEIGHT OF PARTS OF BODY

To the Editor:—Kindly inform me what percentage of the total weight of a normal man his upper leg, lower leg, foot, trunk, upper arm, lower arm, hand and head represent.
E. L. TODD, Jersey City, N. J.

ANSWER.—The relative weight of the parts of the body of a normal man, according to Vierordt (Anatomische, physiologische und physikalische Daten und Tabellen, Jena, Gustav Fischer, 1906, p. 32) is: upper leg, 13.25; lower leg, 5.2; foot, 2.17; trunk, 54.845; upper arm, 3.833; lower arm, 2.15; hand, 1; the entire body, 118.46.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.

DISTRICT OF COLUMBIA: Washington, April 10. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

ILLINOIS: Chicago, April 10-12. Director, Mr. A. M. Shelton, Springfield.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Charles E. Prior, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

OKLAHOMA: Oklahoma City, April 10-11. Sec., Dr. J. M. Byrum, Shawnee.

Virginia December Examination

Dr. J. W. Preston, secretary, Virginia State Board of Medical Examiners, reports the written examination held at Richmond, Dec. 5-8, 1922. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Ten candidates were examined, all of whom passed. Thirteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University.....	(1920)	84,	(1921) 83.5
University of Maryland.....	(1922)		84
Cornell University.....	(1922)	84,	85.5
Jefferson Medical College.....	(1922)		87.9
Medical College of Virginia.....	(1917)	87.8,	(1922) 85.9
University of Virginia.....	(1921)	85.9,	(1922) 91.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University.....	(1908)	Dist. Colum.	
Emory University.....	(1915)	Alabama	
Loyola University.....	(1918)	Illinois	
College of Physicians and Surgeons, Baltimore.....	(1895)	Penna.	
Johns Hopkins University.....	(1920)	Maryland	
University of Maryland.....	(1921)	Maryland	
Albany Medical College.....	(1899)	New York	
Jefferson Medical College.....	(1908)	Pennsylvania,	(1920) W. Virginia
Medical College of the State of South Carolina.....	(1921)	S. Carolina	
University of Tennessee.....	(1915)	Oklahoma	
Vanderbilt University.....	(1916)	Florida	
University of Virginia.....	(1921)	N. Carolina	

South Carolina November Examination

Dr. A. Earle Boozer, secretary, South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, Nov. 14-16, 1922. The examination covered 18 subjects and included 90 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Cornell University.....	(1917)		89
University of Oklahoma.....	(1915)		79.5
Jefferson Medical College.....	(1918)		87.7
University of Tennessee.....	(1898)	86.7,	(1905) 75.7
McGill University, Quebec.....	(1904)		81.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Tulane University.....	(1921)	Alabama,	Louisiana

Louisiana December Examination

Dr. Roy B. Harrison, secretary, Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Dec. 7-9, 1922. The examination covered 12 subjects, and included 100 questions. An average of 75 per cent. was required to pass. Of the 16 candidates examined, 12 passed and 4 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Tulane University.....	(1921)	87.2,	(1922) 82.8, 85.5, 86.3, 86.6
University of Maryland.....	(1917)		90.6
Mcharry Medical College.....	(1922)		82.4

Memphis Hospital Medical College.....	(1908)	77.6*
University of Tennessee.....	(1920) 81.2, (1921)	87.2
Baylor University.....	(1912)	78.3
University of Tomsk, Siberia.....	(1915)†, ‡	84.8
FAILED		
Flint Medical College of New Orleans University.....	(1910)	61.6
Meharry Medical College....	(1915) 63.7, (1917) 58.5, (1921)	70.4
College	LICENSED BY RECIPROCITY	Year Grad. Reciprocity with
Northwestern University	(1921)	Tennessee
Tulane University.....	(1903) Mississippi, (1907)	Alabama
Columbia University	(1914)	Mississippi
University of Texas.....	(1917)	Texas
* This candidate was given 14 per cent. credit for 14 years of practice.		
† Graduation not verified.		
‡ Temporary license granted until completion of citizenship.		

Oregon July Examination

Dr. Urling C. Coe, secretary, Oregon State Board of Examiners, reports the written and practical examination held at Portland, July 4, 1922. The examination covered 12 subjects and included 106 questions. An average of 75 per cent. was required to pass. Of the 21 candidates examined, 12 including 1 osteopath, passed and 9, including 5 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Rush Medical College.....	(1920)		2
Harvard Medical School.....	(1922)		1
Creighton University	(1921)		1
University of Oregon.....	(1922)		7
Osteopath			1
FAILED			
Loyola University	(1919)		1
St. Louis College of Physicians and Surgeons.....	(1914)		1
University of Oregon.....	(1921) 1, (1922)		1
Osteopaths			5

Book Notices

BRONCHOSCOPY AND ESOPHAGOSCOPY. A Manual of Peroral Endoscopy and Laryngeal Surgery. By Chevalier Jackson, M.D., F.A.C.S. Professor of Laryngology, Jefferson Medical College. Cloth. Price, \$5.50 net. Pp. 345, with 118 illustrations. Philadelphia: W. B. Saunders Company, 1922.

In this work the author has combined brevity, thoroughness, detail, simplicity and a clear style with the judgment that comes to one after years of careful work in a given field. The result is an excellent reference book on endoscopic proceedings, taking up in detail the necessary equipment, its care and intelligent use, and the endoscopic anatomy of the respiratory and upper digestive systems, and calling attention to the important structures affecting endoscopic proceedings. The author omits nothing that must be remembered if the welfare of the patient is not to be jeopardized, discussing the preparation of the patient, the anesthetic to be used, and the ever present danger of respiratory arrest, which may call for tracheotomy. He is constantly reminding amateur endoscopists of the danger from overenthusiastic but misguided endoscopic proceedings, and suggests at least 200 hours of practice as the minimum before attempting the removal of a foreign body from a patient. This practice may be secured with a rubber tube manikin or by means of dogs, and any foreign body problem should be solved in this way before it is attempted on a patient. One should not telegraph for a set of instruments and expect to remove a foreign body from a bronchus immediately after receiving it. The result will probably be fatal. Symptomatology and pathology of foreign bodies in the respiratory and digestive tract are discussed, and the author describes in detail his method of passing endoscopes, and of direct laryngoscopic examination. He also gives many concrete illustrations of the solution of foreign body problems. A small amount of space is given to the value of endoscopic methods in the removal of foreign bodies from the pleural cavity, especial mention being made of drainage tubes lost during the treatment of empyema. Considerable space is given to the consideration of benign and malignant neoplasms of the respiratory and upper digestive tracts, with a discussion of the symptoms, etiology, pathology,

prognosis and treatment. Here, as in the removal of foreign bodies, the motto of the endoscopist must be, "I will do no harm." Diseases of the esophagus and trachea, other than neoplastic, are discussed, and their relation to endoscopy emphasized. Gastroscopy is also touched on. Laryngeal stenosis, both acute and chronic, with the treatment, forms the closing chapters of the book. The indications and method for tracheotomy, decannulation, and treatment of stricture following intubation are discussed in detail. Any one planning to do endoscopic work would do well to study carefully the many important aphorisms in this volume.

PATHOLOGY: GENERAL AND SPECIAL FOR STUDENTS OF MEDICINE. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., Professor of Bacteriology in the University of London. Fifth edition. Cloth. Price, 18 shillings net. Pp. 531, with illustrations. Philadelphia: Lea & Febiger, 1923.

The book is divided into nineteen chapters; the first nine deal with general pathology, the last nine with special pathologic anatomy, and Chapter 10 takes up diseases of the endocrine organs and abnormalities of internal secretion. The student is offered an enormous amount of detailed information in highly condensed form. Here and there are statements that should be eliminated because not of enough value to occupy the space, as, for instance, this from page 435: "In one remarkable case recorded by Paget an apparently pure cartilaginous tumor [of the testicle] gave rise to secondary cartilaginous growths in the vena cava and lungs, and was described as a 'malignant enchondroma.' It was reexamined by Kanthack and Pigg forty years later [1897], and found to be in reality a carcinoma." In view of the large field the book covers, the accuracy with which it reflects the present knowledge of pathology is noteworthy. As examples of improvements and corrections for future editions, attention may be called to the present inadequate consideration of teratoma of the testis and its derivatives, and to the incorrect statement on page 104 that the opsonins of normal serum differ from immune opsonins in being nonspecific and heat-labile. The illustrations, all microscopic, are good.

CATALOGO DELL OFFICINA ORTOPEDICA DELL ISTITUTO RIZZOLI IN BOLOGNA. Boards. Pp. 115, with 248 illustrations. Bologna: Istituto Rizzoli.

Since the foundation of the Rizzoli Institute, an orthopedic laboratory has been connected with it, and since the close of the war this laboratory has been greatly enlarged. In the first exposition of appliances at Bologna in 1917, and in the interallied sanitary conference in Paris, London and Rome in 1917, 1918 and 1919, the laboratory figured among the best, and it was given the title of the "National Laboratory of Artificial Appliances." During 1920, the laboratory produced 8,500 cast apparatus, 6,100 lower extremity appliances and 2,100 various other orthopedic appliances. The laboratory has also furnished various civil and military hospitals with complete outfits for mechanotherapy and thermotherapy, and with orthopedic appliances and surgical instruments. The laboratory produces orthopedic appliances for locomotion, physiotherapy apparatus, artificial limbs, surgical instruments, plaster models and casts. As a rule, the artificial arms are made of celluloid or hard rubber, but in some cases wood and metal are used. For the lower extremity most appliances are made of wood. To protect the wood from moisture it is covered with cow hide and then varnished. These products then have the advantage of lightness, resistance and beauty. There are illustrations of orthopedic apparatus for amputated limbs and deformities of the extremities and vertebral column, of physiotherapy apparatus and of surgical instruments designed by V. Putti.

LA RACHICENTESI ED IL LIQUIDO CEFALO-RACHIDIANO. Por F. Bonola. Paper. Price, 12.00 lire. Pp. 190. Bologna: L. Cappelli, 1922.

The author describes in a simple way the various methods of examining the arachnoid fluid. Different forms of puncture to obtain the fluid are discussed. As the book is intended primarily for practical use, no bibliographic references are given. There are no illustrations. Physicians familiar with Italian will find the book a useful and reliable guide to the examination of the arachnoid fluid for clinical purposes.

Medicolegal

Infliction of Death Penalty by Use of Lethal Gas

(*State v. Gee Jon et al. (Nev.), 211 Pac. R. 676*)

The Supreme Court of Nevada holds, in this homicide case, that the statute of that state of 1921, which provides that the judgment of death shall be inflicted by the administration of lethal gas, is not unconstitutional on the ground of imposing cruel or unusual punishment. The court says that the revulsion on the part of many to the idea of execution by the administration of gas is due to an erroneous impression. The average person looks on the use of gas with horror, because of the experiences incident to the late war. They forget that there are many kinds of gas, ranging from the harmless nonpoisonous tear gas, which may be used for the quelling of a mob, and the ordinary illuminating gas, which may produce painless death, to the highly poisonous gas which scars and destroys everything with which it comes in contact. It may be said to be a scientific fact that a painless death may be caused by the administration of lethal gas. That suffering and torture may be inflicted by its administration is no argument against it. It must be presumed that the officials intrusted with the infliction of the death penalty by the use of gas will administer a gas which will produce no such results, and will carefully avoid inflicting cruel punishment. That they may not do so is no argument against the law. The court thinks it fair to assume that the legislature, in enacting the law, sought to provide a method of inflicting the death penalty in the most humane manner known to modern science.

Validity of Ordinances Requiring Vaccination

(*Zucht v. King et al. (U. S.), 43 Sup. Ct. R. 24*)

The Supreme Court of the United States, in dismissing a writ of error, says that ordinances of the city of San Antonio, Texas, provided that no child or other person should attend a public school or other place of education without having first presented a certificate of vaccination. Purporting to act under those ordinances, public officials excluded Rosalyn Zucht from a public school because she did not have the required certificate and she refused to submit to vaccination. They also caused her to be excluded from a private school. Thereupon, she brought this suit against the officials in a court of the state. The bill charged that there was then no occasion for requiring vaccination; that the ordinances deprived the plaintiff of her liberty without due process of law, by, in effect, making vaccination compulsory; and also that they were void, because they left to the board of health discretion to determine when and under what circumstances the requirement should be enforced, without providing any rule by which that board was to be guided in its action, and without providing any safeguards against partiality and oppression. The prayers were for an injunction against enforcing the ordinances, for a writ of mandamus to compel the admission of the plaintiff to the public school, and for damages. A general demurrer to the bill of complaint was sustained by the trial court; and, the plaintiff having declined to amend, the bill was dismissed. This judgment was affirmed by the court of civil appeals; and an application for a writ of error to the Supreme Court of Texas was denied by that court. Now the case was before the Supreme Court of the United States on a writ of error, it being assigned as error that the ordinances violated the due process of law and equal protection clauses of the Fourteenth Amendment to the Constitution of the United States, and that as administered they denied to the plaintiff equal protection of the laws.

But, although the validity of a law was formally drawn in question, long before this suit was instituted, *Jacobson v. Massachusetts*, 197 U. S. 11, 25 Sup. Ct. 358, had settled that it is within the police power of a state to provide for compulsory vaccination. That case and others had also settled that a state may, consistently with the federal constitution, delegate to a municipality authority to determine under what conditions health regulations shall become operative; and

still others had settled that the municipality may vest in its officials broad discretion in matters affecting the application and enforcement of a health law. A long line of decisions by this court had also settled that in the exercise of the police power reasonable classification may be freely applied, and that regulation is not violative of the equal protection clause merely because it is not all-embracing. In view of these decisions, this court finds in the record no question as to the validity of the ordinance sufficiently substantial to support the writ of error. These ordinances conferred, not arbitrary power, but only that broad discretion required for the protection of the public health.

The bill of complaint contained averments to the effect that in administering the ordinance the officials had discriminated against the plaintiff in such a way as to deny to her equal protection of the laws. These averments presented a substantial constitutional question. But the question was not of that character which entitles a litigant to a review by this court on writ of error. The question did not go to the validity of the ordinance; nor did it go to the validity of the authority of the officials. This charge was of an unconstitutional exercise of authority under an ordinance that was valid. Unless a case is otherwise properly before this court on writ of error, questions of that character can be reviewed by this court only on petition for a writ of certiorari.

Society Proceedings

COMING MEETINGS

- Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
- American Association for Thoracic Surgery, Chicago, May 28-29. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City.
- American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
- American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.
- American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
- American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
- American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
- American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otolological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
- American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
- American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
- American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
- Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Georgia, Medical Association of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
- Hawaii, Medical Society of, Honolulu, April 28-30. Dr. W. K. Chang, Honolulu, Secretary.
- Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
- Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
- Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
- Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.
- Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.
- North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
- Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
- South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
- Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.
- Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
- Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

February, 1923, 165, No. 2

- *Clinical Investigation of Tropical Sprue. B. K. Ashford, San Juan, Porto Rico.—p. 157.
- *Total Circulating Volume of Blood and Plasma in Cases of Chronic Anemia and Leukemia. N. M. Keith, Baltimore.—p. 174.
- Case of Multiple Myeloma. G. McConnell, Cleveland.—p. 184.
- *Occupational Sensitization to Castor Bean. H. S. Bernton, Washington, D. C.—p. 196.
- Diagnosis of Obscure Chronic Abdominal Conditions. J. L. Ransohoff, Cincinnati.—p. 202.
- Diagnosis of Spleen Function. M. H. Kahn, New York.—p. 214.
- *Autolysate-Precipitin Reaction in Typhoid Fever. J. L. Laird, J. R. Conover and D. C. A. Butts, Philadelphia.—p. 241.
- *Thrombosis of Coronary Arteries, with Infarction of Heart. J. T. Wearn, Boston.—p. 250.
- *Hematemesis in Nephritis. H. F. Shattuck, New York.—p. 276.

Clinical Investigation of Tropical Sprue.—Of 616 cases of sprue, 453 were examined by Ashford by laboratory methods and 85 per cent. yielded a positive finding for *Monilia psilosis*. Of 259 cases of glandular deficiency, 124 were examined by laboratory methods and all were negative for *Monilia psilosis*; the rest were not examined in the laboratory. All of the phenomena in the syndrome of glandular insufficiency were more frequent and, clinically, far more vivid in sprue, generally about double that of the former condition. But the salient point is found in that in sprue the tongue lesions are more than fifteen times, and the frank diarrhea more than five times as frequent as in glandular insufficiency. In fact, the strictly classical raw tongue and white, frothy diarrhea were never found in glandular insufficiency.

Volume of Blood and Plasma in Chronic Anemia and Leukemia.—Wide variations in blood and plasma volume were observed by Keith in twenty-four patients presenting definite evidence of chronic disease of the blood forming organs. These variations were sometimes noted in the same patient. In certain cases of chronic anemia there was a striking increase in the volume of plasma; in others, a normal plasma volume. In all cases the blood volume was normal or reduced. In cases of chronic anemia no exact relationship could be determined between the amount of plasma and the hemoglobin percentage, although in individual cases these varied somewhat inversely with one another. An experiment in vitro on the blood of a patient with splenomyelogenous leukemia failed to show that any appreciable amount of the dye, vital red, is taken up by the leukocytes. In chronic leukemia the blood volume is almost invariably increased. The plasma volume often reaches a high value, especially in the splenomyelogenous type. In chronic leukemia no definite relationship could be demonstrated between the basal metabolic rate and the variations in blood or plasma volume.

Occupational Sensitization to Castor Bean.—Bernton narrates the case of a chemist who in the course of his occupation acquired a sensitiveness to the dust of the castor bean. Attacks of sneezing and of asthma were the clinical manifestations of this sensitiveness. The fat-free castor meal produced an urticarial wheal at the site of a superficial scratch on the forearm. A cutaneous reaction was obtained with a drop of the protein solution of the meal in a dilution of 1:250,000. Symptoms of protein intoxication resulted from the absorption of extracts of the castor meal from skin abrasions. The presumptive evidence indicates that the globulin fraction possesses antigenic properties, and that exposure to organic dust in industries may cause an acquired sensitiveness. Cutaneous testing with the suspected material would be of value in diagnosis and treatment.

Autolysate-Precipitin Reaction in Typhoid Fever.—The autolysate-precipitin reaction described by Laird and others is dependent on the determination of the existence of the autolyzed typhoid bacilli in the excretions of the patient by means of a typhoid-immune rabbit serum, in direct contrast to the older method which depended on a precipitin reaction

in the serum of the suspected patient by means of a known typhoid solution. The reaction showed clearly positive in all carriers and in cases of typhoid fever up to the fifty-sixth day of the disease. The carriers were active for many years, one for eighteen years. The bacteriologic diagnosis was positive in only about 6 per cent. of known typhoid cases. Apparently, the autolysate-precipitin reaction is distinctly more sensitive and accurate than any of the previous methods of typhoid determination. The technic is described in detail.

Thrombosis of Coronary Arteries.—Wearn analyzed nineteen cases of this affection, cases in which the clinical diagnosis was confirmed by a necropsy. He uses the findings to reconstruct the clinical picture of a typical case.

Hematemesis in Nephritis.—A case of severe hematemesis is reported by Shattuck, due, as far as could be ascertained, to chronic nephritis with hypertension. A review of the literature shows several reports of this rather unusual complication, but gives no uniform conclusions about the cause or pathology of this symptom.

American Journal of Physiology, Baltimore

February, 1923, 63, No. 3

- Supposed Relation of Suprarenals to Reflex Volume Changes in Denervated Limb. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 436.
- Unusual Appearances of Nucleated Erythrocytes in Circulation Following Repeated Injections of Splenic Extract. N. B. Eddy and A. W. Downs, Edmonton, Canada.—p. 479.
- Absorption from Intestine and Excretion Through Kidney of Unaltered Complex Protein Substance, Tissue Fibrinogen. C. A. Mills, S. E. Dorst, G. Mynchenberg and J. Nakayama, Cincinnati.—p. 484.
- Effect of Potassium Cyanid on Metabolism in Two Fresh Water Arthropods. W. C. Allee, Chicago.—p. 499.
- Effect of Restricted Diet. I. On Growth. J. R. Slonaker and T. A. Card, Palo Alto, Calif.—p. 503.
- *Variations of Blood Sugar of Rabbit Throughout the Day and Effect of Subcutaneous Injection of Glucose. G. S. Eadie, Toronto, Canada.—p. 513.
- Concentration of Sugar in Blood of Rabbit During Inanition and After Ingestion of Glucose. E. L. Scott and T. H. Ford, New York.—p. 520.
- *Direct Influence of Blood of Parathyroid Tetany Animals on Excitability of Motor Nerves. C. Jacobson, Chicago.—p. 535.
- Occurrence of Citric Acid in Sweat. C. D. Leake, Madison, Wis.—p. 540.
- Proof that High Protein Diet Increases and Starvation Decreases Catalase Content of Entire Animal. W. E. Burge, Urbana, Ill.—p. 545.
- Living Peritoneum as Dialyzing Membrane. T. J. Putnam, Baltimore.—p. 548.
- Effects of Epinephrin on Heart of Common Bull-Frog (*Rana Catesbiana*). C. I. Reed and E. Smith, Lawrence, Kan.—p. 566.
- Heat Liberated by Beating Heart. IV. C. D. Snyder, Baltimore.—p. 583.

Diurnal Variation in Blood Sugar of Rabbit.—When 1 gm. glucose per kilogram of body weight is injected subcutaneously into rabbits, Eadie found that there is a sharp rise, reaching its maximum in one half hour and reaching normal in about three hours. This is followed by a smaller secondary rise. Hypoglycemia does not occur. With subcutaneous doses of 2 gm. glucose the rise is much greater but the variation in the height to which the curve rises is also much greater. The curve then falls for from three to five hours, shows a slight secondary rise and returns in about seven hours to a value near the normal. This study was made in connection with the study on the effect of insulin.

Effect of Parathyroid Tetany Blood on Motor Nerves.—The results obtained by Jacobson are interpreted as supporting the theory of a chemical change in the tetany blood directly affecting nerve excitability. But before such data can be accepted as proving this point, Jacobson says it must be shown that the results are not due to temperature change in the transfused leg.

American Journal of Roentgenology and Radium Therapy, New York

February, 1923, 10, No. 2

- *Studies of Mechanism of Movement of Mucous Membrane of the Digestive Tract. G. Forssell, Stockholm, Sweden.—p. 87.
- Importance of Indirect Roentgen Ray Findings in Chronic Infection of Biliary Ducts and Gallbladder. M. P. Burnham, San Francisco.—p. 105.
- Roentgen Ray Study of Absorption of Tuberculous Exudate Within Lung. K. Dunham and V. V. Norton, Cincinnati.—p. 112.
- Deep Roentgen Ray Therapy. R. Merton, London, England.—p. 119.
- *Case of Double Spontaneous Pneumothorax. C. P. Emerson and R. C. Beeler, Indianapolis.—p. 126.

- Anatomic Cross Section Charts in Estimating Roentgen Ray Dosage. A. U. Desjardins, Rochester, Minn.—p. 134.
Injuries from Roentgen Rays in Deep Therapy. H. Wintz, Erlangen, Germany.—p. 140.
Radium Treatment of Cancer of Esophagus; Review of Forty-Four Cases. R. W. Mills and J. B. Kimbrough, St. Louis.—p. 148.
Treatment of Superficial Cancer. D. T. Quigley, Omaha.—p. 161.
History Chart for Radium Therapy. C. Chase, Brooklyn.—p. 163.
Two Important Points from Radium Therapist's Standpoint Regarding Cancer Immunity. C. Chase, Brooklyn.—p. 167.

Mechanism of Movement of Mucous Membrane of Digestive Tract.—Forssell states that the folds of the mucous membrane of the colon, as well as those of the stomach, duodenum and small intestines, are not modeled by a contraction of the muscular coat only, but by autonomous appropriate movements of the mucous membrane. The folds of the mucous membrane do not consist of passive structures, but represent a momentary state of movement. The whole rigid whorl of folds and furrows becomes alive and proves to be formed by independent motor forces which may be of great importance for the mechanical regulation of the digestion. It is apparent that the complicated relief of the intestinal mucous membrane not only forms a passive depository for digestion and resorption of the food, but also constitutes a mechanism with a subtle and wonderful organization for regulation of the chemistry of digestion. The muscular tube of the digestive tract and the special motor mechanism of the mucous membrane collaborate in the mechanism of digestion. The movements of the muscular coat determine the rough division and the large displacements of the contents of the stomach and the intestines. The movements of the mucous membrane produce an extremely differentiated distribution and restraining of the food in digestive chambers of varying form and size, and procure the fine regulation of the current by the passage of the contents in the alimentary canal. The rôle that disturbances of the motor mechanism of the mucous membrane may be playing in the pathology of the alimentary tract has not yet been investigated.

Case of Double Spontaneous Pneumothorax.—Emerson and Beeler report what they believe to be the only case on record of double pneumothorax due to emphysema.

Annals of Surgery, Philadelphia

February, 1923, 77, No. 2

- *Regeneration of Meninges. I. Dura Mater. W. Y. Sayad and S. C. Harvey, New Haven, Conn.—p. 129.
Chronic Empyema. C. Eggers, New York.—p. 142.
Inguinal Hernia in Male. Late Results in 978 Traced Cases. S. Erdman, New York.—p. 171.
*Improved Technic for Gastrectomy and Gastro-Enterostomy. L. Freeman, Denver.—p. 190.
Limitations of Ochsner Treatment in Certain Cases of Suppurative Peritonitis. J. H. Jopson and D. B. Pfeiffer, Philadelphia.—p. 194.
Spontaneous Intraperitoneal Rupture of Bladder. J. F. Geisinger, Richmond, Va.—p. 206.
Mechanism of Formation of Urinary Calculi. L. D. Keyser, Rochester, Minn.—p. 210.
Skin Grafting by Exact Pattern: Report of Cosmetic Results Obtained Without the Employment of Sutures. B. Douglas, New Haven, Conn.—p. 223.

Regeneration of Meninges.—Defects in the dura of the dog, operatively induced by Sayad and Harvey, without injury to the adjacent arachnoid, healed rapidly in from one to two weeks and without the formation of adhesions.

Improved Technic for Gastrectomy and Gastro-Enterostomy.—The special equipment used by Freeman consists of two mattress needles, a foot or so in length (long needles used in the manufacture of mattresses and to be obtained in most hardware stores); four Allis forceps and several ordinary rubber bands about one-eighth inch in width. In gastro-enterostomy, after exposure of the stomach and jejunum, a fold is picked up from each with the Allis forceps and brought alongside of each other in the position in which they are to be united. A mattress needle is then placed well down on either side of these folds, pressing them closely together into two prominent opposed pouches, such as are formed when forceps are used. While the needles are held in place by an assistant, a rubber band is wound around their ends on either side, tightly enough to bring the elasticity of the bands into play, and clamped with forceps. The operation is then completed in the usual manner.

Archives of Internal Medicine, Chicago

February, 1923, 31, No. 2

- *Protein Feeding and High Blood Pressure. S. Strouse and S. R. Kelman, Chicago.—p. 151.
Relation Between Hemoglobin, Cell Count and Cell Volume in Venous Blood of Normal Human Subjects. H. C. Gram and A. Norgaard, Copenhagen.—p. 164.
*Toxic Manifestations Following Alkaline Treatment of Peptic Ulcer. L. L. Hardt and A. B. Rivers, Rochester, Minn.—p. 171.
Simple Immersion Electrode for Taking Clinical Electrocardiograms. H. E. B. Pardee, New York.—p. 181.
*Paroxysmal Ventricular Tachycardia. C. C. Wolferth and T. M. McMillan, Philadelphia.—p. 184.
*Surgical Treatment of Angina Pectoris. W. B. Coffey and P. K. Brown, San Francisco.—p. 200.
Fatty Degeneration of Heart. A. M. Master, New York.—p. 221.
*Intrapericardial Rupture of Aortic Aneurysm in Boy Sixteen Years of Age. De W. G. Richey, Pittsburgh.—p. 232.
Blood Sugar Standards. Part I. Normal and Diabetic Persons. H. Gray, Boston.—p. 241.
Blood Sugar Standards. Part II. In Conditions Neither Normal Nor Diabetic. H. Gray, Boston.—p. 259.
Intracutaneous Reactions in Lobar Pneumonia to Pneumotoxin. C. Weiss and J. A. Kolmer, Philadelphia.—p. 263.
Value of Index and Angle of Bordet-Vaquez in Cardiac Examination. D. S. Dann, Boston.—p. 269.
*Pathologic Physiology of Polycythemia Vera. R. Isaacs, Cincinnati.—p. 289.
*Etiology of Acute Intestinal Intoxication in Infants. G. L. Boyd, Toronto.—p. 297.

Protein Feeding and High Blood Pressure.—A careful study made by Strouse and Kelman of a number of patients has shown that marked variations in blood pressure occur in patients with hypertension and with slight or no impairment of renal function. Such variations bear no relation to the intake of protein food. In such cases no damage to renal function and no increase in nonprotein nitrogen or urea nitrogen of the blood was found to follow protein feeding up to 150 gm. daily. In three such cases strong stock soup and coffee, given daily, did not increase blood pressure. In cases of frank progressive nephritis with hypertension, a diminution of protein intake, sufficiently marked to lower the figures for blood nonprotein nitrogen and urea, did not cause lowering of the blood pressure. The experiments reported add further evidence to that already accumulated to prove the existence of a clinical entity characterized by a primary hypertension. They further suggest that variations in blood pressure in this condition result from vasomotor disturbances.

Toxic Manifestations Following Alkaline Treatment of Peptic Ulcer.—Forty-eight patients with peptic ulcer, the diagnosis in each case being confirmed by roentgenograms, were studied by Hardt and Rivers. They found that patients with duodenal ulcer who were treated by the Sippy method may develop definite symptoms of toxemia associated with renal changes, increased blood urea, and normal or increased carbon dioxide combining power of the plasma. The gastric acidity during the period of toxemia is usually normal or there is hyperacidity. In fact, patients with duodenal ulcer and renal complications are more inclined to develop these toxic manifestations and to a much greater degree.

Paroxysmal Ventricular Tachycardia.—Four cases of paroxysmal ventricular tachycardia are reported by Wolferth and McMillan, one with auricular mechanism of normal type and three with auricular fibrillation. The electrocardiographic findings through which the diagnosis was arrived at in these cases are discussed. Emphasis is placed on the value for diagnosis, when the auricles are fibrillating, of comparing the relations of coupled beats to the onsets of paroxysms. The literature is reviewed and from the study of the cases previously reported together with those here presented, the following data have been assembled: (a) Twenty-two cases have thus far been reported in which electrocardiograms justify the diagnosis of paroxysmal ventricular tachycardia. (b) During paroxysms, the following types of auricular action have been recognized: (1) normal mechanism; (2) retrograde auricular beats; (3) auricular flutter, and (4) auricular fibrillation. (c) Slight irregularity of rhythm just after the onset of paroxysms is not unusual. It may also occur just before the offset. (d) In about half the cases reported, none of the paroxysms observed exceeded five minutes in length. The longest paroxysm reported apparently lasted for eleven days. In long paroxysms, severe cardiac failure usually occurs. (e) Profound myocardial disease is

usually associated. Other disturbances of the cardiac mechanism are remarkably frequent. Eleven of the twenty-two patients are known to have died shortly after coming under observation. (f) Short paroxysms occurring during auricular fibrillation may cause the ventricles to behave in a manner simulating auricular flutter and lead to a mistaken diagnosis of flutter. (g) The results from quinin and quinidin in treatment have been promising, but further observations are necessary in order to determine whether or not these drugs are of real value in this condition.

Surgical Treatment of Angina Pectoris.—Sympathectomy was done by Coffey and Brown in five cases of angina pectoris, two of them presumably being due to syphilitic aortitis. Death occurred in one case. Marked improvement was noted in the remaining four cases. In view of the obstinate and painful nature of the symptom angina pectoris, the relief following operation in these cases seems to the authors sufficient to warrant further trial of this or similar operative procedures.

Intrapericardial Rupture of Aortic Aneurysm.—In the case reported by Richey there was no evidence of syphilis or mycosis. No coarctation of the aorta could be found, but there was a uniform narrowing of the aortic arch just beyond the aneurysm of the ascending limb, which was regarded as a hypoplasia associated with status thymicolymphaticus. The author failed to find a similar case recorded in the literature.

Case of Polycythemia Vera.—A case of polycythemia vera with an unusually high red cell count is reported by Isaacs. Counts at intervals during three years varied from 7,360,000 to 15,940,000.

Etiology of Acute Intestinal Intoxication in Infants.—Boyd asserts that extracts of intestinal mucous membrane from cases of acute intestinal intoxication in children contain a toxic substance, which, when injected into animals, produces a definite symptom complex, consisting of depression and narcosis, anorexia, circulatory failure, increase in the number of intestinal evacuations, and in some cases convulsions and death. Younger animals were much more susceptible to this toxic substance than older ones. The toxin is not destroyed by boiling and passes through a bacteria tight filter. Boiled aqueous extracts of fresh stools proved nontoxic when injected into animals. Systemic blood from cases of acute intestinal intoxication was slightly toxic when injected into animals. Portal blood from patients was very toxic. No distinctive pathologic findings were seen in any of the fatal cases.

Boston Medical and Surgical Journal

March 1, 1923, 188, No. 9

- *Prevention and Control of Diphtheria. B. Schick, Vienna.—p. 255.
Traumatic Third Degree Laceration of Perineum in a Female Child Seven Years Old. L. E. Phaneuf, Boston.—p. 258.
Injuries to Spleen. E. H. Pool, New York.—p. 262.
Hare-Lip. W. E. Ladd, Boston.—p. 270.
Tuberculous Cervical Adenitis in Children. J. S. Stone, Boston.—p. 272.
Ventriculosepsy and Puncture of Floor of Third Ventricle. W. J. Mixter, Boston.—p. 277.

Prevention and Control of Diphtheria.—Discussing the therapy of diphtheria, Schick comes to the following conclusions: The injection of serum must be made as early as possible. Every hour of delay may be harmful and is particularly dangerous in severe cases in which the quantity of toxin produced in the throat is considerable. In all mild and medium cases 100 antitoxin units per kilogram of body weight are sufficient. In severe cases 500 antitoxin units per kilogram of body weight are to be injected. Repeated injections should be omitted as superfluous. Fifty antitoxin units per kilogram of body weight suffice for immunization. A slight improvement in the curative results may be achieved by intravenous injection; this may be repeated in dangerous cases.

Traumatic Laceration of Perineum in Female Child.—Phaneuf's patient was impaled on an iron picket fence. Examination showed a laceration extending through the hymen, the vaginal mucosa, the levator ani muscles and the external sphincter; the rectal mucous membrane was intact. The rectum could be seen bulging between the torn perineal muscles with each deep inspiration.

Canadian Medical Association Journal, Toronto

February, 1923, 13, No. 2

- Importance of the Emotional or Psychic Nature of People in General in Practice of Medicine in Its Widest Sense. A. McPhedran, Toronto.—p. 82.
Aches and Pains of Renal Origin. A. Fullerton, Belfast, Ireland.—p. 85.
*Study of One Hundred Cases of Chorea with Particular References to Cardiac Complications. G. F. Strong, Vancouver, B. C.—p. 92.
Tetany. S. G. Ross, Montreal.—p. 97.
Acute Leukemia in a Child Aged 6 Years. F. F. Tisdall, Toronto.—p. 104.
Diagnosis and Treatment of Hyperthyroidism. H. W. Riggs, Vancouver.—p. 106.
*Case of Primary Sarcoma of Heart. L. G. Pinault, Campbellton, N. B.—p. 108.
A New Cysto-Urethroscope for Examining and Operating on Any Part of Urinary Tract by Direct-Telescope or Indirect-Periscope Methods. G. S. Gordon, Vancouver, B. C.—p. 110.
Industrial Medicine. B. L. Wyatt, Grand Mere, Que.—p. 114.
Case of Septic Arthritis in an Infant. A. M. Forbes, Montreal.—p. 118.

Study of Chorea with Particular References to Cardiac Complications.—There were sixty-six females and thirty-four males, a ratio of two to one in the group of 100 cases analyzed by Strong. The average age was 13.3 years, the oldest patient being 23 and the youngest 4 years old. There was a history of definite acute rheumatic fever in 20 per cent. of the cases. In addition there were fourteen patients who gave a history of joint pains, bringing the total possible cases of preceding rheumatism up to 34 per cent. Scarlet fever occurred in the past history in 18 per cent. of these cases, but in only one instance did the attack of scarlet fever seem to bear any relation to the chorea. Tonsillitis occurred in 34 per cent. of these cases. There was a positive blood Wassermann in 11.6 per cent. of the patients. In four cases in this series there was an absolutely negative past history. In eighteen cases the onset of the disease dated from some sudden fright. There were forty-five instances with organic cardiac disease; in every case there was involvement of the valves; in a few cases there was further cardiac damage, such as pericarditis or actual myocarditis. There was only one case of pericarditis in this series. Partial or complete heart block occurred in only one case, or 2.2 per cent. of those patients of whom electrocardiograms were taken. In 29 per cent. of the patients in this study there had been recurrences of chorea. The incidence of cardiac disease was higher in these twenty-nine cases than in the group as a whole or in the cases without previous chorea. In the whole group, 45 per cent. of patients had cardiac disease; the twenty-nine patients with previous chorea, fifteen, or 51.7 per cent., had heart disease; and in the seventy-one cases with only one attack of chorea, thirty, or 42.2 per cent., had a diagnosis of organic cardiac disease on their discharge from the hospital. The incidence of cardiac disease was much increased in those patients who had had acute rheumatic fever. Of twenty such cases, fourteen, or 70 per cent., had heart disease, while of the remaining eighty cases only thirty-one, or 38.7 per cent., had cardiac involvement. The occurrence of tonsillitis did not seem to increase the incidence of cardiac disease. Of the forty patients with temperatures over 99 F., twenty-two, or 55 per cent., had organic disease. Only 38.3 per cent. of the sixty patients with temperatures of 99 F. or less had organic disease. The occurrence of an elevation of temperature during an attack of chorea would seem therefore to increase slightly the likelihood of cardiac involvement. Of the forty-five patients in this whole series who developed organic heart disease only twenty-two had temperatures over 99 F. In the forty-five cases of organic cardiac disease the mitral valve was involved in forty-four and the aortic valve in only five cases.

Primary Sarcoma of Heart.—The symptoms in Pinault's case were: generalized edema, marked dyspnea and a disturbance of digestion. The first symptoms began two months previously with dyspnea, and swelling of the lower limbs and abdomen. The patient was a female, aged 47. Her personal and family history was good. The diagnosis was made of myocarditis with the probability of a mediastinal tumor interfering with venous blood return. The patient died four weeks after entering the hospital. The postmortem examination disclosed a tumor, the size of a hen's egg, completely filling

the right auricle. The left auricle, both ventricles and the valves were apparently normal. It proved to be a round cell sarcoma.

Florida Medical Association Journal, St. Augustine and Jacksonville

January, 1923, 9, No. 7

- Catatonic Dementia Praecox; Physiotherapeutics, and Results Obtained in Twenty Cases. D. C. Main, Washington, D. C.—p. 113.
Physician as Business Man. L. A. Bize, Tampa.—p. 118.
Medical Practitioner and American Society for Control of Cancer. J. E. Rush.—p. 121.

Georgia Medical Association Journal, Atlanta

February, 1923, 12, No. 2

- Use of Radium in Treatment of Cancer of Cervix. O. D. Hall, Atlanta.—p. 45.
Treatment of Leukemia by Means of Roentgen Ray. J. W. Landham, Atlanta.—p. 51.
Review of Six Months' Experience with Radium. W. L. Cooke, Columbus.—p. 54.
Roentgen-Ray Treatment of Uterine Hemorrhage and Fibroid Tumors. Review of Literature and Report of Cases. J. S. Derr, Atlanta.—p. 56.
Roentgen-Ray Treatment. W. F. Jenkins, Columbus.—p. 64.
Cancer of Lip; Treatment by Radium and Surgery Combined. C. K. Wall, Thomasville.—p. 67.
Cancer of Stomach. Report of Case. C. W. Roberts, Atlanta.—p. 69.
Secondary Effect of Scoliosis on Internal Organs. T. Toepel, Atlanta.—p. 77.

Indiana State Medical Association Journal, Ft. Wayne

February, 1923, 16, No. 2

- Differential Diagnosis of Meningitis. C. F. Neu, Indianapolis.—p. 33.
Treatment of Meningitis. M. F. Porter, Jr., Fort Wayne.—p. 36.
Otitic Meningitis. H. B. Snee, South Bend.—p. 37.
Endonasal Operation on Lacrimal Sac. W. B. Chamberlin, Cleveland.—p. 42.
Gallbladder Surgery. S. J. Young, Gary.—p. 50.

Wisconsin Medical Journal, Milwaukee

February, 1923, 21, No. 9

- Neuroses and the Chronic Invalid. H. T. Patrick, Chicago.—p. 387.
*Challenge of Chronic Heart Patient to Medical Profession. R. H. Babcock, Chicago.—p. 391.
Relationship of Cardiovascular Renal Disease to Chronic Invalid. A. R. Elliott, Chicago.—p. 393.
Value of Blood Chemistry in Clinical Diagnosis. B. C. Ford, Minneapolis.—p. 397.
Intra-Ocular Manifestations in Various Brain Conditions Associated with Brain Pressure and Modus Operandi by Which These Manifestations are Brought About. J. A. Bach, Milwaukee.—p. 401.
Pseudo-Exophthalmic Goiter. Report of Case. A. S. Jackson, Madison.—p. 412.
Case of Pellagra in Wisconsin. H. E. Marsh, Madison.—p. 413.

The Chronic Heart Patient.—Babcock directs attention to that large number of patients who come to the physician because alarmed by unwonted pain or other sensation in the region of the heart or on account of a sudden attack of palpitation, so-called. Either of these sensations may occur alone or the precordial pain may be accompanied or followed by rapid or irregular heart action. In all such instances it should not be concluded that heart disease is present until convinced by careful inquiry into the history and by the discovery of indubitable evidence of a cardiac defect. The etiologic factor may be some toxic agent producing an intercostal neuritis or upsetting cardiac action through the vagus. Therefore, before assuming the heart to be at fault and telling the patient his pumping apparatus is responsible, the toxin or other disturbing factor should be sought for and removed. The cause may reside in diseased tonsils or teeth or digestive tract in cases of nerve irritation or in some agent introduced into the system from without, such as the abuse of tea, coffee, tobacco and (nowadays rarely) alcoholic beverages. Palpitation has been found in women the direct result of visceroptosis or pelvic displacements. The point particularly emphasized by Babcock is that not only is it seldom necessary but usually unwise to send the patient to bed. Physicians should be careful never to frighten the patient even should auscultation disclose a systolic murmur. It is not uncommon for a systolic bruit to appear during the disordered cardiac action and then to disappear when the heart has become quiet and regular. In short, the psychical management is as essential, often more essential, than is rest, digitalis and other commonly employed therapeutic measures.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

February, 1923, 4, No. 1

- Complement Fixation Test in Coccidiosis of Rabbit. S. W. Patterson.—p. 1.
*Influence of Vitamin A on Blood Platelets of Rat. S. P. Bedson and S. S. Zilva.—p. 5.
*Variations in Some of Urinary Constituents and Alveolar Carbon Dioxid Tension in Relation to Meals. E. C. Dodds.—p. 13.
*Testing the Antigenic Value of Diphtheria Toxin-Antitoxin Mixtures. A. T. Glenny, K. Allen and B. E. Hopkins.—p. 19.
"Gastrin" Content of Human Pyloric Mucous Membrane. S. E. Ammon and R. K. S. Lim.—p. 27.
Schick Test and Active Immunization. R. A. O'Brien, A. J. Eagleton, C. C. Okell and M. Baxter.—p. 29.
Diagnostic Value of Rabbit Inoculation in Encephalitis Lethargica. J. McIntosh.—p. 34.

Influence of Vitamin A on Blood Platelets.—The findings of Bedson and Zilva reveal the fact that young growing rats when deprived of vitamin A show a slightly lower platelet count than do normal rats. In those experiments in which consecutive counts were made, the general tendency of the platelet count is in the direction of a diminution, but even here, accepting the experimental error as 10 per cent., only four out of the six rats show a fall beyond this limit. The greatest diminution was 244,000. The authors are not convinced that this minimal change in the platelet count could not be produced by other dietetic deficiencies.

Effect of Meals on Urinary Constituents.—By examining specimens of urine before and after meals, Dodds found that the first meal of the day was followed by a decrease in the excretion of acid and ammonia calculated per hour. This alkaline tide lasted from one to two hours, and was followed by a period of increased excretion of acid and alkali per hour. This acid tide lasted for about two hours, the period of the whole meal effect taking roughly from four to five hours. The changes following lunch were obscured, in the majority of cases, by the acid tide of the breakfast. Diurnal origin of these variations was excluded by starvation experiments. In view of these results, the alkaline tide was associated with gastric secretion and the acid tide with pancreatic secretion. The p_H of the urine was found to rise after a meal, and to fall later.

Antigenic Value of Diphtheria Toxin-Antitoxin Mixtures.—Evidence is brought forward by Glenny and his associates to show that the toxicity test alone may give incomplete or erroneous conclusions as to the immunizing value of a toxin-antitoxin mixture intended for immunization against diphtheria. Four methods are described for testing the antigenic value of mixtures: (a) Tracing the antitoxic value of the blood of rabbits after a single subcutaneous injection of the mixture as a "primary stimulus." (b) Accelerating the results of (a) by a subsequent injection, as a "secondary stimulus," of either the same mixture or of a Schick dose of toxin. (c) Tracing the increase in antitoxic values of the blood of immune rabbits after a subcutaneous injection of the mixture as a secondary stimulus. (d) Injecting guinea-pigs, which have survived the test for toxicity of the mixture, with Schick doses of diphtheria toxin at weekly intervals commencing three weeks after the injection of the mixtures.

British Medical Journal, London

Feb. 24, 1923, 1, No. 3243

- *Aches and Pains of Renal Origin. A. Fullerton.—p. 309.
Certain Diseases of the Cow and Their Interest to the Physician. F. Hobday.—p. 313.
*Scientific Basis for Nonspecific Protein Therapy. A. J. Clark.—p. 315.
*Diastase in Blood and Urine in Diabetes Mellitus. G. A. Harrison and R. D. Lawrence.—p. 317.
Brachial Neuritis Due to Cervical Rib. W. Wrangham and J. Phillips.—p. 319.
*Asthma and Suprarenal Inadequacy. T. Drummond.—p. 320.
Thyroidectomy for Malignant Disease in Man Aged Seventy-Four. W. J. Harrison.—p. 322.
*Primary Union After Operation for Suppurative Appendicitis. R. G. Riddell.—p. 322.
Osteitis of Temporal Bone with Meningitis. H. L. Whale.—p. 323.
Fatal Thrombo-Arteritis of Right Middle Cerebral Artery of Uncertain Causation. F. P. Weber.—p. 324.

*Rupture of Renal Artery and Vein by Slight Injury: Operation: Recovery. E. M. Atkinson.—p. 324.

Aches and Pains of Renal Origin.—As causes of renal pain Fullerton discusses renal calculus, tuberculous kidney, pyelitis, hydronephrosis and pyonephrosis, renal tumors, hematuria, movable kidney, carcinoma of the bladder, a papilloma at a ureteral orifice, an enlarged prostate or stricture of the urethra, certain forms of chronic nephritis, infarcts, hydatid cyst in which small cysts are sometimes passed, other cysts of the kidney, and horseshoe kidney. The idea running through this address is that the pain is due in a large proportion of cases to distention of the renal pelvis. Treatment should be directed toward removing the cause, and involves, in some instances, ablation of the kidney. In selected cases it may be possible to relieve the patient by interrupting the nerves carrying the painful impressions.

Scientific Basis for Nonspecific Protein Therapy.—Discussing the changes observed in the blood during nonspecific protein therapy, Clark says, that the bulk of the evidence points to the fact that nonspecific protein therapy causes a washing out of the tissue fluids into the blood, and that this process causes a number of changes in the composition of the blood. The evidence at present available is insufficient to indicate which of the changes observed is really of chief clinical importance.

Diastase in Blood and Urine in Diabetes Mellitus.—Estimations of diastase simultaneously in the blood and urine have been made by Harrison and Lawrence in fifty-five cases of diabetes and in a large number of controls, due attention being paid to the reaction of the urine, the diet, etc. The findings are in support of those investigators who have concluded that the presence of amylase is more or less accidental and of little or no value in the diagnosis, prognosis, or treatment of diabetes mellitus.

Asthma and Suprarenal Inadequacy.—Evidence is presented by Drummond to support the theory that inadequate suprarenal function is the cause of asthma.

Primary Union After Operation for Suppurative Appendicitis.—Of seven cases of suppurative appendicitis in which Riddell used flavine, 1:1,000 solution, the incision healed by primary union except in one case, in which the tissues were soaked with purulent fluid as soon as the peritoneum was incised, and the operation was of long duration and the patient weak. Violet green, iodine and eusol were tried in other cases but failed to affect primary union.

Rupture of Renal Artery and Vein by Slight Injury.—Atkinson's patient fell while playing cricket and pushed his elbow into his left side. The pain was very slight, and he thought so little of the accident that he continued playing. The next day his side was stiff and painful, and he was passing blood in his urine all day. Because of symptoms of peritoneal involvement, a laparotomy was performed. There was no peritonitis. The abdominal wound was closed and the kidney exposed from the loin. It was found to be a very large hydronephrosis in which virtually no kidney tissue was left. It was removed. An examination of the kidney showed a hydronephrosis due to a congenitally narrowed ureteric strait, the kidney substance being almost nonexistent. On searching for the renal vessels they were found, not in the piece of tissue which had been ligatured, but torn off close to the kidney just below this. The injury had apparently been sufficient to tear through both vessels, and the resulting hemorrhage had ceased spontaneously.

Journal of Pathology and Bacteriology, Edinburgh

January, 1923, 26, No. 1

*Relation of Vitamin C to Bacterial Infection. G. M. Findlay.—p. 1.
Complement Fixation Reaction in Liver Fluke (*Fasciola Hepatica*, L.) Infection. N. H. Fairley and F. E. Williams.—p. 19.

*Pathology of Schistosomiasis (*S. Hematobium* and *S. Mansoni*) in Human Subject. H. R. Dew.—p. 27.

Case of Symmetrical Cortical Necrosis of Kidneys Occurring in an Adult Man. J. Bamforth.—p. 40.

*Further Stage in Fatty Change Occurring in Cell Degeneration, Resulting in Production of Deeply Pigmented Bodies. E. Emrys-Roberts and H. A. Haig.—p. 46.

Differential Medium for Streptococci. H. W. Crowe.—p. 51.

Desiccation of Serum and Other Protein Solution; Special Reference to Reagents Used in Wassermann Reaction. P. Hartley, A. J. Eagleton and C. C. Okell.—p. 53.

Properties of Dried Complement with Reference to Its Use in Wassermann Reaction. C. H. Browning and E. M. Dunlop.—p. 66.

*Relation Between Appendicitis, Oxyuris Vermicularis and Local Eosinophilia in Appendix Wall. E. H. Eastwood.—p. 69.

*Foreign Body Tubercles on Serous Coat of Stomach, Caused by Escape of Particles of Oat Seed. T. Shennan.—p. 82.

Herpetic Meningo-Encephalitis in Rabbits. C. Da Fano.—p. 85.

Tomato Extract as Culture Medium. C. E. Jenkins.—p. 116.

Making Dilutions of Antiserums. J. S. C. Douglas.—p. 118.

Serum Constituents Responsible for Sachs-Georgi and Wassermann Reactions. T. J. Mackie.—p. 120.

Alterations in Morphologic and Biologic Characters in Streptococcus Group Brought About in Vivo—(1) *Streptococcus Mucosus*; (2) Chronic Pneumococcus Infections. C. H. Browning and R. Gulbransen.—p. 121.

Influence of Colon Bacillus on Growth of Bacillus Typhosus, with Special Reference to Enrichment by Brilliant Green in Typhoid Carriers. R. P. Smith.—p. 122.

Relation of Vitamin C to Bacterial Infection.—The results of Findlay's experiments with four species of bacteria seem to show that guinea-pigs fed on a diet deficient in vitamin C succumb to a smaller infecting dose of bacteria than animals fed on a complete diet. The symptoms of toxemia are manifested more rapidly in scorbutic than in control guinea-pigs either because the tissues, especially the heart, are more susceptible to the action of bacterial toxin or because in scorbutic animals there is more toxin formed by the bacteria as a result of some rupture in the defense mechanism of the body. It has long been known that degeneration in the hemopoietic bone marrow is associated with a reduced resistance to bacterial infection. In chronic scurvy there is present such a degeneration in the bone marrow. It, therefore, seems not improbable to Findlay that the lesion in the bone marrow may be at least one of the factors in the reduction of the resistance to bacterial infection exhibited by animals with chronic scurvy.

Schistosomiasis.—Dew emphasizes the fact that in spite of many general resemblances the helminthology and the pathology of the two infections (*Schistosoma mansoni* and *S. hematobium*) are distinct. The worms themselves produce a toxin, the reaction to which is manifested by eosinophilia and deviation of complement, and which is probably a big factor in the production of many of the pathologic changes, especially those found in the liver.

Pigmented Fatty Change in Cell Degeneration.—A description is given by Roberts and Haig of a further stage in fatty change, occurring in cell degeneration in certain subacute lesions, consisting in an alteration of some of the fatty or lipoidal globules, whereby a gradual deposition of pigment occurs at the periphery or margin of the affected globules, together with a progressive loss of their fatty or lipoidal contents. This is accompanied by a shrinkage process, resulting eventually in the formation of minute, deeply pigmented, granules. It is suggested that these granules, and the bodies preceding them, are in the nature of altered lipochrome, possibly a reduction product.

Oxyuris Vermicularis in Appendix.—No evidence was found by Eastwood in support of the theory that *Oxyuris vermicularis* is frequently a cause of appendicitis. *Oxyuris*, when present in the appendix, does not cause local eosinophilia. Eosinophils were found in the mucosa of the appendix in much greater numbers in pathologic than in normal appendixes, their numbers showing a definite relation to the stage of inflammation. They rise to above normal twenty-four hours after the onset of the attack, reach a maximum in the second week, and then gradually subside, but remain considerably above normal even three or four weeks after the attack. This local increase of eosinophils in the appendix is not accompanied by a general eosinophilia. Pigmentation of the appendix is said to occur as frequently in normal as in diseased appendixes, and is more common after the thirtieth year.

Oats in Tubercles in Stomach Wall.—Shennan relates the case of a woman, aged 36, who gave a history of indigestion of several months' duration. She complained of more or less constant discomfort across the upper part of the abdomen, aggravated by food. On opening the abdominal cavity, the surgeon could find no sign of acute inflammation or ulceration of new growth; but he noticed an eruption of raised pink nodules—in size up to that of a grain of boiled rice—

over the visceral peritoneum in the right upper quadrant of the abdomen, mainly over the pyloric end of the stomach. These were at first thought to be tuberculous nodules, but in consistence they differed from tuberculous nodules, and their distribution and position were unusual. On microscopic examination, the nodules were found to be made up of granulation tissue, embedding elongated fragments of a vegetable substance which proved to be an oat seed. Shennan suggests that they escaped through a small perforation in the wall, which healed up speedily and perfectly, without much reaction even locally.

Journal of Tropical Medicine and Hygiene, London

Feb. 15, 1923, 26, No. 4

*Unusual and Fatal Case of Undulant Fever Contracted in Khartoum. R. G. Archibald.—p. 55.

*Case of Myositis Purulenta Tropica. R. L. McConnell.—p. 57.
Identification of Inulin and Maltose, by Mycologic Method. Cases of Maltosuria. A. Castellani and F. E. Taylor.—p. 59.

Unusual Case of Undulant Fever.—Archibald records a case of malignant undulant fever contracted in Khartoum in which death occurred after an illness of twenty-seven days' duration. Clinically, the case lacked many of the typical manifestations of the disease. On the twenty-first day of the illness no agglutinations for *B. melitensis* were present in the patient's serum. *B. melitensis* was recovered by hemoculture on the twenty-second day of the disease; it was also obtained from postmortem cultures of the spleen. Archibald emphasizes that serodiagnostic methods are not always reliable; where they fail, hemoculture, urine culture, or splenic blood culture should be made. Patients should not be discharged from the hospital till repeated bacteriologic investigations show the urine to be free from *B. melitensis*.

Myositis Purulenta Tropica.—McConnell's patient complained of very severe pains in all the large joints and in the back, the elbows and knees suffering most. The evening temperature was about 103 F. The joint pains were so severe that he could not sleep. In the course of the next four months abscesses developed on the chest wall, shoulder, thighs, neck, rib and over the superior iliac spine. Much pus of anchovy sauce color was evacuated from each abscess. Filarial larvae were looked for without success. What appeared to be a nematode larva was found in a fresh specimen of pus. Later, in a stained specimen, a similar organism was found, likewise a small coiled up worm.

Medical Journal of South Africa, Johannesburg

January, 1923, 18, No. 6

Control of Malaria. G. A. P. Ross.—p. 134.

Some Points in Plastic Vaginal Surgery. W. G. Grant.—p. 147.

Intestinal Obstruction from Hydronephrosis in a Pelvic Kidney. H. T. Mursell.—p. 148.

Headache and Weak Cylinders. A. Verwey.—p. 149.

Practitioner, London

January, 1923, 110, No 655

Ophthalmic Operations. A. Critchett.—p. 5.

Throat, Nose and Ear Operations. J. Dundas-Grant.—p. 11.

Surgical Emergencies, with Special Reference to Abdominal Region. D'Aarcy Power.—p. 26.

Operation on First and Last Kink. W. A. Lane.—p. 33.

Operations on Bones and Joints. J. Lynn-Thomas.—p. 40.

Operations on Rectum. C. G. Watson.—p. 51.

Genito-Urinary Operations. F. S. Edwards.—p. 61.

Operations in Gynecology and Obstetrics. C. Berkeley.—p. 73.

Operations for Sports Injuries. F. Roimer.—p. 99.

Antiseptics in Common Operations. W. E. Dixon.—p. 113.

Anesthetics in Common Operations. D. W. Buxton.—p. 121.

South African Medical Record, Capetown

Jan. 13, 1923, 31, No. 1

Malaria on the Lowveld. H. A. Spencer.—p. 3.

Some Aspects of Scurvy in the Native, and Its Treatment by Orange Juice Intravenously. S. Donaldson.—p. 7.

Case of Glandular Fever. W. G. Robson.—p. 13.

Jan. 27, 1923, 21, No. 2

Cerebral Trauma and Osteoplastic Repair of the Skull. T. L. Sandes.—p. 26.

A Plea for Radiation as an Alternative to Surgery. D. De Vos Hugo.—p. 29.

Hyperchlorhydria—a Manifestation of Endocrine Abnormality. J. Drummond.—p. 34.

Standardization in the Treatment of Prostatic Obstruction. A. R. McLachlan.—p. 37.

Journal d'Urologie, Paris

December, 1922, 14, No. 6

*Share of France in Progress of Urology. E. Jeanbrau.—p. 433.

*Kidney Functioning on Salt-Free Diet. Negro and Colombet.—p. 467.

*Correction of Balanic Hypospadias. G. Marion.—p. 473.

Share of France in the Origin and Progress of Urology.—Jeanbrau remarks that three new chairs of urology have been installed in France since 1920, and reviews the history of this branch of medicine to which France has contributed so much. Urea was recognized by Le Cadet in 1771, and although sugar was suspected in diabetic urine by Willis in 1677, it was Chevreul in 1815 who identified the sugar in the urine as glucose. The French were leaders in constructing a practical catheter and lithotrite, and in internal urethrotomy, endoscopy and the ureteral catheter. Ségalas exhibited in 1826 a speculum for urethra and bladder but it did not give enough light. Desormeaux of Necker Hospital devised in 1853 an efficient endoscope for the bladder, and thus became the father of cystoscopy, as Nitze, the inventor of the prism cystoscope, always acknowledged. This instrumental period of urology is almost exclusively French, and the same can be said for the scientific period which followed, inaugurated by Guyon, Albarran, Tuffier, Janet, Cathelin and Luys. Israel of Berlin remarked at the International Urologic Congress in 1910 "All the urologists of the world have been pupils of Guyon's school at the Necker Hospital." Legueu, the present head of the Necker school has simplified local anesthesia for prostatectomy. His latest achievement was the reconstruction of the entire spongiosa portion of the urethra after a war wound, utilizing the abdominal aorta from a dog. Papin in 1921 introduced the method of denervating the kidney as the last resource to control pain in the organ. Pousson at Bordeaux has popularized surgical treatment of nephritis with hematuria, uremia or rebellious pains. The article is illustrated.

Influence on Functional Tests of the Kidney from Salt in the Diet.—Negro and Colombet report as the result of their research that salt has no influence on the phenolsulphone-phthalein test of the functional capacity of the kidneys. But the Ambard ureosecretory constant is modified decidedly by variations in the intake of salt. They give tracings from two typical cases. No regular law could be deduced governing the behavior of the constant.

Correction of Balanic Hypospadias.—Marion's illustrated description shows the various steps of the intervention which has proved eminently successful in four cases in which he has applied it. The technic is that of Chocholka, slightly modified, and this, he states, is based on the operation described by Bevan in THE JOURNAL, April 7, 1917, p. 1032. The new urethra is made from a square flap cut from the underside of the penis, entirely above the abnormal opening. The portion close to the abnormal opening is left attached. The flap is then drawn up around a sound and fastened with five stitches to make a tube. The passage is dug for it through the glans, using a trocar and then enlarging the passage with forceps. The forceps then draw the newly formed tube back through the new passage. His modification, which he considers very important, consists in slitting and turning back the skin on each side below the abnormal opening, after the new urethral tube has been sutured to the proximal stump. This slit on the median line allows a triangular flap to be turned back on each side, and the whole region is freshened. The flaps are then sutured together on the median line, aided by Galli tubes, and the whole heals smoothly without any tendency to fistula at any point. The flap is cut long enough so that the new tube projects beyond the glans at first. Its nourishment is insured by the narrow pedicle close to the former abnormal opening.

Schweizerische medizinische Wochenschrift, Basel

Jan. 18, 1923, 53, No. 3

*Accommodation in Ametropic Eyes with Glasses. C. A. Hegner.—p. 53.

*Predisposition and Cancer. K. Nather.—p. 54.

*Surgical Treatment of Tuberculosis of Lungs. H. Alexander.—p. 56.

*Chronic and Incurable Patients. J. Kollarits.—p. 59.

Coagulation of Blood. A. Fonio.—p. 60. Conc'n.

History of Inspection of Leprous Persons in Switzerland. A. Martin.—p. 64.

Accommodation in Ametropic Eyes After Correction with Glasses.—Hegner demonstrates that a shortsighted person wearing correcting glasses does not need to accommodate as strongly as with normal vision. The stronger the glasses and the nearer the object, the greater is the difference in the two groups. Therefore it is not necessary to prescribe special glasses for fine work for myopia in the young. The far-sighted person is at a disadvantage, because the stress of accommodation is greater with the glasses.

Predisposition and Cancer.—Nather examined the blood serum for ferments dissolving carcinoma cells (Freund-Kaminer's method, with Koritschoner's and Morgenstern's modification). He found that these ferments persist in about 20 per cent. of patients suffering from a cancer—especially of the squamous type; 77 per cent. of healthy persons under 45 years of age had the ferment, while it was present only in 22 per cent. after this age. Yet these persons remained healthy. He never saw a return of these ferments after radical operations for cancer (cured over ten years). It seems, therefore, that Freund-Kaminer's reaction is not caused by the cancer, but on the contrary seems to be a manifestation of the cause of cancer.

Surgical Treatment of Tuberculosis of Lungs.—Alexander recommends thoracoplasty in severe progressive unilateral cases. Stationary cases may be treated with it, if the chest is already so contracted that a further collapse of the lung seems impossible, and the patient continues to expectorate bacilli from a cavity which cannot close. The combination of thoracoplasty with removal of part of the phrenic nerve is advisable. Pneumothorax has the disadvantage of being a protracted treatment, and causing exudates. The advantage with artificial pneumothorax is the possibility of restoring the former condition of the lung.

Psychic Direction of Chronic and Incurable Patients.—Kollarits emphasizes the necessity of providing some sort of occupation for such patients.

Riforma Medica, Naples

Jan. 15, 1923, 39, No. 3

Malformation of Cecum and Pericolic Membrane. Alzona and Valenti.—p. 49.

*Antimony in Treatment of Leprosy. A. Versari.—p. 53.

Functional Nervous Disturbances After Trauma of Orbit. Cozzoli.—p. 55.

Resistance of Vessel Walls in Clinical Pediatrics. Muggia.—p. 56.

Treatment of Lepra by Antimony.—Versari reports two cases of leprosy with very good palliative results from intravenous injections of tartar emetic. He injected every other day from 2 to 10 c.c. of a 2 per cent. solution, adding each time 1 c.c. The second patient required twenty-two injections (total 1.84 gm. tartar emetic). Though the drug acts very favorably on the lesions, it does not sterilize the patient.

Feb. 5, 1923, 39, No. 6

*Rapid Diagnosis of Cholera. I. Iacono.—p. 121.

*Diagnosis of Intestinal Metastasis of Cancer. G. Aperlo.—p. 123.

*Paradoxical Postencephalitis Kinesia. A. Salmon.—p. 129.

Modern Views on Infantile Paralysis. G. Gianturco.—p. 131.

Prophylaxis and Treatment of Deficiency Diseases. Torraca.—p. 134.

Rapid Diagnosis of Cholera.—Iacono reviews eight different methods in vogue for isolation of cholera vibrios, and extols the superiority of what he calls the polyserum method. It is based on Castellani's discovery that when serums agglutinating typhoid, paratyphoid and cholera germs are mixed, and added to culture mediums containing these germs, the only one that proliferates is the one that does not have its corresponding agglutinating serum in the mixture. For example, if loops of paratyphoid and typhoid bacilli and cholera vibrios are added to a culture medium containing serums agglutinating the cholera germs and the paratyphoid bacilli, the typhoid bacilli alone will proliferate. He reports twenty-two tests of the method in practice; it proved rapid and reliable, showing the cholera vibrios in pure culture in eight hours.

Diagnosis of Metastasis of Cancer of the Pylorus.—Aperlo quotes Tansini's statement in 1906 to the effect that when there is intestinal metastasis of malignant disease in the pylorus region the abdomen is not sunken in as usual but

looks rounded and full, as in a well nourished, healthy person. Aperlo relates six instructive cases in which this Tansini sign warned of metastasis even when there was no ascites, palpable tumor nor enlarged glands, and the general condition rendered the assumption of malignant disease uncertain. Riva-Rocci has noticed a similar rounding up of the abdomen in children with peritoneal involvement in the course of tuberculous meningitis, instead of the usual *depressione a barca*. Other signs of abdominal metastasis of gastric or duodenal cancer are the enlarged glands in the left supra-clavicular fossa, hardening and retraction of the umbilicus, and a hard patch in front of the rectum, which can be felt through the rectum.

Postencephalitic Paradoxical Kinesia.—Salmon refers to the strange fact that certain persons with parkinsonian symptoms after epidemic encephalitis are able sometimes to dance or ride the bicycle whereas they are stiff and seem to have scarcely any control over their legs at other times. He points out the difference between the parkinsonian symptoms that follow epidemic (lethargic) encephalitis and those of true Parkinson's disease. In the postencephalitic immobility, the mental factor seems more prominent than the muscular rigidity. It seems to be more of a disinclination to move than an inability to move. Naville calls it "bradyphrenia"; Hesnard and Verger call it "mental viscosity." The subjects seem incapable of attention, thought or desire. The phenomena observed seem to confirm the assumption of a center for emotions located in the gray substance of the base of the brain.

Crónica Médica, Lima

September, 1922, 39, No. 711

*Abdominal Aortitis. M. Gonzáles Olaechea.—p. 336.

*Colloidoclasia and Malaria. J. A. Monteverde.—p. 341.

*Breast Nursing at Lima. Rómulo Eyzaguirre.—p. 357.

*Blocking the Celiac Plexus. M. N. Carrillo.—p. 359.

Pathogenesis of Auricular Fibrillation. R. M. Alzamora.—p. 364.

Abdominal Aortitis.—Olaechea says the prognosis is grave in the case described, as the man aged 55 has high blood pressure and kidney disease, besides abdominal attacks resembling the symptoms of angina pectoris. The abdominal aorta is tender in its entire length, and part of it is unusually large. Moist heat to the abdomen relieves the pain, and treatment as for syphilis is now under way. In another case the insufficiency of the abdominal aorta was evidently due to loss of elasticity in its walls. The result was attacks of intense pain, tenderness along the aorta, and edema of the legs and lower trunk, ascites, and finally fatal anuria, with death forty-five days after the onset of the edema. Throughout, the pulse had been good, the heart working well, and there was no trace of edema above the abdomen.

Colloidal Shock in Relation to Malaria.—Monteverde gives a summary of what is known in regard to anaphylaxis and the hemoclastic crisis, and relates a number of experiences with malarial and other subjects. He explains the hemoclastic crisis as due to the same pathogenic mechanism as anaphylaxis, namely an upset in the colloid balance. The malarial attack is a hemoclastic phenomenon. The irruption into the blood stream of the newly fledged malarial parasites acts as an antigen. The blood changes occur in the same way and sequence as under shock treatment from parenteral injection of proteins. All hemoclastic phenomena have the same pathogenesis, and the malarial attack belongs in the same category with the rest.

Breast Feeding at Lima.—Eyzaguirre states that only 44 per cent. of 600 infants under observation were breast fed. "The infant is thus forced into being the parasite of the cow."

Blocking the Celiac Plexus.—Carrillo describes the application of Labat's technic for anesthetizing the celiac plexus, and extols its advantages for operations in the abdomen. He urges this nerve blocking as a harmless treatment for algias in the viscera as well as for operations.

November, 1922, 39, No. 713

*Depopulation. L. Avendaño and G. Fernández Dávila.—p. 431.

*Parasitic Diseases of Lungs in Peru. A. Corvetto.—p. 471.

*Technic for Pulmonary Docimasia. G. Fernández Dávila.—p. 479.

The Stegomyia Calopus in Peru. N. E. Cavassa.—p. 484.

Factors Contributing to Depopulation.—This long article describes conditions in Peru and means designed to improve them. It was read at the recent Latin-American medical congress, and concluded with an appeal to the governments of the countries of America for concerted action on ways and means to promote the natural and eugenic increase of the population.

Parasitic Disease of the Lungs in Peru.—This was summarized on page 807 when it appeared in another exchange.

Pulmonary Docimasia.—Fernández Dávila has modified Icard's technic for pulmonary docimasia and extols the extra precision it confers on the test. He uses a 40 or 50 per cent. aqueous, instead of alcoholic, solution of potassium hydroxid. This takes a little longer to digest the lung fragments and release the air in them, but the process never exceeds two or three hours. Another improvement is a long, graduated glass tube, 5 mm. in diameter, which is mounted in the rubber stopper of the test tube holding the lung fragments suspended in the caustic fluid. Then more fluid is poured into the small tube until it reaches nearly to the top and the tube is plugged. The air released from the lung by the action of the caustic can thus be easily and accurately estimated.

Deutsche medizinische Wochenschrift, Berlin

Jan. 12, 1923, 49, No. 2

- *Disinfection of the Mouth. H. Leo.—p. 39.
- *Proteins as Antigens and Antibodies. W. G. Ruppel.—p. 40.
- *Modified Technic for Meinicke's Test for Syphilis. E. Meinicke and E. Grün.—p. 43.
- Tuberculosis and Pregnancy. G. Winter and W. Oppermann.—p. 45. Cont'n.
- Radium Castration and Dosage. P. W. Siegel.—p. 47.
- *Gastric Cancers. M. Askanazy.—p. 49. Cont'n.
- Fat-Splitting Function of the Lymphocytes. S. Bergel.—p. 51. Idem.
- L. Aschoff and H. Kamiya.—p. 53.
- *Thoracocentesis and Thoracoplasty. K. E. Neumann.—p. 53.
- Disinfection of Tuberculous Sputum. F. Kirstein.—p. 54.
- Dangers of Ethyl Chlorid for Children. Seiffert.—p. 55.
- Improvised Tonometer. P. König.—p. 56.
- *Asphyxia During and After the Birth. M. Henkel.—p. 56.
- Dementia Praecox in General Practice. Henneberg.—p. 58.
- *Increase in Drunkenness and Alcohol Addiction. E. Meyer.—p. 60.
- The Campaign Against Tuberculosis in Switzerland. K. Söpfle.—p. 60.
- Medicolegal Questions in Medical Practice. Ebermayer.—p. 61. Cont'd.

Disinfection of the Mouth.—Leo found that the disinfecting action of water soluble drugs ends in a few minutes. The bacteriologic content was just as high fifteen minutes after cleaning the mouth with water or hydrogen peroxid. Yet the latter has the mechanical advantage of cleaning the gaps between the teeth, by the foaming and probably also because of its action on pathogenic germs. Preparations which are insoluble in water, like some of the substitutes for iodoform, may remain and be active in the mouth over night.

Lyophil and Lyophobe Proteins as Antigen and Antibody.—Ruppel used the electro-osmotic method for separating different fractions of proteins. He found that the agglutinins and amboceptors (except the hemolytic) and syphilitic reagins are contained in the lyophobe euglobulin fraction (precipitated in water free from electrolytes). The protective and curative properties, especially antitoxins, are in the lyophil fraction (with pseudoglobulins). Albumin does not produce anaphylaxis against itself, nor does it contain any antibodies. Bacilli can be disintegrated by the electric current, and their lyophobe fraction, though its toxicity is diminished, is a suitable antigen for immunizing purposes in disease.

Modified Meinicke Reaction in Diagnosis of Syphilis.—Meinicke and Grün report good and rapid results from the addition of tolu resin to, and the omission of cholesterol from, the alcoholic extracts.

Cancer of the Stomach.—Askanazy deals with the pathogenesis of carcinoma of the stomach, and especially with congenital inclusions in the walls of the stomach.

Puncture of Thorax and Resection of Ribs.—Neumann points out that a fresh exudate can be expected low in the phrenicocostal sinus, while an older one should be looked for higher up.

Asphyxia Neonatorum.—Henkel admits that asphyxia may be an indication for forceps, but states that the forceps often aggravates the asphyxia.

Increased Frequency of Alcoholism.—Meyer's psychiatric statistics show the rapid increase in alcoholism since 1918. The percentage of cases of alcoholism in the Königsberg psychiatric clinic in 1921 and 1922 (12.58 per cent. men and 2.18 per cent. women) almost reached the pre-war level (16.75 men and 2.26 women). On a recent Saturday evening, between 8 and 10 p. m., he met between thirty and forty drunken persons on the streets of Königsberg. He recommends prohibition of the manufacture of strong liquors and strong beers as a start for general prohibition.

Jan. 19, 1923, 49, No. 3

- *Korotkow's Method of Blood Pressure Determination. Rumpf.—p. 71.
- *Sedimentation Speed of Blood Corpuscles. Moral.—p. 74.
- Tuberculosis and Pregnancy. Winter and Oppermann.—p. 76. Cont'n.
- *Determination of Tubercle Bacilli in Blood. O. Köster.—p. 78.
- Treatment of Arthritis. Roeser.—p. 79.
- *Pernicious Anemia. Autor.—p. 80.
- Thrombolytic Purpura and Aplastic Anemia. F. Sternberg.—p. 81.
- Anemia Due to Anguillula Intestinalis. Heinsen.—p. 83.
- Nature of Rickets. E. Aschenheim.—p. 85.
- *Puncture of Lymphatic Glands in Syphilitics. F. W. Oelze.—p. 86.
- Stimulating Roentgen Ray Doses in Alopecia Areata. Thederling.—p. 89.
- Proposed Prussian Law on Tuberculosis. E. Hartmann.—p. 90.

Korotkow's Method of Blood Pressure Determination.—Rumpf recommends Korotkow's auscultation method. In healthy persons it usually gives a little higher figures for systolic pressure than the palpation method. If the brachial artery is sclerotic, the method gives lower values.

Sedimentation Speed of Blood Corpuscles.—Moral observed the sedimentation speed of blood in about 400 patients. Only increased speed is of diagnostic value. Slow speed does not exclude organic disease. In later stages of tuberculosis, slow speed has a good, high speed a bad significance.

Determination of Tubercle Bacilli in Blood.—Köster did not find bacilli in the blood in fourteen cases of tuberculosis (one of them a meningitis). Zeissler's oxalate method gave reliable results, when 1:500 of a loop of the tubercle bacilli was mixed with 5 c.c. of blood.

Pernicious Anemia.—Autor was not able to produce anemia in rabbits by injections of extracts of bacilli cultivated from the stool of pernicious anemia, nor by extracts of colon bacilli. Care is necessary in estimating the blood changes; one of his rabbits had 335 normoblasts in 1 c.mm. of blood before the experiment. Anisocytosis, polychromophilia and normoblasts are quite common in rabbits.

Puncture of Lymphatic Glands in Syphilitics.—Oelze combines the methods of Schultz and Mitchell (injection of 0.25 to 0.5 c.c. of normal salt solution and leaving the needle in the gland for two to five minutes). The method should be used in cases with negative Wassermann reaction more often than it is.

Klinische Wochenschrift, Berlin

Jan. 15, 1923, 2, No. 3

- *Change of Cell Metabolism as Basis of Pathologic Reactions. A. Gottschalk.—p. 109.
- Anesthesia with Pure Acetylene. C. J. Gauss and H. Wieland.—p. 113. Cont'd.
- *Intensity of Metabolism and Diuresis. H. Vollmer.—p. 117.
- *Uremia and Nitrogen Retention. H. Lax.—p. 119.
- *Food and Acidity of Urine. C. M. Hasselmann.—p. 122.
- Mercurial Stomatitis as Occupational Disease. L. Möller.—p. 123.
- *Pituitary Tumor and Diabetes Insipidus. G. Domagk.—p. 124.
- Dwarfism. M. Berliner.—p. 126.
- "Inflammation and Nervous System." G. Spiess.—p. 128. Reply. Kauffmann.—p. 128.
- Uniting of Nerves in Parabolic Rats. B. Morpurgo.—p. 129.
- Intravital Hemolysis and Transfusion Shock. W. Jantzen.—p. 129.
- Botulism After Use of Canned Beans. L. Wagner.—p. 130.
- Pyelography. A. Lichtenberg.—p. 130.
- Insurance of Sick Persons. J. Sturm.—p. 133.

Change of Cell Metabolism as Basis of Pathologic Reactions.—Gottschalk reviews the recorded experiments on the increase of noncoagulable nitrogen compounds in the liver after injections of proteins, especially of bacterial origin. He points to the possible consequences for allergic conditions and infectious diseases.

Intensity of Metabolism and Diuresis.—Vollmer found that hormones which increase the metabolism decrease diuresis

and the acidity of the urine. Proteins have generally a similar action. Hormones which decrease metabolism, especially extracts of testes, increase diuresis.

Uremia and Nitrogen Retention.—Lax found in three nephritis cases with death from insufficiency of the kidneys, a nitrogen equilibrium or, rather, a greater elimination than intake of nitrogen. He attributes the uremia to "isosthenuria of the tissue cells," because he found, with Rohonyi, that normal tissues contain about ten times more noncoagulable nitrogen than the blood; the figures are equal in uremia.

Food and Acidity of Urine.—Hasselmann found in men the lowest acidity after a meat diet, while a diet rich in oats caused a very acid urine.

Pituitary Tumor and Diabetes Insipidus.—Domagk's case was diabetes insipidus with metastasis of cancer in the nervous part of the pituitary, which did not present macroscopic changes. There were no macroscopic changes in the brain.

Münchener medizinische Wochenschrift, Munich

Jan. 12, 1923, 70, No. 2

- *Encephalography. W. Alwens and S. Hirsch.—p. 41.
- *Mechanical Strain on the Epiphysis. W. Müller.—p. 44.
- *Metabolism in Scurvy. Knipping and Kowitz.—p. 46.
- *Atropin in Treatment of Parkinsonian Symptoms. W. Szyszka.—p. 47.
- Contracture in Talipes Valgus. G. Hohmann.—p. 48.
- Caustics in Intra-Uterine Treatment. W. Sigwart.—p. 50.
- *Revision of Uterine Cavity in Puzzling Hemorrhages. W. Hesse.—p. 51.
- *Treatment of Gastroptosis. E. Wehner and H. Böker.—p. 52.
- *Infection in Tuberculosis. F. Hamburger.—p. 54.
- Laceration of Umbilical Cord in Normal Delivery. Death of Infant. M. Nassauer.—p. 55.
- Unusual Findings in Abortions. E. Hönck.—p. 56.
- Cataleptic Rigor Mortis. Lochte.—p. 56.
- *Sphenoidal Sinusitis in General Practice. G. Spiess.—p. 57.
- Physicians and Social Insurance. E. Sardemann.—p. 58.

Encephalography.—Alwens and Hirsch report one death attributable to the encephalography among their patients. In another case breathing stopped for a short time but the patient recovered. In some cases intraspinal insufflation seemed to have a favorable influence on the condition of the patient. This was especially noticeable in three persons, aged about 23, suffering from "a sort of migraine."

Mechanical Strain on the Epiphysis.—Müller resected in animals a large part of the shaft of the radius in order to compel the ulna to carry the weight of the body. He found that this induced changes in the bone histologically and radiologically similar to the bone changes in rickets. Therefore these changes are not specific for rachitis. They are simply the result of an insufficiency of the bone in respect to the function required of it.

Metabolism in Scurvy.—Knipping and Kowitz encountered a number of cases of scurvy affecting exclusively single men who prepared their own food or frequented cheap restaurants serving canned foods. The basal metabolism was increased as long as they were kept on a diet sterilized in the autoclave. Addition of lemon juice brought the oxygen consumption down to normal.

Atropin in Treatment of Parkinsonian Syndromes.—Szyszka relates excellent, though transient, results in the treatment of postencephalitic parkinsonian syndromes. He gave from four to six pills daily of 0.0005 gm. atropin sulphate for three to six days. Then he interrupted the treatment for two or three days to delay habituation. In some of the patients the dose had to be gradually increased to 0.004 gm., but without causing untoward effects. One patient who had required over five minutes to copy sentences was able to do the copying in two minutes and twenty seconds after six days of atropin. Similar effects were observed in the time required in dressing.

Revision of Uterine Cavity in Puzzling Cases of Hemorrhage.—Hesse recommends digital examination of the cavity of the uterus in cases of uterine hemorrhage. He reports cases in which polyps were thus discovered that had escaped other means of investigation.

Operative Treatment of Gastroptosis.—Wehner and Böker review the methods for operative correction of gastroptosis. They applied the Duret suspension method in fourteen cases,

and in eleven the roentgenologic effect was perfect. Clinical cure was realized only in three in this group; six others were only improved.

Infection in Tuberculosis.—Hamburger supplements his previous report on the infection of his oldest son with tuberculosis, narrating the tragedy of the infection of his four other children. It was caused by a tuberculous servant, with intermittently "open" tuberculosis. All four children had a typical phlyctenular conjunctivitis after the infection. He declares that the servants in the homes with small children should be reexamined for tuberculosis every three months.

Sphenoidal Sinus Disease.—Spiess discusses the symptomatology, diagnosis and treatment of sphenoidal sinusitis. He stresses the feeling of pressure in the head, the anxious expression of the face, narrowing of the visual field, and thoughts of suicide.

Jan. 19, 1923, 70, No. 3

- Chemotherapy of Gallbladder Disease. G. Singer and R. Willheim.—p. 73.
- *Hyperemesis of Pregnancy. H. Albrecht.—p. 75.
- *Prognosis of Tuberculosis of Infants. H. Langer.—p. 76.
- Technic of Pleural Puncture. Hammer.—p. 79.
- Surgical Treatment of Tuberculous Spondylitis. M. Baumann.—p. 81.
- Treatment of Congenital Irreducible Luxation of Hip Joint by Subtrochanter Osteotomy. F. Hahn.—p. 82.
- *Intestinal Arteriosclerosis. F. W. Strauch.—p. 83.
- Fight Against Intestinal Parasites in School Age. Hage.—p. 85.
- Animal Chimeras: Parts of Different Species Joined to Make Living Animal. Goetsch.—p. 87.
- Poisoning by Atropin. Malade.—p. 87.
- Symptomatic Changes of Blood. P. Morawitz.—p. 89.
- The Right of Physicians to Sell Drugs. Hildebrand.—p. 91.

Hyperemesis of Pregnancy.—Albrecht believes that the basis of the vomiting of pregnancy is increased irritability of the pneumogastric nerve from psychic causes. Psychotherapy proved successful in his fifty-two cases.

Prognosis of Tuberculosis of Infants.—Langer emphasizes the bad influence of superinfection, and believes that isolation of infants for a year would decrease the mortality. Previous tuberculosis of the parents increases the resistance of the infant against acute tuberculosis. The prognosis is not as unfavorable as is generally assumed.

Intestinal Arteriosclerosis.—Strauch finds that pains ("abdominal angina") are not always the first sign of arteriosclerosis of the abdominal vessels. A feeling of fullness, sudden hyperacidity, idiosyncrasies may be due to it. Measuring the blood pressure is important. Intolerance against nicotin is very frequent. In all these conditions theobromin preparations, possibly atropin and papaverin, are indicated.

Wiener klinische Wochenschrift, Vienna

Jan. 18, 1923, 36, No. 3

- *Roentgen-Ray Treatment of Tuberculosis of Skin. R. Volk.—p. 41.
- *Treatment of Tuberculosis. J. B. Andreatti.—p. 44. Cont'd.
- *Action of Sodium Chlorid. M. Engländer.—p. 51.
- Oxygen Consumption During the Latent Period of Roentgen Injury. Petry.—p. 51.
- Death of Infant: Aspiration of Vomit or Infanticide? Schwarzbacher.—p. 52.
- Ligation of Hypogastric Artery in Treatment of Inoperable Uterine Cancer. F. Orthner.—p. 54.

Roentgen-Ray Treatment of Tuberculosis of Skin.—Volk believes the roentgen rays are good as a rule, but that they are superfluous in tuberculids like lichen scrophulosorum, acnitis and folliclis. This treatment is advisable in indurated erythema. Lupus which lies level with the skin is not influenced by roentgen rays; they should be used only in the ulcerative form. The rays act well also in lupus of the nasal mucosa, though radium gives excellent results after excochleation of the granulations.

Treatment of Tuberculosis.—Andreatti believes that uncomplicated tuberculosis lowers the body temperature. He attributes the fever to mixed infection, which should be treated by a vaccine. The temperature should be taken every two hours.

Action of Sodium Chlorid.—Engländer found that sodium chlorid increases the speed of decomposition of potassium permanganate in an alkaline medium. The salt is therefore chemically not as indifferent as generally assumed.

Zeitschrift für Kinderheilkunde, BerlinJan. 18, 1923, **34**, No. 5-6

- *Endogenous Infection of the Small Intestine. K. Scheer.—p. 223.
 *Prognosis in Tuberculous Infants. W. Stoeltzner.—p. 235.
 *Food Consumption of Rats. I. John and B. Schick.—p. 239.
 *Arneth's Blood Count in Normal Infants. Arneth and Nienkemper.—p. 263.
 *Motor Underdevelopment of Children. T. Heller.—p. 287.
 "Concentrated Food for Infants." Heller.—p. 291. Reply. Nobel.—p. 292.
 Real Acidity of Mouth Fluid in Infants. Jacobi and Demuth.—p. 293.
 Stomach Function Tests in Healthy Infants. F. Demuth.—p. 297.
 *Fat Tissue in the Newborn. J. Becker.—p. 301.
 Angioma of Lung in Infant. C. de Lange and S. B. de Vries.—p. 304.
 *"Temporary Dwarf Growth." J. Rosenstern.—p. 310.
 Treatment of Tuberculosis in Children. B. Salge.—p. 326.
 Cryoscopy with Small Amounts of Fluid. B. Salge.—p. 330.
 *Scurvy and General Dystrophy. Flora Rosenbund.—p. 333.
 *Occult Bleeding in Feces of Infants. H. L. Ratnoff.—p. 340.
 Idiosyncrasy Against Human Milk. E. Aschenheim.—p. 351.

Endogenous Infection of the Small Intestine.—Scheer cultivated strains of colon bacilli from the stomach or duodenum of fifteen dyspeptic infants. These strains showed a strong faculty to supplant other cultivated microbes (Nissle's antagonistic index). A similar occurrence in the feces was found by other authors, who pointed out the different significance of these active strains of colon bacilli in adults and in infants. They seem to prevent infection by other germs in adults, while they are probably pathogenic in infants. Three children were injected with formaldehyde solution after death. The histologic findings did not speak for an invasion of the body through the walls of the intestine. Agglutination tests with the serum of the patients were usually also negative. In some cases ferments dissolving proteins from colon bacilli were found. In such cases an invasion of the whole body may be assumed.

Prognosis in Tuberculous Infants.—Stoeltzner admits that the new finer methods of diagnosis allow a little brighter outlook in such cases. Yet the mortality among his thirty-three tuberculous infants was at least 72 per cent. Other authors have reported 65 per cent.—figures which are surpassed only in hydrophobia and lepra.

Food Consumption of Rats in Pregnancy and During and After Lactation.—John and Schick publish careful studies on ten rats. Pregnancy does not increase consumption. The sudden and regular increase in weight of the rats six or eight days before the termination of pregnancy is due to retention of water. The consumption of food increases immediately after delivery and, with the increase in milk secretion, quickly reaches more than two and one-half times the normal figures. These amounts of food cause dyspeptic disorders in normal animals.

Arneth's Blood Count in Normal Infants.—Arneth and Nienkemper analyzed in detail the white blood corpuscles of ten infants under 10 days old. To the distinctions between classes of leukocytes according to the number of nuclear lobes, Arneth added similar attempts to classify the lymphoid cells.

Motor Underdevelopment of Intellectually Normal Children.—Heller draws attention to children who are intellectually normal or supernormal, but who fail in the motor sphere. They are clumsy in dressing; do not learn to run, jump, or dance gracefully. Treatment must be individual, and should bring the child to understand the mechanical details of such movements, training both mind and muscles.

Fat Tissue in the New-Born.—Becker found large qualitative and quantitative differences in the fat tissue of fetuses and new-born infants. It seems that an embryonic type is frequent in those whose glands are also underdeveloped.

"Temporary Dwarfs."—Rosenstern publishes five cases of children, who are much smaller than other children of their age. This is chiefly due to the shortness of the lower extremities. The mutual proportions of the parts of the body correspond to a younger stage. Some of them change later to normal proportions.

Scurvy and General Dystrophy.—Rosenbund concludes from her observations on thirty-four cases, that dystrophic conditions in children suffering from scurvy are caused by primary infectious troubles or by lack of other necessary substances, but not by the scurvy itself. The striking simul-

taneous improvement of the scurvy and the dystrophy is due to the increased appetite, or to the presence of other vitamins in the hospital diet, or to a correct proportion between food and vitamins.

Occult Bleeding in Feces of Infants.—Ratnoff found very often occult intestinal bleeding in children in the second half of the first year and the beginning of the second. He points out that this age predisposes also to cutaneous hemorrhages (Rumpel-Leede's phenomenon).

Zentralblatt für Chirurgie, LeipzigFeb. 3, 1923, **50**, No. 5

- Operation for Pylorospasm in Infants. B. Heile.—p. 162.
 *Cicatricial Stenosis of the Pylorus. E. Elischer.—p. 165.
 *A Substitute for Drainage of Hepatic Duct. Ahrens.—p. 169.
 Preparation of Operative Field. P. Rosenstein.—p. 170.
 Gastrosocopy and Mechanics of Esophagus. W. Sternberg.—p. 172.

Stenosis of the Pylorus Caused by Corrosive Substances.—Elischer emphasizes the fact that the portion of the gastrointestinal tract chiefly injured by the ingestion of corrosive substances depends to a great extent on the condition of the stomach as to fullness at the time of the accident. If the stomach is empty, the changes may affect the whole gastric mucosa, but if the corrosive fluid enters a full stomach, it passes along the sulcus gastricus or gastric channel directly to the pyloric portion of the antrum and causes here the greatest changes. The possibility of stenosis of the pylorus must always be considered. If roentgenoscopic examination is possible, we can establish the indications for operative intervention. If the esophagus is nearly closed, the pylorus will usually be found free if the stomach is much contracted and hard to draw forth. If stenosis of the pylorus is present, however, there is usually a distended and somewhat flaccid stomach, which is easily drawn forth, and the pylorus shows characteristic changes: radial scars, especially on the anterior surface of the stomach—possibly adhesions, or hard scar tissue extending down to the muscle layers. These changes were especially characteristic of the effects of concentrated solutions of hydrochloric acid. In this condition of the pylorus there are two ways open: jejunostomy or gastro-entero-anastomosis. Jejunostomy is to be recommended only in case the stricture of the esophagus is complete and the stomach has been so badly damaged that there is scarcely a sound portion left for the gastro-enterostomy, but these conditions rarely exist. Gastro-enterostomy is preferable to jejunostomy, as the introduction of food into the small intestine may set up chemical irritation which will render proper nutrition impracticable.

A Substitute Method for Kehr's Drainage of the Hepatic Duct.—During the past two years, in a number of cases, after removing stones from the choledochus, Ahrens has extirpated the gallbladder, closed the incision in the common bile duct, and joined the stump of the cystic duct to the duodenum or end-to-side with the stomach. In this manner he used for drainage a biliary passage that is not subject to obliteration and constitutes, to a certain extent, an accessory common bile duct. The stump of the cystic duct is ligated with fine catgut; a fold of the duodenum or of the juxtapyloric stomach is raised up with two forceps; a scalpel is inserted and this small opening is enlarged with fine forceps introduced. The cystic duct is inserted in this opening, and the duodenum is sutured for some distance to the peritoneum of the gallbladder bed and the choledochus. The cystic duct thus becomes an integral portion of the duodenal wall. A small tampon placed beneath the hepatoduodenal ligament holds the anastomosis in place until healing is effected. The principle is like that of Maylard's method.

Zentralblatt für Gynäkologie, LeipzigJan. 20, 1923, **47**, No. 3

- Transverse Division of Sacrum in Narrow Pelvis. Eymer.—p. 98.
 *Roentgen-Ray Therapy of the Adnexa. W. Flakamp.—p. 100.
 *Treatment of Rebellious Pains in Lumbar Region. G. Burckhard.—p. 107.
 Changes in the Mamma at Menstruation. A. Rosenberg.—p. 111.
 Case of Genuine Missed Labor. F. Kok.—p. 116.
 Total Inversion of Uterus in Woman Aged 70. Fleischmann.—p. 121.
 Connection Between Measures to Protect the Perineum and a Hematoma in Head of Infant. Schneider.—p. 123.

Deep Roentgen-Ray Therapy in Inflammations of the Adnexa.—Flaskamp has found in roentgen rays a valuable adjuvant of other forms of conservative treatment of inflammations of the adnexa. He reviews the ordinary methods of treatment and points out the weak points of each. Physiotherapy (heat, cold and light), while it alleviates pain and checks hemorrhage, effects a cure in only the milder cases. The patient is usually confined to bed for a long period. In the majority of cases the local condition is little changed. Ovarian function remains disturbed. With roentgen rays, 30 per cent. of the Seitz-Wintz erythema dose being employed, it is possible to inhibit for a time the functioning of the follicle apparatus, by which ovarian hemorrhages are engendered, without injuring the endosecretory portion. This technique of temporary sterilization is what Flaskamp employs. It requires precise adjustment, from the physical and biologic side, of the roentgen-ray tubes. Patients with inflammatory changes of all kinds were thus treated and with good success. The first or second week of the intermenstrual period is the appropriate time for the application. Contraindications are endosecretory disturbances, exophthalmic goiter, tendency to myxedema, and psychoses of other than ovarian origin. In 40 per cent. of the patients, amenorrhea was set up at once. The induced menopause lasts from eighteen months to two years. The possibility of conception is not impaired. In thirty-five reported cases, normal children were born following temporary sterilization. A further justification for temporary sterilization is the commonly observed fact that ovarian functioning hampers the curative process in general.

Treatment of Pains in Lumbar Region.—Burckhard recommends what he terms "episacral anesthesia" to combat chronic pain in the sacral region. The results are surprisingly good. He has used the method so far in ten cases (all women), in several of which the patient has been observed for more than a year. The back pains disappeared soon after the injection. A second injection was in no case necessary, but he would not hesitate to give a second injection if needed. No patient has had a recurrence, though several have been doing hard physical labor. A slender needle, such as is usually employed for local anesthesia, is inserted, right or left of the midline of the sacrum. The distance of the sacral foramina from the midline is determined by palpation. The needle is then pushed forward to the third, then to the second, and finally to the first sacral foramen, while, at the same time, small quantities of the fluid are injected. At each sacral foramen he injects from 10 to 15 c.c. of the 0.5 per cent. procaine-pinephrin mixture. Then the needle is drawn back almost to the site of the first puncture, turned, and in the same manner, the fourth and fifth foramina are provided for. He then proceeds in the same manner on the other side. No bad effects were ever noted following the injection. As his series of cases is small, Burckhard gives this merely as a preliminary report, recommending the method for trial.

Časopis Lekarův Cesky, Prague

Dec. 30, 1922, 61, No. 52

Coxalgia of Adolescents. J. Divis.—p. 1241.

*Action of Lymphocytes in Tuberculosis. M. Kaplanova.—p. 1246.

Extraction of Fetus in Breech Presentation. M. Wassermann.—p. 1248.

Obturator Hernia. F. Kudlac.—p. 1249.

Action of Lymphocytes in Tuberculosis.—Kaplanova observed a pleuritic exudate in a case of tuberculosis. Many erythrocytes were arranged around single lymphocytes. This resembled the pictures seen in the peritoneal fluid after intraperitoneal injections of blood corpuscles.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 27, 1923, 1, No. 4

Hay Fever Plants in Utrecht District. Benjamins et al.—p. 330.

Myosclerometer. S. Koster.—p. 342.

*Prelimacteric Corpulence. A. Willemse.—p. 351.

Vaccination Against Typhoid. H. Klein.—p. 355.

Frontal Sinusitis Involving Brain. D. A. van Walree.—p. 365.

Prelimacteric Corpulence.—Willemse remarks that the period just preceding the involution of the ovaries and testes has been studied very little. The climacteric occurs about fifteen years later in men than in women. He has noticed

in the preclimacteric stage that the skin feels less elastic as the hair turns gray and the teeth decay, but the most striking change is the accumulation of fat. In women, just above the wrist there is often a local accumulation of fat, an actual *plica adiposa antibrachii*. Another common deposit of fat is close to the lower jaw. These two locations for local accumulations of fat seem to be peculiar to the approaching menopause, and may warn of its imminence.

Feb. 3, 1923, 1, No. 5

*Formation of Hippuric Acid. I. Snapper et al.—p. 426.

*Myoclonic Reflexes. L. J. J. Muskens.—p. 433.

*Treatment of Epilepsy. F. J. Stuurman.—p. 442.

*Deafness in Schoolchildren. A. Binnerts.—p. 445.

*Acute Dilatation of the Stomach After Delivery. L. van der Perk.—p. 454.

Job van Meekren, M.D., 1611-1666. E. D. Baumann.—p. 456.

Formation of Hippuric Acid.—The research reported from the Amsterdam physiology institute confirms the production of hippuric acid in the kidneys of the dog, hog and sheep, and likewise in man. It further demonstrated that the production of hippuric acid and its elimination in the urine are two distinct functions, and must be estimated separately.

Myoclonic Reflexes.—Muskens analyzes the mechanism of the latent and refractory period with myoclonic reflexes and experimental epilepsy as studied on cats and other animals, with and without drugs.

Treatment of Epilepsy.—Stuurman recorded the number of seizures in patients during periods when they were being treated with bromids or with phenobarbital. The results showed that the latter is useful, and possibly a little more effectual than the bromids, but not enough to compensate for its higher price as a rule. It acts more rapidly than the bromids and hence may be preferable in status epilepticus, and in cases that do not respond to bromids. He noted that the urine after an epileptic seizure was always strongly acid, while preceding the attack it was less acid than normal or even weakly alkaline. Treatment with alkalis or acids kept up for two or three months failed to show any influence, either favorable or unfavorable, on epilepsy.

Deafness in Schoolchildren.—Binnerts comments on the advantages of special schools for the partially deaf. He urges the organization of such a school in every community of 100,000 inhabitants or even less. The difficulty is that the parents often do not recognize the defect in the child, and combat the special schools as inferior. A campaign of enlightenment for teachers and parents must be organized. In the Netherlands, from 0.2 to 2 per cent. of the children are unable to hear a whisper at 2 meters or less.

Acute Dilatation of the Stomach After Childbirth.—No anesthetic had been given, and the acute dilatation gradually subsided after the primipara had been turned to lie on her right side.

Acta Medica Scandinavica, Stockholm

Jan. 27, 1923, 57, No. 5

*Wassermann Reaction in Metasyphilis. T. E. Hess Thaysen.—p. 419.

*Perception and Representation. S. E. Henschen.—p. 458.

Ulcerative Syphilitic Colitis. C. Gram.—p. 502.

Action of Muscle Dehydrogenases. G. Ahlgren.—p. 508.

Prognostic Value of Wassermann Reaction in Metasyphilis.—Thaysen is skeptical about the prognostic value of a positive Wassermann reaction in the blood or spinal fluid in fully developed tabes. In abortive cases, a negative reaction seems to give a better prognosis. The course of the disease is not changed if the treatment changes the reaction of the blood.

Perception and Representation from the Anatomic and Clinical Standpoint.—Henschen tries to define exactly these and similar terms, and discusses the cerebral localization in cases from the literature and one of his own.

Hospitalstidende, Copenhagen

Feb. 7, 1923, 66, No. 6

*Hemoglobin and Corpuscle Volume in Infants. P. Drucker.—p. 110.

Myeloblasts and Partly Granular Myelocytes. Ellermann.—p. 124.

Hemoglobin and Corpuscles in Infants.—Drucker gives eight tables of the findings in large numbers of infants with

acute or chronic digestive disturbance, stenosis of the pylorus or anemia. Nothing was found to show any connection between rachitis and anemia. The blood findings were within normal range in the dyspepsia cases.

Norsk Magazin for Lægevidenskaben, Christiania

February, 1923, 84, No. 2

- *Objective Test for Neurasthenia. G. H. Monrad-Krohn.—p. 113.
- *Tuberculous Brain Tumor. F. Harbitz and Monrad-Krohn.—p. 119.
- *Autogenous Vaccine in Pyelitis. O. Jervell.—p. 126.
- *Erythema Nodosum. A. Wiborg.—p. 135.
- *Determination of Nonprotein Nitrogen in Blood. Arnesen.—p. 136.
- *Specific and Nonspecific Therapy. K. Hansen.—p. 153.

Test for Fatigue in Neurasthenia.—Monrad-Krohn gives an illustrated description of an apparatus with movable diaphragm which shows the visual field for each eye separately, and the amount of overlapping of these fields in binocular vision. The test is made with a single long number of thirty digits. In his hundreds of applications of this test, the overlapping digits were numerous only in persons much fatigued from recent exertion. By this means we can tell whether the neurasthenic subject is overdoing, and thus be able to guide him into safe channels. He adds that work at home, or family "scenes" are often more fatiguing than a day's work outside.

Tuberculosis of Base of Brain.—Harbitz and Monrad-Krohn report a case of tuberculoma of the optopeduncular region, and signs of old and manifestly regressive tuberculous meningitis; the pituitary was intact. The man aged 27 had been apparently healthy until frontal headache developed and vision became impaired. The symptoms progressed to a fatal termination in five weeks.

Autogenous Vaccines in Treatment of Pyelitis.—Jervell relates that only nineteen of his fifty cases of pyelitis were treated with autovaccines. The colon bacillus was responsible for the pyelitis in these cases. Only six were cured and five improved; no effect was apparent in eight. The patient's serum agglutinated the colon bacillus only in seven cases.

Erythema Nodosum.—Wiborg states that in a recent series of thirty cases of erythema nodosum 86.67 per cent. were children. Most of the cases occurred in a single month, but there were only single cases in the different families. The affection seemed to rouse a latent tuberculosis in some of the cases.

Nonprotein Nitrogen in the Blood.—Arnesen points out some sources of error in the current tests for nonprotein nitrogen in the blood or serum, and describes means to insure precision. He tabulates the findings in a number of cases for comparison.

Specific and Nonspecific Therapy.—Hansen reviews recent literature on protein therapy and shock therapy in general. The nonspecific substances seem to act alike, and there is not much choice between them. Certain facts observed suggest, however, that some of these substances have an elective stimulating action on certain cells. This opens a new field for research.

Ugeskrift for Læger, Copenhagen

Feb. 1, 1923, 85, No. 5

- *Psychic Disturbances After Epidemic Encephalitis. K. Winther.—p. 73.
- *Calcium Treatment of Nervous Headache. C. I. Baastrup.—p. 75.
- Cannula and Syringe for Treatment of Syphilis. K. Philipsen.—p. 77.

Postencephalitic Psychic Disturbances.—Winther relates that 8 of his 31 patients with epidemic encephalitis presented confusion, delirium or stupor during the acute phase. In 4 cases the acute phase was followed by a state of apathy and inability to work, which lasted for from six months to three years. In 4 others this psychasthenia was accompanied with irritability and emotional instability. This stage lasted from six months to two and a half years. The trend was towards final complete recovery in these two groups. In 2 men, aged about 50, a manic-depressive condition followed the acute phase, and incapacitated the men for a year, with final recovery. Two men in the twenties had apparently recovered from the encephalitis, but two years later developed maniacal excitement and motor agitation. This condition gradually

subsided in a month, but one was left with a complete change of character, irritable and thieving. The connection with the encephalitis two years before was evident from the bilateral paresis of accommodation and insufficiency of convergence, which testify to epidemic encephalitis, as well as the severe motor symptoms suggesting chorea. The complete Korsakoff syndrome developed in one man, aged 47, four years after epidemic encephalitis. In 6 cases of the disease in previously normal children, the acute phase was followed by symptoms of psychopathic degeneration. They have persisted unmodified for two years to date. Probably many of the inmates of our asylums have a history of epidemic encephalitis in childhood although the disease may have escaped recognition at the time. The children with these congenital and acquired degenerative psychopathies should be placed in a special institution where they would be under strict supervision and teaching. Kleptomania is common among them. In Winther's 25 cases of epidemic encephalitis, 1918 to 1922, 11 patients died in the acute stage and he has lost track of 2. Of the other 12, none had recovered within six months; severe mental disturbances were still evident two years later in 5, and 2 others presented disturbances of a milder form.

Calcium Treatment of "Nervous Headache."—Baastrup reports experiences which justify tentative calcium treatment in all cases of rebellious headache for which no special cause can be discovered. In some patients in this class a tendency to recurring attacks of Quincke's edema suggested that the headache might be due to the intracranial extension of the process, and that calcium would be the logical treatment. A familial predisposition was always evident in this group. The recurring attacks and puffiness under the eyes, swelling of the lips and other manifestations of Quincke's edema were accompanied by the severe headache. The portrait of the grandfather of one of these patients showed the same puffiness under the eyes. Baastrup gave calcium lactate, 1 gm. one to three times a day for three weeks, and then with longer intervals for ten days. The results were excellent: The edema and the headache subsided, as also a vasomotor rhinitis which had proved refractory for several years. In other cases absolutely no cause could be discovered for the "nervous headache," but the calcium tablets proved equally effectual. The children in these families were usually of the exudative diathesis type. The blood may show a lymphatic tendency in cases of nervous headache, and this is a further indication for calcium treatment.

Feb. 8, 1923, 85, No. 6

- Fracture of Coronoid Process of Ulna. H. Abrahamsen.—p. 89.
- Metal Bands for Fractured Bones. Schleisner.—p. 91.
- Modern Treatment of Tropical Diseases. H. C. Gram.—p. 92.
- *Calcium Treatment of Nervous Headache. A. Tofte.—p. 97.

Nervous Headache.—Tofte confirms Winther's statements and reports an instructive case of rebellious headache after an abortion. The blood was of the lymphatic type, and the woman was weak and languid. Under calcium, conditions returned to approximately normal, and a normal pregnancy followed. The calcium was kept up throughout, and only once was there a transient tendency to headache.

Upsala Läkareförenings Förhandlingar, Upsala

Feb. 10, 1923, 28, No. 3-4

- *Psychic Energy and Mental Insufficiency. H. Sjöbring.—p. 163.
- *Sugar Content of the Blood in Fever. B. Jacobowsky.—p. 215.
- *Anatomy of Rabbit Skeleton. H. A. Landing.—p. 237.

Psychic Energy and Mental Insufficiency.—Sjöbring discusses (in English) what energy means in relation to psychic activity. He explains the importance of the energy problem for both organic psychoses and functional psychic disturbances.

The Blood Sugar Curve After Heat Puncture.—Jacobowsky concludes from his experiments on rabbits that the rise in temperature induced by heat-puncture does not cause hyperglycemia. Consequently he assumes that the high sugar content of the blood in febrile infectious conditions is not due to the fever itself but to the action of infection toxins.

Study of Skeleton at Different Ages.—Landing reports extensive research on the anatomy and course of ossification of the bones in fifty male and fifty-five female rabbits.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 15

CHICAGO, ILLINOIS

APRIL 14, 1923

THE DIAGNOSIS OF BRONCHIAL ASTHMA*

CHARLES H. EYERMANN, M.D.
ST. LOUIS

The term asthma is one which has been rather loosely applied to all conditions in which dyspnea is a pronounced symptom, but we can now obtain sufficient evidence to restrict its use to the affection known as bronchial or spasmodic asthma; in other words, to that condition characterized by dyspnea, the result of allergenic reaction.

The accumulated knowledge of the last ten years is greatly in favor of hypersensitiveness as the basic factor. It is not germane to the present purpose to discuss the pioneer work which placed bronchial asthma on an allergenic basis. At least from a clinical standpoint, the evidence is too overwhelming to deny the existence of this association, so it is desired to emphasize those factors that should be considered before applying the term asthma to a given condition.

THE HISTORY OF SIMILAR SYMPTOMS IN THE ANTECEDENTS

Longcope¹ believes there is an apparent definite tendency toward inheritance. He states that the symptom of allergy appears early in many and may be observed on first contact with a given protein. Cooke and Vander Veer² found a positive family history for hypersensitiveness in 48 per cent. of their cases of clinical hypersensitiveness, while only 14.5 per cent. of normal persons gave a positive antecedent history. Adkinson,³ in Walker's cases, found 48 per cent. giving a positive family history. Again, Rackemann⁴ found 58 per cent. of sensitive cases presenting a positive family history, while only 10.5 per cent. of nonsensitive cases gave such a history. Among the pediatricians, Talbot⁵ found a positive family history in all of nineteen cases of asthma in children that he studied in great detail; Schloss,⁶ 59 per cent. in eighty children; Herman,⁷ 65 per cent. in sixty-one children with a positive family history. By a positive history is meant the occurrence of asthma, hay-fever, eczema and urticaria.

Thus it becomes pertinent that the family history of approximately 50 per cent. of cases supplies one link in the diagnosis. One should be warned that scrupulous attention must be observed in obtaining this history. All types of dyspnea have been called asthma in the past, so that one applies to this antecedent history the same safeguard that one applies in obtaining the history of the present illness. The question of hay-fever and urticaria in the antecedent is rather easily determined, but the question of asthma and eczema is one that is shrouded in all sorts of phantasies in the lay mind.

AGE OF ONSET

It has been shown that the age of onset is very important and seems to bear a definite relationship to sensitivity.⁸ By means of sensitization tests, it has been found that the earlier in life symptoms of hypersensitiveness manifest themselves, the more likely they are to be due to sensitization. Approximately 80 per cent. of patients whose symptoms commence before the age of 2 years have given positive cutaneous reactions; then, as the age of onset increases, the percentage of sensitization decreases, and necessarily the percentage of nonsensitive cases increases. More definitely stated, the nonsensitive cases number more than 50 per cent. when the age of onset is beyond 20 years. When the age of onset is past 40 years, the great probabilities are that they are nonsensitive. Walker,⁹ finds no positive cases after fifty years; Cooke and Vander Veer,¹⁰ only one case, which covers the two largest reported groups of asthmatics. In our own smaller group, there is one instance in which the suspicion of sensitivity in a man past 60 years is very strong, but the proof is difficult, owing to the associated pathology.

Cooke and Vander Veer² believe, further, that the age of onset is influenced by heredity. They have presented evidence that when the inheritance is derived from both the maternal and the paternal sides, the period of greatest liability is the first five years; that when it is derived from either parent alone, the age of onset is between 10 and 15 years; that when the age of onset is after 20 years, no history of parental hypersensitiveness is obtained. In the latter instance, if one subscribes to the theory of heredity it can be presumed that the inheritance is more distant.

It is well to point out here that asthma in infants and young children is manifested most frequently by so-called colds and bronchitis. These symptoms take on the appearance of chronicity very easily, owing to the fact that, if due to a food, it would be one eaten rather frequently, or if due to inhalation, there would be constant exposure to the keratoproteins usually found

* From the Medical Clinic, Washington University Dispensary.

1. Longcope, W. T.: The Susceptibility of Man to Foreign Protein, *Am. J. M. Sc.* **152**: 625 (Nov.) 1916; Protein Hypersensitiveness and Its Importance in the Etiology of Disease, *J. A. M. A.* **77**: 1535 (Nov. 12) 1921.

2. Cooke, R. A., and Vander Veer, Albert, Jr.: Human Sensitization, *J. Immunol.* **1**: 201 (June) 1916.

3. Adkinson, J.: Genetics, **5**: 363, 1920; *Oxford Medicine* **2**: 233.

4. Rackemann, F. M.: A Clinical Study of 150 Cases of Bronchial Asthma, *Arch. Int. Med.* **22**: 517 (Oct.) 1918.

5. Talbot, F. B.: Asthma in Children, II, Its Relation to Anaphylaxis, *Boston M. & S. J.* **175**: 191 (Aug. 10) 1916.

6. Schloss, O. M.: Allergy in Infants and Children, *Am. J. Dis. Child.* **19**: 433 (June) 1920.

7. Herman, Harold: A Critical Study of Sixty-One Cases of Asthma and Eczema in Infancy and Childhood Controlled by Cutaneous Protein Sensitization Tests, *Am. J. Dis. Child.* **24**: 221, 1922.

8. Walker, I. C.: A Clinical Study of Four Hundred Cases of Bronchial Asthma, *Boston M. & S. J.* **179**: 288 (Aug. 29) 1918.

9. Walker, I. C., in *Oxford Medicine* **2**: 229.

10. Cooke, R. A., and Vander Veer, Albert, Jr., in *Tice's Medicine* **5**: 499.

to be etiologic factors. Further, since infants spend most of their lives sleeping, by themselves, especially after eating, they could have true asthmatic attacks without the immediate family being cognizant of an ailment, and thus develop bronchitis as the presenting symptom.

Thus, we have another factor which materially assists us in arriving at the diagnosis of bronchial asthma. When one learns that there is an early age of onset of symptoms characteristic of paroxysmal dyspnea due to protein sensitization, if one can fortify this knowledge with a positive antecedent history, one has at least strong presumptive evidence that one is dealing with bronchial asthma.

SYMPTOMS

All attacks of paroxysmal dyspnea can be divided into two classes. In one, in which positive cutaneous protein reactions have been obtained, the first symptom noted by the patient is a sense of constriction or tightening in the chest, followed by increasing respiratory difficulty, more pronounced with expiration, and eventuating in a cough, which is dry at first, but becomes in a short time characteristically productive. This sequence of events will not vary in the sensitive cases, no matter how long standing the condition. This type of attack occurs at any time, day or night, not with any regularity, and unassociated with exertion. Often this type of paroxysmal dyspnea is preceded by so-called head colds, which consist of sneezing and the production of a colorless coryza. I believe that when the coryza remains colorless, it is but the nasal manifestation of hypersensitiveness, and that the subsequent dyspnea is the bronchial manifestations of the same protein irritant. Clinically, it apparently makes no difference how the protein is introduced. This sequence of symptoms, from sneezing and coryza to spasmodic dyspnea, or spasmodic dyspnea alone, has been observed to occur in sensitive patients, whether the exposure to the offending protein is by inhalation (keratoprotein and pollen) or ingestion (food proteins).

Records of the following cases will help to illustrate the foregoing.

REPORT OF CASES

CASE 1.—A boy, aged 5 years, had complained of asthma since the age of 1 year, preceded by eczema existing since the age of 6 weeks. He had asthmatic attacks at least once each month, and frequent head colds, with much sneezing and coryza. He had had thorough nose and throat attention without relief. Of significance to us in the family history is the fact that the father has "rose fever," consisting of paroxysmal sneezing and coryza, commencing about the first of June and lasting to mid-July. This patient gave positive cutaneous reactions to the split proteins of wheat, potato, egg, oat, horse dander, wool, cat and dog hair, goose feathers and ragweed. Appropriate treatment by nonexposure to the offending proteins has made this child asthma free and also free from head colds. To be noted in this case, particularly, are the early onset of asthma preceded by eczema, which is a very frequent preceding factor; the positive antecedent history; the removal of laryngologic foci without benefit, and the improvement by the mere withdrawal of the etiologic factors.

CASE 2.—A woman, single, white, aged 37, seen, Feb. 14, 1921, had complained of asthma, distinctly nonseasonal, since the age of 6 weeks. The family history for allergenic phenomena was unreliable. Physical examination, including laryngologic examination, was essentially negative. Positive cutaneous reactions were obtained to casein, barley, oat, rice and pea. Appropriate abstinence in her diet has made this patient practically asthma free.

CASE 3.—A man, white, aged 54, seen, Dec. 5, 1921, complained of asthmatic attacks for the last thirty-five years.

The essential features in this patient were positive cutaneous reactions to horse dander, chicken feathers and dog hair. Through the elimination of these factors, he has been asthma free since Dec. 19, 1921.

To be noted in these adult cases is the early age of onset and the improvement with nonexposure to the offending proteins despite the long continuance of symptoms. The last patient received desensitization injections of horse dander because his employment required the handling of horses. During the year of observation, he had one week of discomfort, which is to be compared to his previous more or less constant dyspnea. In all three cases, it is noteworthy that the physical examination was essentially negative. In the adult cases, the existence of emphysema can be assumed, although at the present time it is producing no clinical manifestations.

In the other type of paroxysmal dyspnea, in which no positive cutaneous protein reactions are obtained the attack is initiated by cough, of progressive frequency and severity, that by its very nature produces dyspnea, a dyspnea rather inspiratory than expiratory, and finally relieved by productive expectoration. The sputum is more frequently purulent, particularly if there are head colds in which the nasal secretion is yellow and thick. If these attacks have existed for some time, there is noticeable dyspnea on exertion, or exertion may provoke the attack. This type is found in children and young adults associated with nasopharyngeal and respiratory infections. But when it develops during or past middle age, the symptoms usually come on with cold weather, so-called "winter asthma," the sputum in the latter type being more frequently watery and frothy, rather than purulent. The description of emphysema in Osler's Practice of Medicine exactly fits the latter type. There is, however, a "winter asthma" occurring in children and young adults in whom positive reactions are obtained to the keratoproteins, due to their more intimate exposure to the offending protein during the winter months (keratoproteins).

It can be presumed that there is some bronchial constriction in these nonsensitive cases, since they are partially relieved by the inhalation of antispasmodic fumes. These drugs release the muscular constriction, thus setting free the sputum, which is expectorated, with consequent relief. The muscular constriction probably results from local irritation due to protracted coughing and to the tenacious secretion. It has been our observation that the relief obtained from antispasmodic remedies in the nonsensitive cases is not as marked as that obtained when the bronchial constriction is due to protein irritation. In the nonsensitive case, there is usually a gradual diminution of symptoms, and not the startling rapid relief seen in the true bronchial asthmatic.

It has been mentioned that irregularity of attacks characterizes the sensitive cases. There are exceptions. Patients sensitive to pollen usually have their attacks of dyspnea at night. It is thought that this is so because hay-fever sufferers are forced to become mouth breathers while asleep, and thus the same turgescence and edema are produced as in the nasal apparatus. Just recently, we have had some support in this belief in a patient who had nonseasonal hay-fever, or allergenic coryza, from flour dust, giving positive cutaneous tests to the split proteins of wheat. In order that he might continue his work, he plugged the nostrils with cotton, which resulted in a noticeable amelioration of the nasal

symptoms; but he developed an irritative cough and paroxysmal dyspnea, for which he sought relief. Also, patients sensitive to the keratoprotein necessarily have the greater number of their attacks at night because it is at this time that they are in contact with these proteins.

One cannot be too dogmatic in outlining the symptoms of paroxysmal dyspnea. Frequently, repeated attacks in the true asthmatic may produce sufficient bronchitis, so that the symptoms simulate the nonsensitive dyspneic. Constant exposure to one offending protein may produce continuous dyspnea or the clinical picture of emphysema. The history and sensitization tests are an invaluable aid and will make the diagnosis. But from the standpoint of symptomatology, one feels safe in saying that the great majority of sensitive cases are characterized by spontaneous attacks, usually unassociated with exertion, and initiated by an oppressive feeling in the chest or chest tightening and dyspnea, followed by cough; while in the nonsensitive cases the attacks are initiated by cough, followed by dyspnea and chest oppression, and more frequently associated with exertion. In general, one can say that dyspnea on exertion or nocturnal dyspnea does not indicate bronchial asthma. Our observation has been that the conditions most frequently appearing in the asthma division of the general medical clinic of the Washington University Dispensary under the diagnosis of bronchial asthma are: hypertension, aneurysm, chronic cardiac diseases, pulmonary tuberculosis, emphysema and obesity.

The following cases will illustrate a few of the wide variety of clinical entities appearing with the diagnosis of asthma; they are presented because the patients stated that they had been previously treated for asthma.

CASE 4.—A man, colored, aged 48, seen, Oct. 9, 1922, complaining of asthma of six weeks' duration, suffered from dyspnea on exertion and nocturnal dyspnea. The salient features of the examination were aneurysm of the descending aorta, by fluoroscopic examination, and a positive Wassermann reaction.

CASE 5.—A woman, white, aged 56, seen, March 24, 1922, complaining of asthma since December, 1919, at the age of 19 years had an attack of asthma which lasted for three days and was relieved by compound licorice powder. At the age of 36 years, she returned to St. Louis from San Francisco, and had a similar attack, occurring in the fall and lasting until late spring. She returned to St. Louis in the fall of 1919, and again commenced having difficulty in breathing. Since the onset of the trouble in 1919, asthma consisted of dyspnea on exertion and orthopnea. The patient was an obese woman, 5 feet 3 inches tall, and weighing 217 pounds (98.2 kg.). The family history for all allergenic phenomena was unreliable. Salient points of the physical examination were: blood pressure, systolic, 180, diastolic, 90; pulse rate, from 90 to 100, and pretibial pitting. The electrocardiogram shows left ventricular preponderance. Cutaneous sensitization tests were negative. After appropriate therapy for the evident decompensation, the patient was placed on a reduction diet, and when last seen weighed 171 pounds (77.7 kg.). It is also interesting to note that at this time the blood pressure was 120, systolic; 80, diastolic. Commencing with this reduction, there has been improvement of her dyspnea. Despite the previous history, which might lead one to believe that she was, or had been, suffering from seasonal bronchial asthma, she passed through the last ragweed season without any symptoms referable to sensitization. We felt certain that this would be the case on account of the negative tests obtained with pollen.

CASE 6.—A man, married, aged 46, seen, Nov. 21, 1922, complaining of asthma, for which he had been treated for the last twelve years, with dyspnea on exertion and nocturnal

dyspnea, the latter being relieved by productive expectoration, had had no spontaneous asthmatic attacks. He had lost 50 pounds (22.7 kg.) during the course of his illness. The essential feature of the physical examination was an advanced pulmonary tuberculosis, which was substantiated by roentgenologic studies of the lungs and the presence of many tubercle bacilli in the sputum. It is unnecessary to point out that this man lost twelve years of proper treatment by being passed along as an asthmatic.

CASE 7 (Courtesy of Dr. A. E. Strauss, director of heart clinic).—A man, colored, aged 68, seen, Feb. 20, 1922, stating that he had been treated for bronchial asthma for the last year, complained of smothering spells and orthopnea. As a result of examinations, pulsus alternans, chronic myocarditis, hypertension and general arteriosclerosis were diagnosed.

In this group of cases, we have patients treated for asthma for periods varying from twelve years to six weeks, in whom the dyspnea was but the symptom of a condition unrelated to the allergenic phenomena. Also, it is to be emphasized that the symptom "asthma" in these cases consisted of orthopnea and dyspnea on exertion, and that the age of onset was late in life.

I do not desire to minimize the physical examination, for it is of invaluable assistance in establishing the differential diagnosis. However, it is unfortunate that there are no physical findings typical of bronchial asthma. During an attack, the prolonged wheezing expiration heard and the expiratory effort seen will come nearer identifying the attack as a result of bronchospasm than any other physical finding, but it will not definitely class the case as one of bronchial asthma. It is difficult to differentiate the cause of an attack of paroxysmal dyspnea by physical examination alone, many clinical entities giving similar pictures. Between attacks, it is more usual for the nonsensitive cases to have the physical findings of chronic bronchitis contrasted, with certain exceptions, with the clear chest of the true asthmatic between attacks.

We have available, then, three factors with which to build up our diagnosis of bronchial asthma: the history of similar symptoms in the antecedents, the age of onset and the typical symptomatology of the true asthmatic. This conception does not relegate the sensitization tests into disuse, for they remain the keystone of the diagnosis. A positive sensitization test, proved to be the etiologic factor by production of the dyspnea through exposure to the protein which gave the positive reactions, makes the diagnosis of bronchial asthma, even if the factors before mentioned were all negative. On the other hand, negative sensitization tests in a patient with an early age of onset, the symptomatology of a true asthmatic and a hereditary influence could properly lead to a diagnosis of bronchial asthma. The negative tests may be due to the fact that one has not tried the proper protein, that the product used has deteriorated or that the patient is sensitive to a protein hitherto unsuspected as a causative agent. The knowledge concerning etiologic factors in bronchial asthma advances very rapidly. It is but recent that house dust,¹¹ glue,¹² the dander of the rabbit¹³ and goat hair¹¹ have been implicated, to any extent, as causa-

11. Cooke, R. A.: Studies in Specific Hypersensitiveness, IV, New Etiological Factors in Bronchial Asthma, *J. Immunol.* **7**: 147 (March) 1922. Vander Veer, Albert, Jr.: The Present Status of the Treatment of Hayfever and Asthma, *Am. J. M. Sc.* **164**: 97 (July) 1922.

12. Cooke, R. A.: Studies in Specific Hypersensitiveness, III, On Constitutional Reactions: The Dangers of the Diagnostic Cutaneous Tests and Therapeutic Injection of Allergens, *J. Immunol.* **7**: 119 (March) 1922.

13. Ratner, Bret: Rabbit Hair Asthma in Children, *Am. J. Dis. Child.* **24**: 346 (Oct.) 1922; *M. Clin. N. America* **5**: 1129 (Jan.) 1922; Herman, Harold (Footnote 7). Cooke, R. A. (Footnote 11). Larsen, N. P., and Bell, S. V.: Classification and Management of Asthma in Children, *Am. J. Dis. Child.* **24**: 441 (Nov.) 1922.

tive agents. However, Sewall,¹⁴ in 1914, reported a case of asthma related to him by V. C. Vaughan, Jr., due to exposure to rabbits. Vander Veer¹⁵ notes, in a summary of cases investigated since 1917, that his percentage of undiagnosed cases has decreased from 29 in 1917 to 17 in 1920, owing to the increasing knowledge of new etiologic factors.

As examples of difficulties encountered, Cases 8, 9 and 10 are presented.

CASE 8.—A girl, aged 10 years, seen in the asthmatic division of the general medical clinic, Sept. 14, 1922, with complaint of asthma existing for two years, the difficulty in breathing following a persistent head cold with copious watery nasal discharge, and the attacks being distinctly non-seasonal, since onset of illness had done considerable sneezing, sometimes in paroxysms. Since February 28, she had been under observation in the pediatric service. From April 3 to June, she was under observation in the Children's Hospital, during which time there were no asthmatic attacks. Suppuration in the ethmoidal and sphenoidal sinuses, and infected tonsils and adenoids were the outstanding features of the examination. After some local treatment in the nose and throat clinic and a resumption of the asthmatic attacks, the patient reentered the Children's Hospital, July 6, and had most thorough laryngologic operative work done. During the period of her stay in the hospital, she had no asthmatic attacks, but very shortly after her return home the asthmatic attacks recommenced. We have seen this patient in an effort to determine the etiologic factor. She has given borderline positive reaction to cat and to camel hair. There has been no specific treatment, but a search for the source of contact with the offending protein has been made. The attacks became rather severe during the latter part of December, and she reentered Children's Hospital the first week of January. She is still there at the time of writing, and has been asthma free ever since. In this case, to be noted are the onset with copious watery nasal discharge; the purulent nasal condition, being secondary infection; the operative relief of the evident pathologic condition, without influence on the asthmatic attacks, and the prompt relief, without specific treatment, by removal from her usual environment.

CASE 9.—A woman, white, married, aged 33, who entered Barnes Hospital with extreme dyspnea, a condition of three weeks' standing, has just returned from the West, where she had gone thirteen years previously on account of attacks similar to the one she had at the present time. She became progressively better while under our observation in the hospital, without any particular treatment. Cutaneous sensitization tests were negative, as were the general physical examination and all laboratory findings. We have heard recently of this patient, and she is again having attacks of paroxysmal dyspnea. Questioning has brought out the fact that during the first attack of paroxysmal dyspnea, thirteen years ago, she was working in a grocery store and living in quarters above it; that at the present time, she is similarly situated, and that while in the West she was not so situated.

CASE 10.—A woman, white, aged 40, who was seen, Oct. 18, 1921, complained of asthma of ten years' standing, which had become progressively worse for the last two or three years. Her attacks were associated with exertion and occurred at night, but she also had spontaneous attacks during the day time. At the time of examination at the dispensary, she was in evident respiratory distress. She was placed in Barnes Hospital for study. During her stay there, she had no asthmatic attacks. Exercise tolerance tests produced dyspnea. Cutaneous tests were negative. Roentgenograms of her lungs were interpreted as revealing pulmonary tuberculosis. Frequent sputum examinations did not show tubercle bacilli. At this admission, she was not considered as having bronchial asthma, and it was thought that she had dyspnea on exertion as the result of either a cardiac or a pulmonary condition.

After her discharge from the hospital, she was seen again. The asthmatic attacks recurred after her return home from the hospital.

This patient has had three admittances to Barnes Hospital with practically immediate relief from the asthmatic attacks, and attacks have occurred almost immediately on return to her home. Many cutaneous tests have been made on this patient, and one obtains only suspicious positive reactions to the keratoproteins.

These three cases can be diagnosed as bronchial asthma, despite inconclusive cutaneous reactions, because prolonged observation has shown that in these patients the attacks occur only in certain localities; they give a typical symptomatic history, and have an early age of onset. From our observations, we conclude that they are sensitive to a protein peculiar to their environment. They readily fall into the class of dust asthmatics, recently called to our attention by Cooke and Vander Veer. It is believed that dust is an etiologic factor in some cases only so far as it contains the offending protein. In one of the instances cited, we have not found the offending protein; in the other two, we are suspicious that they are sensitive to one of the keratins.

CONCLUSION

I desire to stress the fact that in addition to a thorough physical examination, a painstaking history gives us the diagnostic solution of many of our cases of paroxysmal dyspnea. It is a history that requires patience, thoroughness, system and intelligent cooperation on the part of the patient. Such a history, with the information obtained from sensitization tests, and complete physical examination, makes it possible for us to restrict the term bronchial asthma to those conditions the result of allergenic reaction. We should inculcate the fact that bronchial asthma is an allergenic manifestation characterized by recurrent attacks of paroxysmal dyspnea, due to spasm of the bronchioles, developing as the result of exposure to a foreign protein to which the individual is sensitized; and thus eliminate such terms as cardiac, renal, uremic and winter asthma. The application of the term asthma to any other condition is a nosologic error, alike confusing to the medical profession and misleading to the patient.

401 Humboldt Building.

Factors Affecting Plankton.—Some years ago, it was said the degree of pollution of a stream was indicated by certain species of plankton, a collective name for the minute free-floating organisms which live in practically all natural waters. While this has never been disproved, other factors which require prolonged study must be considered. In a bulletin on the self-purification of the Ohio River, the U. S. Public Health Service points out that among the sanitary problems awaiting solution are: (1) the relations between plankton and the pollution of streams; (2) the correlation of this fact and other known factors, and (3) the mechanism of these and other factors in the self-purification of water. Plankton are subjected to many hazards. As they are carried down stream their number varies with the depth, velocity, and turbidity of the stream, with the temperature and amount of sunlight and organic matter, with the increase and decrease of other plankton that form their chief food. Sluggish water favors multiplication in most plankton; flood waters interfere with their feeding and bury them under sand and mud. Cold weather decreases their number; warm weather increases it. Pollution, in brief, is only one factor that affects the number and kind of plankton in a stream, and before any deduction can be drawn from them concerning pollution, it is necessary to know many other factors—industrial acids entering the stream, weather conditions, floods, etc.—which vary with each stream and at almost every location on a stream.

14. Sewall, Henry: Some Relations of the Brain and of the Olfactory Apparatus to the Processes of Immunity, *Arch. Int. Med.* 13:856 (June) 1914.

15. Vander Veer, Albert, Jr. (Footnote 11, second reference).

REFLEX ANURIA

REPORT OF CASE WITH UNIQUE BLOOD CHEMISTRY FINDINGS AND AN UNUSUAL APPLICATION OF THE DUODENAL TUBE*

JOSEPH F. McCARTHY, M.D.

JOHN A. KILLIAN, PH.D.

AND

ARTHUR F. CHACE, M.D.

NEW YORK

If the statement so often repeated is true that medical progress occurs in cycles, with equal verity it may be stated that we are now in the cycle of physiologic chemistry. Fortunately, our own work has been guided by men in the forefront of this movement of whose studies and advice we have freely availed ourselves, being taught thereby, from a surgical standpoint, when to lay hands on and when to keep hands off an operative urologic case. They have, at least in the borderline case, converted a clinical "hunch" into something approximating a reasonable degree of certainty. Notable in the above mentioned efforts has been the striking benefit to the clinician and the surgeon afforded by the relatively simple and accurate methods of blood analysis introduced by Folin, Benedict, Myers and others. Following the introduction of these methods, a considerable amount of valuable clinical data has already been accumulated. In this connection, we desire to record a case, with the idea that it may serve as a stimulus to others to publish findings pertinent to this field of endeavor, so that the knowledge derived therefrom may soon be sufficient to standardize, if possible, our points of view on this subject.

REPORT OF CASE

Mr. L. M., aged 35, a bank clerk, native of Canada, admitted to the hospital, March 7, 1922, complained chiefly of pain on the left side, persisting at irregular intervals for the last five months. The family history was negative, and there was nothing of note in the past illness save a loss of weight of about 10 pounds (4.5 kg.) in the last five years. The present illness began about five months prior to the patient's admission to the hospital, with pain in the upper left quadrant of the abdomen. This pain suddenly appeared after dinner. It was of a sharp, colicky nature, radiating to the left testis, persisting with the same intensity for about a week, and necessitating administration of codein and heat for its alleviation. At this period, urination occurred from eight to ten times a day. Dysuria was absent. Vomiting was recorded three hours after the onset of pain. The patient thought that during the first week blood had been observed in the urine (his wife called the attention of his physician to it). Marked rectal and vesical tenesmus was also noted. The temperature rose as high as 103.8 F. the first night and remained at 102 for about the first week. The second week, the temperature was about 100. No chills or chilly sensations were experienced.

Following the first attack, the patient had about six similar attacks, though not as severe as the first, nor with the temperature excursions then noticeable. At the time of admission, the urine had a specific gravity of 1.025, and was negative for protein and sugar. Three succeeding examinations gave similar reports, except that triple phosphates and oxalates, a few leukocytes and some mucus were found. Later examinations revealed a trace of protein and a few hyaline casts. From the foregoing history, a tentative diagnosis was made of left sided ureteral calculus. The patient was admitted to the medical department for gastro-intestinal roentgen-ray examination, since the patient as well as his

family physician, who was a relative, wished to rule out the gastro-intestinal tract as the offending factor.

Aside from the fact that the patient was a poorly developed and indifferently nourished person, the physical examination brought out nothing worthy of note. The roentgen-ray examination, March 10, gave comparatively negative findings. The first roentgenographic examination of the genito-urinary tract showed what appeared to be kidney shadows of comparatively normal contour and illumination, although the left was a shade larger than the right; the latter was lower in its position on the two exposures to such a degree that in one it was above, in the other below, the level of the transverse process of the third lumbar vertebra, whereas the left kidney had retained its position. The upper urinary tract was clear of calculi or calcareous deposits. However, on each side of the pelvis appeared several pea-sized shadows. On the right side, these were fairly low and outside the course of the ureter, and, therefore, probably phleboliths. On the left side, there appeared a single smaller shadow, probably also a phlebolith. On the other hand, it was necessary to consider a calculus.

On the morning of the 15th, another roentgen-ray study of the genito-urinary tract was undertaken. Here, it was noted that a mass appeared overlying the lower pole of the left kidney, and a pyelogram was suggested to confirm this finding. March 15, the patient was turned over to one of us for examination of the genito-urinary tract, with these findings: An exploratory examination with a 16 F. McCarthy cysto-endoscope revealed the bladder, both ureteral orifices and the internal sphincter normal; the bladder was intolerant to inflow of fluid above 8 ounces; the urethra was deep; the verumontanum was somewhat enlarged; there was moderately increased congestion.

On rectal bimanual examination, both lateral lobes of the prostate were similar in outline and size, and not enlarged. Nothing of significant nature was elicited. Abdominal palpation was negative, and no subrenal tumefaction was found, as indicated in the roentgen-ray examination. On advice, further exposure to roentgen rays was deferred for a time, and a differential renal function test was made. The urethra would not admit a cystoscope larger than a 16 F., so we were limited to catheterization of one ureter, the left, which admitted a No. 6 ureteral catheter to the renal pelvis. A specimen collected was sent to the laboratory for microscopic and cultural findings. Aside from a few pus cells, these were negative. A fifteen-minute phenolsulphonephthalein estimation was made, and from the left side but 3 per cent. was obtained, whereas, from the bladder, through the cystoscope that represented the right side, together with possible leakage along the left ureteral catheter, the return amounted to 40 per cent. The patient had a pronounced reaction from this examination. After a day or two, he was permitted to go to his home for a short sojourn until the roentgenologist deemed it advisable to take a pyelogram.

March 22, an 18 F. cysto-endoscope was introduced, and the left ureter was catheterized to the pelvis, a roentgenogram being taken before and after the introduction of 20 c.c. of a 25 per cent. solution of bismuth and ammonium citrate. After the exposure, this solution was drained off, apparently completely. The roentgenogram showed a dilated renal pelvis, the shadows previously noted being extra-urinary. Following this, the patient had a restless night, and vomited a moderate amount of light colored fluid. The next day, he complained of headache, and vomited continuously, but the bowels moved at regular intervals. The usual report on urine voided was noted, but the amount was not stated. Treatment given at this time consisted of applications of a Pressnitz dressing to the abdomen, and the administration of alkalis, cerium oxalate and bismuth subcarbonate. On the 25th, the vomiting continued. A specimen of urine was sent to the laboratory, the amount of which was not stated. The therapy employed consisted of colonic irrigations and a Pressnitz dressing. On the 26th, the patient voided, but the amount was not recorded. Apparently from the 27th (five days after the pyelogram was taken) a condition of comparative anuria supervened and the patient grew increasingly restless, with more or less constant vomiting of light brownish fluid. From 6 a. m. on the 26th to 6 a. m. on the 29th, three days, the patient voided 48 c.c. of urine. The treatment comprised administration of

* From the departments of urology, biochemistry and medicine, New York Post-Graduate Medical School and Hospital.

infusion of digitalis, and the bromin sodium salicylate, colonic irrigations with sodium bicarbonate, and employment of the rectal drip and of heat. Subsequently, the patient expelled the drip, and he became intolerant to the use of the rectal tube so that this avenue of relief was closed. At 8 a. m. on the 29th, he voided 24 c.c. of urine.

To clear up the possibility of a retention of pyelographic fluid in the renal pelvis, an attempt was made to pass a ureteral catheter up the left side, but an obstruction was encountered from 6 to 8 cm. from the vesical orifice of the ureter. This obstruction was not met in the previous examinations. In the late afternoon of the 30th, the advisability of double renal decapsulation was considered, but the majority opinion opposed this procedure on the ground that it was of dubious value. The usual conservative measures of hot packs, hypodermoclyses of 1,000 c.c. physiologic sodium chlorid solution were employed. Shortly after this, the patient voided 205 c.c. at one time. The urinary output from the 28th was: 28th, 16 c.c.; 29th, 210 c.c.; 30th, 205 c.c.; 31st, 107 c.c.

On the 31st, 500 c.c. of blood was withdrawn, and 500 c.c. of 3 per cent. sodium bicarbonate solution was introduced intravenously. On this day, the feasibility of employing the duodenal tube was discussed. This suggestion appealed to one of us as offering the only possible means of assistance, since the vomiting had almost reached the projectile stage, and the patient was intolerant to anything by rectum. The twenty-four hours of the day the duodenal tube was first employed, beginning in the late afternoon, the urinary output was 170 c.c. Next day, the output was 330 c.c. Medication employed through the duodenal tube was 5 per cent. glucose solution, 2 per cent. sodium bicarbonate, and, for catharsis, sodium sulphate. On the day after, the patient voided 1,055 c.c., and on the next succeeding day 2,250 c.c. For some days prior to this, he had the typical appearance of a nephritic, being more or less edematous, with the face rather puffed, palpebral orifices narrowed, edema of the extremities, and twitching and hiccup of a most persistent nature. The feeding through the duodenal tube consisted of peptonized milk, sodium bicarbonate, cream, water and glucose solution, about 1,000 calories every twenty-four hours.

The patient was now in a semistuporous condition except when aroused or during the feeding. At other times, he would lie with the eyes closed, although his responses were almost always clear. Following this phenomenal improvement in the renal output, April 3 the duodenal tube was discontinued. The patient was put on very small quantities of spinach soup, cauliflower, sweet potato, baked apple and lemonade. The feedings were given in very small amounts. The urinary output during this twenty-four hours was 2,250 c.c. This diet was continued another day, and on the evening of the 5th, after two days without the tube, the patient had a definite convulsion, lasting fifteen minutes. He was placed in hot packs for twenty minutes, but was seized with another convulsion lasting ten minutes. Chloral and bromids were administered; 500 c.c. of blood was withdrawn, and 500 c.c. of 5 per cent. glucose solution was administered intravenously about three hours after the last convulsion. Use of the duodenal tube was resumed the following morning, the 6th, and continued until the 12th. It was introduced at times merely for feeding; at others, it was retained for a period of from four to six hours. At one period, it was left in situ for forty-eight hours without removal. Later, in the employment of the tube, a feeding would be followed by a six hour wait, when a half gallon to a gallon of water would be passed through the tube for the purpose of irrigation. Immediately following the onset of the grand lavage, stools increased from two each day to from ten to fifteen. The stools, which at the outset of this procedure gave every evidence of profound putrefactive changes, promptly lost these qualities.

In the accompanying table are tabulated the chemical changes in the blood of the patient during his stay in the hospital. It will be noted that the chemical analysis of the blood on admission gave normal figures for urea nitrogen, sugar and chlorids. The uric acid (4.6) is slightly but definitely above normal. This increase of blood uric acid, in spite of the restricted hospital diet, coupled with the presence of a trace of protein and blood cells in the urine, would

signify a mild impairment of kidney function at this time. It has frequently been pointed out by Myers¹ and his co-workers that the uric acid concentration of normal blood is from 2 to 3 mg. per hundred cubic centimeters, but as the permeability of the kidney is lowered in the initial stages of renal impairment, this is first indicated in the analysis of the blood by an increase in the concentration of uric acid. Later in the progress of the damage to the kidney function, the urea accumulates in the blood; but in general there is no perceptible rise in the creatinin until the urea nitrogen has been doubled or more than doubled.

Kast and Wardell² have placed the urea nitrogen content of normal blood between 12 and 15 mg. per hundred cubic centimeters, and Folin has stated that the maximum concentration of this component in normal blood is from 14 to 15 mg. per hundred cubic centimeters. For normal individuals, the creatinin of the blood amounts to from 1 to 2 mg. per hundred cubic centimeters. Myers and Killian³ have shown that the blood creatinin furnishes a better prognostic insight into the extent of the involvement of kidney function than either a test of the urea of the blood or the phenolsulphone-

Chemical Changes in the Blood

Date	Uric Acid, Mg. per 100 C.c.	Urea Nitrogen, Mg. per 100 C.c.	Creatinin	Sugar, per Cent.	Chlorids, per Cent.	Carbon Dioxid Combining Power
3/13/22	4.6	12.1	....	0.117	0.487	....
3/27/22	...	62.5	12.5	0.230	0.413	50.4
3/30/22	...	83.3	17.0	0.246	0.400	31.9
3/31/22	...	92.0	23.1	0.290	0.357	21.4
4/ 2/22	...	98.6	20.4	0.226	0.350	55.7
4/ 3/22	...	82.0	20.0	0.270	0.326	81.5
4/ 4/22	...	104.0	21.2	0.332	0.300	63.0
4/10/22	...	56.0	9.2	....	0.450	56.0
4/15/22	...	48.0	4.4	....	0.538	62.6
4/22/22	...	12.9	3.2	0.141	0.550	60.7
5/ 4/22	...	9.7	2.7	0.109	0.513	55.8
7/11/22	4.2	16.0	....	0.097	0.550	....
Comment						
3/22/22	Pyelogram					
3/25-26/22	Oliguria					
3/27/22	Anuria; obstruction noted in left ureter					
3/28-31/22	Daily urine excretion varied from 16 to 205 c.c., about one seventh total fluid intake					
3/28-31/22	P. M., about 1,000 c.c. of alkaline fluids were given daily in infusions, hypodermoclyses and rectal drips					
3/31/22	P. M., duodenal tube introduced; solutions of glucose and sodium bicarbonate and tap water given through duodenal tube					
7/1-3/22	Fluid intake, from 780 to 3,840 c.c.; daily urine excretion, from 170 to 1,055 c.c.					
4/3/22	Alkali therapy discontinued					
4/3-4/22	Administrations of fluids and medications and feedings through duodenal tube discontinued					
4/4/22	P. M., convulsions					
4/5-12/22	All fluids and feedings through duodenal tube					
4/8/22	Calculus passed in urine					
5/6/22	Patient left hospital					

phthalein test. Many cases with a creatinin concentration of 4 mg. or less have shown improvement under treatment; cases with more than 4.5 or 5 mg. almost invariably terminate fatally.

March 27, after the period of oliguria and anuria, we find the urea nitrogen has risen to 62.5, and the creatinin to 12.5 mg. per hundred cubic centimeters. The concentration of sugar in the blood has been doubled, but the chlorids are diminished. Following the suggestion of Myers and Short,⁴ the chlorids of the whole blood rather than the plasma have been determined, and these authors place the normal range at from 0.45 to 0.50 per cent. The carbon dioxid combining power shows a beginning decrease in the alkali reserve of the blood plasma. On this date, an obstruction was encountered during an attempt to catheterize through the left ureter. Three days later, March 30, the urea nitrogen has reached 83.3 mg., and the creatinin, 17.0 mg., and twenty-four hours later, these components have increased to 92.0 and 23.1 mg., respectively.

1. Myers, V. C.: Practical Chemical Analysis of Blood, St. Louis, G. V. Mosby Company, 1921.
2. Kast, Ludwig, and Wardell, E. L.: Urea in Human Blood, Arch. Int. Med. **22**: 581 (Nov.) 1918.
3. Myers, V. C., and Killian, J. A.: Am. J. M. Sc. **157**: 674 (May) 1919.
4. Myers, V. C., and Short, J. J.: J. Biol. Chem. **44**: 47 (Oct.) 1920.

It is evident from a comparison of these figures that the nitrogenous waste products were rapidly accumulating in the blood, but all to an equal degree. This fact, as Foster⁵ has demonstrated, indicates an anuria of mechanical origin, either in the kidneys or in the ureters. There is, moreover, a precipitous drop in the carbon dioxid combining power to 31.9, March 30, and to 21.4, March 31. During this four day period, about 1.5 to 2 liters of alkaline fluids had been given in infusion, hypodermoclyses and rectal drips. It is significant that, in spite of this large fluid intake, the retention of the nitrogenous waste products progressed and a severe acidosis developed.

There is a well established clinical doctrine stressed by numerous experimentalists and clinicians that cases of nitrogen retention require a large volume of fluid intake to provoke a diuresis since the damaged kidney can excrete the nitrogen compounds at but a low concentration. This principle finds confirmation in the experiments of Foster, who showed that in such cases the amount of nitrogen excreted in the urine bears a definite relation to the volume of urine. It is evident from the blood finding that the introduction of fluid through these channels had little or no influence on the excretion of urine and, consequently, little or none on the retention of nitrogen. The daily volume of urine ranged from 16 to 205 c.c., only one seventh of the total fluid intake.

On the afternoon of March 31, the duodenal tube was introduced, and through it the administration of fluids, medication and feedings begun. For the subsequent four days, the fluid intake varied from 780 to 3,840 c.c., and the urine excretion rose from 170 to 1,055 c.c. A large quantity of fluid was also lost in the frequent semifluid stools passed during this period. It will be noted that although there was a slight rise in urea nitrogen, April 2, to 98 mg., it dropped the following day to 82 mg., and the creatinin was decreased to 20 mg. The influence of this mode of therapy on the alkali reserve of the blood was more striking. Van Slyke, Stillman and Cullen⁶ have shown that the normal blood has an alkali reserve equivalent to from 53 to 70 c.c. of carbon dioxid per hundred cubic centimeters of plasma. A decrease of the carbon dioxid combining power below 50 per cent. by volume indicates an alkali deficit, or acidosis, whereas an increase above 77 per cent. by volume denotes an alkali excess, or alkalosis. The carbon dioxid combining power, April 2, had reached 55.7, and, April 3, 81.5.

The drop in the carbon dioxid combining power of the blood plasma from 50.4 to 21.4 within four days demonstrated an extreme depletion of the blood plasma base despite the administration of large amounts of sodium bicarbonate in colonic irrigations, rectal drips and intravenous infusions. Hence, sodium bicarbonate was added to the duodenal lavage, but the use of this alkali was controlled by changes in the carbon dioxid combining power of the plasma. April 2, the alkali reserve of the plasma had risen to 55.7 and, April 3, to 81.5 per cent. by volume. To avoid the development of an alkalosis, the alkali therapy was discontinued. Since it was thought that the patient had passed the most critical period of his damaged renal function, the duodenal tube was removed, and for the subsequent two days feedings were given by mouth. The night of April 4, the patient had two severe convulsions. A specimen of blood obtained at this time showed that the urea nitrogen had risen to 104 mg. and the creatinin to 21.2 mg., whereas the carbon dioxid combining power had dropped to 63. The duodenal tube was again introduced, April 5, and used until April 12, for feedings and lavage. Since the carbon dioxid combining power remained well within normal limits, the use of alkalis in the fluids was abandoned. Tap water alone served for the lavage. April 8, the urine contained several brick-red fragments of a calculus. These were recovered, dried and weighed. The total weight of the fragments was 0.5 gm. They were composed of urate and ammonium magnesium phosphate crystals embedded in material of a protein nature.

It is of interest to note that the decrease of the urea nitrogen preceded the drop in the creatinin. A comparison of the relative concentration of the chlorids with that of the

nitrogenous waste products and sugar reveals an interesting phenomenon. As the nitrogenous compounds accumulated in the blood, and the sugar rose with them, the concentration of the chlorids progressively diminished. April 4, when the urea nitrogen and sugar had reached the highest levels, 104 mg. and 0.332 per cent., respectively, the chlorids had dropped to their lowest figure, 0.300 per cent. But after this time, the retention of the nitrogenous compounds diminished and the chlorids simultaneously rose to an abnormally high concentration. An explanation of the significance of this balance in the crystalloids of the blood cannot now be presented; however, analogous changes have been observed by one of us⁷ in cases of mercuric chlorid nephrosis.

SUMMARY AND CONCLUSIONS

A patient of low resisting capacity, a bank clerk, who had been indoors for a number of years and who entered the hospital with most of the clinical symptoms of a ureteral calculus, at the time of admission to the hospital gave blood chemistry findings within normal limitations, save for relative high uric acid. This, with the urinalysis, might seem to indicate a mild impairment of kidney function, as there was at times a low specific gravity, with a trace of protein and an occasional hyaline cast. Cystoscopy was performed, with a little more reaction than usual, March 15. On the 19th, cystoscopy was again performed, and the ureters were catheterized. A relatively low function was shown for the left side, 3 per cent. for fifteen minutes, it being presumably the affected side; and roentgenographically a shadow of bean shape was revealed, resembling a tumefaction encroaching on the lower third of the left kidney. This was ruled out on the 22d, with a pyelogram, 20 c.c. of 25 per cent. bismuth and ammonium citrate solution being used. The patient for several days was quite restless, and there was some vomiting. On the fifth day thereafter, he developed anuria of a very pronounced character, which became practically complete, two days later.

Again a cystoscopic examination was made. An attempt to introduce a ureteral catheter in the affected side revealed an obstruction at 6 to 8 cm. The inferential diagnosis at first was toxic nephritis, as the result of pyelography. An alternative diagnosis was: displacement of a ureteral calculus (which failed to throw a shadow, roentgenographically), followed by an obstruction on this side, and a reflex anuria on the other. All the customary remedial measures, such as medication by mouth, rectal drips, colonic irrigations, hypodermoclyses; bloodletting with intravenous infusion of glucose solution and sodium bicarbonate having been exhausted, the patient continued in a condition of uremia, with pronounced muscular twitching; semi-comatose, with projectile vomiting, expulsion of the rectal drip, etc. His insusceptibility to these measures led us to the only remaining procedure offering relief: the use of the duodenal tube, which was attended with spectacular results. First, there was cessation of vomiting, reducing it to a negligible factor; second, an immediate and tremendous increase in urine output was secured, with but slight change in the blood chemistry findings. Four or five days later, lavage of the entire intestinal tract with from a half gallon to a gallon (2 to 4 liters) of tap water, three times every twenty-four hours, increased the number of stools by from ten to fifteen a day. There was a pronounced reduction in the blood retention, which dropped in six days from 104 mg. of urea nitrogen and 21.2 mg. of creatinin, to 56.6 mg. of urea nitrogen and 9.2 mg. of

5. Foster: Harvey Lectures, 1921.

6. Van Slyke, D. D.: Stillman, E., and Cullen, G. E.: *J. Biol. Chem.* 30: 401 (June) 1917.

7. Killian, J. A.: *J. Lab. & Clin. Med.* 7: 129 (Dec.) 1921.

creatinin. Five days later, there was a reduction to 48 mg. of urea nitrogen and to 4.4 mg. of creatinin, until finally there was 9.7 mg. of urea nitrogen and 2.2 mg. of creatinin.

Another feature of note was the pronounced albuminuria coincident with the culmination of the symptoms following pyelography. The passage of the calculus has cleared up the diagnosis: in all probability, the patient had a ureteral calculus, which was dislodged at the time of the last ureteral catheterization, producing an obstructive anuria on this side, with a reflex anuria of the opposite side.

The interesting questions of the renorenal reflex and the ureterorenal reflex are here involved. By this, of course, is understood the secretion inhibiting influence exerted by a sudden obstruction of one kidney or ureter on the healthy kidney of the opposite side. In this connection, Pfammer⁸ states that opinions are still greatly at variance concerning the renorenal reflex. He goes on to say that the existence of this so-called renorenal reflex is by no means generally admitted. He previously investigated the reflex vesicorenal modification of water secretion through the automatically regulated influence of repletion of the bladder, but he was able to elicit a reflex from one ureter to the opposite kidney through irritation of the mucosa. He positively demonstrated a reflex anuria of both kidneys and stimulation of the vasomotor center and a reflex anuria of one kidney derived from the corresponding ureter; but contralateral anuria, namely, anuria derived from the opposite kidney or its ureters, is, so he states, hypothetical. Only case reports can be accepted as proof of a reflexly inhibited secretion in which the apparently reflexly inhibited kidney was shown to be healthy. It has been established that the urinary secretion not only is dependent on the blood supply of the kidney, but also is perhaps even more delicately governed by the venous drainage. In view of the fact that the vena cava is situated to the right of the vertebral column, it is entirely possible that, in operative manipulations of the right kidney, the left renal vein becomes completely or partly obstructed, owing to the shortness of its veins or other factors, thereby interfering with the urinary secretion.

This author adds that numerous experiments with all sorts of stimuli, with experimentally displaced kidneys under the skin, have invariably left the secretion of the other kidney entirely unmodified. The experiments showed that neither an increased intrarenal pressure nor renal ischemia of one kidney will induce a reflex intermission of the secretion of the other kidney. According to Haines and Taylor,⁹ apparently about ten cases of renorenal reflex pain or anuria, or both, have been reported, with complete studies by roentgen ray and catheterization. To this number, we add a personal observation of a man about 38 years old, who had repeatedly suffered from severe right sided renal colic. Examination showed nephrolithiasis of the left kidney with obstruction of the renal pelvis and subsequent hydronephrosis. Nephrectomy was performed, followed by recovery. No phenomena on the part of the right kidney were noted later on. The clinical diagnosis must be centered on the demonstration of the seat of the disease, and a renorenal reflex enters into consideration only provided the kidney is absolutely

healthy and functionally efficient. The causes of the recurrence of this reflex anuria apparently are not demonstrable, although the reflex is easily explainable on anatomic grounds. Bartrina¹⁰ states that the renorenal reflex apparently played a part in a case of right sided calculus of the renal pelvis, in which there were severe attacks of renal colic, gradual increase of the urea contents of the urine (sufficient amount of urine), and increase of Ambard's constant.

After the extirpation of the right kidney, the urea contents of the urine rapidly increased to above the normal standard. Finally, Mingazzini¹¹ states that by means of seventy-five experiments on thirty-three dogs, he endeavored to ascertain how reflex anuria takes place in renal colic during the passage of small calculi through the ureter. At the same time, the functional activity of one kidney was tested during temporary occlusion of the other kidney. In these experiments, he states that the ureter was closed for half an hour by means of elastic clamps. It was found that irritation of the ureter in its upper half did not produce anuria, whereas irritation of the ureter in the upper half of the lower third induced anuria in a series of cases. Compression of the ureter in its upper half induced no change of the entire urinary secretion, although the other kidney was stimulated to do a temporarily increased amount of work. Occlusion of the ureter in its lower half was followed by a modified function of the kidney of the opposite side, sometimes also by anuria. In these cases, the total secretion of the kidney was considerably diminished even before intervention. The operative traumatism of such procedures, as well as the evisceration of the kidney; insufficient general anesthesia, and other similar factors do not by themselves induce anuria. The author emphasizes that the method of temporary compression of the closed ureter may be utilized also, being practiced for the functional testing of the kidneys when the other functional tests, such as ureteral catheterization, are not applicable.

The courage and fortitude of the patient in the ease presented were admirable. Though at times in a semi-comatose condition, he assisted in the passage of the duodenal tube, often insisting on passing it himself. The results obtained through the use of the duodenal tube in this case were so striking and impressive, we are convinced that this procedure opens a wide field of possibilities: (1) through the enormously increased absorption capacity of the upper intestinal tract as opposed to the lower, as proved by experiments by Killian and Cherry, with phenolsulphonephthalein and other agents, and in this particular case, in the fact that there was little or no absorption of the sodium bicarbonate when introduced in the colonic irrigations and rectal drips, whereas in the bicarbonate administrations through the tube there was rise in the carbon dioxide combining power of the blood so rapid that it became necessary to discontinue it; (2) through the absorption capacity of nitrogenous end-products in the intestinal tract.

It will therefore readily be seen how advantageous is a complete flushing, such as is possible only by means of this tube, especially when urea nitrogen and creatinin retention is of the rapidly cumulative type, as in toxic drugs taken accidentally or with suicidal intent; in postoperative cases, especially following prostatectomy,

8. Pfammer, E.: Ueber Reflectorische Anurie: Gibt es einen Renorenalen Reflex? Beitr. z. klin. Chir. **122**: 326, 1921; Zur Frage der Reflex Anurie, Ztschr. f. Urol. **14**: 450, 1920.

9. Haines, W. H., and Taylor, K. P. A.: The Renorenal Reflex, New York M. J. **113**: 197 (Jan. 29) 1921.

10. Bartrina, T. M.: Les réflexes de l'appareil génito-urinaire, Presse méd. **29**: 293 (April 13) 1921.

11. Mingazzini, E.: Contributo sperimentale all'esclusione temporanea chiusa di un rene, Clin. chir. **27**: 577, 1920.

nephrectomy, etc., or in any case in which the retention of these products in the blood stream is relatively acute, and the basic kidney substance has not been destroyed by organic change.

We hope that from being regarded as essentially an appliance for internists, the duodenal tube in the immediate future will earn the esteem it merits on the part of the surgical side of the profession.

40 East Forty-First Street.

THE OLD HEAD INJURY CASE

A CLINICAL STUDY OF ONE HUNDRED CASES *

JOSEPH C. MICHAEL, B.Sc., M.D.

Chief of Nervous and Mental Clinic, Outpatient Department, University Hospital; Attending Consultant in Neuropsychiatry, U. S. Veterans' Bureau, District 10
MINNEAPOLIS

The literature on head injuries has been greatly augmented as a result of the many observations made during the World War. The treatises, however, deal in the majority of instances with the acute cases and early complications.

For several years the opportunity for observing old head injury cases, incurred chiefly during the year 1918, has presented itself. The questions What becomes of the man who has suffered a head wound? How is he able to carry on? What measures does he require as time goes on? are rather vital. The clinical pictures show many and varied symptoms. One is early impressed by the degree of associated disability. The latter phase particularly seemed worthy of special study and prompted a grouping of these cases, aiming at setting down, as far as possible, a fair longitudinal section of the chronic case.

This study deals with 100 patients, all of whom, except two, are now living. It concerns men between

TABLE 1.—Etiologic Features

	No. and Per Cent. of Cases
1. Patients unconscious at time of injury.....	70
2. Operated on at time of injury or later.....	57
3. Patients actually wounded externally.....	97
4. Patients not visibly wounded externally (concussion).....	3
5. Scalp wound only.....	7
6. Scalp, bone and bone wounds:	
(a) Cranial fracture (not gunshot wounds).....	31
(b) Gunshot wounds.....	40
7. Scalp, bone and actual brain destruction:	
(a) Penetrating gunshot wounds.....	17
(b) Penetrating brain wounds (not gunshot wounds).....	2
8. Cysts (all removed).....	3
9. Date of injury incurred in years closely averaging 1918.....	91
Date of injury, 1903 to 1916.....	9
10. Site of region chiefly involved:	
(a) Frontal.....	22
(b) Parietal.....	38
(c) Temporal.....	13
(d) Occipital.....	21
(e) Base.....	3
11. Cerebral abscess (complicating).....	3

17 and 35 years of age. Data were obtained from records made during the acute phases as well as at subsequent intervals, either in the hospital or in the outpatient clinic, chiefly during the last four years. Not infrequently, the notations on the earliest clinical phases, when the injuries were incurred, were rather meager; nevertheless, many times the history made amends for that deficiency. Essentially complicating diseases were ruled out in the cases of this series.

* Read before the Southern Minnesota Medical Association, Mankato, Dec. 5, 1922.

ETIOLOGIC FEATURES

Table 1 shows that 70 per cent. of the patients had immediate loss of consciousness as a direct effect of concussion. The traumatic deliria come in this group. Fourteen patients gave histories of a period of primary unconsciousness continuing over twenty-four hours. Table 5 is presented to show the relation of these traumatic deliria to permanent complications, including vocational capacity.

More than half, or 57 per cent., of the patients had surgical intervention. The three patients not visibly

TABLE 2.—Symptom Groups

	No. of Cases
1. Subjective complaints of so-called "head injury syndrome type" (not including psychotic).....	80
2. No subjective complaints at all.....	8
3. Psychosis, persisting.....	12
4. Having organic neurologic symptoms early.....	39
5. Permanent organic neurologic symptoms: (Compare Table 4).....	44
6. Epilepsy (compare Table 3).....	36
7. Vocational ability:	
(a) Totally handicapped.....	18
(b) Having major handicap with but little occupational ability.....	35
(c) Minor handicap with fair success.....	37
(d) Having no trouble at all.....	10

wounded made uneventful recoveries. Nearly one fifth of the patients suffered penetrating brain wounds. Of these, all excepting one are living. The parietal area was most frequently the site of trauma, the base being affected in only a small proportion.

SYMPTOM GROUPS

Table 2 presents the high incidence of the so-called functional complaints. Of these, headache and dizziness and general irritability are most frequent. Others are insomnia, restlessness, shakiness, black spots before the eyes, a feeling of generalized weakness, loss of appetite, nausea, palpitation, periods of difficult breathing, vasomotor irritability, inability to stand the warmer or colder extremes in climate, varied paresthesias, fainting episodes (not necessarily epileptiform), a feeling of inadequate memory or thinking capacity, the inability to withstand, in short, the usual excesses, strains and exertions. Case 1 illustrates this type:

CASE 1.—S., in November, 1917, was struck in the occipital region by an unloaded hand grenade. He was unconscious two hours, and dizzy and confused for the subsequent three days. After ten days he returned to duty. He remained in the army until April, 1919. He said that during this time he was easily exhausted by the hikes and drills, and for that reason was given the lighter company duties. He felt quite well until the summer of 1920, when headache became more frequent and severe. Sharp pains would come on, affecting his forehead chiefly. In winter the pains were less troublesome. Fatigue would cause the pains to become severer. He also suffered from a dizzy feeling in the head and a general tremulousness. Though sleep was said to be fairly good, he was very easily awakened. He dreamed a good deal. He suffered from dull headache for an hour after rising. He was easily irritated and frightened. He was also very restless. The previous personal history and family history were unimportant. Examination presented a depression in the occipital area the size of a nickel. Roentgen-ray and other findings were negative. The patient is reported as now doing fairly well in his vocation.

The number of persons suffering from definite psychosis is not large. The proportion of permanent invalidity in the nervous system from the objective point of view is a seemingly large one; the same is to be said for the number of true epilepsies. Reactions

to alcohol were not observed. More than half of our patients may be considered unable to sustain themselves by earning their own livelihood. These factors become important in the field of industry.

EPILEPSY

When looking at the list of epilepsies in more detail in Table 3 we note that 36 per cent. of all our patients have this complication; 75 per cent. of the patients with psychosis come under this grouping. The preponderance of epilepsy in cases in which there are injuries

TABLE 3.—Epilepsy—Thirty-Six Cases

	No. of Cases
1. Types:	
(a) Jacksonian	6
(b) Sensory	2
(c) Grand and petit mal.....	21
(d) With psychosis.....	9
2. Area of head injured:	
(a) Frontal	11
(b) Parietal	21
(c) Temporal	1
(d) Occipital	3
3. Not operated on immediately after trauma.....	8
4. Cases appearing during first nine months.....	21
5. Vocational handicap:	
(a) Unable to do anything.....	12
(b) Seriously handicapped and showing very little occupational ability	10
(c) Carrying on in some selected vocation with some success.....	14
(d) Having no handicap whatever.....	0
6. Late operation (a year or more).....	13
(a) Cessation of seizures (3 years following operation).....	1

to the frontal and parietal areas of the cranium is striking. Only five patients of this series with epilepsy had sustained the brunt of head trauma in areas other than the frontal or parietal. Seizures developed within nine months after injury in a little less than two thirds of the cases in which there was this type of complication. The vocational handicap is pronounced. Worthy of emphasis is the obviously intractable course in spite of late surgical intervention. Of the thirteen patients operated on during a period when the acute symptoms had subsided, only one failed to have recurrence of seizures. This patient was operated on three years ago. Cases 2, 3 and 4 are illustrative:

CASE 2.—G. had been well until March, 1919, when he sustained a skull fracture in an automobile accident. The left parietal region chiefly was involved. He was unconscious four hours. He developed epileptiform seizures six weeks later, which recurred at the rate of one each month until February, 1921, when a surgeon performed a decompression at the site of injury, removing a cyst. Seizures ceased for one year, after which time they recurred. Immediately following the operation in 1921, he developed right sided hemiplegia, residuals of which were present during examination six months later and also one year later. Short intervals of severely painful paroxysms in the paralyzed side were complained of. Some dysphasia was present. No signs of increased intracranial pressure were found. Until May, 1922, he made fair progress in his work as a student in radio engineering, but has been having increasing difficulties since then. Epileptiform attacks with increasing general instability persist.

CASE 3.—L., aged 35, sustained a fracture of the right temporal area of the skull in 1910. No complications were noted. He had his first epileptiform seizure during army service in 1918. He worked as a railroad conductor five months, when his employers learned of his seizures and discharged him. When examined in April, 1920, roentgenograms were negative and the optic fundi were normal. A typical grand mal attack was observed in the hospital. He underwent a decompression operation three months later at the site of the old fracture. He was placed on phenobarbital (luminal). Two years later he reported that he had no fainting spells and that he was getting along well in his work as a freight train conductor. He was given his old job back a year after the operation.

CASE 4.—A., aged 27, was struck by a steel pipe in the right frontal region, eight years before, and was unconscious twelve hours. A decompression operation over the site of the injury was performed. He suffered from stiffness and weakness in his left hand until a year later, when another surgical operation was performed, at which a piece of loose bone was removed and a bone graft was introduced. In 1918 he was kicked accidentally by another sailor at the site of the old wound, and was again unconscious. He could not work because of weakness and twitching in the left side of his body. This increased, and considerable mental depression developed. Another operation was performed in Cincinnati in 1921, but in three months the former complaints of dull pain in the head, irritability, restlessness, sleeplessness, depression, difficulty in mental concentration, and weakness all returned.

PERMANENT ORGANIC NEUROLOGIC FINDINGS

A very detailed and elaborate analysis of the permanent organic neurologic findings was not always feasible, but a rather rough classification is attempted. Motor phenomena are most frequent. The incidence of irregularity in pupillary reactions and speech disorder deserves particular note. Of the nine patients giving abnormal pupillary reaction to light or presenting irregular outlines, five sustained determinable penetrating brain tissue injury, whereas in four cases fracture of the cranial bone only could be satisfactorily demonstrated to have occurred at the time of injury.

PSYCHOSIS

Of our twelve chronic mental cases, there was epilepsy in nine. We have looked on the mental symptoms in these nine cases of dementia as being directly associated with the epileptic constitution. They invariably followed the onset of the seizures.

CASE 5.—R. sustained a gunshot wound of the parietal area of the brain in 1918. The bullet was removed at a field hospital. Right sided motor palsy has persisted since the period of injury. He developed epileptiform seizures within several weeks after trauma, and had been entirely unable to do any work. When interviewed two years after the injury, he limped in the right foot; contractures were present in the right arm. The left pupil presented only a very little reaction to light and accommodation. Vision, including the fields, was normal. The speech was slow and hesitating. The psychomotor activity was markedly reduced. The memory was faulty, and a tendency to confabulate was noted. Serologic findings were negative throughout. He fell into the hands of a surgeon six months later, and was operated on to "relieve pressure on the brain." Two months after this operation he was reported to be in the same condition as he had been prior to operation. More recent reports show more deterioration.

The three cases in which there was no epilepsy had unmistakable histories of psychosis prior to the trauma. Thus, there is now not one case which could be labeled unqualifiedly as "traumatic psychosis."

CASE 6.—P., aged 30, in 1919 fell 50 feet in the coal bunker of a transport, and fractured the bones in the left frontal region. He was unconscious four hours. He remained in the hospital four months, after which he was discharged from the naval service. He had headaches and dizziness after the time of the injury. When seen in the summer of 1921, he complained of headache, dizziness, irritability and soreness in the body "all over." His voice seemed low and lacking in vigor, and he was noted "not to be himself mentally." The bodily systems presented no important findings. He was committed to the state hospital a half year later where a diagnosis of dementia praecox was made, and has remained there since. In 1919 he was discharged from the navy with the same diagnosis. The examining board had convinced

itself that similar mental symptoms were present prior to his period of naval service. It was observed that this man had definitely paranoid ideas during his period of service prior to the injury.

Köppen¹ has described the after-effects of head injury. Bullard² reviewed seventy old cranial fracture cases, and found that thirty-seven of the patients did not complain of any symptoms. Eight patients presented only "slight" symptoms; eighteen had troublesome symptoms, but they were able to earn a livelihood; seven presented serious symptoms. Of fifteen patients operated on, twelve had no symptoms. Bailey³ has written a treatise on nervous diseases following head trauma. Cannon⁴ points out that the increase of intracranial pressure is due to edema of the injured tissues. Meyer⁵ indicates the salient types of posttraumatic conditions; he reviews their pathogenesis and reports illustrative case histories. English⁶ emphasizes the prevention of sequelae, and discusses prognosis. According to him, about 10 per cent. of the patients will show mental impairment, but rarely does definite insanity develop.

Cushing⁷ has reported his physiologic investigations and also outlined the surgical technic to be followed. Demmer⁸ emphasizes that the total impacting influences on the entire brain, rather than local edema, is the essential pathologic process. LeCount and Apfelbach⁹ review postmortem observations in 504 cases, and note that cerebral edema was the commonest observation. Apfelbach¹⁰ states that edema is most frequently noted postmortem in periods of from two hours to two or three days after the injury, and that the part played by edema in the production of symptoms is not exactly known. Wilensky¹¹ emphasizes that advancing intracranial pressure is the most important operative indication, and that the irritative or paralytic focal symptoms are second in importance. Lumbar puncture has given little more than temporary relief in most cases. Munro¹² refers to the indications for surgery in head trauma as the presence of a compound or comminuted

TABLE 4.—Permanent Organic Neurologic Findings

	No. of Cases
1. Olfactory disturbance.....	1
2. Visual disturbances.....	4
3. Auditory disturbances	8
4. Pupillary abnormalities.....	9
5. Somatic motor phenomena.....	32
6. Somatic sensory phenomena.....	18
7. Aphasic disturbances	10

fracture or increasing intracranial pressure. Blood in the spinal fluid has no bearing on operability. Murard¹³ reports on forty cases observed for a year. Nineteen patients died; ten still complained of headaches and other symptoms. He notes that the motor symptoms are the slowest to disappear; also that the

1. Köppen, M.: Arch. f. Psychiat. **33**: 568, 1900.

2. Bullard, W. N.: Boston M. & S. J. **136**: 404 (April 29) 1897.

3. Bailey, Pearce: Diseases of the Nervous System Resulting from Accident or Injury, New York, D. Appleton & Co.

4. Cannon, W. B.: Am. J. Physiol. **6**: 91.

5. Meyer, Adolf: Am. J. Insanity **60**: 373, 1904.

6. English, T. C.: Lancet **1**: 845 (Feb. 20) 1904.

7. Cushing, Harvey: New York M. J. **85**: 97-107, 161-169, 208-216 (Feb. 7) 1907.

8. Demmer, F.: Beitr. z. klin. Chir. **121**: 491, 1921.

9. LeCount, E. R., and Apfelbach, C. W.: Pathologic Anatomy of Traumatic Fractures of Cranial Bones, J. A. M. A. **75**: 501 (Feb. 21) 1920.

10. Apfelbach, C. W.: Studies in Traumatic Fractures of the Cranial Bones, Arch. Surg. **4**: 434-450 (March) 1922.

11. Wilensky, A. O.: S. Clinics N. America **1**: 1709 (Dec.) 1921.

12. Munro, D. H.: Boston M. & S. J. **186**: 342-350 (March 16) 1922.

13. Murard, J.: Lyon chir. **14**: 810 (Sept.-Oct.) 1917.

French government decided not to offer further military service to a person who had suffered head trauma.

Frazier and Ingham¹⁴ describe a series of 200 cases observed during the first year following the trauma. They state that the functional symptoms, almost without exception, diminished gradually, and ultimate recovery, apparently complete, occurred in from three to nine months after the injury when gross damage to the brain was absent.

The large percentage of our patients giving these complaints would seem to indicate that the apparently

TABLE 5.—Cases in Which there Was Primary Delirium Continuing Over Twenty-Four Hours and Permanent Invalidity

Case	Days Unconscious	Type of Injury	Organic Neurologic Findings	Psychosis	Estimated Present Vocational Ability	Epilepsy
5	90	Brain	Present	Present	None	Yes
7	5	Brain	Present	Present	None	No
8	14	Skull fracture	Absent	Absent	33⅓% normal	No
9	12	Skull fracture	Absent	Absent	60% normal	Yes
10	14	Concussion	Present	Present	33⅓% normal	Yes
11	5	Skull fracture	Absent	Absent	None	No
12	24	Skull fracture	Present	Present	None	Yes
13	8	Brain	Absent	Absent	50% normal	No
14	12	Brain	Present	Present	(?)	Yes
15	10	Brain	Present	Absent	50% normal	Yes
16	4	Brain	Absent	Absent	75% normal	No
17	3	Skull fracture	Absent	Absent	50% normal	No
18	10	Brain	Present	Absent	None	No
19	8	Brain	Absent	Absent	75% normal	No

complete recoveries emphasized by Frazier and Ingham did not persist in the majority of cases. In our group of this type, fifteen patients had actual brain tissue destruction, and of the seven patients from whom practically no functional complaints were elicited, four suffered brain injury.

Dana¹⁵ thus refers to the startling similarity of these functional complaints: "It seemed to me, finally, that there must be an underground school for the education of those who have been hit on the head and desire permanent total disability compensation."

Chatelin and DeMartel,¹⁶ who have observed a very large number of head injury cases at the Salpêtrière in Paris, report the same uniformity in functional complaints in cases with and without signs of objective trouble. These complaints, according to Dana, follow, in civil life, with litigation and compensation, and without either. He gives it as his opinion that, if the state refused all compensation after an injury, there probably would be 50 per cent. less who would continue to complain of this frequent head wound syndrome.

What percentage of head injuries was fatal during the war is, of course, not possible to state. However, the report of Hanson¹⁷ is here in point. Out of a total of 449 classified cases of head injuries observed in a field hospital in 1918, 136 patients sustained scalp wounds only, and of these none died; 103 had skull fracture with intact dura, and seventeen patients had other wounds. In all of these there was a mortality of only 3.9 per cent., whereas eighty-nine cases of penetrating brain injuries, in all except three of which operation was performed, gave a mortality rate of 44.2 per cent. Of these deaths all were classified as operative excepting three. The total deaths were about 10 per cent up to Jan. 1, 1920, when his review was made.

14. Frazier, C. H., and Ingham, S. D.: Arch. Neurol. & Psychiat. **3**: 17 (Jan.) 1920.

15. Dana, C. L.: Difficulties in the Diagnosis of Meningitis, Arch. Neurol. & Psychiat. **4**: 479 (Nov.) 1920.

16. Chatelin, C., and DeMartel, T.: Wounds of the Skull and the Brain, University of London Press, 1919.

17. Hanson, A. M.: Mil. Surgeon **47**: 662 (Dec.) 1920.

Sharpe¹⁸ reports from 46 to 64 per cent. mortality based on the New York hospital records filed between 1900 and 1910. He attributes this high mortality to too frequent surgical intervention without due regard to shock, or to medullary or terminal edema. Of the patients who recovered, he could locate only 34 per cent., and, of these, 67 per cent. were still suffering from the usual head syndrome. He states that wet, swollen brain, thickening, and gradual induration about the supracortical veins in the cerebral sulci, resulting no doubt from organized blood, were the usual observations.

PATHOLOGY

The seemingly well defined functional syndrome, so called, suggests a fairly uniform causative mechanism. Meningeal adhesions, obstruction of the sinuses, particularly the longitudinal, and actual concussion of the brain and of the labyrinth are believed by various authors to figure in the pathogenesis of the chronic head syndrome. Chronic irritation of nerve cells can explain persistent symptoms of functional complaints.

Assuming the correctness of the assertion that 80 per cent. of the excretion of the spinal fluid is through the supracortical veins in the cerebral sulci, it is logical to deduce that there is local impairment of the cerebral circulation.

We should not lose sight of the fact that the 100 men are compensation cases. No doubt the desire for reimbursement and the difficult situations of the post-bellum period have contributed to the degree of invalidity incurred. The psychopathologic elements frequently indicate a defense or escape reaction in these individuals. The uniformity in the group of functional complaints and the large percentages of objective permanent complications will lead us to look on the pathologic factors from a broad point of view. Vocational ability has been judged largely from the standpoint of the prewar occupation.

SUMMARY

1. One hundred old head injury cases were studied with special reference to the neurologic complications and the probable factors in their production, as well as to the degree of the vocational handicap.

2. The prognosis for life of the patients overcoming the immediate complications is very favorable, excepting those who incurred penetrating brain injury.

3. Freedom from invalidity is uncommon. Of the total group, 53 per cent. are unable to sustain themselves.

4. Careful, early treatment will do much to prevent chronic invalidity.

5. Increased intracranial pressure and signs of local irritation are the only indications for surgery on the head in the acute as well as in the chronic case.

6. Handling of the patients with intractable head injury syndrome constitutes a problem of great magnitude.

18. Sharpe, William: *Diagnosis and Treatment of Brain Injuries With and Without a Fracture of the Skull*, Philadelphia, J. B. Lippincott Company, 1920.

Public Health Directors at Large.—Each year, as more persons become interested in the work of the county public health association, they should be honored by election to membership as "directors at large." Their advice and aid would be at all times of great value to the officers. Success is entirely dependent on the active cooperation of the citizens of a county.—*Minn. Pub. Health A. J.* 4:409 (March 11) 1920.

SUDDEN ACUTE PAIN IN THE SHOULDERS ASSOCIATED WITH ACUTE PELVIC PAIN IN WOMEN

A SYMPTOM OF RUPTURED ECTOPIC PREGNANCY, INDICATING SUBPHRENIC BLOOD EXTRAVASATION (SUBPHRENIC HEMOPERITONEUM) *

I. C. RUBIN, M.D.

NEW YORK

Pain in the shoulders is associated, as a rule, with disorders of the shoulder joint and in the proximity; and with various intrathoracic and subdiaphragmatic lesions, such as angina pectoris, pleurisy, pneumonia, new growths and lesions of the gallbladder, liver, stomach and intestine.

While I was engaged in studying the significance of shoulder pains in uterine insufflation, my attention was called to the occurrence of shoulder pains in patients with ruptured ectopic pregnancy.

The first observation was made on a ward patient in October, 1921. The patient presented the history characteristic of tubal pregnancy. There was a fulness in the pouch of Douglas, tenderness, moderate abdominal distention, and shifting dullness in the flanks. The patient stated that she had severe darting pains in the shoulders, which had begun two days before her admission to the hospital. On further questioning, this pain was said to follow an attack of fainting. She had not suffered from "rheumatic" pains before, and was at a loss to account for these pains.

At the laparotomy there was a large amount of free blood in the general peritoneal cavity, and clotted blood in the pelvis. The tubal rupture was found on the left side. From both lateral abdominal regions there poured down a large amount of fluid blood so that it was impossible to wipe the abdominal cavity dry. While the pelvis was successfully wiped clean, suction being used, the blood continued to gravitate down from above. The following morning the patient was completely relieved of her shoulder pains.

This symptom was so marked before the operation that it gave rise to some discussion as to its mechanism. Some ventured the explanation that it was due to reflex radiation from the seat of the tubal rupture. But as the spinal nerve trunks by which the sensation of pain in the shoulders is conveyed are far removed from the sacral autonomic fibers, it would be essential to trace the pain stimuli produced in the pelvis through intermediary nerve paths which should connect the cervical with the lumbosacral cord. Such associating fibers, however, so far as I have been able to ascertain, have never been identified. A more direct explanation is to be found in the observation, repeatedly made, of instances of subphrenic pneumoperitoneum when artificially induced, by way of the uterus and tubes, for the purpose of determining tubal patency. Shoulder pains have been found uniformly with artificial subphrenic pneumoperitoneum, so that they have come to be regarded as pathognomonic of that condition.

The mechanism by which these shoulder pains in subphrenic pneumoperitoneum are produced depends on the relations between the diaphragm and the suspensory ligament of the liver. When gas displaces the diaphragm upward, the liver is simultaneously displaced downward. The falciform hepatic ligament is

* From the gynecologic service of Mount Sinai Hospital, Dr. Joseph Brettauer, chief of service.

consequently stretched, and thus the phrenic nerve is stimulated. As the phrenic nerve has its origin in the third, fourth and fifth cervical cord segments, and as it actually connects with cervical peripheral nerves supplying the shoulder girdle, pain produced in the diaphragmatic area is referred to the shoulders by sensitized cutaneous nerves of the cervical segments.

Capps and Coleman have recently demonstrated¹ that localization of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself: "It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion produces pain over a sharply limited point somewhere along the trapezius ridge." It may be added that in patients with an artificial subphrenic pneumoperitoneum the same phenomena have been observed. The extent, distribution and intensity of the shoulder, interscapular and subcostal pain depend on the quantity of gas that reaches the subphrenic space and on its diffusion over the liver.

If gas under the diaphragm can cause shoulder pains by distention and stretching, it may also be assumed that fluid suddenly accumulated in the subphrenic space may also produce these referred pains. It should therefore not be surprising to encounter shoulder pains in cases of ruptured ectopic pregnancy, when large quantities of fluid blood are extravasated in the peritoneal cavity, extending upward along the lumbar gutters as high as the subphrenic spaces. Just as with gas in subphrenic pneumoperitoneum, the fluid also may be confined to one side or the other; it may be unevenly distributed, giving rise to unilateral or bilateral shoulder pains, their intensity varying with the amount of distention. The one point of difference in the behavior between gas and fluid within the free peritoneal cavity is that gas expands in all directions, and may travel upward to either side, regardless of its source. Thus, for example, if the gas passes into the abdominal cavity through a patent right tube, it does not necessarily follow that a right sided subphrenic pneumoperitoneum will result. Fluid blood, on the other hand, tends to course along the lumbar gutter on the side of the tube from which it issues, so that unless the hemorrhage is very large, the shoulder pain will correspond to the side of the tubal rupture. When the hemoperitoneum is extensive, bilateral shoulder pains are present, but affect more intensely the shoulder corresponding to the side of the tubal rupture. When the hemorrhage is not extensive and is confined to one side, the shoulder pain will indicate the side of the rupture.

ILLUSTRATIVE CASES

CASE 1.—*Bilateral shoulder pains, more intense in the left shoulder. Findings: Ruptured left sided tubal pregnancy, with large amount of extravasated blood.*

H. G., aged 35, single, was admitted to the gynecologic service of Mount Sinai Hospital, Dec. 7, 1921, as an emergency case. Menstruation began at 15 years, was always regular, and was of four days' duration. The flow was usually scanty, and was accompanied by severe cramps on the first day. The last menstrual period was a normal one, and had occurred three weeks before admission to the hospital. The patient was well for a week and then began to bleed moderately without pain until two days before examination, when the flow became scanty.

On the morning of the day of her admission, the patient fainted on walking to the bathroom, got up unaided, and

went to her room. Bleeding was still scanty, although a definite decidual cast was discharged. After that she complained of severe pains in both sides of the abdomen, "radiating" to the shoulder, and worse on the left side. These pains had continued in spasmodic attacks. A decidual polyp extruded from the cervix, which was otherwise of normal appearance. The uterus was soft and appreciably enlarged. There was a very tender elastic mass in the left fornix, and bogginess in the culdesac as well as in the right fornix. The diagnosis of ruptured ectopic gestation of the left tube was made. The hemoglobin was 55 per cent.

At the laparotomy, which was done the same day, I found a left tubal gestation of the dissecting type, which had ruptured. The peritoneal cavity was filled with free and clotted blood, which came down from both lumbar gutters, more abundantly from the left side. The right tube was infantile, and the ovary was normal.

CASE 2.—*Severe pain in the right shoulder. Findings: Right sided tubal abortion and moderate blood extravasation.*

P. M., aged 28, married, the mother of three children, the youngest being 8 months old, had always had regular menstrual periods of six days' duration and painless. The last regular period began, Jan. 25, 1923. January 26, the patient was seized with violent pain in the right lower abdominal quadrant. Shortly afterward she was seized with severe pains in the right shoulder, requiring counterirritants. Faintness preceded the spasmodic pain attack, which lasted about two days. The period changed in character from the normal moderate flow to staining, which had continued until February 14, when she was taken with severe pains in the right side, which were very severe in the right shoulder. Syncope preceded this attack. Bleeding had slightly increased during the last two days, the pains persisting both in the right shoulder and in the abdomen. The uterus was in the anterior position, slightly enlarged, and there was slight bleeding from the external os. A smooth, elastic, tender mass was present to the right of the uterus, and there was bogginess in the pouch of Douglas. The left adnexa were not palpable. At the laparotomy, February 16, a tubal abortion involving the right tube was found. The omentum and intestine were covered with small blood clots. A moderate amount of free blood was in the pelvis, larger blood clots being adherent to the right tubal fimbria. Blood and fibrin covered the right tube and ovary.

Of all the cases of ectopic pregnancy observed since October, 1921, shoulder pains have been encountered in four; these were complicated by large extravasation of free blood. In one, most of the blood accumulated in the lumbar gutters and in the subphrenic spaces. This was in all probability due to the fact that the bleeding was brisk and followed the initial syncope, rendering the patient prostrate until she was relieved by the operation. When bleeding is gradual and not associated with collapse, the patient may walk about for a while, thus allowing the blood to gravitate down in the deep pelvis. It is possible also that the common practice of elevating the lower extremities as a first aid measure to relieve syncope may cause the first gush of blood to reach the subphrenic spaces, where it remains more or less confined, until liberated by laparotomy.

In the unruptured cases and in those complicated only by pelvic hematocele with or without syncope, shoulder pains were absent. While pelvic pain is perhaps one of the most constant symptoms of ruptured ectopic pregnancy, the presence of shoulder pains and, to a less degree, subcostal pains makes the differential diagnosis from other pelvic lesions more complete. Together with other signs and symptoms of ectopic pregnancy, the sign of referred pains in the shoulders may help in the differentiation from rupture of other hollow abdominal viscera, such as perforated gastric or duodenal ulcer, appendix or intestine (typhoid).

1. Pleural and Peritoneal Pains, editorial, J. A. M. A. 80: 403 (Feb. 10) 1923.

From twisted ovarian cysts or torsion of tubes, from acute inflammatory pelvic lesions, the differential diagnosis should, in the presence of shoulder pains, render the diagnosis practically certain in favor of ruptured ectopic pregnancy.

261 Central Park West.

GONOCOCCAL INFECTION OF KIDNEY WITH SPONTANEOUS RECOVERY

REPORT OF CASE

RALPH L. DOURMASHKIN, M.D.

AND

HARRY COHEN, M.D.

NEW YORK

While mixed renal infection in the course of gonorrhea is not infrequent, a pure gonococcal invasion of the kidneys may be considered a rare complication. The leading textbooks on urology devote only a few lines to this condition, and some textbooks fail to mention it at all. Exhaustive search of the literature reveals but twenty cases in which the gonococcus was the sole cause of the trouble. Hagner, in 1910, compiled ten cases that were purely gonococcal in origin, and ten others attributed to mixed infections. Since then, various authors have reported seventeen cases, ten of which represented a pure gonococcal infection.

Of the twenty cases of pure gonococcal infection, sixteen occurred in men, and four in women. The right kidney was involved in nine cases, the left in five, and both kidneys in four. In two cases, we could not ascertain which kidney was involved. Cultures were made in eleven cases, the nine other cases being proved by stained smears. Three cases were discovered at necropsy, and one at operation (nephrotomy). In four cases, surgical interference was indicated (two nephrectomies and two nephrotomies); eight cases were cured by pelvic lavages. Two cases were treated with serum and vaccines; there was spontaneous recovery in one case. The outcome in one case could not be determined.

Few writers were able to find any characteristic vesical lesions, absence of any marked changes in the bladder mucosa being the rule. In the majority of the cases, there was a distinct history of chronicity. This was absent in our case.

REPORT OF CASE

Gonorrheal infection of the left kidney, hydronephrosis and gonorrheal urethritis with a stricture. History.—J. M., a man, aged 28, single, in February, 1922, contracted a gonorrheal urethritis, which subsided under routine local treatment in the course of two or three weeks. One month following the onset of the urethral discharge, he began to complain of weakness, general malaise, loss of appetite, fever and rapid loss of flesh. He had no pain or frequency on urination at any time, but what brought him under our observation was an acute, agonizing, colicky pain in the left hypochondrium, radiating backward and lasting a few hours, and hematuria.

Examination (April 2).—The patient was emaciated, and apparently acutely ill, with the tongue heavily coated; the temperature was 102.2 F.; the pulse, 110. The chest was normal. Examination of the abdomen revealed an enlarged left kidney, the lower pole of which was distinctly palpable in the left lower region at the level of the umbilicus. The prostate gland was not enlarged, and the expressed secretion contained no pus and no gonococci. There was no evidence of urethral discharge at the meatus. The catheterized

bladder urine was very turbid, and contained a heavy trace of albumin and pus. Smears showed innumerable intracellular gram-negative diplococci, having all the morphologic characteristics of gonococci. No tubercle bacilli were found after an exhaustive search. The roentgenologic examination of the urogenital tract revealed no shadows suggestive of urinary calculi. Blood count revealed: 9,400 white cells, with 71 per cent. polymorphonuclear leukocytes, and 3,400,000 red cells. The hemoglobin was 60 per cent.

Cystoscopy.—This was performed, April 7. The bladder mucosa was moderately injected, but presented no other unusual characteristics. The right ureteral orifice was normal in appearance. The left ureteral orifice was inflamed and somewhat edematous. A No. 6 F. catheter of the whistle tip variety entered the right renal pelvis with great ease. The urine obtained from the right kidney was clear, and on microscopic examination showed no pus and no organisms. Numerous attempts to pass olive tip catheters of various sizes into the left ureter failed, an obstruction being invariably encountered at 6 cm. Even a filiform bougie could not surmount the obstruction. After considerable manipulation, a gush of about 10 c.c. of pale, shreddy urine was obtained in a continuous stream through a No. 4 F. olive tip catheter. On microscopic examination, the urine was found to be thickly studded with innumerable pus cells. The stained specimen looked like a smear obtained from a urethral discharge, containing numerous gram-negative intracellular diplococci having all the morphologic characteristics of gonococci. Unfortunately, as in the cases of other writers, the rarity of the condition was not realized, and for this reason no cultures were made. Phenolsulphonephthalein injected intravenously appeared at the end of three minutes in the urine obtained from the right kidney. Concentration was good. The urine from the left kidney was collected about twenty minutes after the injection of the dye, and practically no trace of the latter could be detected in it.

Following cystoscopy, the patient was admitted to the People's Hospital, where we kept him under observation. His condition gradually improved, but the enlargement of the kidney and pyuria persisted. Another cystoscopy for the purpose of lavaging the pelvis of the diseased kidney and obtaining urine for culture was refused.

COMMENT

It was evident that we were dealing with an acute gonococcus infection of the kidney, pyelitis or pyelonephritis, associated with hydronephrosis, the latter being subsequent to ureteritis and a stricture, as evidenced by the inability of the smallest olive tip catheter and filiform bougie to overcome the obstruction, and by the obtaining of the urine in a continuous stream. The severe renal colic of which the patient complained was undoubtedly due to the distention of the hydronephrotic sac with fluid. The improvement noted after cystoscopy was probably due to the reestablishment of urinary drainage from the left kidney. The patient was in the hospital two weeks, and there was a gradual improvement in the general and local kidney condition. He was seen again five months later. He had gained 20 pounds (9 kg.) in weight and had been working for the last two months. On examination, the kidney was no longer palpable, and the urine was sparklingly clear and free from gonococci.

307 East Seventeenth Street—221 Second Avenue.

More Mind to Save Civilization.—If we are courageously to meet and successfully to overcome the dangers with which our civilization is threatened, it is clear that we need more mind than ever before. It is also clear that we can have indefinitely more mind than we already have if we but honestly desire it and avail ourselves of resources already at hand. Mind is our "conscious knowledge and intelligence, what we know and our attitude toward it, our disposition to increase our information, classify it, criticize it, and apply it."—Robinson: *The Mind in the Making*.

OTIOBIOSIS, THE EAR TICK DISEASE

W. L. CURTIS, M.D.

AND

MARTHA E. CURTIS, A.B.

LINCOLN, NEB.

According to Toomey,¹ "the tick that invades the ears of cattle and man, the 'spinose ear tick,' is an ectoparasite belonging to the family *Argasidae*. It is no longer considered a species of the genus *Ornithodoros*, as it was made the type species of a new genus by Banks, 1908. Its proper technical name is now *Otiobius megnini* (Duges, 1883), Banks, 1908."

Among the first to become acquainted with tick infestations of the ear were the natives and early colonists of Mexico. The ear ticks were not, however, considered as members of a distinct species, but were described together with the other ticks found on man as members of *Ixodes hominis* by Koch in 1844. In the manuscript reports of French surgeons and veterinarians who accompanied the invading French army to Mexico in 1864, we find particular mention of the ear tick. "The horses of the expedition were frequently infested, and not a few cases occurred among the soldiers." Toomey gives, as the date of the first printed record of the tick infesting man, the year 1867, in a report by Guérin; but it was not until 1883 that Alfred Duges recognized it as a separate species. Duges gave it the name of *Argas megnini*, in honor of his former teacher, Prof. Pierre Mégnin of Paris. Two years later, Mégnin published a new description with illustrations based on specimens sent him from Mexico by Duges. Hooker² first described its life history in 1908. Since then, the spinose ear tick has been mentioned and described more or less thoroughly in various of the United States government bulletins, and in 1918, Imes³ published an eight-page bulletin dealing exclusively with the spinose ear tick, and methods of treating infested animals. In 1921, Toomey of St. Louis published an article entitled "Otiobiosis (Ear Tick Disease)" discussing the subject particularly from the standpoint of the human infestation.

The tick *Otiobius megnini* is found throughout Mexico and those states of the union along the Mexican border. It has been reported from Idaho, Nebraska, Kansas, Iowa, Kentucky, Colorado, Montana, Nevada, California and Oregon. It is very possible that the same species is found in South America, and Bedford has shown that it occurs at Vryburg and Fauresmith in the Transvaal, on the stock. It was first reported in South Africa in 1912.

Toomey tells us that there seems to be no well-marked seasonal prevalence, but the tick is found more frequently in dry hot seasons; according to Imes, moisture is apparently detrimental to the tick during certain stages of its life cycle.

DESCRIPTION OF THE PARASITE

According to all authorities, this tick is remarkable for the difference in appearance between the spiny nymphal form and the adult. Toomey's description of the tick is remarkably clear, and particularly adapted to the medical man without technical training in entomology:

The larva is an elongate ovopyriform hexapod, with a long terminal capitulum; it measures 0.6 mm. from tip of hypos-

tome to posterior extremity, but gorged larvae attain to 4 mm. by 2 mm., and are then nearly oval. The integument is finely striated with symmetrically arranged pits, from which bristle-like hairs issue. The unengorged larva is white, the gorged larva is violet brown.

The nymphal stage is covered with spines; hence the popular name. The body is lozenge-shaped, slightly longer than broad, rounded anterior to third legs, suddenly contracted posterior to them; 3 to 4 mm. long when unfed; gorged stage measures 5.5 by 8.5 mm. Color, unfed, earthy yellow; replete, violet brown. Integument, both ventrally and dorsally, is beset with posteriorly directed spines or bristly hairs; ventrally the spines extend to the anus. Integument finely striated, pits absent.

The adult body is panduriform, being broadest at level of third legs, and suddenly contracted behind fourth pair. Eyes absent. Integument with small circular, shallow pits with short central hairs, the whole surface being finely granular. On the ventral surface, between the two postanal grooves, extremely small and crowded spines. Legs comparatively thinner and shorter than in nymph. Color brownish violet or black. Size: female 5 to 7 mm. long by 3.5 to 4.5 mm. wide, males somewhat smaller.

The eggs are large and dark brown.

LIFE HISTORY OF THE PARASITE

Hooker divides the ticks into three classes according to their habits of molting, as suggested by Ransom: (1) those which pass both molts on the host (*Margaropus* and *Dermacentor*); (2) those which pass the first molt on the host, but the second molt off the host (*Ornithodoros megnini* and two African species, *Rhipicephalus bursa* and *cerveti*); (3) those which pass both molts off the host (most of the ticks in this country). Thus, as Toomey says, except for *Rhipicephalus bursa* and *cerveti*, the life history of *Otiobius megnini* is unique among the ticks in that only one molt, from larva to nymph, takes place on the host, and the nymph stores up enough food to make it unnecessary for the adult to feed before fertilization and oviposition take place. The life history, as described by Hooker and Imes is about as follows.

1. The first, or larval, stage is the most active stage. It is in this stage that the tick enters the ear. The tiny six-legged animal is not easily visible with the naked eye. Having gained entrance to the ear, the parasite penetrates deep down the canal and buries itself between the folds of skin; it has even been known to attach itself to Shrapnell's membrane in man.

2. The parasites gorge themselves with blood from five to twelve days, having increased several times their original size, attaining a length of 4 mm. and a width of 2 mm. The engorged larvae are inactive, and grublike in appearance, of a yellowish-white or pink.

3. The engorged larva sheds its skin and appears as an eight-legged nymph, covered with small spines. Unengorged, the nymphs are from 3 to 4 mm. long.

4. The nymphs attach themselves to the skin inside the ear and suck blood from the host, slowly increasing in size. The nymphs feed for several weeks and sometimes for months (from fifty-one to more than 200 days), and have been known to remain in the ear for seven months, according to Imes. They change their position in the ear frequently. When fully grown and completely gorged, their length ranges from 5.5 to 8.5 mm. On the completion of their development as parasites, they drop out of the ears and crawl up several feet from the ground, secreting themselves in dry, protected places, such as cracks and crevices of buildings, fences, corral walls and trees. Hooker believes that the fertilized females are negatively geotropic, for he has noticed that they crawled up posts and shrubs and

1. Toomey, T. N.: Laryngoscope 31: 930 (Dec.) 1921.

2. Hooker: J. Econ. Entom. 1: 34-51, 1908.

3. Imes: Farmer's Bull. 980, U. S. Dept. Agric., 1918, pp. 3-8.

deposited their eggs on such objects at about the level of the ox's head when in the act of grazing. This tropism he correlates with the parasitic activities of the larvae, and considers it a mechanism acquired, favoring access to the ears of cattle.

6. In about a week's time, in midsummer or early autumn, after the nymph leaves the ear, the second molt takes place, the membranous skin is shed and the adult tick appears, without spines. Fertilization then takes place and oviposition commences. So far as known, the adult never attaches itself to animals, nor does it take food. J. D. Mitchell has kept the nymphs alive in a pill-box, without food, for one and a half years. It is evident that the nymph is capable of storing up a great deal of food. While Toomey remarks that the eggs are often laid on the ground, Imes states that the eggs are laid in cracks and crevices of buildings and fences. According to Imes, "the egg-laying period may be intermittent and continue over a period as long as six months." But as soon as the egg-laying is completed, the females die. Unfertilized females have been known to live more than a year. Mégnin has kept them alive for two years without feeding. Many authorities believe that the adults never feed, and this view is supported by the fact that the adult capitulum is very small and the hypostome unarmed.

7. The eggs, large and dark brown, may hatch as early as ten days after they are laid; but, if the climate is temperate, two or three weeks is required. Shortly after hatching, the seed-ticks are ready to attach themselves to any suitable animal. But they may live for three months without feeding. "The primitive hosts are the wild mammals of the tropical and subtropical prairies, particularly the hares and gophers Horses, asses, dogs, coyotes and man are less frequently infested."

SYMPTOMS IN MAN

"Besides the common feeling of fulness, the other sensations are described as a tickling and ringing rather than the frank scratching felt after a beetle has crawled down the canal. Throbbing may occur, but is not so frequent as in invasions of the canal by larvae of other insects. Dizziness and nausea are not so common as in myiasis. Excruciating pain may occur at times." Little bleeding occurs. It seems likely that the tick secretes an exotoxin that has a slight keratolytic effect, according to Toomey. "Damage to the skin of the canal is slight when infestation has lasted for only four or five weeks. . . . Most cases of longer duration are, however, complicated by secondary mycotic invasions—more frequently by the saprophytic molds than by the penetrating fungi. . . . In time, a chronic eczematoid dermatitis may result. Furunculosis or cellulitis are not common complications." It has been noted that the presence of the tick causes the secretion of surprisingly little cerumen, as compared with insect infestations of the ear. But an increased amount is almost invariably noted. Simpson and Wheler⁴ reported that in one ear of a patient who had a tick in each ear, the canal was almost entirely occluded by cerumen. They also found one of the ticks spread over the tympanic membrane. Toomey remarks that "the unexperienced may mistake the six-legged larvae for a beetle. The beetles usually found in the human ear canal may in a popular way be described as six-legged, relatively very much narrower than the larval ear tick; with longer, more jointed legs, free from

hairs; their mouth parts are much smaller, and the body surface is apt to be more convex and more shiny."

PREVIOUS REPORTS OF CASES

1. The first instance of infestation of man, to appear in print, was recorded by Guérin in 1867.

2. Duges, in his description of the parasite in 1883, said: "This epizoon, very abundant in the state of Guanajuato, is found on the horse, the ass and the ox, principally in the ears, and is spread frequently to other animals, in particular to man, for I have often removed it from the ear passage of children and even adults."

3. Townsend,⁵ in 1893, noted that Dr. W. M. B. Lyons of Las Cruces informed him that he had on several occasions extracted this tick from the ears of children in the neighborhood. He recommended a little chloroform or phenol (carbolic acid) in sweet oil.

4. Rev. W. J. Holland⁶ tells of a friend who got a tick in his ear while sleeping on the ground in Arizona. This caused extreme pain, prohibiting sleeping and finally causing loss of hearing. A physician, on examination, called it a case of polypus. In his efforts to remove this, he removed the tick. The hearing was restored at once, but the irritation remained for some time. The patient had since heard of two other cases of the same kind, which were relieved by tobacco juice. Holland said the species was *Ixodes bovis*. I wonder whether it was not the spinose ear tick.

5. Dr. Fernando L. Arguelles of El Paso, Texas, showed Toomey five ear ticks that he had removed from three Mexicans. Two of the patients had two ticks each. One of the patients had eczema as a sequel.

6. Two specimens in the nymphal state were taken from the ears of a visitor to Cambridge by Dr. J. Christian Simpson. They were supposed to have entered the ears when the patient was camping out in Arizona. There was one tick in each ear. One of the ticks was spread out over the tympanic membrane, and the canal was almost entirely occluded by cerumen.

7. Mr. J. D. Mitchell of the Bureau of Entomology reports two cases at Victoria, Texas, in 1905, in which specimens were taken from human ears by a physician, following prolonged, severe pain.

8. Herms⁷ records the case of a man whose ear was entered by a tick while sleeping on the ground in the vicinity of cattle during the month of September. The tick lived in the ear until December 9, causing much inconvenience. It was finally removed by peroxid applied with a syringe.

9. Prof. Myron H. Swenk of the Department of Entomology and state entomologist of Nebraska lent me a specimen and a letter received in connection with a hitherto unreported case of otioobiosis. The patient was a 3 year old boy living at Lodgepole, Neb. The tick, an unreplete nymph of *Otiobius megnini*, was removed after three months' infestation, by sweet oil and water. There was but little pain, and that only at intervals. Preserved in alcohol, the tick appeared dark brown, with a prominent hypostome and constricted at the sides behind the third pair of legs. It was 4 mm. long by 3 mm. wide.

10. While serving as a medical officer with the National Guard of Pennsylvania, while the latter was stationed at Camp Stewart, near El Paso, Texas, during 1916, Dr. Noxon Toomey removed an ear tick from one of the men. Though the cerumen was syringed away, the tick could not be dislodged. After the canal was cleared, he introduced a probe tipped with cotton, soaked in chloroform. After three minutes had elapsed, he was able to remove the tick. It proved to be a young nymph of *Otiobius megnini*. It had been in the ear six or seven weeks, and had produced no other disturbance except a slight itching deep in the canal.

AUTHOR'S CASE

In 1922, a 7 year old boy, who had recently come with his parents from Arizona, was brought to me for examination. The mother noticed what she thought to be a blood blister in the boy's ear while washing it. The boy had not complained

4. Simpson and Wheler: Lancet 1: 1197-1198, 1901.

5. Townsend, C. H. T.: New York J. Entom. Soc. 2: 49-52, 1893.

6. Holland, W. J.: Canadian Entomologist, 1898.

7. Herms: Medical and Veterinary Entomology, 1915, pp. 328-329.

of any trouble with his ear. On closer examination, I found what might have been taken for a polypus, but which proved to be a tick of the species *Otiobius megnini*, attached to the membrana flaccida. After removal it proved to be quite active, moving about on the table. A small bleeding point was noticed where it was attached to Shrapnell's membrane. No further trouble was experienced by the patient. The tick was bluish gray, and covered with coarse hairs or spines, a replete nymph. After immersion in alcohol, it became dark brown. It was 7 mm. long by 4.5 mm. wide.

TREATMENT IN MAN

The tick should be narcotized with chloroform vapor introduced into the canal on a cotton-wound probe, after

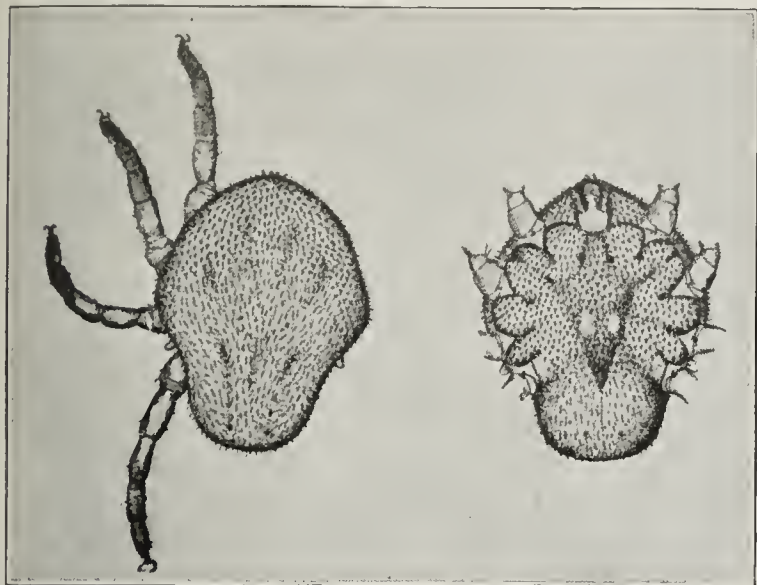


Fig. 1.—*Otiobius megnini*, unfed nymph, dorsal and ventral aspects (from Marx).

which syringing the canal will easily remove the parasite. Should there be no chloroform or ether at hand, an instillation of liquid petrolatum or any bland oil will close the breathing pores of the tick and cause it to release its hold. It can then be removed with aural forceps or by syringing. Toomey recommends an ointment containing salicylic acid and benzoic acid, 3 per cent. each, in any neutral base, as the best treatment for any complicating eczematoid dermatitis, mycotic in origin.

PROPHYLAXIS

Toomey reminds us that the wild mammals of the subtropical prairies furnish an ineradicable reservoir of ear tick infestation. "Infestations of cattle can be prevented," he says, "by instillations of pine tar-cottonseed oil mixture into the ears once a month." He is of the opinion that man is most frequently infested during the tropical sandstorms. Persons who are exposed to horses or cattle should have the ears examined by a physician every three or four months.

Because of its peculiar life history and the remarkable difference in appearance between the spiny nymphal form and the adult, *Otiobius megnini* interests the zoologists; but the physician is interested in the prevention of otibiosis, or its efficacious treatment, should the disease occur. Pierce⁸ calls attention to

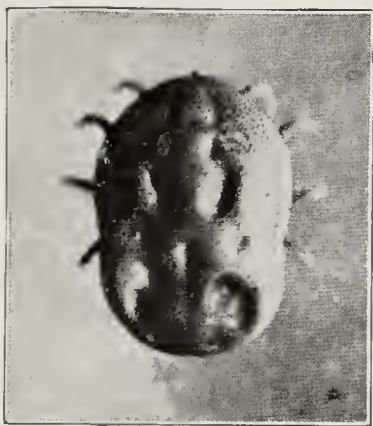


Fig. 2.—Engorged nymph (Hunter and Bishopp).

another factor that will probably add to the interest in the spinose ear tick:

We should be familiar with this tick since a considerable part of our military activities in this country have been and will probably continue to be in the Southwest, where the species abounds. It is probable that by exercising some care in locating camps and in choosing places for sleeping, some degree of immunity from attack will result. The seed ticks are, of course, concentrated about feed lots, corrals and watering places of live stock, and these should be avoided in choosing a camp site.

1503 South Twenty-Second Street.

SUBDIAPHRAGMATIC ABSCESS*

FRED M. HODGES, M.D.

RICHMOND, VA.

Subdiaphragmatic abscess, or a localized collection of pus in contact with the under surface of the diaphragm, is becoming less frequent, as diagnosis and surgical technic improve; but the condition, I believe, is more common than discussions of the subject usually imply. It certainly occurs occasionally in almost every hospital; and since early diagnosis and treatment usually mean a cure, while late diagnosis is often followed by serious complications and death, subdiaphragmatic abscess should be carefully eliminated in every postoperative case showing evidence of suppuration somewhere in the body, or in the case of any acute abdominal catastrophe followed by evidence of suppuration.

The subphrenic space is divided anatomically into four intraperitoneal and two extraperitoneal spaces. The falciform ligament divides the entire space into a right and left side, these being further divided into anterior and posterior intraperitoneal spaces by the lateral ligaments. The left extraperitoneal space is just above the pole of the kidney, where the peritoneum reflects on to the diaphragm; the right lies between the layers of the coronary ligament.

Piquand¹ classifies these abscesses into: (1) anterior inferior abscesses, mainly with abdominal signs; (2) retroperitoneal abscesses, with signs of lumbar swelling, and (3) superior abscesses with thoracic symptoms.

Gravitation, the suction action of respiration, and the lymphatic connection between the lower and upper portions of the abdomen, are the usual explanation of the occurrence of subphrenic abscess. In infections in the lower part of the abdomen, the subphrenic spaces may be involved in several ways: (1) by direct extension up the lumbar fossae; (2) through the lymphatics; (3) through the portal circulation, or (4) associated with or following a general peritonitis. According to Ullman and Levy,² infection by the peritoneal route produces intraperitoneal abscess; by the cellular tissues and blood stream, extraperitoneal abscess; and by the lymphatic route, both types.

The commonest sources of subphrenic infection are the appendix, ruptured gastric and duodenal ulcer, and gallbladder and liver infections, although an abscess may follow infection of any abdominal organ or may be secondary to a focus elsewhere in the body. Lock-

* Read before the Fifty-Third Annual Session of the Medical Society of Virginia, Norfolk, Va., Oct. 31-Nov. 3, 1922.

1. Piquand, G.: Les abcès sous-phréniques, Rev. d. chir. **39**: 156-179, 373-393, 812-831, 962-982, 1909.

2. Ullman, Alfred, and Levy, Charles S.: Subphrenic Abscess, Surg. Gynec. & Obst. **31**: 594-600 (Dec.) 1920.

8. Pierce: Sanitary Entomology, Boston, Richard G. Badger, 1921, pp. 424-426, 433-434, 444-445.

wood³ states that in a hundred cases at the Mayo Clinic twenty-two originated primarily from the stomach and duodenum, twenty-two from the appendix, and thirty-five from the liver and gallbladder. He estimates, in an analysis of cases occurring in several large clinics, that from 0.6 to 1 per cent. of all cases of appendicitis are followed by subdiaphragmatic abscess.

In the diagnosis of subdiaphragmatic abscess, a history of recent injury, operation, or infection elsewhere in the abdomen is very important. There may be pain and tenderness over the infected area, hiccup or nausea, a slight cough, painful respiration, or a feeling of distention on the affected side. In the acute cases the temperature, pulse and blood picture are those of marked suppuration; the respiratory rate is not usually increased in proportion to the pulse and temperature. When the condition becomes chronic, the general symptoms are not so marked and the leukocytosis not so great. The physical findings are usually those of pulmonary compression and elevated diaphragm. The heart may be displaced, but not so much as in pleural effusion; and the liver may be displaced downward. A pleural friction rub is frequently present. When there is gas in the abscess, an area of tympany may be found. There may be a bulging in the upper abdomen anteriorly, laterally or posteriorly.

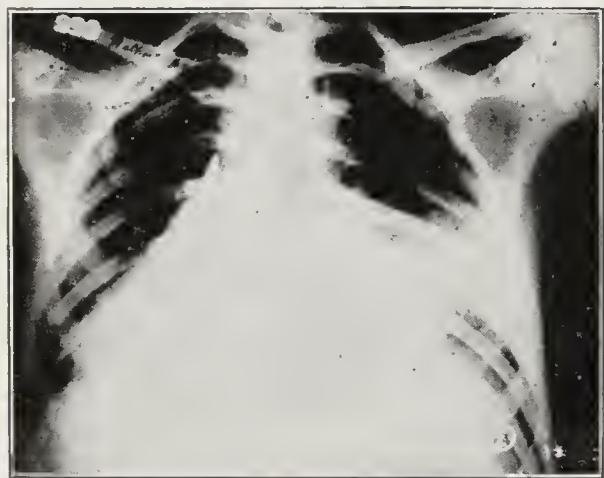


Fig. 1 (Case 2).—Abscess with air pocket beneath right diaphragm, result of gunshot injury to the liver.



Fig. 2 (Case 2).—Appearance three weeks later: The diaphragm is now lower on the right side, and the air pocket is much smaller.

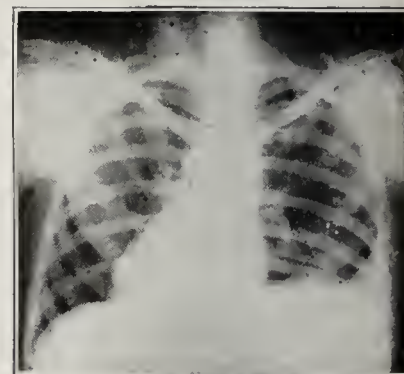


Fig. 3 (Case 2).—Appearance six weeks later: chest normal.

Bulging posteriorly in the lumbar region, with local pain and tenderness, usually means extraperitoneal abscess.

Burke⁴ describes an irregular line of the upper border of the liver dulness, the highest point being in the median or anterior axillary line. He found Litten's sign in only one of eighteen cases, though this sign is said to persist in subdiaphragmatic abscess.

Some² state that, except in the gaseous type, it is impossible to distinguish between the impairment in the lower chest due to pleurisy and that due to subdiaphragmatic abscess.

When there is gas present within the abscess, three different zones of resonance may be made out. In the lower area there is dulness, due to the fluid within the abscess and the liver dulness; in the middle area there is tympany, due to the gas within the abscess, and in the upper area there is the normal lung resonance.

Hoover noted, in a case of subphrenic abscess, that the costal border had a greater lateral excursion on the affected than on the sound side, owing to the loss

of the normal antagonism of the diaphragm to the action of the scaleni and intercostals of the affected side. In one of our cases of left side abscess this was true, but in the others it was negative.

Lee⁵ reports four cases of subdiaphragmatic inflammation, with physical signs and roentgen-ray appearance of abscess, but with spontaneous recovery without suppuration. The diaphragm was elevated just as in abscess. In one of his cases a few cubic centimeters of cloudy fluid was removed from the pleural cavity on the affected side. These were evidently instances of subdiaphragmatic inflammation in which recovery took place before suppuration occurred, and must be borne in mind in the interpretation of a high diaphragm.

In our series of nine cases, seven were on the right side, and two on the left; three followed appendectomy; one, a gunshot wound; one, perinephritic abscess; one, resection of the cecum for carcinoma; one, perforated duodenal ulcer; one, perforated gastric ulcer, and one, multiple liver abscesses. Of this group, four patients are well; one is still under observation, and four are dead.

In two of the four deaths, the importance of an early diagnosis was exemplified. The patients were weak and emaciated, the abscess having been present for more than six months. In one fatal case there

were multiple abscesses of the liver in addition to a chronic abscess. The liver abscesses were probably primary. The fourth case was acute, and the patient probably should have recovered, except for the fact that a large empyema developed following transpleural drainage. In one of the cases ending in recovery we felt reasonably sure that the pleura was infected by an exploring needle. The day the needle was used, no fluid could be found in the pleural space by either physical examination or the roentgen ray. Thirty-six hours later, symptoms of pleurisy developed. This was followed by a fairly large empyema.

In only one case was a definite diagnosis made prior to the roentgen-ray examination. The evidence furnished by the roentgen ray is almost entirely due to changes in the position and contour of the diaphragm, except when, in addition to change of contour, there is an air pocket or collection of gas beneath the diaphragm. The diaphragm is almost always elevated, usually less so in the extraperitoneal cases; the dome is accentuated, and the excursion limited. Occasionally the diaphragm is flattened, but in the case in which this

3. Lockwood, A. L.: Subdiaphragmatic Abscess, *Surg. Gynec. & Obst.* 33: 502-516 (Nov.) 1921.

4. Burke, Joseph: Surgical Aspects of Right Subphrenic Abscess, *Ann. Surg.* 68: 383-394 (Oct.) 1918.

1939 (Dec. 17) 1921.

5. Lee, R. I.: Subdiaphragmatic Inflammation with a Syndrome of Physical Signs and Spontaneous Recovery Without Suppuration, *J. A. M. A.* 54: 1307-1310 (April 17) 1915.

was noted there was practically no excursion even with forced respiration. Only twice did we find an air pocket beneath the diaphragm, and these showed the fluid level when the patient was in the lateral position. One of these followed a gunshot injury to the chest. In this and two other cases there was an accompanying small empyema, but the diaphragm could be made out distinctly.

The action of the diaphragm in diseases of the thorax has been carefully studied, but its various reactions to disease beneath the diaphragm have been neglected. We occasionally see the diaphragm nonmotile when there is an infection some distance away, as in the appendix, though there is no pain on deep inspiration. Sayle⁶ has shown limitation in the movement of the diaphragm in a large percentage of patients with acute appendicitis. We have been able to confirm this in two cases in which a routine fluoroscopic



Fig. 4.—Abscess beneath diaphragm on left side, following fracture of eighth and ninth ribs; a fairly large air pocket can be seen; pneumonia in the right lung.

examination was made prior to an examination of the genito-urinary tract for stone in the right kidney or ureter. In both of these cases the pain was that of kidney colic; in one the blood picture and other findings were those of appendicitis, but in the other the absence of motility of the diaphragm gave the first evidence of other trouble than renal colic. Operation in each instance showed an acutely inflamed appendix. In three other cases with less severe reactions in the appendix, the diaphragm was normal.

The diaphragm seems to splint the upper abdomen almost as effectively as the recti do the lower quadrants. An elevated and more or less rigid diaphragm is as reliable evidence of infection just beneath, as is a rigid rectus of an acute appendicitis. Some observers report an elevation of the diaphragm with little or no decrease in the excursion in subdiaphragmatic abscess, but this has not been our experience. In every instance we found marked limitation, as compared with the normal side. Shifting dullness on percussion cannot always be explained by what is seen with the fluoroscope. We have not noticed a complete filling in of the costophrenic space by the lungs, as is seen in normal chests.

In all of our cases but two, an empyema was either suspected or diagnosed prior to the use of the roentgen ray. Probably in many instances the needle is draining the abscess itself, when a liter or more of fluid is supposed to be withdrawn from the pleural cavity before the abscess is entered by radical surgical measures.

Abscesses containing gas are not so common. Moore,⁷ in 1921, in a study of the subject, found only

a few illustrations in the literature. He showed one well illustrated case. Lockwood, however, in a hundred cases, found that one third contained gas. The gas may be from the intestine, from the lungs, or of bacterial origin.

If there is a large collection of fluid in the pleura and no gas in the abscess beneath the diaphragm, the roentgen ray is of little value in the diagnosis, since the position of the diaphragm cannot be determined until the pleura has been drained. This really has little practical bearing, since an empyema of this character would in any event be drained.

Abscess of the liver, cyst, large tumor of the kidney and perinephritic abscess must be considered in the differential diagnosis; but the clinical history, physical examination and laboratory findings usually help to eliminate these.

In massive collapse of the lung, the diaphragm is elevated on the affected side, but the heart is usually displaced to this side instead of upward and to the opposite side, as in subdiaphragmatic abscess.

Promiscuous needling is probably never justified, certainly not until every other method of diagnosis has been exhausted. In the large majority of cases the condition above the diaphragm and a fairly definite location of the abscess beneath the diaphragm can be determined prior to the use of the needle. A large needle is necessary, if any dependence is to be placed in it as a diagnostic measure. Therefore, unless the position of the diaphragm is carefully considered, the pleural cavity may be entered and infected.

REPORT OF CASES

CASE 1.—R. B. M., a man, aged 65, operated on in August, 1921, for an acute purulent cholecystitis, remained in the hospital until September 15, during which time pus drained freely.

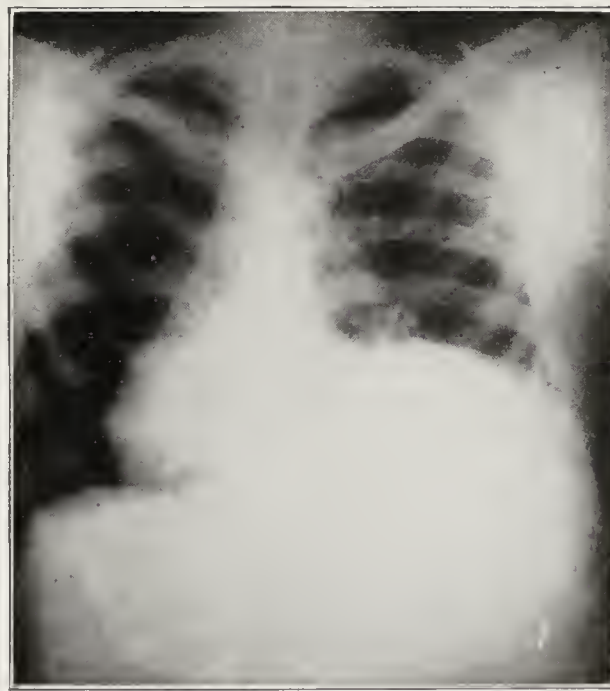


Fig. 5.—Right side elevation due to subdiaphragmatic abscess following perforating duodenal ulcer.

During February, 1922, about 1 ounce (30 c.c.) of bile drained daily. The patient had chills and fever, the temperature ranging from 100 to 104, pulse from 84 to 124, and the blood count from 12,300 to 22,100. Physical examination showed dullness, diminished breath sounds, and râles at the right base. Roentgen-ray examination, February 22, disclosed the lungs clear; the aorta slightly dilated; the right diaphragm acutely arched, extending almost to the third rib, with excursion markedly limited. The findings were very suggestive of subdiaphragmatic abscess. Pus was withdrawn from the liver area, in the anterior axillary line, at about the seventh rib.

6. Sayle, Llewellyn: A Study of Diaphragmatic Movements in Acute Abdominal Inflammation, *J. A. M. A.* **61**: 505-508 (Aug. 17) 1918.

7. Moore, Sherwood: The Roentgenological Findings in a Case of Pyopneumothorax Subphrenicus Dexter, *Am. J. Roentgenol.* **6**: 83 (Feb.) 1919.

The rib was then resected and the pleura sutured. Several ounces of pus was then withdrawn. The patient died, March 14. Postmortem examination showed small multiple abscesses of the liver, with pus in the anterior intraperitoneal space and in the lesser peritoneal cavity.

CASE 2.—J. W., a man, aged 26, wounded, Sept. 15, 1918, got along very nicely for about a week, when chills, a rapid pulse, and high temperature developed. He also had a good deal of pain and tenderness in the right lower chest. This continued for several days, his condition becoming more serious. September 30, a roentgen-ray examination showed the diaphragm very high on this side, with a large air pocket beneath the diaphragm. The fluoroscopic examination confirmed this, and a definite fluid level could be made out beneath the diaphragm. A diagnosis of subdiaphragmatic abscess with a gas pocket was made. This was drained, and further roentgen-ray examinations, October 9, 14 and 23, showed the progress of the case. November 15, the patient was perfectly well clinically, and a short time later returned to duty.

CONCLUSIONS

1. The occurrence of subdiaphragmatic abscess is still sufficiently frequent, especially in postoperative cases, to be of marked clinical importance.

2. Early diagnosis and treatment usually lead to a cure, while late diagnosis often means serious complications or death.

3. A history of a recent abdominal operation or infection, followed by an unexplained elevation of the pulse and temperature, should require a careful elimination of subdiaphragmatic abscess.

4. The roentgen ray is a very important diagnostic aid, and will almost invariably give valuable and definite information.

5. In any acute upper abdominal infection, an elevated and rigid diaphragm should lead to the suspicion of subdiaphragmatic abscess.

6. A diaphragm normal in position, contour and motility usually eliminates the possibility of an abscess just beneath.

7. Promiscuous needling is never indicated, since in this way the pleural cavity may be unnecessarily infected.

801 West Grace Street.

A SIMPLE METHOD FOR DEMONSTRATING MOTOR PARALYSIS OF THE LOWER EXTREMITIES

WITH SPECIAL REFERENCE TO HOOVER'S SIGN

TOM BENTLEY THROCKMORTON, B.Sc., M.D.

DES MOINES, IOWA

In 1908, C. F. Hoover¹ of Cleveland described a new sign for the detection of malingering and functional paresis of the lower extremities. Hoover observed that if a normal person, lying in a dorsal position, attempted to lift one of the lower extremities while extended, the heel of the opposite extremity tended to be forced downward in an endeavor to counterbalance the lifting effort expended in the elevation of the opposite leg. If the hand of the observer was placed beneath the Achilles tendon of one extremity and the opposite leg elevated while extended, it was found that the muscular resistance offered by the passive extremity equaled that necessary to elevate the opposite leg. In patients suffering from organic motor paresis of one lower extremity, it was found, when effort was made to elevate the extended and palsied member, that the opposite and unaffected leg made counterpressure downward, whether or not any voluntary muscular strength was exhibited on the affected side.

The foregoing, in brief, describes the findings of Hoover in normal persons and in those having organic motor paralysis of one extremity. In order to be concise concerning that author's findings in regard to nonorganic

motor palsy of the lower extremities, I take the liberty of quoting the following verbatim:

In two cases in which paresis of one leg was claimed by the plaintiffs in suits for personal injuries, there were wanting the characteristic physical signs to sustain the claim of paresis of the lower extremity as the result of injuries. Furthermore, in both of these cases, when the patient was asked to lift the normal leg off the couch, the leg which was alleged to be very paretic was opposed strongly against the surface when resistance was offered to lifting the normal leg. When the patient was requested to lift the paretic leg, there was an apparent attempt to respond to my demand, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch. Had the paresis been genuine, the sound leg would have been firmly opposed against the surface of the couch when an uninhibited attempt was made to lift the paretic leg.

There can be no question that Hoover deserves credit for calling attention to the discrepancy that occurs in cases of organic palsy of the lower extremities, and in those in which the palsy is of a functional or of a simulated nature. In fact, I feel that the valuable sign has not been made use of sufficiently, either through ignorance of the sign or because it is not fully understood. In the latter instance, no doubt some confusion might arise owing to the fact that no visible means was at hand whereby the observer could accurately observe

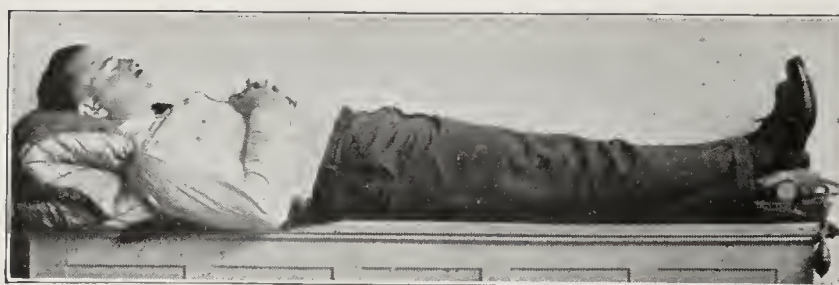


Fig. 1.—Position of patient with sphygmomanometer in place beneath the right heel: Extremity is elevated sufficiently to clear the leg muscles from contact with the horizontal surface.

Bladder Tumors in Anilin Dye Workers.—The occurrence of tumors of the bladder in workers in anilin and a number of like products used in the dyeing industry has attracted considerable notice on the continent in recent years. Rehn, in 1895, was the first to draw attention to the occurrence of cases of tumor of the bladder in workers in fuchsin in the anilin factory at Frankfort-on-the-Main. Leuenberger of Basel published in 1912 collected reports of forty-six cases of tumors of the bladder, of which approximately two thirds were carcinoma and one third papilloma, and three cases of carcinoma of the kidney. He estimated that these conditions were thirty-three times as frequent in the 840 men employed in the anilin industry in Basel, as in the rest of the male population of that town. The condition was rarely seen prior to 1900; but, with the growth of the anilin industry, tumor of the bladder became much more frequent. Leuenberger cites safranin, dianisidin, dihydrothioxilin, congo red and benzopurpurin as capable of provoking vesical tumors. Benzidin and betanaphthylamin are regarded as especially dangerous.—Hope: Industrial Hygiene and Medicine, 1923.

1. Hoover, C. F.: A New Sign for the Detection of Malingering and Functional Paresis of the Lower Extremities, J. A. M. A. 51:746 (Aug. 29) 1908.

the downward pressure expended by the nonelevated leg, and thus the real significance of the sign might at times be left in doubt or even lost. To overcome this deficiency, I carried out a series of experiments in the hope of finding some simple means of recording the downward pressure exerted by the lower extremities in health and in paretic conditions. The results of such efforts I now present in this preliminary note.

For years, at least among the older neurologists, the hand dynamometer was used as a means of determining the amount of grip present in either hand. For a long time it had been my thought that an instrument to measure the downward pressure of the lower extremities in cases of motor paralysis, either organic, functional or simulated, similar to the recording of the grip by means of the hand dynamometer, might be of value in further elucidating Hoover's findings and at the same time give to those less trained in other means of neurologic diagnosis a method of demonstrating visually the presence or absence of any such difference in the complemental pressure as described by Hoover. Accordingly, at first a spring balance type of scale was used, the patient lying in dorsal decubitus with one heel resting on the platform of the scale. It was thus observed in those cases in which no paralysis was present that the downward pressure exerted by the passive leg resting on the scale was equal, or nearly equal, on the two sides as registered in pounds; whereas in cases in which there was paralysis of one extremity, either organic or functional, variations in the complemental pressure between the two sides occurred.

In view of the impracticability of using scales as an instrument for recording the downward pressure made by the passive extremity, the sphygmomanometer apparatus was brought into use, with very gratifying results. The use of this instrument is simple and apparently is thoroughly accurate for the taking of the necessary readings. The patient is caused to lie flat on his back with the lower extremities extended. The arm band of the sphygmomanometer apparatus is then placed under one heel, and, after the recording dial has been attached, air is introduced. In order to obviate the possibility of the calf muscles coming in contact with the bed, couch or extended chair, usually a book or other firm object is placed beneath the arm band to elevate the leg sufficiently. The air pressure in the arm band is now increased until the upper and lower surfaces of the cuff are separated to such an extent that downward pressure with the heel will not bring the two surfaces into apposition, thus assuring that the heel will always be resting on an air cushion. The amount of air necessary to bring this about was usually found to be sufficient for adults when the recording hand of the instrument reached 30 mm. With the heel resting on the air cushion, the leg entirely free from contact with the bed, and the starting point on the dial observed, the patient is instructed to raise the opposite leg, *while keeping the extremity extended*, to an angle of about 45 degrees with the body. The max-

imum excursion of the recording hand, particularly the point at which the downward pressure of the heel sustains the hand, is then noted. Usually it is well to repeat the test a time or two to make sure that the readings show no great variations. Variations will sometimes occur if the patient does not fully relax the muscles of the extremity to be elevated. After the reading has been taken on one side, the air cushion is placed beneath the opposite heel. Here, for several reasons, the starting point may be found different than was the one used in trying out for the first set of readings. If too low, more air is introduced; if too high, the release valve is opened and sufficient air allowed to escape until the starting point is uniform. In normal persons, i. e., when no paralysis of the extremities exists, the readings on the two sides are, for all practical purposes, one and the same, clearly demonstrating that Hoover was correct when he asserted that an equal amount of pressure was made downward by the non-active leg as was necessary to elevate the active limb.

In cases of motor paresis of a lower extremity, the findings, as registered by means of the sphygmomanometer, were interesting. Usually a test of the non-affected leg was made first, the heel of the palsied



Fig. 2.—Manner of elevating the opposite extremity, with leg fully extended. The absence or presence of any complemental contralateral pressure can thus be determined and the amount visualized by means of the recording dial.

extremity resting on the air cushion while the normal extremity was voluntarily caused to be elevated. The test was then reversed, and a reading taken with the palsied extremity elevated. In cases in which the paralysis was only partial, and of some duration, it was found that when the nonparalytic leg was elevated, the maximum reading was sustained, whereas elevation of the organically palsied extremity produced a maximum reading not only lower than the one ob-

tained when the normal leg was elevated, but a reading that was not well sustained, tending to decrease as the muscles of the paralytic extremity failed to maintain the elevation. The following is an illustrative case:

A man, aged 56, had right hemiplegia following a "stroke" sustained the preceding year. There was residual paralysis now mostly in the right lower extremity. Increased tendon jerks, slight ankle clonus, and pathologic toe signs were present on the affected side. Elevation of the left (normal) leg gave a sustained pressure reading of 52 mm. by the right heel, the starting point used being 30 mm. Elevation of the right (palsied) leg gave a maximum reading of 40 mm., gradually declining to 34 mm.

When the paralysis was recent and progressive, it was noticed that attempts to elevate the palsied extremity produced a far greater contralateral pressure on the nonaffected side than occurred when the normal extremity was elevated. In a patient thus tested, the readings, 30 mm. being taken as a basis, were as follows: Elevation of the normal extremity gave a sustained reading of 34 mm. pressure beneath the heel of the paralytic extremity, whereas attempts to elevate the markedly palsied leg gave a reading of 70 mm. pressure downward by the nonaffected extremity. The attempt of the patient to elevate the paralytic extremity naturally brought forth an unconscious effort to aid

on the part of the muscles of the nonaffected extremity, with the result that a greater contralateral pressure downward was the resultant. When the normal extremity was elevated, only a slight pressure was exerted downward by the heel on the affected side, owing to the inability of the patient to fix the paralytic muscles, which resulted in little or no contralateral assistance in elevating the sound limb, and a correspondingly low reading by the sphygmomanometer. Variations in readings between extremities, normal and paretic, must of necessity vary in different individuals; but it would seem that the foregoing is fairly typical of what one may expect to find in those cases in which one leg is organically paralyzed, when the paralysis is by no means complete, or when it becomes more progressive.

Motor paralyzes of a lower extremity, either functional or simulated, have not the diagnostic earmarks that stamp so clearly at times a frank lesion of the corticospinal neurons. In hysterical paralysis, for instance, there is an absence of any extensor toe sign, although the tendon jerks may be increased and clonus present. Anesthesia involving the entire extremity, or of a "stocking-like" nature, may be also present, an anesthesia which has no known anatomic basis. While there may be sufficient neurologic evidence to convince the examiner that the paralysis in a given case is purely hysterical in origin, still the application of Hoover's method in determining the departure from the normal, as far as complementary opposition of the limbs is concerned, merely serves to add another strong link in the chain of diagnostic evidence. In a case of hysterical hemiplegia, with hemianesthesia of the left arm, trunk and leg, the sphygmomanometer readings, 30 mm. being taken as a basis, showed a pressure of 38 mm. when the nonaffected right leg was elevated, as against 34 mm. when an attempt to elevate the paralytic left leg was made. It was peculiar to note that while at one time a reading of 34 mm. was observed, the majority of attempts to elevate the paralytic leg resulted in either a slight downward pressure on the right heel, not exceeding 34 mm., or else complementary elevation of the right extremity, which naturally resulted in a negative reading—i. e., below 30 mm. These findings, I feel, are sufficient to show that Hoover's statement concerning functional paralysis is, in the main, correct, namely: "When the patient was requested to lift the paretic leg, there was an apparent attempt to respond, but the normal leg did not offer the least opposition. The normal leg lay perfectly limp on the couch." The use of the sphygmomanometer does show, however, that downward pressure may occur to some extent on the nonaffected side, even in a case in which the paralysis is, without question, of a hysterical origin.

CONCLUSIONS

1. Motor paralysis of a lower extremity may be organic, functional or simulated.
2. Normal persons show little or no variation between the two sides in the counterpressure made by the passively extended leg when the opposite extremity is elevated while extended.
3. The counterpressure phenomenon is still retained, but differs on the two sides when the paresis of an extremity is secondary to a corticospinal pathway involvement.
4. In cases of hysterical paralysis of the lower extremity, counterpressure is still preserved on the

affected side, whereas on the nonaffected side, counterpressure is slight, or may be entirely absent.

5. Hoover's sign should be used as a routine in all cases of suspected hysterical paralysis involving a lower extremity.

6. The use of the sphygmomanometer apparatus in ascertaining the amount of complementary counterpressure in paralysis of the lower extremities is simple, accurate and reliable.

IDIOPATHIC SPONTANEOUS PNEUMOTHORAX, APPARENTLY NON-TUBERCULOUS

REPORT OF CASE

I. S. KAHN, M.D.

SAN ANTONIO, TEXAS

The occurrence of spontaneous pneumothorax in the course of pulmonary tuberculosis is, of course, relatively not infrequent. Its similar relative rarity in other diseases, apart from traumatism, or in the healthy individual, is the occasion for the report of this case:

REPORT OF CASE

E. H. B., aged 36, married, a grocer, who was seen, Oct. 26, 1922, through the courtesy of Drs. C. E. Scull, P. I. Nixon and J. W. Nixon of San Antonio, and whose family history was negative for tuberculosis, had had no severe

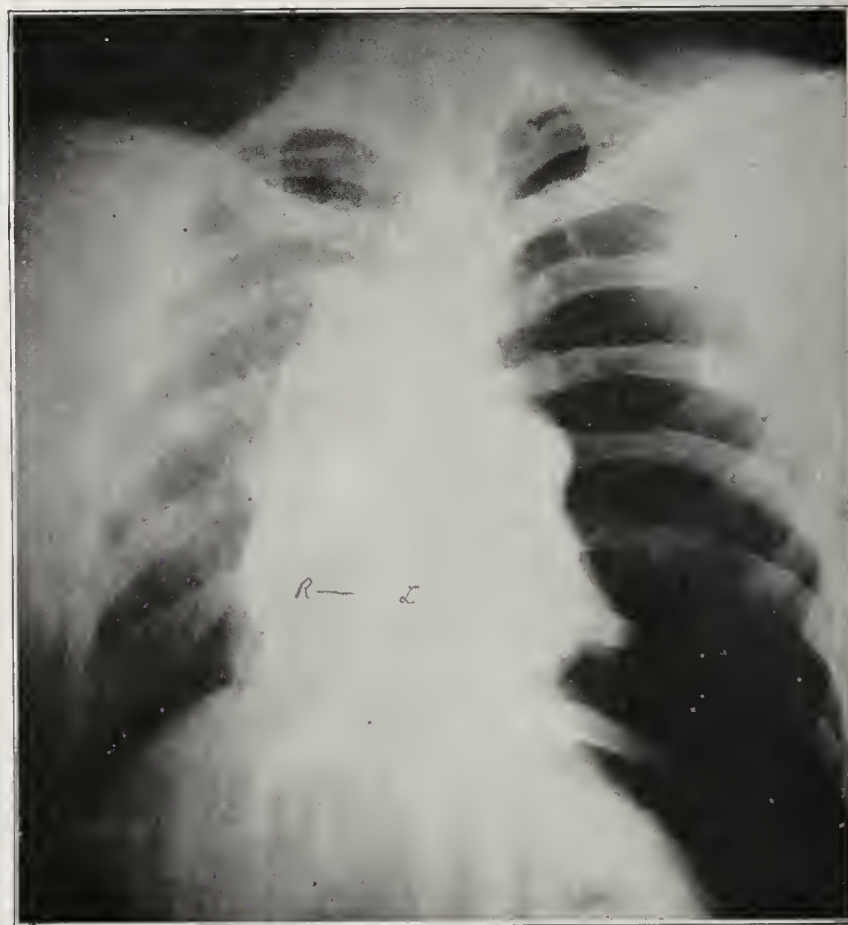


Fig. 1 (Sept. 7, 1922).—Huge spontaneous pneumothorax with total lung collapse; no bands of adhesions.

illness, and had had no occasion to consult a physician for any cause whatsoever from childhood up to his present illness. For the last eighteen years, however, he had had five or six attacks of asthma a year, usually coming on in the winter months and never lasting more than two or three nights. The attacks always were of no great severity, and were relieved immediately by sitting up in the fresh air. There was never any cough between attacks. He was subject to frequent colds, possibly of vasomotor origin.

While lifting a heavy sack of beans (80 pounds), Aug. 19, 1922, he felt a sensation of discomfort and smothering in the left part of the chest. Soreness in the chest commenced at once, with some shortness of breath, especially noticeable on even slight exertion. He consulted a physician three hours later, and was advised to go to bed, though really he did not feel ill enough to do so. He noticed a tight pressure cough with every change of position, but there was no expectoration. He had a slight fever for two weeks. He was referred



Fig. 2 (October 27).—Appearance after removal of 800 c.c. of air; roentgenogram taken before operation revealed identical condition seen in Figure 1.

to Drs. Nixon and Scull of San Antonio, September 7, who recognized the condition present.

Physical and roentgen-ray examinations at that time revealed a total collapse of the left lung, with cardiac dislocation to the right, causing no discomfort to the patient beyond rapidity of the pulse and shortness of breath on exertion. The pleural cavity contained no fluid. In view of the ordinary tendency of the air to be absorbed promptly in these cases, the patient was advised to rest and to return in a month for observation.

October 26, seven weeks later, he returned with the statement that he felt fairly well, but was still very short of breath on exertion. Physical and roentgen-ray examinations showed the thoracic condition as at the initial examination, the collapsed lung not showing the slightest tendency to expand—the pleural cavity evidently not having absorbed any of the extravasated air, instead of most of it, as should ordinarily have taken place. The absence of fluid and infection precluded a persisting opening in the tear. Because of the danger of a permanent loss of the lung, which had now been totally collapsed nine weeks, and subsequent later collapse of the thoracic wall and permanent disability, it was decided to remove part of the air.

October 27, under local anesthesia, a needle was inserted into the pleural cavity, attached to an artificial pneumothorax apparatus with the bottles reversed. A manometer reading of $+1$ cm. of water was obtained, with little or no evidence of the respiratory excursion. Then 800 c.c. of air was slowly withdrawn, leaving a manometer reading of -1.5 cm. Owing to beginning substernal distress at that point, the air withdrawal was stopped. No shock or pain followed. The roentgenogram taken that afternoon showed restoration of the normal convex diaphragm dome and the lung about one-third expanded.

It is, of course, a well known fact that partial removal of a serous pleural exudate, which previously had shown no tendency to absorption, will often be followed by its complete disappearance. Evidently a similar process was called into play in this case, subsequent to the partial air removal. Physical and roentgen-ray examinations, November 8 and 22, showed such rapidity of air absorption and lung expansion that further operative measures were deemed superfluous. December 18, physical and roentgen-ray examinations showed the air entirely gone and the lung expansion complete. None of the usual stigmas of either active or inactive tuberculosis could be found by either method of examination, and the patient was completely free from cough or other suggestive symptoms.

REPORTS IN THE LITERATURE

Weber¹ says that there are practically 200 cases on record in which this accident has occurred in apparently healthy persons, without obvious exciting cause beyond sudden respiratory efforts.

Terry² reports a case of a young man in good health who had had no previous illnesses of any kind, and in whom several routine chest examinations had proved normal. While he was taking a cold shower, something was felt to give way in his chest, and a total spontaneous pneumothorax was discovered. Symptoms were rather trivial, and a return to normal occurred in about four weeks. No cause for the accident was discovered. Clinically, there was nothing further to suggest tuberculosis.

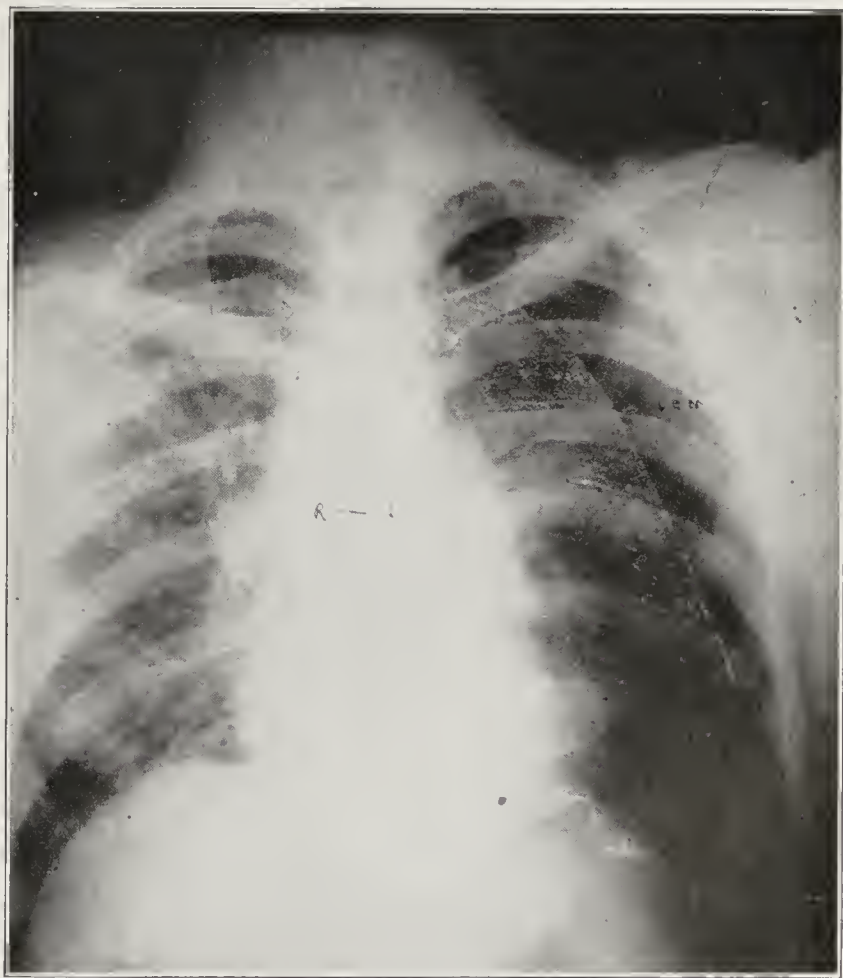


Fig. 3 (November 8).—Rapid absorption of air, and lung expansion.

Crockett³ reports a similar case in a young athlete, also without tuberculosis, though modifying this statement with the remark that pleuritic adhesions seen in the roentgenogram indicated that there nevertheless

1. Weber, F. P.: Spontaneous Pneumothorax, *Practitioner* **102**: 190 (April) 1919.
2. Terry, A. H.: Spontaneous Pneumothorax of Uncertain Etiology, *J. A. M. A.* **66**: 1776 (June 3) 1916.
3. Crockett, James: Spontaneous Pneumothorax, *Lancet* **2**: 330 (Aug. 12) 1922.

may have been an active tuberculous lesion of the lung at some time previously.

Hawes⁴ reports a case in which, between 1911 and 1921, there had been several bilateral spontaneous pneumothoraces, first in one side, then the other, occurring at times every few months. All roentgen-ray findings between attacks were negative. Hawes was disposed to regard this case as tuberculous, though there had never been a positive sputum, and his last



Fig. 4 (November 22).—Further absorption of air, and lung expansion.

physical examination report of 1919, in my opinion, is not conclusive. When last heard of in 1921, this patient was apparently able to do light work, though he had one or more probable recurrences of his spontaneous pneumothoraces after 1919.

Pierson⁵ reports four cases, one in a new-born child. Only two of these four patients were definitely tuberculous. He states that about ninety such nontuberculous cases were reported in the literature up to the time the paper was read. Curiously enough, in the discussion of the paper before the San Francisco County Medical Society, Sept. 4, 1917, occurred the report by Dr. E. S. Kilgore of the only other case I have been able to find in the literature in which there was any necessity to withdraw the air in any of these nontuberculous cases. Here the condition of lung collapse had lasted a year.

Hamman⁶ reports five cases, in two of which the patients were definitely tuberculous, but in three of which the accident occurred in persons in good health and in whom no evidences of tuberculous disease could be found or developed later, one after one year, one after two years and one after five years. However, he regards these cases all definitely tuberculous, and due probably to the rupture of a pleural adhesion into a

small peripheral tuberculous focus, with closure of the focus following the lung collapse.

Weber⁷ reports a fatal case of spontaneous pneumothorax occurring on the seventh day of influenzal bronchopneumonia. He quotes seven similar cases of other authors, four with recovery. He quotes a report of 7,868 cases of pneumonia up to 1908, with only three cases of spontaneous pneumothorax.

Berkley and Coffen⁸ report two cases due to influenzal bronchopneumonia, only one of which was tuberculous. They state that in many of their 1,700 bronchopneumonia cases, necropsies showed ruptured air sacs in the peripheral borders of the lungs, and in many cases numerous adjacent air sacs ruptured, forming large air spaces, which they termed emphysematous excavations. These emphysematous blebs were found in many cases at postmortem in which spontaneous pneumothorax was absent. They were also able to recognize these blebs roentgenographically. They believe these cases potential pneumothorax cases, reporting one actual rupture from this cause.

Abt⁹ reports a similar case in a child with bronchopneumonia.

Meyer¹⁰ reports a case of bilateral spontaneous pneumothorax with necropsy, the case having been seen in the third attack of the year. The postmortem revealed extreme emphysema of both lungs and no tuberculosis.

However, cases of spontaneous pneumothorax due to emphysema certainly must be very rare. I was

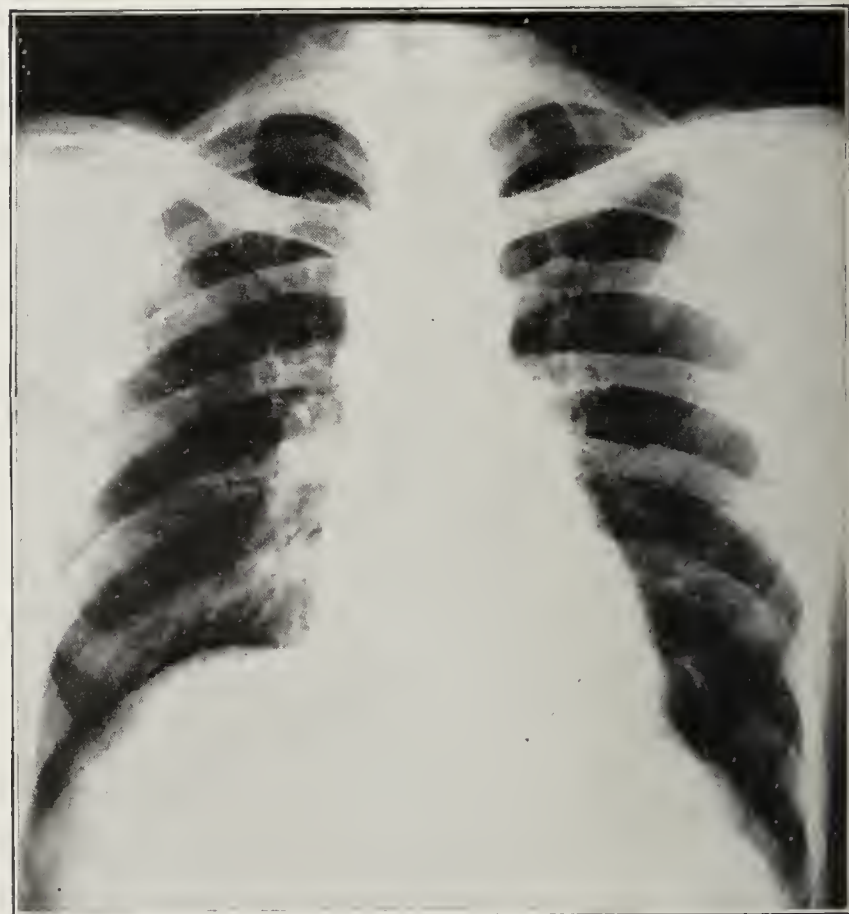


Fig. 5 (December 18).—Complete absorption of air, and full expansion of lung without roentgenographic evidence of tuberculosis.

unable to find a single case in medical literature of spontaneous pneumothorax due to a ruptured emphysematous vesicle, wherein a definite specific history of

4. Hawes, J. B.: A Case of Spontaneous Pneumothorax, Boston M. & S. J. **186**: 528 (April 20) 1922.

5. Pierson, P. H.: Spontaneous Pneumothorax, Boston M. & S. J. **178**: 385 (March 21) 1918.

6. Hamman, Louis: Spontaneous Pneumothorax, Am. J. M. Sc. **151**: 229 (Feb.) 1916.

7. Weber, F. P.: Spontaneous Pneumothorax in Influenzal Pneumonia, Brit. M. J. **1**: 9 (Jan. 4) 1919.

8. Berkley, H. K., and Coffen, T. H.: Generalized Interstitial Emphysema and Spontaneous Pneumothorax, J. A. M. A. **72**: 535 (Feb. 22) 1919.

9. Abt, I. A.: Spontaneous Pneumothorax, M. Clinics, Chicago **2**: 1291 (May) 1917.

10. Meyer, Alfred: Case of Bilateral Spontaneous Nontuberculous Pneumothorax with Autopsy, New York M. J. **105**: 1238 (June 30) 1917.

previous asthmatic attacks was mentioned, and asthma is, of course, our common cause of emphysema.

Patients who recover, of course, offer no postmortem studies, and the few cases coming to necropsy have presented other obscuring conditions. That these cases of idiopathic spontaneous pneumothorax in apparently healthy persons are definitely and invariably due to the rupture of a subpleural minute tuberculous focus, followed by its subsequent entire healing, is difficult of proof. Should healing of the focus not occur, active pulmonary tuberculosis should follow months or years later. Case 1 of Hamman's series is the only one I have been able to find.

Recurrence of these pneumothoraces is not uncommon. Only the future, in this particular case, can determine the question of recurrence. Whether his accident was due to the rupture of an emphysematous bleb from asthma or was due to the rupture of a tuberculous focus is impossible to be stated definitely. Certainly, careful roentgen-ray studies reveal no evidences of tuberculosis, parenchymal or pleural, and no adhesions. The expanded lung, by physical examinations, shows no râles or adventitious breath sounds suggestive of tuberculosis.

RECURRING ILEOCECAL INTUSSUSCEPTION

REPORT OF A CASE COMPLICATED BY TUBER-
CULOSIS OF THE INTESTINE

MOSES THORNER, M.D.

SANTA MARIA, CALIF.

The cause of intussusception is not always clear. It is easy enough to understand how a pedunculated tumor large enough to be caught in a peristaltic wave ahead can cause the intestinal wall at its base to become invaginated. But what is the particular cause, or causes, responsible for intussusception occurring most frequently at the ileocecal junction? Is it due to a too mobile cecum, or to a less mobile one, as either condition could mechanically predispose to invagination? Or is it due to violent enterospasm of the small intestine just at its juncture with the cecum? For the latter reason, ileo-ileac invagination does occur. With such an enterospasm, however, intussusception into the cecum could not occur if the ileocecal valve were small enough, and of sufficient firmness.

One can understand that the small intestine, having far greater peristaltic activity than the sluggish colon, might be constantly tending to invaginate itself. But there are other conditions that prevent it, two of which stand out prominently: (1) a small, firm ileocecal valve, and (2) a tendency of the small intestine to kink itself just before the junction. It would not be hard to conjecture that a prominent Lane's kink is the result of Nature's effort to prevent intussusception by diverting the axis of the small intestine peristalsis.

It was just these two theories that tempted me in the case here reported to make futile efforts at narrowing effectively the ileocecal lumen, on the one hand, and, finally, to succeed in diverting the axis of peristalsis by performing a lateral anastomosis between the ileum and the cecum.

It seems that one should apologize for finding it necessary to operate for an intussusception so many times before discovering an effective cure for the condition. At the same time, the mere reduction of the

intussusception, and the anchoring of a part of the cecum or ileum or mesentery, as is usually practiced, does not offer sufficient reason for the cure of the pathologic state, and prevention of its recurrence. The case here reported clearly demonstrates this fact, it seems to me, as will be shown in reciting the steps taken in its cure.

REPORT OF CASE

History.—M. D., a girl, aged 11 years, referred by Dr. R. W. Brown, March 10, 1921, with the diagnosis of intussusception, when seen, ten hours after the initial attack, was suffering with severe abdominal cramps, occurring cyclically. The attack would begin rather sharply, reaching its acme of pain after about two minutes, and gradually subsiding to a steady cramp. This cycle recurred every few minutes, accompanied by nausea and vomiting. At the beginning of the attack, the bowels moved without aid; but subsequent efforts by the use of high enemas were unsuccessful, except for the return of blood-stained fluid and mucus. There was only slight rigidity of the right abdominal wall, and a mass of considerable size could easily be felt through it, in the right umbilical region.

First Operation.—Twelve hours after the attack began, under gas-ether anesthesia, a Kammerer-Battle, right rectus incision, with retraction of the rectus muscle, was made. A large, sausage-shaped mass was delivered into the wound, which proved to be an ileocecal intussusception, including the proximal end of the appendix. The reduction was not easy, as traction on the ileum and an attempt at sliding over the invaginating walls was ineffectual. We attempted then, successfully, the following technic:

Technic of Reduction: The upper end of the entire mass was grasped between the fingers of either hand, while the two thumbs pressed firmly but gently on the contained mass; the fingers then slid and drew the outermost intestinal walls toward the operator. At the same time the assistant made gentle but firm traction in the opposite direction on the protruding ileum. This effort was constantly repeated until reduction was complete. In effect, the effort was similar to that of reduction of a paraphimosis. It was found that gases were imprisoned between the intestinal walls, forming a cushion, which prevented the walls from sliding over; for when this was released, a fact which could be heard, and felt by the fingers, the reduction became easy.

The invagination consisted of about 10 inches of the ileum, a part of the cecum, and the proximal end of the appendix. Effort was made to determine a palpable cause for the intussusception, but no tumor or ulceration could be found. The mesenteric glands in the vicinity were enlarged. There was a prominent cuff of fat partially surrounding the ileocecal junction, and this, together with a very patent ileocecal valve, was thought to be a predisposing factor. The cuff was inverted by suture into the bowel lumen, and with an additional mattress-inverting suture, the patency of the ileocecal valve was considerably reduced. The appendix was removed, and the caput coli and terminal ileum were each sutured by a single mattress to the peritoneal reflection from the pelvis. The wound was closed in the usual manner.

Progress of the case was uneventful. The bowels moved on the second day, and the patient was out of bed on the third. The wound healed by first intention, and the skin stitches were removed on the eighth day.

The symptoms recurred, April 2. The attack was acute, with symptoms exactly as in the initial onset, but all the symptoms were immediately relieved by high enemas given in the knee-chest posture. As the bowels moved daily, the patient was allowed to go home, April 7.

There was a recurrence of the attack, April 19, unrelieved by enemas. A large mass was felt in the right umbilical region.

Second Operation.—Six hours after the attack, an incision was made parallel to the first one, and to the right of the umbilicus. There were considerable omental and intestinal adhesions. On separation of the omentum from the intestines, these were found to be thickly covered with miliary tubercles; the mesenteric glands were much enlarged. About 1 foot of ileum was invaginated into the cecum. The intussusception

was easily reduced by the technic previously described. On account of the presence of the large number of tubercles, no further radical means for prevention of recurrence was undertaken. It was hoped that the dense adhesions which ordinarily follow would in themselves prevent future invagination.

The further course was uneventful; the temperature and pulse remained normal; the bowels moved well on the second day; the patient was out of bed, April 25. She left the hospital, April 29, in excellent general and local condition.

The patient remained well, with steady gain in weight until July 18. The attack really began on the evening before with slight abdominal pain in the umbilical region. In the morning the pain became acute, of the usual cyclic type, accompanied by vomiting, and bloody mucus from the bowels.

Third Operation.—Six hours after the acute attack, a cut was made through the first incision. There were no adhesions to the abdominal wall. The intestines, however, in this region were very adherent. It was interesting to note that they appeared healthy and not without tone, in marked distinction to the previous time, and with complete disappearance of the tubercles. After the reduction, as before, the ileocecal orifice was found to be very patulous, and was considerably narrowed by three puckering mattress sutures of chromic gut, encircling the lumen of the intestine at this junction. The abdominal wound closed as usual.

There was slight temperature reaction, to 100 F., for three days following the operation. The temperature became normal on the fourth day, and the bowels moved well. There was complete subsidence of all symptoms. The stitches were removed on the ninth day, the wound having healed.

The patient was kept in bed a longer time on this occasion, but after two weeks she was allowed up and about. The general and local condition was excellent. July 30, the bowels moved normally, without cramping; no mass was to be felt; otherwise the local and general condition was excellent. There was recurrence, December 19, of a typical attack, unrelieved.

Fourth Operation.—Four hours after the acute attack, an incision was made over the last one, but extended downward in the right iliac region. Omental adhesions were encountered, not to the wound line, but beyond and lateral to it. A large mass consisting of cecum with invaginated ileum was delivered into the wound. Reduction was performed by the previous technic. No tubercles were found. The ileocecal orifice was as patulous as before, easily admitting three fingers.

Still imbued with the idea that the patulous ileocecal valve was a sine qua non for an invagination at this point, we again decided to narrow the lumen, but with three Halsted inversion stitches of Pagenstecher linen following about the lumen of the bowel. The lower end of the cecum was again anchored to the pelvic peritoneal band to prevent excessive motility. The mesentery of the ileum near the cecum was reefed, also with Pagenstecher linen, imitating a Lane's kink. The wound was closed as usual.

December 22, the pulse, respiration and temperature were normal; the bowels moved well; there was subsidence of all untoward symptoms; the patient was allowed out of bed.

The subsequent course was uneventful. The wound healed by first intention; the bowels moved well; Jan. 10, 1922, the general condition was excellent. Local examination revealed no definite mass in the right iliac region; there was some tenderness on deep pressure.

There was a recurrence, February 11. The patient did not suffer so acutely, but she was more nervous, and had pain in the right side of the abdomen. Palpation disclosed a much smaller mass than in the former attacks; she was relieved by enemas.

February 12, the bowels moved well; all symptoms were relieved; the mass was not felt. The pulse, respiration and temperature were normal; she was sent home.

There was a recurrence, February 14. The attack was markedly acute, and a large mass could be felt in the right umbilical region.

Fifth Operation.—This was undertaken within six hours after the beginning of the attack. There were adhesions all about, but particularly between the omentum and the intes-

tinal coils. These were released, and the intussusception was reduced as usual. The ileocecal orifice was as patulous as before, and no evidence of the Pagenstecher stitches was found. It seemed that everything possible was engulfed in that insatiable cecal maw—bowels, adhesions, et al.

The futility of anchoring by stitches, or extensive adhesions even, was thoroughly brought home, and no further attempt was made to narrow the ileocecal lumen.

Two procedures were now open: either resection of the cecum and the lower part of the ileum, with anastomosis, or ileocecostomy. After all the previous efforts, which thus far had preserved the life of this little patient, it was felt that the graver radical operation (resection) should be reserved for a possible last hope. Therefore a lateral anastomosis of the ileum and the cecum was done.

The ileum was brought down to near the lower end of the caput coli, and there anastomosed to avoid the cecal pouch which would remain if anastomosed above the ileac junction. Pagenstecher linen was used for the Czerny-Lembert, and No. 0 chromic for the through and through intestinal suture. A stoma somewhat larger than what would admit the thumb, in all diameters, remained after closure. The abdominal wound was closed as usual.

February 20, recovery had been uneventful. The wound healed by first intention. The bowels moved well; the appetite was fair; the pulse, respiration and temperature were normal; the general condition was good, though the patient looked rather peaked. She was sent home.

Jan. 31, 1923, after the lapse of almost a year, the patient was robust, and had been entirely free from any abdominal distress since the last operation. She was active in athletics, being on the basketball team of her school. She had two well healed scars, one 2 inches, and the other 4 inches in length. There was no hernia or lack of muscular tone or strength. No mass could be felt in the right iliac region.

Stereoscopic roentgenograms revealed the barium entering the terminal ileum, and both the cecum and the ileum lay in the right iliac fossa, where they were anchored at the last operation.

COMMENT

At the first operation there were only very slight, young adhesions at the invaginated site, operation being performed twelve hours after the diagnosis was made. All the other operations were performed within six hours after the sharp attack of cramps, and at each, extensive adhesions, even of the intussusception, were found. This would indicate that the invagination had taken place to a certain extent without causing distress, and without complete obstruction. But it would seem that when a fresh part of the ileum was drawn into the invagination, the characteristic attack, with complete obstruction, ensued.

In reviewing the conditions found at the different operations on this patient, I cannot imagine that any but the densest adhesions, which would immobilize both cecum and ileum, could prevent a recurrence of invagination. This was the case here, where adhesions between the apposed serous coats were found on the invaginated intestine. How, then, can the simple anchoring of the bowel to any part of the abdominal cavity be effective in preventing invagination, unless it is done to such a great extent as seriously to interfere with the motility and function of the intestine?

This advances the idea that if the axis of peristalsis of the ileum is diverted, the beginning invagination cannot proceed beyond this point. The kink, thought by Lane to be pathologic and perhaps inimical, may, after all, have its function in performing this very act, i. e., diverting the onward intestinal rush.

A small, firm ileocecal orifice must, axiomatically, prevent invagination at this point. It was this fact that caused us repeatedly to make the effort of its permanent narrowing, the wedgelike action of the con-

tained intestine tearing out the stitches, however, and rendering the procedure ineffective.

It would seem that the rational effort should be to divert the axis of ileac peristalsis. Ileocecostomy is ideal in accomplishing this, when the general condition of the patient permits, for the important reason, also, that the function of bowel evacuation is not interfered with.

All means of extensive anchoring of the bowel or mesentery to the peritoneum of the abdominal walls or to the neighboring intestine must eventually seriously interfere with bowel function, so that, while mortality is averted, morbidity is substituted. In the former method, both may be averted.

From reports of cases appearing in the literature during the last ten years, I have been able to collect only twelve cases of recurring intussusception. Though this may be a relatively small number, from the reports, these recurrences are from cases that evidently were originally thought to be cured. Probably, many fatal cases do occur, but are not reported, when simple reduction, without radical preventive measures against recurrence, is practiced.

Sufficient attention has not been given by surgeons to this dangerous pathologic condition, and one awakens to the need of more published experience to aid in the cure when the case is encountered.

I report in detail this obstreperous case because of the stimulus it may afford to surgeons to standardize operative procedure in these cases; also to suggest a simple technic for the reduction of the invagination, and to accentuate the effectiveness of the ileocecal anastomosis as practiced in this case, by attaching the ileum below, to the caput coli, rather than above its junction.

A TYPE OF POSTOPERATIVE FEVER, PROBABLY MALARIAL RELAPSE*

J. S. HORSLEY, JR., M.D.
RICHMOND, VA.

These three cases are typical of a certain group seen at St. Elizabeth's Hospital during the summer and early fall months of each year.

REPORT OF CASES

CASE 1.—W. F. S., a man, aged 28, physician, admitted, Sept. 5, 1922, had always lived in South Carolina. He complained of attacks of gnawing epigastric pain accompanied by nausea and weakness, coming from one to two hours after meals, and relieved by food and soda. These attacks had lasted for six years. One year, and again two weeks, before admission to the hospital he passed large, tarry stools for several days, and on the last occasion he spat up some fresh blood. The family history and past history were irrelevant, except for "malaria" during childhood.

The patient was tall and fairly well nourished, with marked pallor and a "washed-out" appearance; the physical examination was otherwise essentially negative. Routine urine, feces, phenolsulphonephthalein kidney function, and Wassermann tests were negative. Gastric analysis showed a slight hyperacidity and a faintly positive benzidin test for blood. Blood examination revealed a mild secondary anemia, a white count of 6,000, differential count, lymphocytes, 36 per cent., transitionals, 1 per cent., and neutrophils, 63 per cent. No malarial parasites were noted in the blood smear. Fluoroscopic examination of the gastro-intestinal tract following a barium meal showed persistent filling defect in the first portion of the duodenum. A diagnosis of duodenal ulcer with mild secondary anemia was made.

A duodenal ulcer was found at operation, September 8, and both the appendix and gallbladder were chronically inflamed and adherent. The operation consisted of appendectomy, cholecystectomy, excision of the ulcer and pyloroplasty (Horsley).

Nausea and vomiting were much more marked than usual after such an operation. Six days after operation the patient had in the afternoon a slight chill, after which the temperature was 101 F. The next afternoon, one hour later, he had a decided chill, following which the temperature was 102. The white count was 12,000 and neutrophils 80 per cent., which is about normal for a person recovering from a rather extensive operation. No malarial parasites were found in blood smears. Thorough physical, urinary and wound examinations gave no evidence of any cause for the chills and fever. The patient was given 2 grains (0.13 gm.) of calomel, followed in one hour by 6 ounces (175 c.c.) of magnesium citrate; quinin bisulphate, 5 grains (0.3 gm.) every six hours, was prescribed for four days. Within a few hours after this treatment was begun the patient felt much better, and the temperature came down to 98.6 the following morning. It remained about normal for eight days, when it rose in the afternoon to 100. Quinin was given as above for three days, after which convalescence was uneventful.

CASE 2.—Miss B. C., aged 46, entered the hospital, Oct. 2, 1922, for operation on an abdominal mass of four months' duration. She had always lived in Virginia. The family history and past history were irrelevant, except for malaria with chills and fever when she was 5 years old.

Physical examination was essentially negative, except for a large, firm, nodular mass attached to the uterus. Routine blood, urine, feces, phenolsulphonephthalein kidney function and Wassermann tests were negative. A diagnosis of uterine fibroids was made, and a hysterectomy and appendectomy were done the day following admission.

The second day after the operation she began to have a temperature varying from 99 F. in the morning to 101 during the evening. This continued for one week. The white count was 11,600. This was accounted for by the development of a stitch abscess which was treated by constant hot super-saturated boric acid dressings and insertion of a small, superficial drainage tube, which was irrigated with 1 per cent. chloramin-T solution twice daily. For four days her temperature varied between 99.6 and 100, and the wound was doing well. The next afternoon (twelfth postoperative day) the temperature was 102.2. It returned to the usual level the following day. On the fourteenth postoperative day the morning temperature was 97.5, and at noon 101. About 1:30 p. m. the patient had a mild chill, following which the temperature was 103.4. The white count was 11,000, lymphocytes 12 percent., neutrophils, 88 per cent. No malarial parasites were found in the blood smear. Thorough physical, urine and wound examinations gave no evidence of the cause of the chill and fever. The patient was given 5 grains (0.3 gm.) of quinin bisulphate every four hours for three and a half days. The day following the chill her temperature returned to its usual level, varying from normal to slightly above normal. After six days the wound infection cleared up and the temperature remained normal. Quinin therapy was continued at intervals of a few days.

CASE 3.—A. A. D., a man, aged 25, student, who had lived practically his entire life in a malarial district of South Carolina, entered the hospital Aug. 14, 1922, for repair of a deformity of the right forearm and hand which had resulted from an injury in a cotton gin nine and a half months before. His family history and past history were irrelevant, except for mild attacks of malaria with chills and slight fever for several consecutive summers, for which he had received no special treatment.

The patient was small and thin, with contraction deformities of the right forearm, hand and fingers. Otherwise the physical examination was negative. Routine blood, urine, feces phenolsulphonephthalein kidney function, and Wassermann tests were negative.

The patient had five plastic operations performed, two under ether anesthesia, and three under local anesthesia. He progressed satisfactorily for thirty days with only a slight

* Read before the Staff Meeting of St. Elizabeth's Hospital, Oct. 24, 1922.

occasional afternoon rise in temperature, which could be explained by the condition of the wound. The last operation was performed, September 14, and the day following the temperature rose to 101.4, returning to 99 in the morning and 101.7 the next afternoon. Two days of practically normal temperature passed, and then, September 19 a rise to 102 occurred, which persisted for twenty-four hours. Thorough physical, urine and wound examinations gave no evidence for cause of fever. Blood examination showed a moderate increase in the white cells, 28 per cent. lymphocytes, 72 per cent. neutrophils and no malarial parasites in the blood smear. Quinin bisulphate, 5 grains (0.3 gm.) every six hours, was prescribed for five days. The patient showed marked symptomatic improvement and a return of the temperature to normal within twelve hours after quinin was begun. Further convalescence was normal.

COMMENT

Most fevers which follow operations can usually be explained by wound sepsis, pyelitis, phlebitis, pulmonary or upper respiratory infections, severe dehydration, or other less common postoperative sequelae. When these usual complications are ruled out, when the patient has a definite history of having had malaria and presents the symptoms of malaria, all of which disappear after quinin therapy, it would seem to indicate that the condition is a malarial relapse.

A review of the literature on malarial relapses (prepared by the information service of the Rockefeller Foundation) mainly of British, Italian, Dutch and American sources, shows that it has long been recognized that malarial relapses may occur after long intervals. A number of authentic cases can be cited, which are thought to prove that the period of latency in malarial infections is often long enough to justify the conclusion that a proportion of the attacks of malaria developing in a given season are malarial relapses from infections of the previous season.

The theory of the etiology of relapse in malaria, which is supported by the majority of authorities of today, is that the diminution in the number of malarial parasites to a certain level at which active symptoms disappear may be due either to the action of quinin or to the protective forces of the body, or to both. The process of asexual reproduction is continued through the interval without modification or interruption, and no abnormal change occurs in the form of the parasite. The number of parasites is small, however, so that no symptoms are produced, until, for some reason, such as exhaustion, exposure to extremes of temperature, unfavorable climatic conditions, surgical operations, or illness from some other disease, the bodily powers of resistance are lowered, when the parasites multiply rapidly and relapse occurs.

One point against considering the fever of the foregoing cases as due to malarial relapse is the fact that in none of them has there been found malarial parasites. Several blood smears of each patient were examined. In this type of malaria, however, the parasites are supposed to be held in a latent state in the red cells of the internal organs, chiefly the spleen, and they cannot be found in the peripheral blood. This probably accounts for the failure to demonstrate them.

Bass¹ says:

It has been well established again, as is recognized by the planter in malarial country, that malaria feeds on indolence and inactivity, and that recovery is more sure and speedy for him who keeps going while taking his quinine. Among troops the observation has been general that men excused from duty or sent to hospital, while not necessarily worse than others

who kept on with their duties, invariably become worse and less amenable to treatment. Again it has been a rare thing for an officer to be actually incapacitated with malaria, while the men who came before the medical officer for malaria almost certainly reached hospital and succumbed to a period of sympathetic treatment, with relapse after relapse, owing to interrupted, inefficient, and insufficient quinine treatment.

In many persons the initial malarial attacks cause the mildest illness, and many have the infection without any symptoms that are recognized as due to malaria. It is, therefore, possible for similar symptoms and conditions to occur in a patient who gives no history of malaria. Quinin is an antipyretic, but it lacks the power of permanently reducing fever and relieving the type of symptoms seen in the three cases cited above, unless the condition is due to malaria. Bass claims that if the therapeutic test uniformly causes clinical symptoms to disappear, it can be depended on to establish malaria as the diagnosis in suspected cases.

The standard treatment recommended by the national committee should be followed in these cases. It consists of 10 grains (0.65 gm.) of quinin sulphate three times a day for a period of three or four days to relieve the acute symptoms, to be followed by 10 grains every night before retiring for a period of eight weeks, to cure the infection.

SUMMARY

1. Certain postoperative fevers occurring during the summer and early fall months in patients who have lived in a malarial district are due to malarial relapses.
2. In three typical cases of postoperative malarial relapse, the therapeutic test for malaria caused the clinical symptoms to disappear.
3. The standard treatment recommended by the national committee should be followed in these cases.

SKIN PREPARATION IN HYPODERMIC NEEDLE PUNCTURES

GAS BACILLUS INFECTION WITHIN TWELVE HOURS AT SITE OF HYPODERMIC PUNCTURE

C. E. TENNANT, M.D.

DENVER

The use of the hypodermic syringe is not altogether free from danger, even though administered under the most careful aseptic conditions. It has long been known that the skin is a common carrier of pathogenic organisms, but the universal use of the hypodermic syringe is so common, and unfavorable results so rare, even when carelessly used by the layman, that it would seem quite impossible for a tragedy, such as is here recorded, to have occurred when the most strict aseptic conditions were present.

Alcohol for commercial use, and even for hospital administration, is not what it was before the Volstead Act. It is quite probable that it should not now be depended on as an antiseptic as it formerly was when made by the old process in regular distilleries, since much of the alcohol now being purchased is a by-product in the manufacture of "near beer," the alcohol being extracted at the last moment, in order to make the product approximate real beer and yet meet the requirements of present legislation.

Alcohol rubbed over the skin causes no discoloration; hence there is no target or landmark apparent to which the point of the needle may be directed in order to come well within the so-called sterilized bacteria-fixed

1. Bass, in Nelson Loose-Leaf Medicine 7: 345.

area. Under such conditions, no doubt, it frequently happens that the hypodermic needle is plunged into an altogether unprepared spot. Consequently, although the technic of hypodermic syringe and solution sterilization may be ever so carefully executed, the unexpected happens, since the needle, passing through an unclean area, may carry with it whatever is lodged on the skin.

I know of no more embarrassing or troublesome postoperative complication to the surgeon and the hospital authorities, and nothing more distressing to the patient, than a postoperative infection, abscess or systemic bacteremia resulting from inoculation at the site of a hypodermic injection.

While it is true that there has been some discussion, pro and con, relative to any preliminary skin preparation prior to the use of the hypodermic needle; until it has been successfully shown that we can do routine operative work without prior skin preparation, or until we can demonstrate 500 consecutive cases without postoperative infection directly traceable to skin contamination, I shall not be quite ready to accept the argument and abandon the usual postoperative routine.

The use of iodine as the agent best adapted to skin preparation has been universally accepted, and why alcohol is permitted, or recognized as equally effective when applied to hypodermoclysis, or the administration of drugs by hypodermic needle, is beyond comprehension, especially since the commercial forms of alcohol are generally used. Many, however, endorse it, and consequently hospitals permit the habit, while nurses and interns are growing more in the habit of using alcohol, because it is to be found in every patient's room and at every ward bed.

The best evidence we have that the patient's local resistance and the mechanical wiping of the needle by the closely fitting epidermis are great sources of protection is the fact that we have so few cases of infection following the use of the hypodermic needle; but this is not sufficient justification for not throwing all barriers we can command around the patient in order to minimize postoperative accidents and distress.

REPORT OF CASE

A white man, aged 26, had had pain in the upper right quadrant frequently since childhood, increasing in severity after January, 1922. The pain occurred usually five hours after meals, and was relieved by food. Roentgen-ray examination disclosed a shallow duodenal ulcer. Operation at 9 a. m., June 27, 1922, disclosed a stellate ulcer at the junction of the duodenum with the anterior surface of the pylorus. After a posterior gastro-enterostomy and appendectomy, the patient was returned to his room in good condition. One-fourth grain (0.016 gm.) of morphin sulphate was administered hypodermically. The nurse called the house physician to visit the patient at 2:45 p. m., as he was very much cyanosed and breathing hard, and I was promptly notified and visited the patient in company with Dr. J. N. Hall, when we found a typical morphin narcosis, the pupils contracted and the respirations slow. At 4:10 p. m. a hypodermic injection of atropin $\frac{1}{150}$ grain, was ordered. Alcohol was used by the nurse in preparation of the skin, and the injection was made in the outer aspect of the right thigh, the hypodermic syringe having been sterilized first by the sister in charge of the

floor. At 8 p. m. the patient was very much improved, and complained of pain at the site of the abdominal incision; evidently, he was recovering from the morphin narcosis.

June 28, at 3 a. m., the nurse reported that the patient was very restless, with severe pain in the abdomen; and with the full knowledge of the effect of morphin on this patient, 1 grain of codein sulphate was administered hypodermically, which afforded relief for one hour. At 8 a. m., he complained of pain in the right thigh, and a hot water bottle was applied by the nurse. When I saw the patient at 8:30, there was a reddened area on the right thigh, about 2 inches in diameter, at the site of puncture by the hypodermic needle when the atropin was introduced on the preceding afternoon. Pressure provoked pain and ischemia, the color quickly returning on removal of the finger tip. There was no crepitation at this time, and it was assumed that we had a simple local hypodermic needle infection and the hot water bottle was continued. The patient was seen again at 11 a. m., the pain having increased in intensity, accompanied by swelling and redness, which extended from the hip to the knee. Crepitation was distinctly perceptible on palpation, and the temperature was 104 F. A diagnosis of gas bacillus infection at the site of the hypodermic puncture was at once made and a needle was introduced, withdrawing serum for microscopic examination, which proved negative.

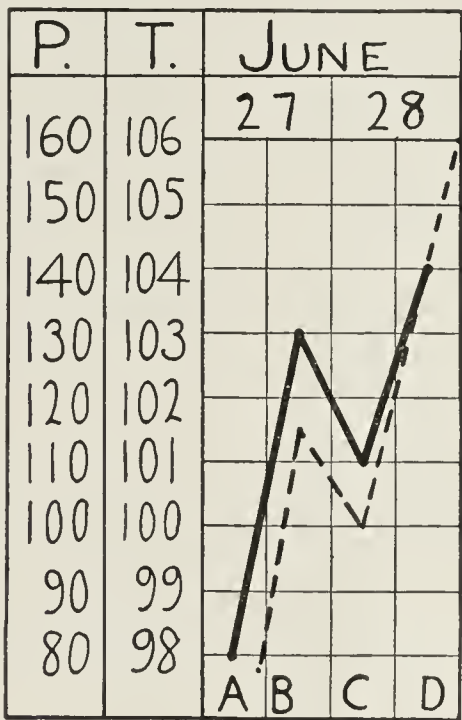
At 11:30 a. m., consultation was held with Drs. J. N. Hall and Leonard Freeman, when it was decided to open the leg. A smear taken from the first incision gave numerous gas bacilli (*B. aerogenes-capsulatus*, Welch, 1891) which finding was later confirmed by our pathologists, Drs. Hillkowitz and Craig. Under local anesthesia, three long incisions were then made through the fascia lata, at 1 inch intervals, and copious applications of hydrogen peroxid were made, no fresh surgical solution of chlorinated soda (Dakin's solution) being available at that time, and amputation being out of the question. The dressings were saturated every ten minutes thereafter, but the patient grew steadily worse, blood appearing in the urine at 5 p. m., the pulse becoming weaker, and death occurring at 12 midnight after two hours of coma.

The remaining tablets of atropin sulphate and the hypodermic syringe and needle were at once submitted to careful laboratory tests by the pathologist, Dr. Helen Craig, anaerobic cultures being made, all of which failed to produce the organism. A

possible clue to the source of this infection may be found in the history subsequently obtained from the wife, that the day prior to the patient's coming to the hospital he had spent a portion of the afternoon in cleaning the stable.

It is in such experiences as this that one regrets not having used the other method of sterilization of the skin. A generous spotting with iodine, given a few seconds to dry, makes the target for a well directed needle, the center of which should be approximated with certainty. The sterilizing efficacy of iodine is no doubt superior to alcohol, especially in view of the quality of the latter now so commonly found on the market.

Maintenance of Industrial Efficiency.—Periodical medical examination, whereby minor ailments may be recognized and treated, also the testing of men's physical fitness for work, after a few months or years of factory service, would, by the elimination of the unfit, tend to maintain industrial efficiency. Physical incapacity for work as revealed by such examination should not, however, be made the excuse for dismissal of the men, but the occasion for providing them with lighter employment.—T. Oliver, *J. State M.* 29:322 (Nov.) 1921.



Continuous line, temperature; broken line, pulse; A, gastro-enterostomy and appendectomy; B, hypodermic injection of atropin sulphate; C, crepitation discovered in right thigh; D, death after two hours of coma.

Clinical Notes, Suggestions, and New Instruments

INJURY TO CAROTID ARTERY AND JUGULAR VEIN, WITH LIGATION AND RECOVERY

C. S. LAWRENCE, M.D., WINSTON-SALEM, N. C.

A boy, aged 12 years, entered the hospital, Aug. 6, 1922, with a wound of the neck, due to an automobile accident. The impact of a collision threw the boy, who was riding on the front seat, into the wind-shield, breaking it and at the same time inflicting a wound in the left side of the neck. There was a sudden, profuse hemorrhage; the boy got out of the car and stood for a second; then his father and other occupants of the car laid him on a cushion and applied a handkerchief compress to the bleeding wound, placed the boy in the car, and drove to the hospital, a distance of 4 miles. On the way, they stopped at the office of a physician, who advised them to rush to the hospital at once.

I saw the boy within a few minutes after admission. He lay perfectly quiet, blanched from loss of blood; the pulse was soft and feeble; there was an incised wound in the left side of the neck, clean cut, with no bleeding. The boy held his head flexed on the neck, closing the wound. His clothing was soaked with blood, and his shoes were full of it. The other occupants of the car were sprinkled with blood.

The wound was so extensive that we decided to give the boy light ether anesthesia to repair it. Things were made ready, and Dr. Stirling started the anesthetic. As soon as the patient got enough ether to stimulate him he moved his head to the right, opening the wound, with a spurt of blood that was, indeed, alarming. I immediately applied a compress, holding it with my hand and controlling the hemorrhage. The wound was slowly opened. At the same time, pressure was made below until I could see the cut end of the internal jugular vein and a wound into the carotid artery. The jugular vein and the carotid artery were clamped with a curved Kelly clamp, transfixed, and ligated with No. 2 chromic catgut. When the clamp was released, blood was seen to flow from the carotid, so it was again ligated above and below the wound, after which there was no bleeding. The artery was cut about half through. The upper end of the jugular was found retracted high up under the cut ends of the neck muscles; it was clamped, transfixed, and ligated with No. 2 chromic catgut. The glass made its mark on the thyroid cartilage from front to back, and almost entered the larynx. The wound ranged from above down; hence the carotid was cut at a lower line than the jugular.

The muscles of the neck were approximated by No. 1 chromic catgut, and the skin was closed with silkworm gut. The boy left the table in a very feeble condition; 500 c.c. of salt solution with 500 c.c. of black coffee, given by rectum, with heat to the body, revived him at once, the pulse improved, and the general appearance improved markedly. Salt solution was given by rectum for twenty-four hours, when the condition was so much improved that the treatment was discontinued.

RECORD OF CONVALESCENCE

August 7, there was ptosis of the left eyelid; the left pupil was contracted, and reacted sluggishly to light. The voice was husky, the patient being able to speak only slightly above a whisper; 1,500 units of antitetanic serum was given. The face muscles were relaxed on the left side.

August 9, the left pupil was dilated with homatropin, and the eye ground examined. The nerve head was somewhat anemic, and the margins were not clearly defined. The vessels looked normal in every way. No abnormality was seen in the retina; there was a mild degree of ptosis of the left lid.

August 12, two silkworm stitches were removed. The margins of the wound separated, with discharge of pus. The patient could not speak above a whisper.

August 15, the eye grounds were normal.

August 21, aside from a slight discharge from the wound, the general condition was good. The left pupil was still

smaller than the right. There was ptosis of the left lid, and relaxation of the muscles of the left side of the face. The voice was husky. The patient was discharged from the hospital to return for dressings.

October 17, fluoroscopic examination showed the excursion of the diaphragm equal on the two sides. The heart and the lungs appeared normal. The pupils reacted to light and accommodation. The left pupil was slightly smaller than the right. The drooping of the left lid and the relaxation of the face muscles were much improved. There was no improvement in the voice. Distinct pulsation was felt in the carotid artery below the point of ligation, with none above. There was a very feeble pulsation in the left temporal artery, demonstrable for the first time since injury. The boy was much improved in general health.

Jan. 29, 1923, five months after the injury, the general health was good. The left pupil was half the size of the right. The voice was husky. There was slight improvement in the voice and in the muscles of the face.

COMMENT

When the common carotid artery or internal jugular vein is divided or punctured, the time required for fatal bleeding is so short that few patients have been saved. Lejars and Larrey have shown, by reported cases, that the life of patients so injured can be saved. In their cases a surgeon happened to be close at hand when the accident happened, and controlled hemorrhage by compression until the vessels could be ligated.

In the case here reported, the patient was literally soaked in his own blood. In my opinion the reasons he did not bleed to death were that: (1) he bled until the blood pressure was nil; (2) the severed neck muscles retracted, taking with them the cut vessels, the bleeding vessels coming in contact with fresh cut muscle, which has a tendency to control hemorrhage; (3) a handkerchief compress was applied by a layman present at the time; (4) the flexed position in which the boy held his head on the neck to the injured side had a tendency to close the wound.

There is no doubt that the recurrent laryngeal nerve was severed at the time of the accident, for all I did was a rapid ligation of the vessels, and if the suture had included the nerve I do not believe it would have destroyed it. There were no symptoms of pneumogastric or phrenic injury. The contraction of the pupil on the side of injury was due, evidently, to sympathetic injury, and the partial paralysis of the face muscles was due to the same cause together with anemia.

NEW TECHNIC FOR THE FLOCCULATION TEST OF SYPHILIS

ARTHUR R. CASILLI, M.D., NEWARK, N. J.

The various modifications of the original Sachs-Georgi precipitation test of syphilis have dealt with the preparation of antigen, the technic used, or both. One thing has become evident, however, and that is the use of concentrated but freshly diluted antigen. Kahn's preparation of antigen and modification of technic used in performing the reaction have gone far to show that the flocculation test may eventually replace the difficult complement fixation procedure of Wassermann.

The technic I have evolved takes advantage of Kahn's antigen, but the reaction gives decided, clear flocculation results.

TECHNIC

The clear serum is inactivated at 56 C. for half an hour. One-tenth c.c. of serum is diluted with 0.9 c.c. of physiologic sodium chlorid solution (0.8 per cent.). At the bottom of a clean, dry, one-fourth by 4 inch test tube made of nonsoluble glass is put 0.05 c.c. of pure cholesterinized antigen (not diluted), and to this the 1 c.c. of diluted serum is added. The mixture is vigorously agitated and incubated at 37 C. Within three hours there will be a sharp, clear-cut flocculation in positive serums. I prefer to incubate over night and read the reaction in the morning when the precipitate all sinks to the bottom of the test tube, leaving a clear, supernatant fluid. The negative serums remain turbid, but with no flocculation.

While the cholesterin antigen gives the best results, the positive serums also react to noncholesterin antigen, but the reaction is less sharp. The stock antigen is always to be kept in the incubator.

For quantitative work, two test tubes are used. In each is put 0.05 c.c. of cholesterinized antigen. To the first tube is added 0.2 c.c. of serum previously diluted to 1 c.c. with saline solution; to the second tube is added 0.1 c.c. of serum previously diluted to 1 c.c. with saline solution. Both tubes are vigorously shaken and incubated at 37 C. Within three hours there will be distinct gross flocculation in both tubes, but more in the first tube if the serum is of four plus reaction. It is interesting to note that, in four plus reactions, the precipitation occurs in the first tube long before flocculation occurs in the second. With a flocculation of equal quantity in the two tubes, or with a fainter precipitation in the second tube, the reaction is read three plus. If there is complete flocculation in the first tube and none in the second, the reaction should be two plus. When the flocculation is only faint in the first tube and none in the second, the reaction is given one plus. Of course, with no flocculation in either tube the reaction is negative. These readings are based on my observation that 0.1 c.c. of serum is just enough to produce a complete flocculation in a four plus reaction. It is an advantage to be first acquainted with the degree of flocculation given by 0.1 c.c. of serum of a known four plus reaction.

RESULTS

I have tried this technic with a large number of serums, and for the present I can only say that the results thus attained are in perfect accord with the Wassermann reaction. My only reason for the publication of this preliminary note is to acquaint other investigators with the technic, which, if adopted, may be of service in their research and may give me no opportunity to compare their results with mine by the time I am ready to give a full account of the test.

111 Park Avenue.

AN UNEXPECTED EPINEPHRIN REACTION FOLLOWING INFILTRATION WITH PROCAIN-EPINEPHRIN SOLUTION AS A LOCAL ANESTHETIC

CHARLES E. DOWMAN, M.D., ATLANTA, GA.

Assistant Professor of Surgery, in Charge of Neurologic Surgery,
Emory University School of Medicine

M. S., a woman, aged 31, was admitted to the Piedmont Sanatorium, Feb. 1, 1923, with a diagnosis of tumor of the cerebellum. Her symptoms had begun one year before, and consisted principally of dimness of vision, headaches, vomiting, and staggering gait. The general examination was negative for hyperthyroidism. The blood pressure was systolic, 100; diastolic, 70; the pulse was 80; hemoglobin, 70 per cent. The neurologic examination disclosed bilateral choking of the optic disks, a markedly staggering gait with tendency to lean to the right, and asynergia of the right arm and right leg. February 7, the patient was prepared for operation. The field of operation was infiltrated with 5 ounces of 1 per cent. procain solution, each ounce of the solution containing 7 minims of epinephrin chlorid solution (1:1,000). Before the infiltration was begun the systolic blood pressure was 102 mm. of mercury; the pulse, 80. At the completion of the infiltration, the systolic blood pressure rose suddenly to 180 and the pulse to 180 minute. There was sudden loss of consciousness followed by a generalized convulsion. The extremities became blanched. The thyroid gland appeared increased in size. A few minutes later there was projectile vomiting. Fifteen minutes after the reaction began, the blood pressure began to fall, and came down within a few minutes to 115. As the blood pressure began to fall, consciousness returned. It was then noticed that the left pupil was dilated and that there was a paresis of the left side of the face. After two hours, these findings disappeared. During the twelve hours following the reaction, the patient vomited several times. At the end of this time the patient had returned to the same condition that preceded the infiltration. Two days later a cerebellar operation was successfully performed under ether anesthesia.

The use of local anesthesia in neurosurgical operations is a matter of routine with me except in children and very nervous adults whose cooperation cannot be relied on. The solution that we use contains from 0.5 to 1 per cent. of procain. To each ounce of the solution, 7 minims of epinephrin chlorid solution (1:1,000) is added. The epinephrin is used for three reasons: (1) to prevent the absorption of the procain; (2) to prolong the duration of anesthesia, and (3) to lessen the usual troublesome scalp hemorrhage. Although as much as 6 ounces of the solution has been frequently used, there have been no reactions which could be attributed either to the procain or to the epinephrin, with the exception of the case reported.

In view of the possibility of severe epinephrin reactions in the use of local anesthesia when this drug is added to the solution, it would seem advisable to determine beforehand whether or not the patient is particularly susceptible to epinephrin. This might be done with the Goetsch test. When several ounces of the solution are required, the epinephrin content should be correspondingly reduced.

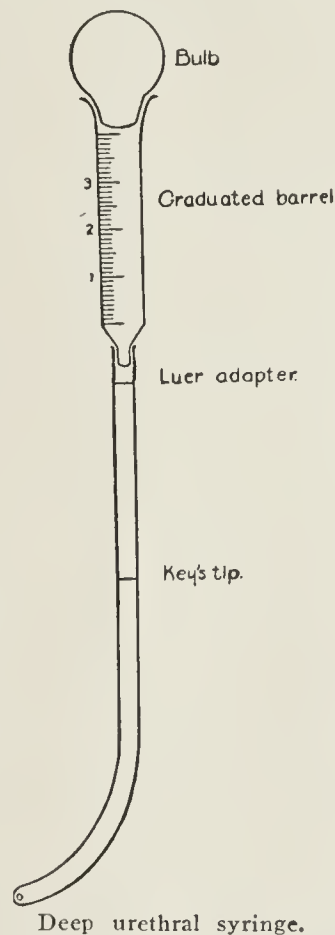
75 Forrest Avenue.

A DEEP URETHRAL SYRINGE

SIMPLE AND INEXPENSIVE ADAPTATION OF THE BULB TYPE*

H. J. SCHERCK, M.D., AND W. E. JOST, M.D., ST. LOUIS

From time to time efforts have been made to overcome the disadvantages of the ordinary type of leather-tipped piston syringe. The disadvantages are well known, especially on account of the difficulty of sterilizing and the impossibility of keeping the plunger continuously tight. Other suggestions have been made to overcome these objections, but we believe that in this idea all objections have been overcome, and that a most practical and simple adaptation has been made, as demonstrated in the accompanying illustration. The idea occurred to us on observing an illustrated advertisement relative to these types of syringe. One of the small syringes was graduated, and the tip adapted to a hypodermic needle of the Luer type.



Deep urethral syringe.

The advantages are as follows: that it is simple, inexpensive, and easy to sterilize; by removal of the bulb, the contents of the bladder can be evacuated, and should more than the usual amount of solution be required, the instrument can be filled any number of times without its being necessary to remove the tip. The only requirement for assembling the instrument is to use an adapter of the Luer type between

the tip of the syringe and the metal Key's tip. These syringes are graduated and contain about 3.5 c.c.

849 Century Building.

*From the Urological Department, St. Louis University School of Medicine.

Problem of Malaria in Marines in Haiti.—Malaria was responsible for 16,986 days of illness in the First Brigade in Haiti in 1921. The average strength of the brigade was 2,115; the number of admissions was 2,056, with five deaths, hence almost every man and officer who served in Haiti during that year was infected. In the first six months of 1922, the number of admissions was 425, with three deaths, and 4,358 days of illness. Lieutenant-Commander Allen, M. C., U. S. Navy, in an address before the medical officers of Haiti, urged the necessity of an antimalaria campaign.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, APRIL 14, 1923

THE THYMUS GLAND

As in so many other instances in which each of two conflicting interpretations of a phenomenon were eventually shown to be in part correct, so the early problem concerning the endocrines: Do they act by putting something into the blood (internal secretion) or by taking something out (detoxication)? is simmering down to the answer, "Both." The thyroid and pancreas yield extracts which seem able to replace completely the intact organs in the animal economy (excluding, of course, the digestive action of the pancreas) and may, therefore, be reckoned as functioning through a secretion. The extracts of suprarenal, pineal and hypophysis have definite actions, but have not yet been shown capable of subserving the functions of the intact gland, and judgment of the most salient action of these glands must be deferred. The parathyroids have never yielded active extracts, and have been recently identified with a detoxicating action.

An interesting light is shed on the whole problem by the elaborate studies of Hammar¹ on the thymus. This organ, as revealed by examination of the bodies of healthy persons accidentally killed, increases in size till puberty (from 11 to 15 years), and then slowly recedes with advancing age. The whole remains functional through life, as shown by its delicate response to varying body conditions and by the continued formation of lymph elements and Hassall's corpuscles. The thymus, it will be remembered, consists of two rather distinct tissues: the cells from the endoderm of the fourth gill cleft, which form the epithelioid core or medulla of the gland and are present with lymph tissue as the reticular cells in the cortex, and the lymphoid cells, which invade the gland early in its development. Hassall's corpuscles are being formed continually from the medullary reticular cells by hyperplasia of a small group of them, and are as continually reverting back to the normal reticular cells or, in the case of the larger corpuscles, undergoing cystic, hyaline, calcareous or other degeneration. The lymphatic tissues con-

stantly produce lymphocytes which pass into the blood, as witnessed by numerous mitoses in the lymph "corpuscles," and an increased number of lymphocytes in the blood leaving the gland, as compared to the entering blood.

These two tissues, though related, are, Hammar believes, essentially individual in their function. Increase or decrease in Hassall's corpuscles and lymphatic tissues or corpuscles may occur independently, changes in the latter being usually merely part of a general change of lymphatic tissues. In age and inanition involution, the cortex is greatly reduced (the whole gland may decrease to a hundredth of the normal weight) by increased emigration and lessened production of lymph cells, while Hassall's corpuscles are slowly decreased because their continual formation is retarded while the steady regression continues. The roentgen ray may completely destroy the lymphoid cells and not modify Hassall's corpuscles. Acute infections are first associated with a marked decrease in the lymphoid cells and a great increase in the number of Hassall's corpuscles (in diphtheria, for instance, there may be ten times the normal number, new small ones being formed while the large ones degenerate); and later, when wasting sets in, with a decrease in both. Exophthalmic goiter is definitely accompanied by increase of both the thymic tissues, and the same follows the feeding of thyroid to animals. In cases of mors thymica (and in suicides) there is, if any significant change, a decrease in Hassall's corpuscles and increase in lymphoid cells. Wherever an increase or decrease of thymic lymphatic tissue appears, the same holds for the purely lymphatic tissue and the blood lymphocyte count, though to a lesser degree. The reverse does not always hold: the thymus is spared in some diseases of the lymph tissues proper.

Hammar concludes that Hassall's corpuscles and lymphoid cells are controlled separately by excitor and depressor factors, acting probably through the blood, and he reasons that the factors stimulating production of the corpuscles give the truest index to the unique functions of the gland. Any true antigenic toxin, as diphtheria toxin, snake venom or thyroid, when introduced into the body, leads to the formation of new Hassall's corpuscles, whereas nonantigenic poisons, as phosphorus, carbon monoxid or lye, are devoid of such effect. Hammar suggests that the thymus is essentially concerned with the production of antibodies, and that Hassall's corpuscles "form the morphological expression of an antitoxic activity." He notes that in inanition with lowered thymic activity the resistance to infection is less; that the increase of Hassall's corpuscles in diphtheria (a definite toxin) is especially marked; that, in response to a new intoxication, new corpuscles are formed while the old ones degenerate—possibly because new specific antibodies cannot be formed by the same elements which had produced

1. Hammar, J. A.: *Endocrinology* 5: 543 (Sept.), 731 (Dec.) 1921.

other antibodies; and that the lymphatic tissues in general are known to be concerned in immune processes. This somewhat speculative evidence is fortified with the results of Barbara,² who demonstrated that the thymus produces "stimulins," which activate the phagocytic cells, increase the opsonins, and either produce complement itself or incite its production in other organs.

The thymus, then, from this point of view, is not a gland of internal secretion in that it gives no substance *sui generis*. It is detoxicating in that it protects against toxins. This action is probably not, however, as in the liver, due to the direct action of the gland cells on the toxic bodies, but rather through the intermediacy of a cell product free in the blood stream, which one might choose to call an internal secretion as well as an immune body. Such a detoxicating secretory action may be the key to a number of endocrine antinomies. The futility of tissue extract therapy in "disorders" of such glands hardly requires mention.

THE THERAPY OF EXOPHTHALMIC GOITER

Exophthalmic goiter has long offered a problem of serious import to the clinician, since it causes much immediate distress to the patient and presents uncertainties of prognosis in most cases. Until recently, errors in diagnosis were frequent, for few clearly defined aids to clinical judgment were available. Now that there is more agreement in respect to the distinguishing characteristics of exophthalmic goiter, the therapy of the disease has become the subject of active discussion. In a recent issue of the *Archives of Internal Medicine*³ is presented the outcome of serious researches by competent investigators which emphasize the conflicting points of view.

The crux of the situation involves the natural or spontaneous course of the disease. This is admittedly fundamental to any final evaluation of specific measures of treatment that may be undertaken. It is often alleged that the natural course of exophthalmic goiter is a most uneven one, and that improvements and relapses may occur at any time spontaneously. Means and Holmes of Boston have wisely remarked, however, that until some one produces a satisfactory experimental exophthalmic goiter, controls will be secured only by chance. Under such circumstances, therefore, it will not be easy to withhold promising treatment from patients, even if a considerable element of uncertainty as to its fundamental value may exist.

Recent treatment of exophthalmic goiter has for the most part proceeded on the theory that it really represents an aspect of hyperthyroidism. Means and

Holmes remark that if we accept the theory that the symptoms manifested in hyperthyroidism are due to increased activity of the cells composing the thyroid gland, then the application of any method of treatment which is known to inhibit or destroy cell function would be rational. Surgery and roentgen-ray treatment have accordingly vied with each other for favor in bringing about the desired result. Rarely has it been possible to study such an array of carefully collected data as the intelligent collaboration of the internist, the surgeon and the roentgenologist has made possible in the study of a large number of patients at the Massachusetts General Hospital by Means and his collaborators. About two thirds of these cases exhibiting unmistakable exophthalmic goiter showed either recovery or improvement coincident with treatment by suitable irradiation with roentgen rays. The Boston clinicians assert that in exophthalmic goiter, when treated by the roentgen ray, if good results are not secured in a few months, surgery should be employed. Prolonged roentgen-ray treatment in patients showing no response is undesirable. They also believe that some patients with exophthalmic goiter who are not cured by the roentgen ray are, perhaps, made better operative risks by it. A combination of the two forms of treatment may sometimes accomplish more than either does alone.

In contrast with this is the report of the course of fifty cases of fully developed exophthalmic goiter observed at the Mount Sinai Hospital, New York, by Kessel, Hyman and Lande. The course of the illness was followed with as little interference with the natural tendency of the disease as was compatible with the comfort of the patient. At any rate, "specific" therapeutic procedures were not instituted. Such observations on patients kept essentially at rest alone may quite properly be regarded as a control investigation for comparison with the result attributed to irradiation and surgery. In the opinion of the New York clinicians, the spontaneous course of exophthalmic goiter is toward arrest in the vast majority of cases. In patients who develop the disease late in life (after 45 or 50) the prognosis is poor. If these cases are excepted, the prognosis is excellent under a regimen of "skilful neglect." To establish the efficacy of any specific therapeutic measure, we are told further, one should demand that definite proof be offered that the results obtained are better than those reported here of the "spontaneous" course of the disease.

All investigators now agree that until a specific diagnostic test is discovered, no reported case of exophthalmic goiter should be accepted as a genuine case unless the basal metabolism is distinctly and repeatedly elevated. According to the New York clinicians, by this alone can the disease be differentiated from "autonomic imbalance." In the stage of arrest, differentiation can be made only by the history of the crisis. The clinical picture varies as the age of the patient at the time of onset of the disease. In other words, the variation.

2. Barbara: La fisiopatologia della tiroide e del timo nei rapporti colle infezioni, Milan, 1918, pp. 1-260.

3. Means, J. H., and Holmes, G. W.: Further Observations on the Roentgen-Ray Treatment of Toxic Goiter, *Arch. Int. Med.* **31**: 303 (March) 1923. Kessel, Leo; Lieb, C. C., and Hyman, H. T.: Studies of Exophthalmic Goiter and the Involuntary Nervous System: Kessel, Leo; Hyman, H. T., and Lande, Herman: III, A Study of Fifty Consecutive Cases of Exophthalmic Goiter, *ibid.* **31**: 433 (March) 1923.

especially in regard to the presence and extent of the exophthalmos, is dependent, we are told, on the end tissues of the patient, rather than on the specific elaboration of any toxic product. It may be well to reiterate here that thyroid hyperplasia and thyroid adenoma may exist for years without at any time causing sympathomimetic symptoms or alteration in metabolism. Kessel, Hyman and Lande insist that in exophthalmic goiter the dominant derangement is in the realm of the involuntary nervous system. This may not be primary; but the primary cause, whatever it is, must at least operate through the mediation of the involuntary nervous system. Means and Holmes point out, further, that, in toxic adenoma, roentgen-ray treatment appears to effect a similar improvement to that noted by them in exophthalmic goiter; but so far they have used irradiation only with patients who have refused operation. In toxic adenoma, in contrast to exophthalmic goiter, surgery probably removes the actual cause of the disease, the adenoma. The indication for surgery, they add, would, therefore, seem more definite than in exophthalmic goiter. Even in toxic adenoma, however, in certain cases that are too thyrotoxic for safe operation, the roentgen ray may be used to advantage. In the light of present-day evidence, the choice of therapeutic procedure presents, indeed, a difficult perplexity.

A RAPIDLY ELIMINATED DIGITALIS BODY

That the action of digitalis persists after the drug has been withdrawn was recognized by Withering in 1785. In recent years, Bastedo determined the presence of digitalis heart block three and a half weeks after the administration of digitalis had been stopped. Cohn observed by means of electrocardiograms that, in relatively healthy hearts, delayed conduction always persisted for at least two days, and occasionally for two weeks, while Eggleston reported coupled beats from four to twelve days, heart block from three to six days, auricular fibrillation three days, and extrasystoles two days after withdrawal of the drug. Agassiz found, after the intravenous injection of strophanthin, that the heart rate present before treatment returned in about a week. The action of digitalis persists, therefore, for several days in most cases, and in exceptional cases for three weeks. It is evident that better control of the action of digitalis is desirable.¹

Hatcher, at the request of the Council on Pharmacy and Chemistry of the American Medical Association, undertook to elaborate a digitalis preparation that would be stable, that would contain a definite amount of the readily absorbable principle, and that would be suitable, if possible, for intravenous administration. As a result of extensive experimentation he has isolated a digitalis body which behaves unlike any constituent

of digitalis heretofore described. That the new substance has a true digitalis action has been shown by tests on the frog's heart, and by its quantitative synergistic action with ouabain. A nearly fatal dose of this substance is completely eliminated within a few hours after its intravenous injection into the cat, whereas a nearly fatal dose of digitoxin is not completely eliminated for several weeks. Hatcher obtained this rapidly eliminated fraction from digitalis leaf, from the tincture, and from other digitalis preparations by simple methods of extraction. Several chloroformic percolates of digitalis, but not all of them—which, *a priori*, might be expected to contain digitoxin mainly—consist almost wholly of the rapidly eliminated substance, apart from inert matter. This is remarkable in view of the fact that digitoxin is the only chloroform-soluble substance, other than digitalin, obtainable from digitalis.²

The rapidly eliminated digitalis body has been separated quantitatively from other digitalis principles, and prepared in a state of purity approaching that of commercial digitoxin. Its importance is due to the effect it will have on the dosage and the biologic standardization of digitalis. Its therapeutic value must be determined by further investigations in which the clinician and the pharmacologist work hand in hand.

The intravenous administration of digitalis is rarely necessary if digitalis is properly given by mouth. For rare cases, in which intravenous digitalis therapy may be indicated, it appears that Hatcher has prepared a product whose action is less persistent than other digitalis preparations now available, and which is simply and inexpensively prepared.

Current Comment

DANGER OF ARSENIC IN CLOTHING

Recently an active advertising campaign has been utilized to promote the use of a solution containing arsenic (equivalent to 0.05 per cent. arsenic pentoxid) as a larvicidal spray for clothing.³ It is proposed to induce manufacturers of woolen garments to have their materials treated with the arsenic solution to protect the cloth against moth invasion; in turn, the retailer guarantees to the consumer that the fabric will remain moth free. In view of past experiences with arsenic poisoning and the almost universal legislation against its presence (except in minute traces) in foodstuffs, wall paper and even in dyed clothing, this propaganda is surprising. Even though only a small amount of arsenic in the form of the larvicide solution is directed for use as a moth preventive, it may be potent for harm, while carelessness in application may result in greater concentrations. When treated clothes are brushed, the arsenic compound may pollute the air

2. Weiss and Hatcher: A Study of a Digitalis Body Which is Eliminated Rapidly After Its Intravenous Injection in the Cat, *J. Am. Pharm. A.* 12: 26 (Jan.) 1923.

3. "Larvex," manufactured by the Process Chemicals Company, New York.

1. Robinson, G. C.: The Therapeutic Use of Digitalis, *Medicine* 1: 122 (May) 1922.

more than was the case with the now forbidden arsenic-bearing wall paper. Even the infant in arms may be poisoned by sucking treated woolens. Skin-rashes, due to the close contact of treated under-clothing, may become frequent, as happened years ago, from stockings colored with a dye carrying a small amount of inorganic arsenic as an impurity. Such contingencies should not be permitted. Unfortunately, the public is led to believe that the government endorses the product. The advertisements state that Larvex—as it is now called—was subjected by the U. S. Bureau of Entomology to the severest test possible and approved. An inquiry by THE JOURNAL reveals that the bureau does not endorse Larvex, nor were the tests the severest possible. It seems that a naval commandant requested the product to be examined and then turned the report—favorable as far as it went—over to the manufacturers, who capitalized it. Thus was one department imposed on by another government agency to the gain of financial interests; thus one arm of the government unwittingly served to defeat the spirit and purpose of legislatures in prohibiting the employment of arsenic in dangerous proportions in every-day commodities. Before it is too late, it is hoped that dealers in wool clothing will not allow themselves to be parties to the distribution of this potent poison, nor allow their names to be used in connection with a misleading endorsement.

POTENTIAL DANGERS IN CHEMICAL PRESERVATIVES

Several years ago, when the question of artificial preservatives, bleaching processes and colors in connection with food products was being actively agitated, Folin said that we need preserved foods now more than ever before. Therefore, he added, there is a legitimate and highly important field for the application of suitable chemicals (if such preservatives can be found) to food which would otherwise be wasted. Whatever the attitude of the individual may be toward the larger questions so long at issue here, there can certainly be no defense of alleged chemical preservatives which do not preserve. To employ such products means to proceed with false assurance. Yet this is apparently what is happening to those who use certain "canning compounds" now widely sold. The problem is one of large significance at the present time from the standpoint of the public health, for "canned goods" have become the object of inevitable suspicion, in view of the outbreaks of botulinus intoxication from preserved products. Levine¹ of the Iowa State College has found that one "compound," consisting of about 95 per cent. boric acid mixed with 5 per cent. of common salt, possessed a selective antiseptic action. Some varieties of colon bacilli and the spore-forming aerobic bacteria tested were inhibited, but the colon forms that have been associated with food poisoning (*B. enteritidis*, *B. paratyphosus* and *B. typhosus*) and the anaerobic spore formers (*Clostridium sporogenes* and *Clostridium botulinum*) grew, the latter readily, in the con-

centration of the compound which would be employed in canning. *Clostridium botulinum* grew in twice the concentration and survived three times the period of boiling recommended for canning with the compound. The bacteria normally present on asparagus, corn, carrots, string beans and green peas grew luxuriantly in the presence of the compound. A method which affords no adequate safeguard against food poisoning is a potentially dangerous one. Chemical preservatives do not exclude the need of eternal vigilance, even when they are sold in packages that glibly guarantee safety.

CONDITIONS ATTENDING THE EXCRETION OF UREA

That the elimination of urea is one of the important functions of the organism requires little argument. It has become an established fact that urea is not confined to one or two organs in the body. This nitrogenous end-product of metabolism occurs in all tissues, except in fat and the urinary tract, in approximately uniform concentration. Its diffusion to all parts of the body is accomplished with great readiness. With this knowledge has come the realization that in health the excretion of urea is easily accomplished. In disease, however, the process of elimination is not always so favorable, so that retention may occur to a variable degree. If the normal process were well understood in all its details, a study of the situation in individual pathologic cases might reveal the character and extent of some defect in the excretory organs. On one side of the urea-secreting cells of the kidney there is blood, and on the other is the urine. Of late years, evidence has been increasing to show that the concentration of urea in the blood plays an important part in the speed of its transfer to the urine. Ambard and his associates conceived another factor to reside in the concentration of urea in the urine. Long ago, however, the studies of Marshall and Davis on animals showed that, when plenty of water is given, the rate of urea excretion is directly proportional to its concentration in the blood. This has now been verified for man, notably by the recent observations of Addis and Drury¹ at the Stanford University Medical School. In their experiments under conditions in which an abundance of water containing varying amounts of urea to alter the content in the blood was ingested, the proportionality between the amount of urea in an hour's urine and the amount in a unit of blood was constant within very narrow limits of variation, over a wide range of blood urea concentration. Such knowledge of the "laws" of urea excretion in health should lead to a useful technic in the detection of abnormalities of the eliminatory processes. It has long been appreciated that although the function of excreting urea may be much impaired in disease, a recognition of this fact simply from the output of urea is difficult or, at times, virtually impossible. The correlation of data derived from both blood and urine gives the greatest promise of furnishing helpful information and promoting an advance in diagnostic method.

1. Addis, Thomas, and Drury, D. R.: The Rate of Urea Excretion, V, The Effect of Changes in Blood Urea Concentration on the Rate of Urea Excretion, *J. Biol. Chem.* **55**: 105 (Feb.) 1923. Drury, D. R.: The Rate of Urea Excretion, VI, The Effect of Very High Blood Urea Concentrations on the Rate of Urea Excretion, *ibid.* **55**: 113 (Feb.) 1923.

1. Levine, M.: The Value of Boric Acid Canning Compound in Food Preservation, *J. Home Econom.* **15**: 64 (Feb.) 1923.

Association News

THE SAN FRANCISCO SESSION

Postconvention Diagnostic Clinics

Thirty-five or more county medical societies in California will participate in diagnostic clinics, which are to be conducted throughout the state on Monday, July 2, and Tuesday, July 3. These clinics will be in all respects similar to those to be held in San Francisco and Oakland during the annual session of the American Medical Association (*THE JOURNAL*, Feb. 17, 1923, pp. 481-482). These clinics are to be held under the direct auspices of the county medical societies or by committees representing accredited hospitals. In some instances, the clinic program will be combined with a social program, all to constitute a well rounded day of review work and pleasure. It is hoped that, through these diagnostic clinics, physicians may get new and helpful ideas of diagnosis, treatment and renewed enthusiasm for their work, and that the public may gain information and fuller appreciation of the efforts and accomplishments of scientific medicine.

Representatives of various county societies and hospitals in California will be in San Francisco during the annual session to offer postconvention hospitality to visiting Fellows and to help arrange their postconvention itineraries. Some of the smaller county societies have combined to hold diagnostic clinics, while others that cannot provide facilities for clinics have created hospitality committees to assist visiting Fellows in arranging vacation trips.

The Los Angeles County Medical Society has appointed a committee to arrange the clinic program in Los Angeles, Monday and Tuesday, July 2 and 3. These clinics will be held in the Los Angeles County Hospital, White Memorial Hospital, St. Vincent's Hospital, Good Samaritan Hospital, Children's Hospital, California Lutheran Hospital, Methodist Hospital, Seaside Hospital and Pasadena General Hospital.

The San Diego County Medical Society, in cooperation with accredited hospitals and the United States Naval Hospital, has arranged for clinics at the United States Naval Hospital, St. Joseph's Hospital and the San Diego County Hospital. At the United States Naval Hospital, specially prepared clinics on tropical medicine will be held, offering a unique opportunity to physicians to see many rare diseases.

Societies of the following counties, singly or in cooperative groups, will conduct clinics and entertain visiting Fellows: Butte, Contra Costa, Fresno, Glenn, Humboldt, Imperial, Kern, Lassen-Plumas, Madera, Marin, Mendocino, Merced, Monterey, Napa, Orange, Placer, Riverside, Sacramento, San Benito, San Bernardino, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Siskiyou, Solano, Sonoma, Stanislaus, Tehama, Tulare, Tuolumne, Ventura, Yolo and Yuba-Sutter.

The postconvention diagnostic clinic program outlined offers splendid opportunity for utilizing the experience of many of the teachers and clinicians among the Fellows of the American Medical Association. Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements, 806 Balboa Building, San Francisco, will be glad to provide additional information about the postconvention clinics.

From San Francisco to Hawaii

The members and Fellows of the American Medical Association who wish to go to Hawaii from San Francisco can leave that city on the *S. S. Wilhelmina*, July 3, returning to San Francisco, July 25, or on the *S. S. Matsonia*, July 11, returning to San Francisco, July 31. Those sailing on either of these two vessels will have eight days in Hawaii. The approximate cost of the trip, including first class steamship accommodations, side trip to Hilo, scenic railroad trip along coast of Hawaii, a visit to Kilauea Volcano, automobile trip to Puna District and return to Honolulu and hotel accommodations at Volcano House and at Moana Hotel in Honolulu, will be \$365. Those who wish to remain longer in Hawaii may sail on the *S. S. Wilhelmina*, July 3, and return on the

S. S. Matsonia, July 31. Thus sixteen days will be allowed in Hawaii. The cost of this trip will be approximately \$400. Any who wish to have further information may communicate with the Matson Navigation Company, 120 Market Street, San Francisco.

Michigan "Golf Special" to San Francisco

Dr. F. C. Warnshuis, secretary of the Michigan State Medical Society, informs *THE JOURNAL* that about fifty reservations have already been made on the Michigan "Golf Special," which will be operated from Chicago to San Francisco for the benefit of members of the Michigan State Medical Society and their friends who will attend the annual session. Reservations have been made from seven states. This special train will leave Chicago at 8 p. m., June 17, and will arrive in San Francisco on the morning of June 23. Stops will be made each day at places where good golf courses are available. Reservations have been made and arrangements have been completed for transportation to and from the golf courses. The cost to those who go on the Michigan "Golf Special" for railroad fare, Pullman, meals and incidentals will be \$235. Requests for reservations should be sent to Dr. F. C. Warnshuis, Powers Theater Building, Grand Rapids, Mich.

To Delegates and Alternate Delegates

Credentials will be given all delegates to the American Medical Association, signed by the presidents and secretaries of their respective state medical associations. In cases in which delegates cannot attend the annual session, their credential cards should be assigned to their respective alternates. These cards are arranged conveniently for this purpose, the authorization for the alternate delegate being printed on the reverse of the card. It is to be hoped that every delegate who has been elected or who will be elected to represent his constituent state association at the annual session will be present on that occasion, or that in the event that any delegate cannot attend, he will notify his alternate delegate and provide him with proper authorization.

Invitation from Salt Lake County Medical Society

The Salt Lake County Medical Society is arranging for the entertainment of visitors who may be able to stop over en route, either going to or coming from San Francisco. The stop over here can be made inexpensive. Our society has already appointed committees to greet and assist in making arrangements to see the city and, if possible, some of the surrounding territory, which may include wonderful mountain drives; a visit to Saltair, which is situated on Great Salt Lake, and a visit to the great copper mines in this vicinity.

Large parties intending to make this stop over are requested to give us notice as far in advance as possible as to the number in party and length of time of stop over. Any inquiries relative to this matter may be directed to the secretary, Dr. Floyd F. Hatch, Deseret Bank Building, Salt Lake City, Utah.

THE SCIENTIFIC EXHIBIT

The Committee on Scientific Exhibit calls attention to the fact that applications for exhibit space or for time on the motion picture theater program must be in the hands of the director of the Scientific Exhibit not later than May 1. Judging by the applications thus far received, the exhibit at San Francisco will be of a high order. The exhibit constitutes an avenue through which research workers and practitioners may present visually and orally the results of their scientific endeavors. Efforts are also being made to coordinate the work of the sections with the exhibit. Each speaker before a section has received a letter from the secretary of the section suggesting that the features of his paper may lend themselves to effective visualization. In order that the available space may be apportioned to the best advantage, applications will not be passed on, nor assignments made by the committee until after May 1.

**ANNUAL CONGRESS ON MEDICAL EDUCATION,
MEDICAL LICENSURE, PUBLIC HEALTH
AND HOSPITALS***Held in Chicago, March 5, 6 and 7, 1923**(Continued from page 1011)***TUESDAY, MARCH 6—AFTERNOON****HOSPITAL SERVICE****DR. FRANK BILLINGS**, President of the American Conference on Hospital Service, in the Chair**The Program on Hospital Service**

DR. FRANK BILLINGS, Chicago: Two years ago, the conference took part for the first time in this annual congress, and through those who had charge of the congress I was given the responsibility of compiling a program on hospitals. Last year, those in authority made the American Conference on Hospital Service responsible for the program on hospital service hereafter. Last year the officers of the conference prepared a program on subjects that were entirely new; they felt that it was necessary because in many instances various subjects relating to hospitals were threshed out repeatedly without getting anywhere, so this year new subjects are presented that have not heretofore been discussed before the congress.

**The Rôle of Nonmedical Clinical Assistants in Hospitals
Without Interns**

DRS. S. S. GOLDWATER and E. M. BLUESTONE, New York: The rôle of the nonmedical assistant in hospitals without interns is one which has not yet been thoroughly investigated or appraised. The subject may be considered by ascertaining the actual contribution that such assistants are making to hospital service by considering the manner in which and the extent to which their services may be utilized to advantage, and finally by inquiring into opportunities for the training of such assistants, and the logical content of a course of training to fit nonmedical aids for fruitful hospital service. It is encouraging to know that the American Conference on Hospital Service has taken official cognizance of this problem.

The activities of nonmedical clinical assistants have a twofold origin: the fact that many hospitals that desire interns are unable to secure them, and the fact that hospitals that employ interns have in some instances deemed it wise to relieve their interns of time-honored and arduous, but relatively simple, duties. The shortage of interns has become chronic. In 1920, out of 6,440 hospitals that were requested by the American Medical Association to express an opinion on the subject of interns, only 1,126 reported that they desired to have interns, and of this number only 593, or approximately one half, were found in condition to furnish satisfactory internships. Roughly speaking, about 10 per cent. of the hospitals in the United States having more than ten beds each are able to offer satisfactory internships, and these hospitals, which represent approximately 50 per cent. of the total hospital bed capacity of the United States, are in a position to absorb all the graduating medical students, thus leaving unsupplied with interns 50 per cent. of all hospital beds.

Hospitals accustomed to the services of interns experience acute distress when deprived of such services. The sudden withdrawal of interns from hospitals during the war started something like a panic. Hospitals were unwilling to do without a system which they had come to regard as indispensable, and, in their eagerness to keep their organizations intact, began to offer financial rewards for interns. In hundreds of hospitals the unsalaried intern was replaced by the salaried intern, but although by this means a small number of older physicians were induced to abandon private practice and resume institutional work, the general hospital situation was not greatly altered, for the principal effect of the bidding up of salaries was the mere fruitless shifting of interns from one hospital to another. The cessation of the war brought no adequate relief. The number of hospital beds, and, more especially, the demand for intensive technical ser-

vice incidental to diagnosis and to the treatment of hospital patients, continue to increase at a rate which indicates a continued shortage of interns; and this is a condition which cannot be disregarded, since it is now generally believed that hospitals which are deprived of interns are more than likely to be frustrated in any attempt at the proper organization and standardization of their clinical work.

Clinical records are important in all hospitals, both great and small, but it is futile to talk about perfecting the clinical records of small hospitals unless a substitute for the intern can be provided. With the best will in the world, the visiting staff of hospitals that have no interns cannot see patients promptly enough after admission; they cannot take proper histories, satisfactorily record operations, furnish or secure adequate and timely assistance at major surgical operations, render prompt first aid in minor accident cases, make adequate clinical notes of the progress of their cases, make sufficiently frequent urinary analyses and blood examinations, or give suitable attention to infected wounds which require time-consuming treatment. For all of this work resident assistants are needed, and for some of it nonmedical aids are already extensively employed.

It would be folly to enlist the services of a nonmedical personnel to satisfy a need that is fundamentally a medical need, if any other expedient were available. Apparently, no other expedient will entirely meet the situation. The growing enrolment of medical undergraduates offers some, but not sufficient relief; for, as the number of medical graduates increases, so also does the ratio of interns to patients in well organized hospitals. Here and there, visiting physicians in attendance at small hospitals assert that in the absence of interns the visiting staff assume the interns' duties. If the larger hospitals which employ interns exclusively could be persuaded to employ mixed forces of interns and nonmedical technicians, a considerable number of interns might thus be released for service in the smaller hospitals. But who will persuade the larger hospitals to do this? Not a few of the larger hospitals are employing nonmedical anesthetists, surgical assistants, laboratory workers, and clinical secretaries, but the ratio of interns to patients is usually greatest precisely in those hospitals in which these extra workers are employed. In these hospitals, the chief purpose of the employment of nonmedical clinical aids is to relieve rapidly changing and relatively unskilled interns of the duties which they perform least satisfactorily, and to substitute workers who, through long continued practice, eventually acquire a high degree of technical proficiency. The relatively extensive employment of nonmedical persons in the most progressive and scientifically productive hospitals suggests that progress in medical science is dependent in a measure on efficient, nonprofessional aid in the performance of work which does not necessarily require medical training and judgment.

The inauguration of a comprehensive course of training for nonmedical clinical aids was first publicly suggested by us about three years ago. Many women had previously been intensively trained as either anesthetists, surgical assistants or laboratory workers; but women with this special training are not qualified for the broader and more varied work of clinical aids. Moreover, most of the women who have taken this special training have been rapidly absorbed by the larger hospitals as helpers to the intern staff, and have therefore failed to bring relief to the smaller institutions that have no interns to be relieved or helped out in this way.

In a typical medical or surgical service, the duties of the house staff begin, on the arrival of the patient, with the taking of the history. The time devoted to history taking is dependent on many factors. The patient may be an adult or a child; may or may not be intelligent in his replies; may require an interpreter, or may be stuporous or unconscious, in which case it may be necessary to obtain the history from a friend or a relative. The clinical condition may call for a simple history, or it may require painstaking historical research. Histories must be taken at all hours, and often in bunches. The time for taking histories is lessened where clerical help is available. Although the visiting staff does not read lengthy histories conscientiously, but, as a basis for its clinical judgments, contents itself with a series

of rapid fire questions addressed to the patient, it is commonly considered good practice for the intern to write histories, and the importance of complete records cannot be gainsaid. In studying the time factor in taking histories, we must remember the importance of searching for and abstracting old charts in the case of patients who were previously admitted. The average time for taking a history in a general hospital is half an hour or, in a 100 bed service, having an average of forty admissions a week, three hours a day.

Laboratory procedures may be considered as those done by laboratory experts, and those done by interns or laboratory technicians. In the former group are included the more difficult bacteriologic and pathologic examinations; in the latter, routine clinical pathology. Routine clinical pathology is usually assigned to the younger members of the house staff as part of their medical education. In Mount Sinai Hospital, one full-time technician for both surgical services, and another for the two medical services would be sufficient. As to general and special therapeutic measures, directions for treatment are necessarily given by the clinician; but the administration of drugs, and other forms of therapy, are carried out by nurses. Operative treatment belongs to the staff. Special therapeutic procedures, such as hydrotherapy, physical therapy and radiotherapy, are rarely assigned to members of the house staff. In Mount Sinai Hospital, the entire staff of each surgical service spends five hours daily in the operating room; but it is generally conceded that the second and third surgical assistants (interns in this case), the anesthetist, and the intern who passes instruments, might be replaced, perhaps with profit to the surgeon and the patient, by trained clinical aids. Other house staff duties are prescribed at Mount Sinai Hospital purely for the training of the interns. These include duties in the admitting room and in the pathologic laboratory. A large number of the duties of the house staff, fully one third, are extraclinical, such as obtaining necropsies, consulting with the relatives of patients, writing certificates and reports, and issuing notices.

DISCUSSION

DR. CHARLES P. EMERSON, Indianapolis: The county hospital is an expression of county pride. We have potentially ninety-two county hospitals in Indiana. If in Indiana we go to one of the counties and say, "You cannot support a hospital in your county," we arouse county pride. An appeal is made at once to the citizens of that county for the establishment of a hospital, and bonds will be issued. The more we discourage county hospitals, the more rapidly they will grow. Small hospitals are an expression of county pride, but in my opinion are menaces to the community. In this country, more than half of the patients are treated in hospitals with less than fifty beds which never have the advantages of interns. Of fifty hospitals in Indiana, we can persuade our seniors to go to but seven. They will not go to the smaller hospitals. They go more and more to the teaching hospitals unless they have a personal interest in a particular small hospital.

The reputation of a hospital depends on one man, whether it has twenty or fifty beds; it makes no difference, so long as it is run by a good man. A county hospital which is under lay organization deserves careful study. It encourages surgeons to operate in it who would not dare to operate in a larger institution. If a man operates on or treats a patient in such a hospital, the responsibility will not lean heavily on him but on the hospital. If a man has a private hospital, he will be held responsible for all that is done for patients; but when he sends a patient to a hospital for which he is not responsible, the hospital itself is responsible for his cases for which he shoulders no responsibility. In such hospitals, the danger to the patient is serious. Hospitals not responsible to one single man are not organized efficiently. Some of the larger hospitals are not efficient, but there is a minimal size below which a public hospital cannot be very efficient. A public hospital which is not under one man's personal direction has to have a staff covering the housekeeping side, the business side, the nursing side, the professional side, etc. You cannot have two persons on a

full salary to do that. If you put in one of these small hospitals a woman who is trained as a clinical assistant, her time must be so spent about the administration and the housekeeping department of the hospital that she would have little time left for the professional care of patients. To maintain nonmedical clinical assistants in a twenty-five bed hospital, you would have to have a staff of three people at work, one each on the housekeeping, the business and the professional side, and the salary demands would be great. Therefore, from the standpoint of the safety of the patients, the problem is serious in these hospitals. If a physician sends a patient to one of these hospitals, he must do what he can and depend on the hospital to do the rest.

What good would an intern be in these small hospitals? Supposing, by some legal means, we could force eighty medical students to each be an intern in a separate county hospital: would it be to the advantage of the institution? Medical students will not go there, but want to go to the larger hospitals where they can work in place of the physicians. The value of interns to hospital organization will be in direct proportion to the supervision they receive. The physician who sends patients will not have the time to give the supervision and neither the housekeeper nor the business manager will be competent to do so. Hospitals under direct church organizations have firmly held that interns could act more efficiently for patients than those who are not trained in medicine. Three years ago I was asked to find out why so many interns left their jobs. I found that interns did not leave their jobs when a religious organization was holding them up to their lay point of view. These hospitals did not lose their interns. The interns naturally make business relationships with some physicians, and when openings present themselves they begin practice before their intern service is over. If we could send interns to these hospitals, it would be a great advantage to the hospitals and to the patients. Those who maintain these hospitals of less than 100 beds need a great deal of education. Interns go more and more to hospitals of more than 100 beds. Those interested in hospitals should know that these smaller hospitals are not necessarily assets to the community. It depends on who runs them. We must educate the public as well as the medical profession. You cannot open a hospital to all physicians in the county and give them equal rights. It will not work. The public should pick out a surgeon and a medical man who can be held personally responsible for the patients in that hospital, no matter whose patients they are.

DR. N. P. COLWELL, Chicago: In 1912, at the time the Council on Medical Education and Hospitals was thinking about putting into effect a year of hospital internship, or considering making that a requirement, an investigation showed that there were not enough hospitals to provide internships for the students then graduating, which was in the neighborhood of 5,000. But since that time, the number of hospitals has so greatly increased that the situation has been reversed. At present it has been found necessary to list only those hospitals which can furnish a satisfactory training for interns. These are general hospitals of 100 or more beds which have a rotating service. No hospital can establish a proper rotating service if it has less than 100 beds.

The problem that Dr. Goldwater speaks of is most acute in hospitals of less than 100 beds, and these hospitals care for a large number of patients. Dr. Goldwater referred to some hospitals offering salaries in an effort to get interns, but experience shows that medical students are not attracted nearly so much to those hospitals which are offering salaries of \$50 or \$100 a month as they are to those hospitals where it is known that excellent intern service is available.

The situation in regard to the number of graduates each year is not nearly as bad as it was a few years ago. The graduating class of last June represented the war class. The class which matriculated in 1918 was the smallest freshman class on record, and this class of 2,600 graduated in June. From the present enrolment of medical students in the classes which are to graduate in the next three years, there will be an increase of approximately 1,000 each year. The coming June there will be 3,000; in 1924 about 4,000 graduates, and in 1925 about 5,000. That increase will relieve the situation

in the hospitals of 100 beds or more, but it will not solve the problem of the smaller hospitals.

The investigation made of graduate medical education during the year shows another factor that enters into the problem. Some hospitals having large staffs of able men who can provide a higher grade of medical education are taking in as interns only those who have served a general internship elsewhere. The student would be assigned to a member of the hospital staff for future work as second assistant and later as first assistant and in that way preparing himself in some chosen specialty. Some hospitals are doing that with great advantage, both to the hospital and to the student. The Johns Hopkins Hospital is doing it now. They have their own interns, and from those interns they select those who are to serve a year as assistant residents and a second year as residents of the hospital. At the Mayo Foundation, every one who enters is required to have obtained a general internship elsewhere. They are assigned to the clinical department representing those chosen specially, and willingly serve for from three to five years. These educational hospitals could easily serve twice as many students if places for them were available. We are planning a separate list of the hospitals which are giving this advanced training for interns. It will include not only general hospitals, but also the special hospitals, such as eye, ear, nose and throat hospitals, and lying-in hospitals.

What is to be done for the large number of smaller hospitals is a problem we are still confronted with. Whether or not a nonmedical assistant can be trained to do the larger part of that work is a matter which should be studied closely and carefully before any definite decision is made about it.

DR. FRANK BILLINGS, Chicago: I am sorry no one has said a word for or against the nonmedical clinical assistant. I should like to have those who discuss the subject further consider that phase. Regarding the inefficiency of small hospitals, after all, it is the man behind the gun. One does not need to look with despair in this big country for want of efficient men in every community. They are bound to come to the front when the need arises. You know what Dr. Sampson did in Iowa in starting a community hospital, and I want him to tell you what he thinks of the nonmedical clinical assistant in such institutions.

DR. F. E. SAMPSON, Creston, Iowa: Dr. Emerson, in his remarks, touched on the matter of the small hospital. Whatever the institutional standards may be, the small hospital is here to stay. As to the nonmedical clinical assistant, there are many other factors to be considered before turning to nonmedical clinical assistants as hospital aids. The county hospital is one of the factors in Indiana, the same as in Iowa. We have a law which enables the people to vote bonds to build hospitals. If we can establish a minimum legal requirement for the county hospital and center that in the university hospital, we can not only settle the problem of the nonmedical clinical assistant, but also make the small hospitals places of opportunity for medical interns. I do not know very much about nonmedical clinical assistants in hospitals, but at Creston we could not get along with them and we train them ourselves. We have a nurse big enough to run a small hospital, and if we only had some place to train the type of superintendents we need for the increasing number of small hospitals, it would be the greatest service we could render in the development of the small hospital, and the nonmedical clinical assistant problem will settle itself.

DR. FRANK BILLINGS, Chicago: Students serving in hospitals as interns have complained to me that the methods are ultrascientific and not keeping pace with modern medicine; that staff members order a certain routine to be carried out with every patient, such as a blood examination, urinalysis or feces examination, and often that routine is kept up day after day. The purpose of an internship is to afford the medical student an opportunity to round out his medical education by daily clinical observations and laboratory work, and several licensing boards require that the physician coming up for examination shall have served the so-called fifth year in a hospital. In many teaching hospitals the routine work required of the intern is not educational. He does not have the opportunity or time which he should have to make

clinical observations or the higher types of laboratory examinations, because he is engaged in this routine work, often unnecessary, and which has become a routine through the want of clinical judgment of the attending staff. Therefore, it was stated in the resolutions passed by the conference in Atlantic City, that nonmedical clinical assistants would be available as aids to interns in hospitals. That side of the question was not taken up by Dr. Goldwater, because his paper dealt with the need of nonmedical clinical assistants in small hospitals. The original resolutions passed at the conference in Atlantic City made reference not only to a nonmedical clinical assistant but also to a nonmedical anesthetist. Mention of the latter was omitted from the booklet, copies of which have been passed around, because there is a law on the statute books of Canada that no nonmedical individual can give anesthetics. In this country also that question has been discussed by the National Association of Anesthetists, which does not believe that any nonmedical individual should give anesthetics. It is a controversial question, and therefore it is omitted. The question comes up as to whether a national association like this, with its seventeen constituent organizations, should not take the initiative and attempt to supply qualified nonmedical individuals who may assist in the small hospitals. I hope you will state whether or not you think it wise to do so.

FATHER P. J. MAHAN, Chicago: The nonmedical anesthetist is already in existence and is quite generally used, indicating that there is a demand for and an appreciation of the help rendered. To a less extensive degree the surgical assistant is likewise existent, but I believe that there the need is not so great. When we come to the question of the record keeper and the clinical laboratory assistant, whence does the demand arise? Does it arise from the demands of the small hospitals, or in the minds of those who understand the need of accurate records in hospitals, and the need of thorough laboratory findings for the benefit of patients? That is an essential question, because if the small hospitals do not realize the need of this service, supposing you were to supply it, would they accept it? There are numbers of hospitals in the North Central states which have been supplied with record keepers, properly qualified, where every effort is made to supply stenographers for the physicians in order to get histories, and the histories cannot be obtained. The physicians resort to subterfuges of all kinds to avoid furnishing histories of their cases, and even when the histories have been written and the rest of the record taken, the physicians oftentimes do not look at them. In my own experience the demand does not arise from the hospitals, but from the medical men practicing in these hospitals. A large number of these men do not know what a good clinical record is, and the example by the older men has led the younger men to lose their interest in clinical records.

DR. I. D. METZGER, Pittsburgh: In 1914, it became the duty of the Pennsylvania board to make it worth while for medical students to enter hospital training, so we had to standardize the hospitals of Pennsylvania. While we demanded twenty-five beds for each intern, a hospital with less than 100 beds cannot rotate the interns satisfactorily throughout the whole service in which they should have experience. If a hospital with 100 or more beds has less than four interns, the interns must rotate throughout the service just as if there were four present, and the uncovered services must be cared for by the staff. We did not allow the rotating service to be set aside because there were less than the number of interns required. In 1916, the approval or disapproval of all hospitals of the state was placed in the hands of the medical bureau. Immediately we took the opportunity to standardize all hospitals, the small as well as the large. The first thing we did during those two years in which we had the power, because we lost the power at the end of that time, was to go over the state and examine all small hospitals. We found that very few of them had roentgen-ray departments; still fewer had laboratory departments. We immediately established these various departments in all hospitals.

It was obviously impossible for experts to give their entire time to these departments in small hospitals; therefore, we were compelled to place nonmedical assistants in the hos-

pitals. We call them technicians. We established pathologic laboratories, not as extensive as in larger hospitals, but laboratories in which all the essential investigations might be made, and placed in that laboratory as a pathologist a general practitioner of the community who had shown some special interest in that type of work. We required the hospital to place in the laboratory a trained technician who could take care of the details of the work and keep the materials in condition and make all tests required. These technicians eventually became strong and efficient people in the laboratories, so that a bill has been introduced in the legislature at Harrisburg providing for the licensing of technicians. They are establishing laboratories of their own and becoming professional people so that it becomes necessary to control them.

In the roentgen-ray department we also have a technician with an assistant trained to an extent that he can take pictures and do the rough work that might be necessary in emergencies and leave to the physician in charge the more technical work of the hospital. In anesthesia we have found that nonmedical people are by far the most expert anesthetists. That is their business, and the surgeon assumes the responsibility. We have nurses or sisters in various hospitals giving anesthetics, and we have no reason to regret it. The department of anesthesia is self-sustaining in all our hospitals. So are the laboratory departments. We must have persons to take care of the records who are not necessarily professional people. The whole story of efficiency in hospital work is told by the records.

DR. F. F. LAWRENCE, Columbus, Ohio: As Dr. Goldwater has told us, 80 per cent. of all hospitals are the smaller community hospitals which cannot provide services for interns, and practically all of these hospitals are unendowed. They are business corporations rather than charity organizations; hence they are legally responsible for every act of every individual in them. Then, added to that, they all have wide open staffs. Every physician in the community has a perfect right to use these hospitals. As there is no organization, there is absolutely no system. There can be no system without organization, and how much less system are we apt to have if we have untrained nonprofessional people as assistants, laboratory technicians, and so on, in and about a hospital? What will records amount to? The moral responsibility for the well-being of patients entrusted to the care of these people is much larger. I do not know how the question can be solved. I was wondering whether the modern movement which has abolished the system of a preceptor taking students in his office and training them has been for good, and whether it would not be a good thing to return to that system in our hospitals, requiring each hospital to have a fundamental working staff which is held responsible for the different departments of the hospital and which will take one or more junior or sophomore students to do the work that is done later by interns.

DR. A. R. WARNER, Chicago: Nearly every one has discussed this problem from some point of view in which he is particularly interested. The records represent a small part of the need of the hospital for nonmedical assistants. The letters that come to my office day in and day out deal with two things: First, "Where can I get an intern? We have not had one since the war, and we are badly needing one." Second, "Where can we get a nurse properly trained to do this or that work?" I can answer neither question satisfactorily. There is a demand from small hospitals which realize they cannot have interns. There is a demand for some one to do the work which the staff will not do for most of the patients. Other information was obtained by a questionnaire sent to about 3,000 people, asking how their roentgen-ray laboratory and anesthesia departments were getting the work done. All the smaller hospitals were suffering greatly in that they did not have sufficient professional service, but had other people doing this type of work. In regard to the roentgen-ray department, a large number stated that they had a full-time head of the department, although the hospital was under fifty beds, which meant that they had a full-time technician. The majority stated that pictures were taken by the superintendent or by the technician, meaning that they had no roentgen-ray professional head. Many

explained that the plates were interpreted by the physicians, which meant that every general practitioner read plates taken by the technician. The hospitals cannot get professional work from the physicians. They cannot get histories written or get professional men to do the roentgen-ray or laboratory work, so they have done the next best thing, namely, get it done by properly trained technicians when they can get them; but they cannot get enough. Most of the hospitals say they train their own assistants. It is not a question of "what is best for patients," but of what we can do when hospitals cannot get adequate professional services.

DR. FRANK BILLINGS, Chicago: During my professional life I have witnessed a good deal of the advancement in medical practice, including the evolution of nursing and the increase in hospital organization, including the employment of interns. Forty-two years ago I was an intern at the Cook County Hospital when there was no training school for nurses. There were only six interns for more than 500 beds, and little demand for them then. Not more than 5 per cent. of the graduates obtained internships in that day. The authorities fought the organization of a training school for nurses, and I worked for five years before a training school was established in that hospital. In three of the main hospitals in which I have worked in Chicago, I had to organize laboratory services, the last one was twenty-four years ago. The changes occurring since then show that the world moves. The demand for nonmedical clinical assistants or technicians is not a new thing. Nonmedical technicians are employed in every university laboratory in this country. The innovation, is in having technicians trained to do clinical work, not as interns but as substitutes when interns cannot be obtained, and as aids to relieve interns of routine work.

The seventeen constituent national organizations that comprise the hospital conference should continue to exert their influence to improve hospitals, so that there will be better staff organizations, better records which are better filed and properly utilized, and improved laboratories and laboratory service. I hope that the hospital will grow beyond the mere purpose of furnishing efficient care for the sick and injured and be also an educational institution, since, as Father Mahan said, we of the medical profession need education as much as the public needs it. I agree with him fully in regard to the lack of interest on the part of professional staffs of hospitals in record making and in record keeping. As chairman of the record committee of a hospital, I had to use moral force and sometimes a little physical force, to make staff members furnish written histories; and even then some histories were not worth the paper they were written on.

DR. S. S. GOLDWATER, New York: The question was asked, What is the source of the demand for this service? Is it a demand because of hospital conditions, or is it a demand on the part of the hospital administrators to get the needed service which they recognize and are clamoring for? As a matter of fact, it is both.

Liability of the Hospital for the Acts of Its Servants

JOHN A. LAPP, Chicago: As to the relationship of the law of prudence to the management of hospitals, and the responsibility which they carry for the acts of their physicians, nurses and other assistants, there are three types of hospitals which need to be discussed separately, for in some institutions the responsibility depends on other considerations than pure negligence. Public institutions have slight liability for the acts of assistants, while private hospitals conducted for profit have very few exceptions from liability, and private benevolent or charitable institutions have a limited liability. The distinction among the three is very important.

Public institutions and hospitals created by the federal, state or local government are not liable for damages caused by negligence or incompetence of their officers or employees, unless that liability has been definitely fixed on them by the constitution of the state or by statutes, or unless that liability has been expressly accepted in the constitution or the law. A person may sue the individual or officer who is responsible for the negligence, but all that is necessary to do to offset the charge is to show that the officer or individual was acting within the law. If an officer cannot show statutory authority

to do certain things, he will be personally guilty of negligence and liable to the one injured. This rule makes the definite requirement on officers and employees that they act within the law. It does not offer relief to an injured person even at best, for it would be of doubtful value to sue an individual employee or petty officer, even though he may be directly chargeable with negligence.

The legislature may make and has made hospitals liable for injuries to their own employees under the workmen's compensation laws. In such cases all hospitals have the same liability as the industries of the state. Private hospitals for profit are subject to all the liabilities which similar enterprises are subject to, and charitable hospitals are made liable for negligence, but only when it is proved that they did not exercise due care in the selection of competent help.

Since the hospital for profit escapes none of the risk of negligence, and charitable hospitals have a large immunity, it is highly important that all institutions seek to come in the latter class—to look to their legal foundations.

Another class of institutions comprise the hospitals connected with medical schools. In such schools conducted by the state, the hospitals are exempt from liability. In hospitals connected with privately conducted schools, the same rules apply as in other hospitals. The whole question is one of the character of the parent institution—the medical school. If the medical school is organized for profit, or has any of the earmarks of a business corporation, the hospital which it conducts is not a charitable institution, whether it gives its work to charity or not. It has been held in several cases involving privately owned medical schools that such hospitals are conducted for the advantage of the school; and, the school being a profit making enterprise, the hospital cannot be exempt from liability.

The Kentucky Court of Appeals summed up the matter of the liability of a hospital owned by a private medical school as follows:

It is manifest from the evidence that the hospital is maintained because it is necessary to the successful conduct of the school of medicine. Without the clinical instruction and the operations by the professors in the presence of the students, the school could not be maintained with success. The hospital is an adjunct and part of the medical school. Whatever gain may result from the operation of the medical school goes to the owners of the property. While the evidence shows a great deal of charity work is performed in the treatment of patients and in dispensing medicines, still the institution is conducted for profit.

In considering the charity hospital, quite a different rule applies. In a few states, notably Massachusetts, charity hospitals are entirely exempt from liability under present court decisions. No matter how much negligence may be chargeable to an employee, the hospital is not liable. In the case of a private physician treating a patient in such a hospital, the physician alone would be liable for negligence.

Should the hospital be liable for physicians whom it selects on a closed staff? Probably so, if the physicians on such staff are selected by the trustees, or with their approval. If a staff physician operates on a charity patient who is the patient of the hospital, then the hospital should be liable, unless such physician were chosen with due care. In the case of private patients brought to the hospital by a member of the staff, the liability should rest with the physician himself.

DISCUSSION

DR. A. R. WARNER, Chicago: There is no adequate or satisfactory amount of literature on this subject. It is growing as rapidly as any subject involving hospital administration, but there is great need for definite information on the subject. Two warnings to hospitals should be given due consideration by the trustees of hospitals as well as by staffs and administrators: First, to secure a maximum of protection by charter. I have known of several instances in which it was a desire of certain groups to retain control of hospitals which were known as charity institutions; but sharp questioning brought out the fact that they were business organizations. One of these was controlled by women physicians of the community. The second warning is the probability that court decisions in the near future will hold hospitals more closely responsible for the exercise of due care in their obligations to patients. Supreme court decisions

may, indeed, be often settled temporarily by little points of evidence, but there is an unmistakable tendency on the part of the courts to assume more responsibility for protecting the public rather than the hospitals or the medical profession.

The best hospitals of the country are public service institutions and are doing good work for the public, some of whom can pay and others cannot. The term charity is out of date, and the hospital as a charity organization is quite out of date, and the courts are so interpreting them more and more. Trustees must keep in mind also that they can have 99 per cent. of the patients treated free if they wish, but the public will be protected by the courts whether that is 1 per cent. or 99 per cent.

There has developed a changed attitude and interpretation of the word "staff." Some years ago we could sharply define the word. For instance, this hospital had an organized staff, and that one did not. There was a time when we could sharply differentiate between the private patients of Dr. So and So and a case of the hospital. You cannot safely do it today. The so-called open community hospitals have learned so much about conventional duties and responsibilities of staffs that as far as they can they will hold the medical profession legally responsible for records and other things. The medical profession of the community, functioning as the staff of a hospital, carries corresponding responsibilities, so that the classification of institutions into staff and nonstaff institutions is no longer quite justified because nonstaff institutions have a great many benefits that were in the past confined only to the staff institutions. I want to read an Ohio opinion which shows more than any other one thing the trend in court decisions: "Where a public charitable hospital has failed to exercise due and reasonable care in the selection of physicians, nurses or attendants, and injury results from the negligence of such persons, the hospital is liable." The only safe course for the trustees of any hospital to pursue is to recognize this tendency and use due and reasonable care in the selection of all agents, including all physicians who are permitted to bring patients or to practice on patients inside the institution.

The Relation of the State University Hospital to the Medical Profession

DR. C. P. HOWARD, Iowa City: This article will be published in full in THE JOURNAL.

DISCUSSION

DR. RAY LYMAN WILBUR, Stanford University, Calif.: This morning we were shown that the ideal plant was located on the state university campus with a close association between the medical school, hospitals and the university itself. A number of our state institutions have had certain difficulties in getting into a position of real leadership in the development of these institutions. Dr. Howard has indicated how Iowa has obtained that leadership.

One of the most serious problems is to get adequate clinical material on a university campus. That means some state law, some arrangement with state hospitals, and usually it must be brought about by common consent. There is such a scheme, I understand, at the University of Minnesota, where municipal hospitals are used by the state institutions; but often there is a struggle to obtain a university hospital so that there will be direct supervision by the institution.

The other problem, of whether members of the staff of a university conducting the medical school shall indulge in any form of private practice in the hospital and in the state, is an important one.

We have heard of the "full-time" or "whole-time" professor, and at the meeting of the Association of American Medical Colleges at Ann Arbor I objected to the use of these terms. I think the proper title should be academic professor. For generation after generation the academic professor has had certain privileges. He received a salary. If a professor of Greek wrote a book on Greek grammar and there were any royalties that came from the sale of the book, he got them. There is no legitimate reason, from the standpoint of university organization, why a professor of obstetrics or surgery on an academic basis should not receive compensation for services rendered outside the university in proportion to the

amount of service rendered, provided in such instances adequate work is done for the salary given. The same thing applies all along the line. Because of the type of organization and political relationship, there has been in some instances an attempt to corral the academic professor in the state medical schools inside the walls of the institution, not allowing him to engage in private practice, consultations, etc. This is entirely wrong. Every hospital medical school taking medical students must have teachers who deal with private patients. We must not have medical students trained simply by guinea-pig doctrines. The teachers must know the game of medicine. They must understand the problems of consultation in the communities in which they live and in which their students are going to live. It is not to the advantage of the medical student to have a teacher who can do things only when he has all the conveniences, necessities and assistants about him. He must know how to practice medicine if he is going to teach it. There must be a limit in all academic appointments and in the amount of private work done. These limits can be determined by the man himself. There should be adequate arrangements for him in the institution to do a limited amount of work. The right man will not abuse the privilege, and the wrong man can be removed.

We must not forget that in state institutions the problem of medical education is just the same. Medical students need just the same kind of training as our teachers need. The future of medicine will revolve largely around state-supported institutions, and we in the medical profession must be very broad in our conceptions of leadership in these institutions, and must get them in the right conditions for teaching rather than dealing with causes that seem to come into competition with us.

DR. IRVING S. CUTTER, Omaha: In Nebraska, we have a somewhat different situation from that of Iowa, because our hospital is wholly charity. Therefore, we have no difficulty in getting clinical patients. We are not trying to educate the physician to send patients to the hospital, but we educate him to take care of his people. In 1917, after we had our hospital well going, we thought about the country practitioner. In 1919, we organized a summer course for practitioners which differs from the Iowa course considerably, in that emphasis was laid on clinical pathology and physical diagnosis, after considerable search as to what the country practitioner not only most needed but wanted. The program was filled from Monday morning of one week until Saturday night of the week following. The course was held in June. We have had from twenty to thirty men each summer, and we expect to hold it again this summer. The first year, twenty-two men came, and they represented graduates of twelve different schools, but they had not been inside of a modern hospital or laboratory for from twenty to thirty years. They were just the fellows we could help the most. Instead of confusing them by asking them how to read an electrocardiogram, we began with the A, B, C's of medical practice, and emphasized physical diagnosis. They heard a lecture on the chest, one on the heart, and then divided into small groups and were taken into the wards and shown cases. Many of them expressed a choice as to what service they wanted to work in. We taught them also to give intravenous medication—something which most of them had no conception of. That was of great value since these men were trying to give arsphenamin and could not do it. Little things like that have not only accomplished a lot for us but have helped the country practitioner. We have to have men to take care of the sick, and the more we can do to make them better men, the greater service we render. It is not the university hospital alone that can do this, but any teaching hospital can do it, and why should they not do so?

DR. CHARLES R. BARDEEN, Madison, Wis.: Dr. Howard has given a clear account of the splendid service rendered by the university hospital of Iowa. He has been able to base this account on long personal experience. Wisconsin is now erecting at the university a state general hospital. I am naturally interested in seeing it develop along lines of greatest usefulness to the public. Michigan and Iowa took the lead in developing state general hospitals on a broad scale. At both institutions the primary incentive in estab-

lishing these hospitals was doubtless the need of providing clinical material for medical students. It was soon discovered, however, that these hospitals met a public need quite apart from their value in medical education. They have come to be regarded as among the most beneficent institutions in the state, and have a popularity much wider than would be possible were their main function the somewhat abstract one of providing medical education. In Wisconsin, the public interest and support of the hospital now being erected are in the main due to a recognition of the value of a stitch in time. The new hospital, as in Iowa, will contain a psychopathic department in which earlier treatment can be given than is now the case in the hospitals for the insane; an orthopedic department in which early treatment can be given in case of inherited or acquired physical defects, and a pediatric department in which infants thrown on the public charge may receive proper medical attention. It will provide facilities for doing what is possible medically to aid the deaf and the blind who now receive merely custodial care. It will provide facilities for the care of patients suffering from various other medical and surgical conditions who are now without resources to obtain the proper care. The law covering these cases is similar to the laws of Michigan and Iowa, but is even broader.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Memorial Hospital Opened.—The Memorial Hospital, Brewton, was recently opened under the supervision of Drs. R. A. Smith and M. H. Hagood.

Australian Health Workers Visit Alabama.—Drs. A. H. Baldwin and F. McCallum of Melbourne, Australia, members of the commonwealth department of health, have been inspecting the activities that are being carried on by the local health units of Alabama for the prevention of malaria, hookworm and other diseases. Drs. Baldwin and McCallum have for the last six months been pursuing a public health course at Johns Hopkins School of Hygiene and Public Health, Baltimore, under the auspices of the International Health Board.

CALIFORNIA

Hydrophobia in California.—A large portion of San Bernardino County has been quarantined for rabies. More than 400 dogs in Berkeley have been vaccinated against rabies by the one injection method. All dogs that have not been vaccinated are taken to the pound.

Hospital News.—A campaign to raise \$100,000 is being conducted in San Francisco, to build and equip a hospital, exclusively for Chinese patients.—The Woman's Maternity Hospital, Pasadena, was dedicated, with appropriate ceremonies, April 1. It is under the management of the Pasadena Settlement Association.—Dr. M. H. Rohland, U. S. Army, retired, will reopen the Hillcrest Hospital, located between San Jacinto and Hemet. The hospital was closed about one year ago.

COLORADO

University of Colorado.—Contracts totaling \$1,237,988 have been let for the immediate construction of the University of Colorado School of Medicine and Hospital in Denver, it has been announced by the regents of the university. The hospital will be erected on a 20-acre field on Colorado Boulevard.

CONNECTICUT

Professor Mendel to Lecture in California.—Lafayette B. Mendel, professor of physiologic chemistry at Yale University, left New Haven, April 6, for the Pacific Coast, where he will lecture at the University of California on "Nutrition." Professor Mendel has leave of absence from Yale for the balance of the college year.

GEORGIA

Mental Hygiene Society Reorganized.—Reorganization of the Georgia Mental Hygiene Society was effected, March 8, at a meeting in Atlanta. Ex-Governor Dorsey was elected president, and Dr. E. Bates Block vice president. Dr. Victor V. Anderson of the National Mental Hygiene Committee stated there was a possibility of Atlanta's obtaining one of the Commonwealth Fund's demonstration clinics for a year. A committee headed by Dean Goodrich White of Emory University will look into the advisability of Atlanta's applying for one of the Commonwealth Fund's clinics.

ILLINOIS

Dr. Stilson Acquitted.—Dr. Jesse M. Stilson, Freeport, was acquitted by a jury, March 24, of a charge of murder, arising through the death of a patient following an illegal operation.

University Appropriation Bill.—The bill to appropriate \$10,500,000 for the University of Illinois passed the house of representatives, Springfield, April 5, and was sent to the senate.

Chicago

Personal.—Dr. Clifford G. Grulee spoke on "Acute Hemorrhagic Nephritis in Children," and Dr. Herman L. Kretschmer on "Urology in Infants and Children," before the Medical Society of Milwaukee County, Wis., April 13.

Arrest Illegal Practitioner.—It is reported that Mrs. Emilie Ehlert, a self-styled spiritualist, was arrested, April 5, on a charge of practicing medicine without a license, by a member of the department of registration and education. Mrs. Ehlert, it is alleged, anointed her patients with a "mysterious" salve for \$2.

Medical Library Donated to Rush.—At a meeting of the Society of Medical History of Chicago, April 6, a collection of books formerly the property of the late Dr. Edward Mease and presented by his son to Rush Medical College was exhibited. The collection, numbering nearly 300 volumes, ranging from the sixteenth to the eighteenth century, contains first editions of a great many of the famous medical books of that period.

IOWA

"Beauty Doctor" Sentenced.—According to reports "Dr." C. A. Furrey, a beauty specialist of Des Moines, convicted of obtaining money under false pretenses, was sentenced to serve seven years in the state penitentiary, March 31.

Southwestern Iowa Medical Society.—At the annual meeting held in Creston, March 29, the following officers were elected: president, Dr. William S. Reiley, Red Oak; vice president, Dr. Joseph W. Beauchamp, Bedford, and secretary, Dr. Jesse S. Coontz, Garden Grove.

Gifts to University Assured.—The passage of the bill providing for the granting of \$2,500,000 by the state to the University of Iowa College of Medicine will enable the university to obtain two gifts of \$1,125,000, each, one from the General Education Board and one from the Rockefeller Foundation, for the enlargement of the Perkins State Hospital and the university medical school. Construction work will start as soon as the necessary arrangements are completed.

KANSAS

Community Physician Appointed.—Two hundred families of Sharon have hired a community physician. Each family will pay \$15 a year for necessary medical and surgical attention. Dr. E. S. Haworth, the appointee, says the plan thus far has worked well.

MARYLAND

Colony for Epileptics Under Construction.—Work on the buildings at the Springfield State Hospital, Sykesville, designed for the epileptic colony, has been commenced. The group, under a \$200,000 appropriation from the legislature, comprises four buildings, which will accommodate 200 patients.

Psychiatric Clinic on Full-Time Basis.—Sufficient funds to place the Henry Phipps Psychiatric Clinic on a full-time basis are practically in hand, as all but \$35,000 of a fund of 2,000,000 has been raised. This, it is confidently expected, will be raised before the end of the month, the time limit set by the anonymous donor who contributed \$1,000,000 on condition that it be equaled within a specified time. In addition to the initial gift of \$1,000,000, the Rockefeller General Education Board has contributed \$750,000, and Mr. E. W. Hark-

ness of the Standard Oil Company, \$125,000. Other contributions have amounted to \$90,000. With the exception of the psychiatric department in the University of Iowa, this will be the only department of psychiatry in a medical school on a full-time basis.

MASSACHUSETTS

Springfield Public Health Conference.—The Massachusetts Public Health Conference will be held in Springfield, April 26-28. Organizations participating are: Boston Association for the Prevention and Relief of Heart Disease, Massachusetts Association of Boards of Health, Massachusetts Association of Directors of Public Health Nursing Organizations, Massachusetts Association for Occupational Therapy, Massachusetts Committee of the American Society for the Control of Cancer, Massachusetts Dental Hygiene Council, Massachusetts Society for Mental Hygiene, Massachusetts Society for Social Hygiene, Massachusetts State Department of Health, Massachusetts State Nurses' Association, Massachusetts Parent-Teacher Association, Massachusetts Tuberculosis League, New England Division, American Red Cross, public health committee of the Massachusetts Medical Society and the public health committee of the Massachusetts State Federation of Women's Clubs.

MICHIGAN

Medical Society Sells Property.—The Wayne County Medical Society has sold its land and buildings for \$110,000. The library of the society has been given to the Detroit Library Commission and will be moved to the Detroit College of Medicine and Surgery.

MINNESOTA

Epidemic of Lethargic Encephalitis.—Thirty cases of lethargic encephalitis with nineteen deaths have been reported to the Minneapolis Health Department since the end of February, it is stated by officials of the board.

MONTANA

Personal.—Dr. William A. Hulbush has been elected president of the Cascade County Medical Society to succeed Dr. Enoch M. Porter of Great Falls.—Dr. Howard W. Bateman, Choteau, has been appointed to the Montana State Board of Medical Examiners to fill the vacancy caused by the death of Patrick Henry McCarthy of Butte.—Dr. Byron L. Pampel, Livingston, has been appointed a member of the state board of health.

NEBRASKA

Personal.—A dinner was given to Dr. Irving S. Cutter, dean of the University of Nebraska College of Medicine, Omaha, at the Omaha Club, March 14, in honor of his recent election to the presidency of the Association of American Medical Colleges.—Dr. LeRoy Crummer, Omaha, delivered an illustrated address before the medical history section of the American College of Physicians, in Philadelphia, April 11. His subject was "Early Anatomical Fugitive Sheets."

NEW YORK

Governor Signs Davison Bill.—Governor Smith has signed the Davison bill, appropriating \$1,500,000 for the construction of the Kings Park State Hospital for war veterans. This is part of the state hospitalization program advocated by the American Legion of New York.

Epidemic Encephalitis.—According to reports made to the division of communicable diseases of the state department of health, there were 308 cases of epidemic (lethargic) encephalitis in New York State during February of this year, more than in any one month during the last two years.

Diphtheria Prevention.—The state health commissioner, in compliance with a request of the public health council, has written to all physicians in the state to emphasize the importance of toxin-antitoxin. Several deaths from diphtheria have occurred due to the failure of physicians to use antitoxin. Four of seven members of one family died of diphtheria. The attending physician stated he "did not believe in toxin-antitoxin."

New York City

Academy of Medicine Drive.—It has been announced that \$100,000 of the \$250,000 fund for the erection of a new building at Park Avenue and Sixtieth Street has been contributed by 400 subscribers.

Medical Jurisprudence Society.—The New York Medical Jurisprudence Society held its annual banquet at the Hotel Brevoort, April 7. April 9, this organization held a joint meeting with the New York Roentgenological Society, at which Prof. L. P. Wilson of the College of Law of Cornell University delivered an address, on "The X-Ray in Court."

Hospital Centennial.—The New York Nursery and Child's Hospital passed its one hundredth year of service, April 1. The seventy-five thousandth infant born in the institution arrived on that day, and was elected to membership on the Honorary Centennial Committee comprising 100 physicians, government officials and laymen. The centennial celebration will be held, April 29.

NORTH CAROLINA

Summer Graduate Course on Internal Medicine.—A summer graduate medical course for physicians, to cover nearly all sections of the state not included last year, will be held by the extension division of the University of North Carolina, in cooperation with the medical school. Three circuits of six centers each will be organized, and each group of physicians will receive twelve lectures and clinical demonstrations. The courses will begin June 18 and end September 8. Internal medicine, with special emphasis on physical diagnosis, will be the subject of the lectures.

OHIO

Medical Building to Be Sold.—A bill, authorizing trustees of the old Ohio Medical University Building, Columbus, to sell the structure to White Cross Hospital, passed the house, March 28.

Nine Chiropractors Fined.—Municipal Judge Mahaffey, according to reports, March 31, assessed fines of \$100 and costs, each, in the case of nine chiropractors, J. H. Farrand, C. A. Jorgensen, Thomas L. Young, Verne T. DeVille, W. H. Wooley, R. A. Martin, C. J. Rectenwald, Newton T. Miller and R. S. Graves, all of Columbus, charged with practicing medicine without a license.

Summit County Medical Society.—The Summit County Medical Society will organize a surgical and a medical section which, in addition to the regular monthly meeting of the society, will each hold a monthly meeting to discuss papers on its own work. President Corwin T. Hill has appointed Drs. John H. Weber and Roy H. McKay to organize the surgical section, and Drs. Joseph N. Weller and Horace E. Groom to organize for the medical section.

OREGON

Personal.—Drs. William Ross Eaton, Oregon City, and Dr. Donald H. Jessop, Portland, are suffering from epidemic (lethargic) encephalitis.—Dr. Ernest F. Tucker, head of the department of gynecology of the University of Oregon Medical School, Portland, since 1898, has resigned.

PENNSYLVANIA

The Jones Filled Milk Law.—The Jones Filled Milk Law becomes effective, June 19, and not May 20, as previously stated. The director of the state department of agriculture announces that all filled milk must be removed from wholesale stock and retail shelves before the date set for the final inspection. The new law means that no filled milks can be offered for sale in the state of Pennsylvania.

Philadelphia

Professors Resign.—Dr. Ruth Webster Lathrop, professor of physiology; Dr. Alice W. Tallant, professor of obstetrics; Dr. Esther M. Weyl, acting professor of pathology; Dr. Laura E. Hunt, professor of otology, and Dr. Frances C. Van Gasken, professor of clinical medicine, the Women's Medical College of Pennsylvania, Philadelphia, have resigned.

Hospital's Ninetieth Anniversary.—April 2, which was the ninetieth anniversary of the founding of the Wills Hospital, was "Donation Day" also. The hospital owes its existence to James Wills, Jr., who died in 1828, leaving it \$108,390. The work of the institution has increased so that the original endowment is insufficient to meet expenses, and state aid has been necessary to keep the hospital open.

City Water and Typhoid.—Following the publication of statistics giving the typhoid records of Reading and Trenton for 1922, Dr. C. L. Furbush, director of the department of public health, stated that, because of the pollution menace,

it had been necessary last year to use greater quantities of chlorin than ever before in the city's history. Philadelphia's death rate from typhoid fever in 1922 was only 2.7.

Personal.—Dr. Hubert Work, Secretary of the Interior, will address the Medical Club of Philadelphia, April 20.—Dr. J. B. Murphy of the Rockefeller Institute, New York, spoke on "Experimental Studies of Resistance to Cancer," before the Pathological Society of Philadelphia, April 12.—At the annual meeting of the Alumni Society of the University of Pennsylvania Medical Department, recently, Dr. Floyd E. Keene was elected president.

New York Obstetricians Visit Philadelphia.—By invitation, the fellows of the New York Obstetrical Society were the guests of the Obstetrical Society of Philadelphia. Clinics were held throughout the day. In the evening, following a dinner at the Adelphia Hotel, the New York members reported on clinics visited, and Dr. O. P. Humpstone of Brooklyn read a paper on "The Sociological Responsibility of Obstetrics and Gynecology."

TENNESSEE

Health Officers Convene.—The county health officers and their sanitary inspectors of the Tennessee Valley held a convention in Huntsville, Ala., March 30. This was the first meeting to be held by the Tennessee physicians and their assistants. A permanent organization that will hold monthly meetings will be effected. The chief subject of discussion was malaria control.

Maternity Bill Passes House.—The house of representatives at Nashville passed the maternity and infancy bill, March 15. Governor Peay has indicated he will sign the bill. Tennessee is one of a number of states which have accepted the provisions of the Sheppard-Towner Law and have qualified for the federal aid received under the statute. The state will pay \$10,000 biennially, and will receive \$15,540 from the federal government.

The Annual State Meeting.—At the ninetieth annual meeting of the Tennessee State Medical Association, held in Nashville, April 10-12, under the presidency of Dr. Holland M. Tigert, Nashville, the oration in surgery was delivered by Dr. E. Starr Judd, Rochester, Minn., and the oration in medicine by Dr. Marvin L. Graves, Galveston, Texas. Dr. Olin West, Chicago, spoke on "Medical Organization."

WISCONSIN

Optional Vaccination Bill.—The assembly, March 28, finally passed and sent to the senate a bill which makes vaccination for smallpox optional instead of compulsory. There was no opposition or debate.

PHILIPPINE ISLANDS

Legislative News.—The House of Representatives, January 18, passed a bill providing for the establishment of hospitals in the provinces and appropriating 500,000 pesos annually for this purpose.—A bill was recently introduced in the House of Representatives providing for the creation of a department of health.

Medicolegal Association Organized.—Under the auspices of Prof. Sixto de los Angeles, head of the department of legal medicine in the University of the Philippines, the Philippine Island Medicolegal Association has been organized. The secretary of justice was the guest of honor at the inaugural meeting, January 12, at which the subject for discussion was "Chiropractic."

Leprosy Research Board.—A board for the promotion and coordination of all work on leprosy in the Philippine Islands was recently created in Manila and approved by the governor general. Members of the board are: Major George R. Candler of the U. S. Army Medical Research Board, chairman; Dr. Jose P. Bantug, Philippine Health Service, secretary; Drs. Libozio Gomez y Pineda and I. Otto Schobl of the Bureau of Science, and Drs. Herbert W. Wade and Granville A. Perkins from the Culion Leper Colony.

CANADA

Health Officers Convention.—The annual meeting of the Ontario Health Officers' Association will be held at the University of Toronto, May 21-23. Dr. Henry F. Vaughan, health officer of Detroit, and Dr. Frederick G. Banting, Toronto, will give addresses.

Typhoid Epidemic.—The number of persons suffering from typhoid fever in the Cochrane, Ont., epidemic (*THE JOURNAL*, April 7, p. 1013) has now reached a total of 570, and the disease shows no sign of abating, it is stated. Twelve persons have died, and a lack of physicians and nurses is adding to the distress. The disease is spreading to other towns, Heart, Kapuskasin and Amos reporting cases. Amos alone has reported forty cases.

GENERAL

American College of Physicians Elects Officers.—At the annual meeting of the American College of Physicians in Philadelphia, April 6-7, the following officers were elected for the ensuing year: president, Dr. Harlow Brooks, New York; vice presidents, Drs. Jabez H. Elliot, Toronto, Canada, and Alfred S. Warthin, Ann Arbor, Mich.; treasurer, Dr. Clement R. Jones, Pittsburgh, and secretary, Dr. Frank Smithies, Chicago.

Dye Chemists Appointed.—The Secretary of Agriculture has appointed a committee of dye chemists to formulate plans of work for the color laboratory. The committee consists of R. Norris Shreve, secretary of the dye division of the American Chemical Society; Willard H. Watkins of the the National Aniline and Chemical Company, Buffalo; Louis A. Olney, president of the American Association of Textile Chemists and Colorists; William J. Hale, chairman of the dye division of the American Chemical Society, and Clarence G. Derick, Buffalo.

Scholarships Endowed by Congress on Internal Medicine.—The seventh annual clinical session of the American Congress on Internal Medicine, which opened in Philadelphia, April 2, announced the endowment of free scholarships to each of Philadelphia's five medical colleges for the best work in clinical research. The following officers were elected: president, Dr. Elsworth Smith, St. Louis; vice presidents, Drs. Edward J. G. Beardsley, Philadelphia, and William C. MacCarty, Rochester, Minn.; secretary general, Dr. Frank Smithies, Chicago, and treasurer, Dr. Clement R. Jones, Pittsburgh.

National Antinarcotic Conference.—Embassies of foreign governments, governors of states, medical, civic and welfare organizations, clubs, fraternities and societies, are invited to cooperate in a national antinarcotic conference, in Washington, D. C., May 3-4, for the elimination of the narcotic evil in the United States and other nations. An international dinner will be given the first day. A permanent committee will be appointed to confer with representatives of foreign governments, and to establish a definite plan to prevent the illegitimate manufacture, sale, distribution and use of narcotic drugs. Secretary of State Hughes will give an address at the dinner, May 3.

Bequests and Donations.—The following bequests and donations have recently been announced:

Springfield (Mass.) Hospital, \$500,000; Springfield Home for Aged Women, Springfield Home for Aged Men, Hampden County Children's Aid Association, and the Massachusetts Society for the Prevention of Cruelty to Animals, each \$10,000, by the will of Mrs. Martha S. Ludington.

University of Chicago, for sociological research, \$21,000, and rare manuscripts valued at \$9,000, by the alumni council.

Good Will Farm, Hermansville, Mich., \$20,000, by Dr. George W. Earle, in memory of his son.

Charity Hospital, New Orleans, \$10,000, by Joseph A. Breaux, former chief justice of the Louisiana Supreme Court, and \$1,000 from "a friend."

Kurn Hattin Homes, Westminster, Vt., and the Sunset Home, St. Johnsbury, each \$3,000; Brightlook Hospital, St. Johnsbury, and the Deaconess' Home, Barre, each \$1,000, by the will of Mrs. Nancy Rollins.

Beth Israel Hospital, New York, \$500, by the will of Mitchell B. Bernstein.

Beth Israel Hospital, New York, Jewish Maternity Hospital and the Hebrew Sanatorium, Rockaway, N. Y., each \$500, under the will of the late Cecilia Rosett.

Long Island College Hospital Medical School, Brooklyn, \$300, by Dr. Rufus E. Hagerthy, Sedgwick, Maine.

St. Michael's Clinic, Anniston, Ala., two beds, one endowed by W. W. Stringfellow in memory of Susie Parker Stringfellow, and the other by Henry J. Edmondson, as a memorial to his mother.

Disease in Other Countries.—The prevalence of disease in other countries is contrasted with that of the United States in the following statistics for 1922, given out by the U. S. Public Health Service:

In Russia, from January 1 to October 7, there occurred 83,367 cases of cholera; and from January to September, 369,125 cases of relapsing fever and 307,329 cases of typhus fever.

In October, there were 886 cases of typhus fever, with seventy-seven deaths, in the Union of South Africa.

The Island of Java reported 454 cases of plague, with 338 deaths in one month.

Bagdad, Mesopotamia, with a population of a quarter of a million, reported 153 deaths from smallpox in October.

Poland in one week had 291 cases of typhus fever and in one month 863 cases of dysentery, with 157 deaths.

From November 19 to December 2, the Madras Presidency, India, reported 700 cases of plague, with 449 deaths.

In less than a month, fifty-one deaths from smallpox were reported from Valparaiso, Chile.

The death rate for 1919, the latest for which comparative statistics are available, was for the United States, 12.9; England and Wales, 13.7; France, 19.1; Ireland, 17.6; Italy, 19.0; Spain, 23.3, and Sweden, 14.4. Australia and New Zealand had the lowest death rate, reporting 12.8 and 9.5, respectively.

Enforcing the Eighteenth Amendment.—Prohibition Commissioner Haynes has compiled the following statistics on federal arrests and seizures for violation of the National Prohibition Act for the six months ending Dec. 31, 1922:

	Six Months' Period Ending June 30, 1922	Six Months' Period Ending Dec. 31, 1922
Illicit distilleries seized and destroyed.....	3,838	4,781
Illicit distilleries seized and not destroyed..	1,218	530
Illicit stills seized and destroyed.....	3,503	4,688
Illicit stills seized and not destroyed.....	2,470	2,492
Gallons of spirits seized and destroyed.....	68,538.03	92,221.78
Gallons of spirits seized and not destroyed..	129,886.93	131,193.37
Gallons of malt liquor seized and destroyed..	1,782,467.94	1,909,706.23
Gallons of malt liquor seized and not destroyed	37,259.37	459,443.71
Number of automobiles seized.....	1,362	2,211
Value of automobiles seized.....	\$ 609,097.00	\$1,100,100.85
Number of boats and launches seized.....	32	87
Value of boats and launches seized.....	\$ 29,060.00	\$ 777,150.00
Total appraised value of property seized and destroyed	\$1,306,539.41	\$1,663,326.97
Total appraised value of property seized and not destroyed.....	\$1,479,312.27	\$5,248,300.24
Number of agents killed on duty.....	2	12
Number of agents injured in performance of duty	16	33
Number of arrests.....	25,766	34,253

National Health Exposition Association.—The establishment of permanent headquarters for the National Health Exposition in Louisville, was recently announced. This association was formed by a group of state and city health officials to conduct health expositions along ethical lines and to eliminate promotional methods and profits from such enterprises. The organization will maintain a permanent staff and its personnel will be sent to various cities wherever required. Dr. George Parrish, Portland, Ore., is first vice president; Dr. Hiram M. Read, Seattle, second vice president, and Mr. Logsdon, secretary-treasurer. Members of the advisory council are: Drs. L. M. Powers, Los Angeles; H. L. Saylor, Des Moines, Iowa; F. W. Almond, Boise, Idaho; R. C. Turk, Jacksonville, Fla.; Thomas Tetreau, Portland, Maine; Rodney P. Fagen, Des Moines, Iowa; W. M. Dickie, Sacramento, Calif.; R. M. Olin, Lansing, Mich.; W. S. Rankin, Raleigh, N. C.; E. G. Williams, Richmond, Va.; S. J. Crumrine, Topeka, Kan.; J. D. Dowling, Birmingham, Ala.; Oscar Dowling, New Orleans; S. W. Welch, Montgomery, Ala.; C. C. Slemons, Grand Rapids, Mich.; W. S. Leathers, Jackson, Miss.; Charles Duncan, Concord, N. H.; I. H. Dillon, Lincoln, Neb.; W. C. Fowler, Washington, D. C.; Henry R. Vaughan, Detroit, and C. W. Garrison, Little Rock.

LATIN AMERICA

Dr. Forero Offers Another Prize.—Dr. Manuel Forero founded a prize some years ago in the Academia Nacional de Medicina at Bogotá. The income from it is awarded triennially for the best work received in competition, the Academia varying the topic. Forero has recently presented the *Repertorio de Medicina y Cirugía* of Bogotá with 200 pesos, to be presented to the author of the best work sent in for publication during the year by a Colombian writer. The presidents of the Academia and of the two medical societies form the jury of award.

New Pediatric Journal.—We have received the first two numbers of the *Revista Brasileira de Pediatria*, the official organ of the Brazilian Pediatric Society, of which Prof. Fernandes Figueira is president. The founder and director of the new journal is Dr. Alvaro Reis, of Rio de Janeiro. It is to be issued monthly in the interests of child welfare in general and in particular. The leading articles in the first number are "Diagnostic Importance of a Negative Response to Tuberculin Tests," by J. P. Garrahan; "Well Baby Clinics," by C. Ferreira, and "The Failure of Tuberculin Treatment," by E. Campos. The new journal makes a fine appearance and has a full abstract department.

FOREIGN

Hospital Inspection.—A party of British medical men, including several directors of London hospitals, are visiting hospitals in Basle, Berne and Zurich, Switzerland.

Pasteur Laboratory at Tientsin.—The new Pasteur laboratory in the French concession on the newly named Rue Pasteur, Tientsin, was formally opened in February, by the French consul. Dr. H. Y. King, director of the Peiyang Naval Medical School; Dr. Lassouarn, superintendent of the Pasteur laboratory; Dr. O'Neill and Dr. Lespinasse were among the resident physicians attending the ceremonies.

Distemper Investigation.—The medical research council of Great Britain has undertaken to organize an investigation of distemper in dogs. The investigation will be brought into relation with other studies in human and animal pathology. The following scientific advisory committee has been appointed to direct the work: Sir William B. Leishman, director of pathology at the War Office; J. B. Buxton, Capt. S. R. Douglas, Prof. F. Hobday and Dr. C. J. Martin.

Medical Education in Czechoslovakia.—A 1923 report from the U. S. Bureau of Education states that the Charles IV University of Prague, organized in 1348, is the largest university in the new republic. In 1920-1921, in its Czech and German departments, it had a teaching force of 256, including seventy-three teachers of medicine, and 8,078 students, including 2,520 in the department of medicine. In 1919, the T. G. Masaryk University, with a medical department, was established at Brno, and in the same year, the Komensky University at Bratislava was organized, with departments of law and medicine.

The Grassi Foundation.—The pupils and friends of Dr. B. Grassi, the malariologist of Rome, are collecting funds to endow a foundation in his honor for zoologic research on parasitic diseases. The occasion is the seventieth birthday of Professor and Senator Grassi, and the fortieth anniversary of his teaching. The address of the committee in charge of the fund is *Rivista di biologia*, via della Dogana Vecchia 27, Rome. Grassi received in 1920 the Mary Kingsley medal, given by the School of Tropical Medicine at Liverpool. His work on the exclusive transmission of malaria by mosquitoes was published in 1900.

The Aronson Prize.—The prize founded by the late Professor Aronson was awarded by the Berlin Hygiene Institute this year to Professor Doerr, director of the institute for experimental pathology and hygiene at Basle, for his works on the connection between the ultraviolet and general biologic problems. In receiving the prize, he made an appeal for closer collaboration between the manufacturers of apparatus and experts in physics and chemistry. The institute at the same time gave a prize to C. Ruge for his works on streptococci, and to Vernbach for his research on the causal agent of influenza.

Deaths in Other Countries

Dr. P. Morelli, professor emeritus of surgery at the University of Naples and frequent contributor to surgical literature, aged 78.—Dr. E. Pinzanni, professor of obstetrics at the University of Pisa, aged 70.—Dr. K. Arnd, professor of surgery at the University of Bern.—Dr. G. Bulius, professor of gynecology at the University of Freiburg, aged 60.—Dr. K. J. Schopper, director of the state bacteriologic laboratory at Linz, formerly privatdozent at Vienna.—Dr. Paul Devillers of Paris, noted for having served as principal, second or physician in more than sixty duels.—Dr. E. de Reynier, who has practiced medicine at Neuchâtel for more than sixty years, aged 88.—Dr. Adolfo Puebla, member of the national legislature of Argentina and medicolegal authority, died at Buenos Aires, at an advanced age.—Dr. José González Castro, a well known Spanish medical writer.—Dr. E. Salkowski, professor emeritus of physiologic and pathologic chemistry at the University of Berlin, aged 78. His works on excretion of phenol and alkali salts, auto-digestion of organs and the chemistry of the urine, and his tests are familiar in our textbooks.—Dr. B. Scheube, long professor at the University of Kyoto, author of the popular manual "Diseases of Warm Countries," aged 71. He practiced at Greiz in Germany.

CORRECTION

Millimicrons Instead of Microns.—The word "microns" in the abstract "Bactericidal Action of Ultraviolet Light" (THE JOURNAL, March 10, 1923, p. 723) should have been "millimicrons" in both instances.

Government Services

U. S. Veterans' Bureau News

The U. S. Veterans' Bureau's preliminary course in the treatment of tuberculosis given at New Orleans (District No. 6) was concluded, March 31. Among the physicians of New Orleans who assisted in the course were: James M. Bamber, Henry Bayon, Charles W. Duval, Irving Hardesty, Adolph Henriques, Foster M. Johns and Professor Ashton.

Director F. D. Hines of the Veterans' Bureau has called a conference of district managers of the Bureau, to be held in Washington, April 23-25. Director Hines expects the district managers to make careful surveys of their respective organizations and to be prepared to discuss them in detail. Among other things, the director wants information as to whether or not a survey has been made to determine surplus medical personnel.

The Senate Committee charged with the investigation of waste and extravagance in the Veterans' Bureau will hold no public hearings for at least six or seven weeks. All members of the committee are absent from Washington, and from information available a quorum of the committee cannot be had for some time. Gen. J. F. O'Ryan, general counsel for the committee, is occupied in preliminary investigations.

Hospital Train Organized

Pursuant to instructions of the Secretary of War, the organization of a hospital train, organized reserves, to be known as Hospital Train No. 11 (a Pennsylvania state unit), has been authorized.

Second Physiotherapy Course

The next course of instruction in physiotherapy to be given at the Walter Reed General Hospital, Washington, will begin, Oct. 5, 1923, and continue four months. It is open to women who have had at least two years' training in an approved school of physical education. For information, apply to the commanding officer, Walter Reed General Hospital, Washington.

Report of Consultants on Hospitals for War Veterans

The group of consultants: Drs. W. C. White, J. C. Bowman, Frank Billings and Pierce Bailey (deceased), appointed by the Secretary of the Treasury in March, 1921, to consider the provision of additional hospital facilities for war veterans, has made its report. The consultants were assisted by an advisory committee consisting of Dr. Haven Emerson, representing the War Risk Insurance Bureau; Drs. C. H. Lavinder, W. L. Treadway and F. C. Smith, the U. S. Public Health Service; Col. C. M. Pearsall, the National Home for Disabled Volunteer Soldiers; Dr. T. W. Salmon, the National Committee for Mental Hygiene, and Dr. H. A. Pattison and Mr. T. B. Kidner, representing the National Tuberculosis Association. The Secretary of the Treasury gave instructions early in the work that all construction should be permanent and fireproof; that additions should be made to existing, permanent government hospitals when possible, and that when this was not possible construction should take place on property already owned by the government before the purchase of new property was undertaken. In gathering data, hearings were granted to more than 100 groups of persons interested in the location of hospitals in their particular districts, and officers who had personal knowledge of existing conditions were consulted. Fundamental principles to guide in the location of hospitals were established after due consideration was given to the distribution of the population, the existing government hospitals, accessory facilities, such as available state and civilian hospitals, the number and distribution of ex-service men, actuarial studies based on the expectation of sickness traceable to war service, railroad facilities, and the probable future economic use of buildings such as were to be provided. In view of the great delay necessary in constructing a complete hospital program, a preliminary report was submitted, which was approved by the Secretary of the Treasury, April 23, 1921. At the request of the Secretary of the Treasury, the President devoted a long session to the study of this problem, June 11, 1921, and approved the program submitted. The hospital plans were then submitted for criticism and advice to the chairman of various interested committees of the Senate and the House

of Representatives, each of whom gave his approval. The complete hospital program as eventually worked out, after several unavoidable delays due to pending legislation and the establishment of the Veterans' Bureau, comprises projects in nineteen cities, and the provision of 6,334 hospital beds. The average cost per bed from funds provided (Public Act No. 384) was \$2,936, which includes allotments for everything—fixed equipment, personnel quarters, power, service, etc. An inspection of a number of the finished hospitals by members of the consultants' staff led to the conclusion that there is nothing better in the United States and probably in the world for the special care of disabled veterans suffering from tuberculosis and nervous and mental diseases.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 19, 1923.

The Census of London

The third volume of the census report of 1921, dealing with London, has been published. The total population enumerated as in the "administrative county" was 4,484,523. At the first census, taken in 1801, the population of the same area numbered 959,310. This number was doubled by 1841 and quadrupled by 1881, and reached the highest figure recorded, 4,536,267, in 1901. But the decline in the "administrative county" does not mean that the growth of London has been arrested. The present county boundary has long ceased to enclose, with any approach to completeness, the aggregation of districts which make up the metropolis. In what is known as "Greater London," the population reached in 1921, the highest figure recorded, 7,480,201, and is still increasing. The housing shortage, due to the war, is shown by these figures: The number of families for each occupied dwelling increased from 1.51 in 1911 to 1.59 in 1921. Analysis of the data on dwellings occupied by private families according to the number of rooms shows that 18.1 per cent. contained three rooms or less; 27.2 per cent. from four to five rooms; 42.3 per cent., from six to eight rooms, and 12.4 per cent., nine rooms or more. The average size of the family has fallen from 4.15 persons in 1911 to 3.79 in 1921, a drop of 9 per cent. This reduction will probably be explained by the returns from other parts of England. At the same time, the average unit of occupation for each family has decreased from 3.56 rooms for each family in 1911 to 3.38 in 1921, a decrease of only 5 per cent. The consequence is that the number of occupied rooms per person has improved from 0.88 to 0.91.

Disregarding differences in type of accommodation and size of rooms, the London population is the less densely housed by an average of one than in 1911. The average size of families in the several boroughs varies from 4.26 to 3.12, the largest being found in the poorest boroughs. With regard to birthplace and nationality, about 92 per cent. of the persons enumerated were born in England, about 3 per cent. in the remainder of the British isles, nearly 1 per cent. in the various dominions and colonies, and rather more than 3 per cent. in foreign countries, one fifth of the latter being British subjects either by birth or by naturalization.

"Safety First"

The sixth annual meeting of a very useful body called the "Safety First" Council has been held at the Mansion House. Its object is to call the attention of the public to the various ways in which the dangers due to vehicular traffic may be avoided. It operates by means of placards and by propaganda among schoolchildren. Speaking at the meeting, Lord Newton said that though we suffered from too large a

population, nobody wished to reduce it by killing people in the streets. Last year no fewer than 675 persons were killed by vehicles in London, and more than 56,000 were injured, an increase of 16 per cent. on the figures of the preceding year. At present, there were two rules of the road—one for the pavement and the other for the road. On the former, the rule is keep to the right; on the latter, to the left. But in keeping to the right, the pedestrian in crossing the road is prone to step off the pavement in such a way that his back is to the vehicular traffic, and he runs the risk of injury. It has therefore been proposed to make the rule of the road, "Keep to the left," for both pavement and road. Then when the pedestrian wants to cross, he naturally turns round, as he is on the side of the pavement distant from the road; and he thus gives himself the opportunity of seeing any vehicle that may be passing. The question of "Keep to the left" has been considered by more than a hundred authorities, who with one exception have agreed to it.

Dangerous Drugs

As reported in previous letters, elaborate regulations have been made by the government to prevent persons addicted to drugs from obtaining them. One regulation was that physicians, dentists and veterinary surgeons, when prescribing "dangerous drugs," must sign their full names, including Christian names. This piece of "red tape" causes great inconvenience without any corresponding advantage. The government has therefore amended the regulation and now requires only the usual signature. On the other hand, a pharmacist shall dispense a prescription only (a) if he is acquainted with the prescriber's signature and has no reason to doubt the genuineness of the prescription, or (b) if he has taken reasonably sufficient steps to satisfy himself that the prescription is genuine.

The Calcutta School of Tropical Medicine

The Calcutta School of Tropical Medicine has adopted an important scheme of research, for which large monetary provision has been made by the government and also by private subscribers. A feature of the school is six special laboratories housed on the fourth floor, which was added by public subscription. The hospital, in addition to a large outpatient department, has ninety-eight beds, and it is hoped to add a special ward for female Indian patients. The students are all qualified and practicing physicians, with experience, in varying degree, with tropical diseases. There is a rigorous system of selection for admission of students, and classes are restricted in number to fifty. Special attention is paid to protozoology, of which Major R. Knowles of the Indian Medical Service is professor. The number of subjects dealt with in a six month's course considerably exceeds those for any other course of tropical medicine, and includes special clinical and laboratory instruction for six research workers on kala azar, leprosy, ancylostomiasis, diabetes, filariasis and the dysenteries. A high standard both in practical and in theoretical knowledge is maintained for the diploma of the school. The intention is to make the Calcutta D.F.M. not merely a medical diploma but an evidence of efficiency in tropical medicine, as the F.R.C.S. is in English surgery.

Dermatitis from Dyed Furs

On the continent of Europe, cases of dermatitis due to dyed furs have been recorded in the last year. The lower part of the face and the neck show an erythematous, lichenoid or eczematous eruption. The fur responsible, known by the trade name of "biberette," is probably rabbit's fur dyed to imitate beaver. The dye is paraphenyldiamin, which has been used for many years to dye fur brown. In England, some cases of dermatitis supposed to be caused by the dye on

cheap furs have recently been reported. The public health department of the London County Council has started an investigation, and a conference of representatives of the London Fur Traders' Association with the ministry of health has been arranged.

Bernard Shaw and the Profession

A favorite subject of Mr. Bernard Shaw's caustic wit is the medical profession. A vegetarian, antivivisectionist, antivaccinator and anti-almost everything, he can easily find topics. The Jenner centenary gave him the opportunity for the quip: "We should burn Jenner in effigy." Now he has, curiously enough, taken Sir Almroth Wright under his wing, but only for the purpose of disparaging previous workers. As Sir Almroth will not publish in the lay press because the proper place for his work is "the scientific journals," Shaw writes, in a letter to the *Nation and Athenaeum*: "What is a scientific journal? Is it a wodge of advertisements of every pill, potion, appliance, instrument and utensil that can be used in the bedroom of an invalid, with a few medical lectures in the middle to help the sales? Clearly not; that is a trade paper. Why does not Sir Almroth contribute to the *Times* supplements, the *Nation and Athenaeum*, the *Spectator*, the *New Statesman* or the *Saturday Review* and the rest of the serious weeklies? Dean Inge gives himself no airs of condescension when he contributes his weekly sermon." The reason, Shaw says that physicians will not write in the lay press is that their "trade union" would have them removed from the register. "Sir Almroth cannot say these things; his loyalty to his colleagues forbids him. Fortunately for the public, I can and do. I shall go ahead until the government purges the general medical council of its trade unionist doctors and makes it representative of contemporary science and the consumer, putting the doctors in their proper place as assessors only. Then it will be safe for Sir Almroth to explain his work to the public instead of having to depend on me." Ignoring the fact that the advances of science depend on the work of previous investigators, even when that work is improved on or supplanted, Shaw misrepresents it all as disastrous mistakes. Thus: "But there is not much vogue for reverence and gratitude in science. Copernicus and Galileo were grossly ungrateful to Ptolemy, and Einstein's irreverence for Newton has lacerated many sensibilities; so poor Jenner must take his turn, and Pasteur be reviled for a second-rate sciolist by young lions trained by Sir Almroth Wright himself. Even I, who have conferred on the world benefits less questionable than inoculating three generations of infants with cow syphilis, have my infallibility challenged quite often and most disrespectfully. *C'est comme cela que la Science marche.*"

Antivaccinationist Methods of Controversy

The Jenner Centenary has been made the occasion for the Anti-Vaccination League to issue a lengthy pamphlet entitled "An Inquiry into Vaccine Lymph: Its Origins, Varieties, Nature and Effects, with a Brief History of Its Compulsory Inoculation in England." The pamphlet is packed with statistics and quotations, and as a piece of special pleading will no doubt be effective with those ignorant of medical science. Dr. Hadwen, the protagonist of antivivisection, figures in the pamphlet. As an example of his methods and of the antivaccinators in general, the following is an example. The ministry of health issued a pamphlet showing the enormous decline of smallpox in Germany since the adoption of compulsory vaccination in 1874. The antivaccinationists asserted that this was a misrepresentation, as compulsory vaccination had existed in Prussia since 1835. They even put forward this contention in two questions in the House of Commons. The fact is that the regulations of 1835 pro-

vided only for compulsory vaccination in the event of an outbreak of smallpox in a house. Yet with his usual capacity for rhetoric and for disregard of fact, Dr. Hadwen, in the *Nation*, says: "The Compulsory Vaccination and Revaccination Acts of Prussia were passed in 1834 for the army and in 1835 for the civil population—the most tyrannical and brutal regulations ever framed by a civilized state—and at the end of thirty-five years of this despotism, Prussia was overwhelmed by the greatest scourge of smallpox on record." That the general vaccination of the population followed, and did not precede this epidemic, Dr. Hadwen takes care not to mention.

PARIS

(From Our Regular Correspondent)

March 16, 1923.

The International Confederation Against Venereal Disease

This confederation, which has just been founded under the chairmanship of Professor Bayet of Brussels and which has its headquarters at Paris, 7, rue Quentin-Bauchart, is the outgrowth of an agreement entered into between the Ligue des sociétés de la Croix-Rouge and the various national societies formed to combat venereal disease. Its purpose is: 1. To serve as a clearing house for all information concerning the world-wide campaign against venereal disease; to institute scientific and social inquiries on the incidence, prophylaxis and treatment of venereal disease in the different countries, and to publish an international bulletin of information. 2. To serve as a connecting link and a means of coordination between the various national societies that are combating venereal disease, national organizations such as the Red Cross, government organizations, etc., with a view to establishing uniform methods in the campaign against the venereal menace, together with exchange of experiences and comparison of results. 3. To facilitate the study of questions pertaining to venereal disease, from the international point of view; to insure the introduction of prophylactic measures to prevent the spread of venereal disease from one country to another; to favor the progress of national legislation, and to promote international agreement. 4. To assist pecuniarily scientific research in this field and to aid every society or national league whose program conforms with that of the international confederation; to found and support all model institutions for the study of all questions pertaining to venereal diseases as a whole. 5. To organize lectures and congresses dealing with venereal disease. 6. To make known to the various governments, through the medium of the constituent national societies, the results of all investigations; likewise, to spread information in regard to the best means of supporting the campaign against the venereal menace, from both the national and the international point of view.

As among the measures needed at once, the confederation proposes the adoption of international measures against charlatanism; the elaboration of a moral code identical for the two sexes, and a study of the principles of legal responsibility, notification of disease, obligatory treatment, sanctions, etc. All countries without exception will be invited to enter this confederation, including Germany, if assurance is given that its delegate did not sign the famous manifesto of the ninety-three German scientists.

Medical Inspection of Schools

In a report presented to the municipal council of Paris, M. Charles Joly gives the results of the medical inspection of schools. During the course of the school year, 23,963 pupils, 11,666 boys and 12,297 girls, have been examined, with the result that 9,054 boys and 9,678 girls were found to be in a normal state of health. With respect to the boys, the following classification was reached: general condition

good, 51.6 per cent.; fairly good, 26 per cent.; passable, 16.6 per cent.; bad, 5.8 per cent. The classification of the girls was: general condition good, 52.4 per cent.; fairly good, 26.5 per cent.; passable, 15.9 per cent.; bad, 5.4 per cent.

Influenza and Mortality from Pulmonary Tuberculosis

Dr. G. Ichok gives in the *Revue d'Hygiène* the results of his special study on the influenza epidemics of Paris, occurring between 1900 and 1920, in their relation to mortality from pulmonary tuberculosis. During this period there were twelve influenza epidemics of varying intensity and duration. Ichok publishes a table that gives evidence of an undeniable recrudescence of deaths from pulmonary tuberculosis corresponding in time to the influenza epidemics:

Difference Between the Weekly Mortality from Pulmonary Tuberculosis Before and During the Periods of Influenza Epidemics

Years of epidemics	1900	1901	1905	1907	1911	1918-1919	1920
Difference between the mortality from tuberculosis before and during the influenza epidemic	+12.2	+38.4	+28.6	+45.7	+30.8	+41.3	+35.4

In 1907 and 1918, the difference between the mortality before and during the influenza epidemics is very marked. Again, in comparing the mortality from tuberculosis and from influenza during the epidemic of influenza and during the first and the second three months after the epidemic, it may be noted that, during the first quarter after the influenza epidemic, the danger was not entirely eliminated; deaths from influenza still occur, though it is evident that the force of the epidemic is broken. As for the mortality from pulmonary tuberculosis, it is noticeable that, with the exception of the year 1905, there was a considerable decrease during the first three months after the epidemic, and a still further decrease during the second three months afterward. In other words, the incontestable increase in mortality from tuberculosis during the influenza epidemics is followed by a decrease. The figures are approximately the same as those recorded before the epidemics, and are at times even lower. One is, therefore, entitled to conclude that the curve of mortality from pulmonary tuberculosis is influenced unfavorably by influenza epidemics.

A New Institute of Colonial Medicine

The deliberations of the council of the University of Algiers establishing an institute of hygiene and colonial medicine in northern Africa have been approved by the issuance of a governmental decree.

Difficulties in the Application of the Compulsory Smallpox Vaccination Law

Dr. A. Delon, director of the municipal bureau of public health in Nîmes, has called the attention of the Société de médecine publique to the difficulties encountered in enforcing the compulsory smallpox vaccination law, especially in the matter of revaccination. The vaccination of children proceeds quite regularly, and young men are revaccinated when they enter the army, but young women are, on the other hand, almost never revaccinated. After men and women have reached their majority, they almost never think of being revaccinated. As a consequence, a large portion of this part of the population is in a state of morbid receptivity. It is to be hoped that the vaccination law will be so modified as not only to make the revaccination of adults compulsory but also to furnish the necessary legal weapons for the complete enforcement of the law.

BUENOS AIRES
(From Our Regular Correspondent)
Feb. 20, 1923.

University Reforms

The professors in the Buenos Aires Medical School held a meeting recently to consider existing laws on university organization, and reforms that seem necessary. A committee was appointed to make a study of the matter and submit a report at the next meeting. Dr. Alfredo Lanari, former dean and present representative of the medical school on the superior board of education, has presented a plan, which is essentially as follows: 1. The faculties, and not the government, shall determine the length of courses (it is unanimously accepted here that seven years of study should be required, besides preparatory courses). 2. On the governing board, the professors shall have six representatives; the assistant professors, four, and the students, four (it is generally thought that the last number is excessive), appointment being made at separate meetings. 3. The dean shall be appointed at a general meeting of professors, assistant professors and students. This plan has been received with approval by many; others, however, attack its provisions and claim that all present evils are due to student ascendancy, which they consider both harmful and unjustified.

The evident insufficiency of university funds will apparently be obviated to some extent, as congress has increased the annual appropriation granted to the Buenos Aires University by \$800,000.

A number of newspapers are conducting a persistent campaign against present university conditions. The attacks are obviously unjust, in the light of the important progress achieved in the last few years.

Medical Visits

The rector of the university, Prof. José Arce, who has returned from the United States, expresses his satisfaction with the splendid organization of the surgical clinics he visited.

There is general interest in the announced arrival of a group of American physicians, now touring South America.

The Salomon Case

Prof. Hugo Salomon of Vienna, on his arrival a few months ago, tried to validate his diploma here. In this, he succeeded only partially, as he failed in one subject. In the meantime, he opened an office, meeting with an amazing success in the treatment of diseases of nutrition. The physicians' syndicate reported him for illegal practice of medicine. In spite of the explicit terms of the law governing the matter, the judge discharged Dr. Salomon. The incident has caused much agitation and has furnished the defendant with no end of free advertising. Dr. Salomon, whose competence in his field is beyond doubt, intimates that he is using new methods, originated by him. The faculty has denied him the privilege of validating his diploma, and has just issued validation rules far more rigid than those previously in force. This action has undoubtedly been influenced by the rush of European physicians to all these countries since the war.

Eye Hospital

The Public Welfare Society has just opened an ophthalmologic hospital and dispensary, which will replace the old Santa Lucia Hospital. The new institution is considered the best of its type in the world.

Cancer Institute

The cancer institute, officially known as the Institute of Experimental Medicine, has just opened its doors. The institution, in charge of Dr. A. H. Roffo, will have room for

sixty patients. There are well-equipped laboratories, and a large personnel. The annual appropriation is over 300,000 pesos (\$110,000). Normally, the institute is a dependence of the medical school.

Public Health Work in the Provinces

The National Department of Health has opened small hospital-dispensaries at Chamental y Chilecito (La Rioja), Molinos y Guemes (Salta), Copacabana y El Alto (Cata-marca), Perico y La Quiaca (Jujuy) and La Banda (Santiago del Estero), and in the cities of Corrientes, Rosario and Santa Fé y Posadas. These stations are used for small-pox vaccination, disinfection and serum distribution, and are centers for infant welfare work. In addition, ten beds are available for emergency cases. The hospitals in Corrientes and Rosario y La Quiaca are acting as disinfecting stations for freight imported from abroad. A station of the same type is to be established at Las Cuevas, where the Chilean railroad first enters Argentina.

PRAGUE

(From Our Regular Correspondent)

Feb. 28, 1923.

Campaign Against Tuberculosis

The ministry of railroads is undertaking an intensive campaign for the eradication of tuberculosis among its employees. A report was recently published of a tuberculosis survey carried out among the railroad employees in Ruthenia, which is being used as an experimental district. In the course of the survey, 2,929 employees were examined for the ministry by Drs. C. Amerling and V. Mikenda. In addition to a routine physical examination, each patient was given the Mantoux tuberculin test. On the basis of the results, the persons examined were divided into five groups: The first, group comprised those who had no physical signs of pulmonary tuberculosis and did not react to the tuberculin test; it numbered 43.6 per cent. of the total. The second group, 15.5 per cent., consisted of those in whom the tuberculin test was negative but examination disclosed slight physical changes in the chest. The third group, 12.5 per cent., gave positive tuberculin reactions, but did not show any physical signs of the disease. In the fourth group were classified those cases in which there were positive tuberculin reactions and positive signs of a tuberculous process in the lungs. Finally, in the fifth group were placed those cases presenting definite signs of pulmonary tuberculosis, and already under treatment for the disease by the insurance physicians. In all cases, the social condition of the employees, particularly of those who showed positive signs of tuberculous infection, was investigated. It was found that tuberculosis is most common among that category of railroad workers employed in building new roads. A chart was prepared showing the percentages of positive tuberculous infection in different railroad stations. It is notable that the percentage of persons who reacted positively to tuberculin is unusually low, but that, on the other hand, the number of persons who showed definite signs of tuberculosis is very high. Because the tuberculosis death rate of the railroad employees is very high—the proportionate mortality for tuberculosis in 1920 was 23 per cent.—the results of the survey seem to indicate that, while the tuberculosis morbidity rate in general in this part of the country is not very high, there are very frequent tuberculosis infections in a later period of life. On the basis of these studies, the ministry of railroads has constructed a very complete program for the eradication of tuberculosis among its employees. It is in an advantageous position for this purpose because it has an efficient machinery in the well developed system of health insurance for its employees. It

employs 749 physicians for the care of about half a million employees. Not only the employees themselves, but also the members of their families, are included in the scheme of health insurance. In order to make expert service accessible to all employees, tuberculosis dispensaries are being created in every district under the direction of specialists. These dispensaries are also used as places from which tuberculous patients are sent to a sanatorium maintained by the ministry for the care of railroad employees affected with tuberculosis. Recently, an interesting experiment was made which aimed at a better follow-up of those patients who have been treated in the sanatorium or have attended the dispensary clinics. Several male social workers were appointed for the different districts, whose task it will be to follow up the tuberculous employees and to see that the efforts of the ministry to promote their health are not being thwarted through ignorance or lack of interest on the part of the employees themselves. This is the first experiment of the kind in which an intensive effort has been made to eradicate tuberculosis from a social unit of the republic; it is, therefore, being followed with keen interest by public health workers.

Venereal Disease Decree

The ministry of health recently issued a decree based on recommendations by the venereal disease survey conducted by Dr. Hynek L. Pelc under the auspices of the ministry last year. It was brought out by the survey that new infections with syphilis have apparently diminished since the close of the war, but that syphilis was carried by the returning soldiers to their families. It therefore seems necessary to make the diagnosis of syphilis among children as easy as possible. The decree makes it the duty of the state Wassermann laboratories to examine, free of charge, all blood specimens sent to the laboratory by child welfare centers, orphanages, children's homes, children's hospitals and kindred institutions. Lying-in hospitals and prenatal clinics are also included among institutions enumerated in the decree. Prior to this time, the institutions had to pay for the examinations unless the blood was taken and sent to the laboratory by a state health officer. It is anticipated that through this measure the diagnosis of syphilis will be made easier for the pediatrician, and that he will therefore take a more active part in the eradication of this disease.

BERLIN

(From Our Regular Correspondent)

March 3, 1923.

Modern Theories of Color Vision

Professor von Hess, the ophthalmologist, of Munich, has been devoting himself of late years to the problem of color vision. Especially his researches on the color vision of insects have awakened general interest. An interesting article on the history of the various theories of color vision since Newton's time, written by Wilhelm Ostwald, formerly professor of chemistry in Leipzig, was published in the *Deutsche medizinische Wochenschrift*, Sept. 15, 1922. He distinguishes two periods of development since Newton: (1) the qualitative, and (2) the quantitative. In the first period, not only physicists and mathematicians made a special study of color vision, but also such men as Goethe and Schopenhauer manifested considerable zeal for the subject. But owing to their lack of knowledge of physics, they were unable to get a clear conception of anything more than the psychologic aspects of the problem. It was only with the advent of Young and Helmholtz that further progress was made from the side of physics. Ewald Hering treated mainly the physiologic and the psychologic aspects of the question. He rejected the three-color theory (yellow, red, blue), and

succeeded in establishing in the circle of color vision four fundamental colors (yellow, red, blue, green). The quantitative theory of color vision, which is based on the discovery that by means of proper light filters the three components of every color; namely, the *Vollfarbe* (the main color principle in which is inherent the shade of color present), the white index and the black index can be exactly determined, was thoroughly studied by Wilhelm Ostwald in 1915. The researches of Professor Hess are based on the important finding of Hering that colors as seen by the totally color blind have about the same relative luminosity that they have for the normal eye when seen in the deep twilight, when the colors are not perceived as such but present merely varying shades of gray. In other words, of the colors of the spectrum, red, orange, yellow, green-yellow, green, blue and violet, the color that appears the brightest by daylight is yellow; then follow green-yellow and orange, green, red, blue and violet. In deep twilight, however, conditions are quite reversed, for here green-yellow presents the brightest gray; then follow yellow and green; then green-blue and blue; then orange, and finally red. A deep blue corn-flower (*Kornblume*) appears in a gray dusk much brighter than a flaming red poppy. If one draws a curve, as was done by Hering, representing the relative brightness of the various colors when seen in a gray dusk, green-yellow will be found at the top; it is surprising to note that red appears almost like black. The relative brightness of the colors as seen in a normal light by the totally color blind will be the same as the foregoing. Professor von Hess has examined a large number of animals, and has found that all invertebrates and fishes see colors in the same way as the totally color blind. For instance, for an animal that has the habit of seeking out the brightest place in the examining vessel, yellow is not the brightest spot but green-yellow; red is for such an animal exceedingly dark, much darker than dark blue, etc. It is a well known fact that the pupil of the human eye contracts in direct proportion to the brightness of the light that enters it. Hess found that the pupil of the eye of the cuttlefish, which in its external appearance resembles the human eye, contracts most under the influence of green-yellow and least under red, since, for the eye of the cuttlefish, green-yellow has the highest and red the lowest degree of brightness. The reaction of the eyes of the totally color blind would be the same as that of the cuttlefish.

The examination of railroad men for partial or total color blindness has usually been carried out by requiring the examinee to select red, green, etc., from a large number of colored yarns. The engineer who in 1918 was responsible for a railway accident in Dresden, in which forty-two persons were killed, had been examined five times by physicians who used this method and had been declared to possess normal color vision. Hess is the inventor of an apparatus that he terms a "pupilloscope," with which a physician observes the eye of the subject through a magnifying glass while colored and gray light is thrown alternately into the eye. The gray light is produced by two adjustable prisms of gray glass. If the light passes through the small ends of the prisms, it is light gray; if it passes through the thick ends, it is dark gray. A certain color is selected; for instance, green, and the prisms of green glass are adjusted until, in changing from green to gray, no movement of the pupil takes place. In this manner the degree of brightness for a given eye is determined. As the findings with respect to brightness are for the eyes of color-blind persons quite different from those secured in the examination of normal eyes, color blindness can be discovered at once in a purely objective manner. In this connection, it is interesting to note that Hess examined with his pupilloscope the aforementioned locomotive engineer,

and in a few hours discovered red-green blindness. As slow reaction of the pupil of the eye is one of the first symptoms of spinal paralysis, the pupilloscope is indispensable for the early diagnosis of this disease. This ingenious apparatus should therefore be found in every modern eye clinic.

It may be well to mention the results of a few more of Hess' researches on light and color vision. He has discovered that birds are blind to blue because they have yellow granules in the retina; that numerous invertebrate animals, because of the fluorescence of their eyes, can see the ultra-violet light that is invisible to the human eye; that it is possible for certain of the lower animals that have no eyes to perceive differences in brightness almost as well as the human eye. His comparative researches on accommodation are also worthy of mention. The achievements of Hess in the advancement of scientific knowledge in the field of color vision have also received definite recognition, for an international committee of award recently bestowed on him the Helmholtz gold medal, which is awarded every ten years for the most significant researches in the domain of optics.

Findings of School Physicians in Continuation Schools for Girls

In 1911, the first school physicians for continuation schools were appointed in Bremerhaven and in Schöneberg. In 1921, according to statistics, there were twenty-six school physicians engaged in continuation schools. A comparison of the average weight and height as found in 1918 and in 1921-1922 shows that last year there was a distinct average increase, not only as regards weight but also as regards height. The health of 7 per cent. of the pupils, however, was declared to be "unsatisfactory." The morbidity statistics covering 1,900 pupils revealed anemia in 23 per cent., curvature of the spinal column in 15.7 per cent. and heart defects in 1 per cent., to which may be added disturbances of heart action in 5 per cent. Refraction defects of the eyes, in most cases not corrected, were found in 14.9 per cent.

Care of Cripples in Prussia

Since legislation was enacted providing for the care of cripples, 20,000 cripples have been given treatment, and far-reaching, prophylactic measures for the prevention of crippling accidents and the elimination of the causes of crippling in general have been taken. Rural leagues have contributed generously to this cause according to their means, and the Prussian legislature has appropriated state funds which, to be sure, will not become available until 1924. Some difficulty is being experienced in the application of the law, for the reason that in every case it must be determined whether or not the cripple is in need of institutional care, and for the further reason that the persons or authorities on whom the burden of a cripple's maintenance and care falls may change frequently and repeatedly, depending on whether or not the cripple is in need of institutional care.

Marriages

WILLIAM C. KIRSTEN, Milwaukee, to Miss Viola Schoenbeck of West Bend, Wis., February 3.

EVARISTO BRUAL to Miss Felicidad Cordero, both of Bauan, Batangas, P. I., January 10.

WILLARD T. NICHOLS, Milwaukee, to Miss Grace Harrington of Seattle, February 17.

MAXIMILIAN KERN to Miss Elaine Frances Hoexter, both of Chicago, March 10.

JESUS AZCONA to Miss Josefina Quilez, both of Manila, P. I., recently.

Deaths

George Harwood, Dubuque, Iowa; University of Bombay, India (licensed, Iowa, 1886); for many years served with the British Army in India; formerly superintendent of the Ashton-under-Lyne, and Birkenhead hospitals, England; at one time a practitioner in Canada; also a druggist; aged 82; died, March 24, at the Finley Hospital, following a long illness.

George A. Fackler ♂ Cincinnati; Medical College of Ohio, Cincinnati, 1881; emeritus professor of medicine, University of Cincinnati College of Medicine; president of the board of health; past president of the Ohio State Medical Association; on the staff of the Cincinnati General Hospital, where he died, March 26, aged 61, of erysipelas.

William Richard Campbell ♂ Clinton, Mo.; Washington University Medical School, St. Louis, 1911; president of the Henry County Medical Society; county coroner; deputy state commissioner of health; aged 44; died, March 26, at the Johns Hopkins Hospital, Baltimore, following an operation for brain tumor.

Frank P. Strickler, Sr., Elizabethtown, Ky.; Medical Department University of Louisville, Louisville, 1887; member of the Kentucky State Medical Association; a practitioner in Elizabethtown for nearly a half a century; aged 67; died, March 17, of pulmonary edema, contributing cause, tumor of chest.

Emil Schwarz, New York; University of Vienna, Austria, 1905; member of the New York Pathological Society; formerly pathologist to the Woman's Hospital, New York, the Brooklyn Hospital, and the Carson C. Peck Memorial Hospital, Brooklyn; aged 41; died, March 29, of pneumonia.

Charles Samuel Morrow, Memphis, Tenn.; Memphis Hospital Medical College, 1899; member of the Tennessee State Medical Association; formerly clinical instructor of medicine at his alma mater; served in the M. C., U. S. Army, during the World War; aged 46; died, March 14.

Leroy S. Holcomb, Pennsville, Ohio; Medical College of Ohio, Cincinnati, 1868; member of the Ohio State Medical Association; formerly president of the Morgan County Medical Society; aged 83; died, January 18, of empyema of the gallbladder and carcinoma of the stomach.

Eugene E. Axtell ♂ Marinette, Wis.; Chicago Homeopathic Medical College, Chicago, 1890; member of the Radiological Society of North America, and former president of the Marinette County Medical Society; aged 57; died, March 22, of angina pectoris.

Albertus C. Wolfe ♂ Columbus, Ohio; Columbus Medical College, 1883; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staff of the Grant Hospital; aged 65; died, February 2, of bronchopneumonia.

George Frederick Koehler ♂ Portland, Ore.; Medical Department of Columbia College, New York, 1889; assistant clinical professor of medicine at the University of Oregon Medical School, Portland; aged 55; died, March 11.

Paul Wegeforth ♂ San Diego, Calif.; Johns Hopkins University Medical Department, Baltimore, 1912; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 36; died, March 30.

Benjamin F. Harding, Mansfield, Ohio; Fort Wayne College of Medicine, Fort Wayne, Ind., 1889; member of the Ohio State Medical Association; aged 61; died, March 23, at Sebring, Fla., of tuberculosis.

William Theodore Hope, Chattanooga, Tenn.; Bellevue Hospital Medical College, New York, 1873; formerly president of the board of health and city physician; aged 72; died, March 20, of paralysis.

Charles A. Van Velzer, Fort Scott, Kan.; Hahnemann Medical College and Hospital, Chicago, 1886; member of the Kansas Medical Society; aged 62; died suddenly, March 17, of chronic nephritis.

Leonard J. Somers, Rochester, N. Y.; Albany (N. Y.) Medical College, 1889; member of the city council; superintendent of the Monroe County Hospital; aged 57; died, March 11.

William Wallace Kimmell, Lebanon, Ore.; Medical College of Ohio, Cincinnati, 1881; for eight years member of the city council; aged 72; died, March 18, following a long illness.

Frank Kurtz Addy, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1903; aged 48; died, February 21, at Santa Barbara, Calif., of influenza and diabetes mellitus.

Larkin L. Harris, Cleburne, Texas; University of Arkansas Medical Department, Little Rock, 1893; member of the State Medical Association of Texas; aged 59; died, January 27.

James Lassiter Everett, Palmer, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1881; aged 71; died, March 21, at the Baptist Sanitarium, Dallas, of senility.

Oscar FitzMerton Gittens, Waterbury, Conn.; Middlesex College of Medicine and Surgery, Cambridge, Mass., 1921; aged 28; died, February 26, of influenza and pneumonia.

George Russell Fessenden, Ashfield, Mass.; Medical School of Harvard University, Boston, 1879; formerly member of the state legislature; aged 74; died, March 18.

David Joseph Chinn, Bettendorf, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1892; aged 62; died, March 31, following a long illness.

C. A. Steward, Grant, Okla.; Barnes Medical College, St. Louis, 1896; member of the Oklahoma State Medical Association; aged 61; died, January 6.

George Thomas Simpson, Breeding, Ky.; University of Louisville Medical Department, 1878; aged 71; died, March 20, following a long illness.

Charles A. Hunter ♂ Reddington, Ind.; Physio-Medical College of Indiana, Indianapolis, 1886; aged 62; died, March 23, following a long illness.

Milton A. Trow, Chatfield, Minn.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; aged 70; died suddenly, March 17, of heart disease.

Albert C. Landes, Brooklyn, Iowa; Iowa College of Physicians and Surgeons, Des Moines, 1884; aged 69; died, April 2, following a long illness.

Alben Young ♂ Chicago; Chicago Medical College, 1889; on the staff of the Ravenswood Hospital; aged 62; died, April 2, of heart disease.

James Anderson Gardner, Greensburg, Kan.; Cleveland Medical College, Cleveland, 1878; aged 67; died, March 11, of cerebral hemorrhage.

Thomas Wisner Sloan, Bellevue, Wash.; University of Louisville Medical Department, Louisville, Ky., 1877; aged 74; died, March 16.

Frank P. Poignee, St. Louis; Missouri Medical College, St. Louis, 1890; also a druggist; aged 56; died suddenly, March 17, of heart disease.

John Sunderlin Van Vechten ♂ Chateaugay, N. Y.; University of Michigan Medical School, Ann Arbor, 1883; aged 67; died, March 27.

Alvin J. Roller, Bristol, Tenn.; College of Physicians and Surgeons, Baltimore, 1882; aged 64; died, March 27, of bronchopneumonia.

William Haines Lyford, Port Byron, Ill.; Rush Medical College, Chicago, 1859; also a druggist; aged 86; died, April 2, of senility.

Bonifacio Rosello y Basa, Manila, P. I.; University of St. Thomas Medical Department, Manila, 1880; aged 68; died, January 5.

James M. Conrad, Mexia, Texas; University of Tennessee College of Medicine, Memphis, 1885; aged 65; died suddenly, March 22.

Theodore Elliott Wannamaker, Jr. ♂ Cheraw, S. C.; Jefferson Medical College of Philadelphia, 1906; aged 41; died, March 13.

Isaiah B. Gibbs, Sycamore, Ohio; Physio-Medical Institute, Cincinnati, 1871; aged 79; died, February 22, of arteriosclerosis.

Orville Forrest Rogers ♂ Boston; Medical Department of Columbia College, New York, 1869; aged 78; died, March 23.

James Wesley Minner, Caney, Kan. (licensed, Kansas, 1904); aged 64; died, February 6, of cerebral hemorrhage.

Peter Yost, Pittston, Pa. (licensed, years of practice); aged 91; died, February 23, of influenza and pneumonia.

David B. Hand, Scranton, Pa.; New York University Medical College, New York, 1870; aged 75; died, April 1.

William B. Pickard, Nashville, Tenn. (licensed, Tennessee, 1889); aged 61; died, March 26.

Nicholas Stutsman, Sparks, Okla. (licensed, years of practice); aged 75; died, March 20.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

INCOMPATIBILITY OF MERCUROCHROME-220 SOLUBLE WITH LOCAL ANESTHETICS AND ALKALOIDS

L. E. Warren, Ph.C., B.S.

IN THE JOURNAL, April 7, 1923, p. 1023, a letter was published from Dr. Charles E. Stolz, entitled "Caution in Use of Mercurochrome-220 Soluble" in which he reported an accident in treatment owing to an apparent precipitation of the drug by procain. Fortunately the results were not serious, but, in view of our rather meager knowledge of the chemical properties of mercurochrome-220 soluble, it seemed desirable to study its incompatibilities further with the view of preventing future mishaps. Accordingly experiments were undertaken with the view of verifying Dr. Stolz' observation with procain and also to determine whether other local anesthetics than procain were incompatible with mercurochrome-220 soluble. It is well known that many basic substances, such as alkaloids and local anesthetics, are precipitated by certain complex mercury salts; but Dr. Stolz appears to have been the first to observe an incompatibility between mercurochrome-220 soluble and a local anesthetic.

Chemically mercurochrome-220 soluble is the disodium salt of dibromo-oxymercuri-fluorescein. If treated with an acid the sodium combines with the acid radical and the bromo-mercuri-fluorescein complex is precipitated as an insoluble compound having acidic properties.

In these tests a small portion of a 2 per cent. aqueous solution of each of several local anesthetics was treated with a few drops of a 2 per cent. aqueous solution of mercurochrome-220 soluble. The strength of 2 per cent. for each substance was selected because this was assumed to represent a fair average of the concentration in which the several substances are employed in medicine. In cases of scant solubility of the anesthetic substance in water a few drops of diluted hydrochloric acid were added in order to render the material soluble.

The following substances gave precipitates: alypin, apothecin, benzocain, butyn, cocain hydrochlorid, B-eucain lactate, phenacain, procain, propaesin, quinin and urea hydrochlorid, tropacocain hydrochlorid and stovain.

The precipitate in each case was of a deep red color, was amorphous and did not become crystalline on standing. In some instances analysis of the dried precipitate showed that it contained all of the essential constituents of the dibromo-oxymercuri-fluorescein radical, viz., bromin, mercury and the dye substance, but that it did not contain sodium or the acid radical with which the basic substance was originally combined. Preliminary tests indicated that the precipitates were probably too soluble to be of value in the analytic separation of the local anesthetics from other substances but that they were sufficiently insoluble to render dangerous the concomitant prescribing of one of the local anesthetics and mercurochrome-220 soluble. The test was also applied to aqueous solutions of benzyl alcohol and saligenin, substances which have local anesthetic properties but which do not have basic properties. No precipitate was given with either substance.

As a matter of interest the test was applied to a salt of a number of vegetable alkaloids or their derivatives in aqueous solution. A red precipitate was given with each of the following substances: aconitin hydrochlorid, apomorphin hydrochlorid, atropin sulphate, brucin hydrochlorid, cephaelin hydrochlorid, cinchonidin sulphate, cinchonin sulphate,

codein sulphate, diacetyl-morphin hydrochlorid, emetin hydrochlorid, ethyl hydrocuprein hydrochlorid, ethyl morphin hydrochlorid, gelsemin hydrochlorid, homatropin hydrochlorid, hydrastin hydrochlorid, morphin sulphate, narcein hydrochlorid, narcotin hydrochlorid, nicotin hydrochlorid, papaverin hydrochlorid, physostigmin sulphate, pilocarpin nitrate, quinidin sulphate, quinin hydrochlorid, sanguinarin hydrochlorid, scopolamin hydrobromid, solanin hydrochlorid, spartein sulphate, strychnin sulphate and thebain hydrochlorid.

As in the case of the local anesthetics the precipitates appeared to be too soluble for the reaction to be of much value in the analytic determinations of the alkaloids. A few basic substances did not give any precipitate with mercurochrome-220 soluble. These were caffein, colchicin hydrochlorid, coniin hydrochlorid, methyl atropin bromid, theobromin sodium salicylate and theophyllin sodium acetate.

Correspondence

DO ANIMALS TALK?

To the Editor:—The quotation in THE JOURNAL (March 17, p. 764), mentioning the white mountain goat as intelligent reminds me that the caretaker of a small herd at an amusement park called his dog to drive them from another dog that they were annoying. The herd ran as soon as they heard the name of the dog of which they were afraid, apparently indicating that they understood language.

Dogs to a high degree and, to a less degree, cats, horses, cattle, sheep, elephants and probably other animals associated with man understand a good many words. One of the best evidences of understanding on the part of animals is the failure to understand under different circumstances. For instance, sheep habituated to the call "Co'nan" do not respond to "Co'day," and vice versa. In Strasbourg, my wife called a dog *chien* without getting a response, but he responded immediately to *Hund*. In English, which is richer in pet names for animals, a dog may not respond to the word dog, but will to some familiar vocative. My dog, for instance, looks for another dog on hearing the word, probably for the same reason that most of us on hearing the word man called out would take it as referring to some one else. Even animals of comparatively low intelligence respond to words of command—in the language to which they have been trained. Just how much dogs understand of ordinary conversation is sub judice.

Recently a good many items have appeared with reference to imitation of human speech by dogs. While my own dog says "out" fairly distinctly when he wants to get out, it seems to me that all these reports are fallacious. Certain sounds emitted by dogs resemble words in one language or another, but it is improbable that they are really trying to pronounce words, even after learning that a certain sound gets them something. A recent assertion of a dog's begging for "jus' a crumb" is probably no more significant than the fact that a cat often goes about, saying "not now"; the difference is that the former happens to make sense, and the latter not.

Another example was the monkey that Professor Garner tried to teach to speak. He got it to say *feu* (French for fire) quite intelligently when a match was lighted. On being asked why he did not teach it the English word, he merely smiled. A diagram may be superfluous, but all there was to it was that the monkey enjoyed blowing out the flame.

It is a curious fact that the only "animals" that have been taught to speak at all fluently have been parrots and a few other birds whose speech organs are so much more different from the human organs than those of mammals. Very con-

tradictory statements are made as to whether parrots, magpies and blackbirds speak with any comprehension.

Professor Garner's study of the speech of animals really deserves more consideration than it has received. He was quite conservative, estimating the maximum vocabulary of monkeys at about thirty "words," a word in this sense being a definite cry, usually common to all members of a species, wherever found, and indicating some emotion, not a concept, as in the case of human language.

Unless better evidence is presented that parrots do use words understandingly and that the occasional utterance of such words as out, damn, come on, and jus' a crumb by more or less trained dogs is really limited to the expression of a definite idea, I think it may be said that the more intelligent lower animals have word perception to a considerable degree, but are absolutely lacking in word expression. It should also be questioned whether word perception is strictly so or whether there is simply an association of certain sounds (perhaps including several words) with certain ideas. The fact that dogs have a relatively large perceptive vocabulary of proper names as compared with common nouns, verbs or adjectives suggests that there is merely an association of a sound complex with some object or action. I knew one dog that recognized at least fifty persons by name—sometimes by one name each, sometimes by the various relationship terms that would be used in a family; but this dog was exceptionally intelligent, could remember at least two years, and apparently got the sense of conversation without reference to intonation.

A. L. BENEDICT, M.D., Buffalo.

SUPERIOR METHOD OF STAINING TUBERCLE BACILLI

To the Editor:—At the Kula Sanitarium, for some time, we have been using, as a routine, a method of staining tubercle bacilli which is eminently satisfactory and is superior to the usual Ziehl-Neelsen stain.

A smear of sputum is prepared and fixed in the usual manner. It is steamed for two full minutes with anilin gentian violet prepared according to the method of Weigert, as described by Stitt, boiling being avoided. The slide is rinsed with running water and covered with gram-iodin solution (Lugol) for two minutes. It is decolorized with acid alcohol (usual solution), washed in running water, and counterstained with 0.1 per cent. solution of pyronin for several seconds. Though we have found pyronin to be the best counterstain, any other may be used.

In the medical literature accessible to me I have not been able to find this method described and would appreciate greatly if you would let me know where I could find some similar procedure described.

PETER MJEDLOFF, M.D., Maui, Hawaii.

Prohibition in Turkey.—The *Wiener klinische Wochenschrift* relates that prohibition of alcohol, which has been in vogue in Asia Minor for some time, is to be enforced throughout the whole of Turkey on and after March 1, 1923. The regulations prohibit any kind of production, importation or sale, with penalty of 50 Turkish pounds per kilogram, and destruction of the liquor. Any infringement of the law or drunkenness entails a fine of from 50 to 200 pounds, or imprisonment for from six to twelve months. All vessels serving for production or consumption of alcohol must be made unusable, and all alcohol on hand must be sent out of the country. The consumption of alcohol for medical purposes is to be under strict supervision. At the same time, regulations for compulsory treatment of syphilis were drawn up and measures to prevent abuses at weddings.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ACETYSALICYLIC ACID

To the Editor:—My daughter, a senior at our college for women, writes me that one of the students takes aspirin, I presume the 5 grain tablet, every one hour, two hours or three hours for headache, and this on the advice of her physician. I hold that aspirin (acetylsalicylic acid) is a coal-tar or synthetic preparation and not made from wintergreen, and is a heart depressant, either immediate or remote. In my practice I have often found damaged hearts, and the only history given is a quantity of aspirin used, usually 5 or 10 grains at a dose, generally for headache. When I prescribe it, I generally add strychnin sulphate, aromatic ammonia or sodium bicarbonate. What is the general belief of the profession in regard to this drug? I know many able men using it almost ad libitum, just as quinin or sodium bicarbonate, and with no protective drug.

M.D., South Carolina.

ANSWER.—The letter of our correspondent is typical of much of the general misinformation concerning acetylsalicylic acid. The manufacturer's claim to the contrary notwithstanding, it has been abundantly proved that synthetic salicylates are not more toxic than are those made from oil of wintergreen. The salicylates, including acetylsalicylic acid, are not markedly depressant to the heart, nor are they responsible for the heart damage the correspondent finds in users of aspirin. The association is probably accidental, as rheumatic patients who often have damaged hearts find salicylates useful for the relief of their aches and pains. Acetylsalicylic acid should not be prescribed in combination with alkalis. Alkalis decompose acetylsalicylic acid with formation of alkali salicylate, which causes greater gastric irritation than if the undecomposed acetylsalicylic acid were given.

The chief objection to the indiscriminate use of this or other analgesic for the relief of headache or other pain is that merely the symptom is relieved, without any effect on the underlying cause, which in the course of time might become aggravated by the neglect of more appropriate treatment.

AVOIDANCE OF ANAPHYLACTIC SHOCK AFTER SECOND IMMUNIZING DOSE OF ANTITOXIN

To the Editor:—If a patient is given an immunizing dose of antitoxin, what are the chances of his developing anaphylactic shock if a second dose of antitoxin is given twelve or fourteen days later intramuscularly? The general opinion is that all contacts should be immunized. Prophylactic doses, however, do not always do what they are expected to do. I would not hesitate to give antitoxin to a person with diphtheria, even if he had been given a dose two weeks before; but I do hesitate in giving an immunizing dose through fear that he may take the disease in spite of this treatment, and be placed in a dangerous condition when the use of antitoxin may later be urgently needed.

A. J. PEARCE, M.D., South Heights, Pa.

ANSWER.—There is little danger of a severe reaction when the second dose of serum is given after an interval of from twelve to fourteen days. Practice varies as to the administration of immunizing doses of antitoxin to exposed persons. When conditions are such that exposed children cannot be closely watched for the first signs of diphtheria, immunization is advisable. When the exposed children can be carefully observed and given antitoxin at the onset of infection, the prophylactic dose may be omitted. By making intracutaneous tests with diphtheria toxin according to the Schick method, it is possible to avoid the administration of antitoxin to those who are already immune. This would be wise in instances in which many children are involved, as in schools and institutions.

PROOF OF PREGNANCY

To the Editor:—1. Can a physician say that a woman has been pregnant or not been pregnant by merely looking at the cervix? 2. Can a physician determine whether a woman has been pregnant if there is no laceration of the cervix or if the striae gravidarum are not present? 3. Can it be told that a woman has been pregnant and has had an abortion after three months?

N. B. SALERNI, M.D., Indianapolis.

ANSWER.—1. No.
2. No, except immediately after delivery.
3. No. The subject is fully discussed in various textbooks on legal medicine and on obstetrics.

Medical Education, Registration and
Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.

IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Charles E. Prior, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

Rhode Island July Examination

Dr. Byron U. Richards, secretary, Rhode Island State Board of Health, reports the written and practical examination held at Providence, July 6-7, 1922. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Eleven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University	(1921) 89,	(1922)	90.4
Tufts College Medical School	(1921) 83.9, 85.5, 86.7,	87.5, 89.5,	89.6
Cornell University	(1919)		85.5
Eclectic Medical Institute	(1904)		93.1
McGill University, Quebec	(1917)		86.5

New Jersey June Examination

Dr. Alexander MacAlister, secretary, New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 19-20, 1922. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 27 candidates examined, 23, including 4 osteopaths, passed, and 4 failed. Sixty-six candidates were licensed by reciprocity and 4 candidates received osteopathic licenses by reciprocity. Two candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University	(1920) 77.6,	(1921)	89.5
Northwestern University	(1919)		87.2
Johns Hopkins University	(1920) 85,	(1921)	83.8
University of Maryland	(1921)		87.4
Tufts College Medical School	(1921)		78.5
Cornell University	(1921)		86.8
Hahnemann Medical Coll. and Hosp. of Philadelphia	(1921) 79.8,		87
Jefferson Medical College	(1917) 84.2,	(1921)	83
University of Pennsylvania	(1920) 85.8, 89.1,	(1921) 84.3,	84.8, 90
University of Catania, Italy	(1914)*		77
University of Naples, Italy	(1911)*		79
Osteopaths	80.3, 80.3, 81.5,		83.7

College	FAILED	Year Grad.	Per Cent.
Hahnemann Medical Coll. and Hosp. of Philadelphia	(1921)		72.3
University of Budapest, Hungary	(1914)*		66.2
University of Naples, Italy	(1916)*		67.6
University of Kharkov, Russia	(1905)*		68.8

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Yale University	(1902)		Connecticut
George Washington University	(1912)		Dist. Colum.
College of Medicine and Surgery, Chicago	(1911)		Tennessee
State University of Iowa College of Medicine	(1917)		Iowa
University of Louisville Medical Department	(1915)		Kentucky
Baltimore University	(1899)		Maryland
College of Phys. and Surg., Baltimore	(1910), (1911)		W. Virginia
Maryland Medical College	(1912)		Pennsylvania, (1913)
University of Maryland	(1911)		Maryland, (1918)
(1921)			New York
Tufts College Medical School	(1915)		New York
St. Louis College of Physicians and Surgeons	(1905)		Penna.
Washington University	(1913)		Missouri
Albany Medical College	(1920)		New York
Columbia University	(1903), (1911), (1912)		New York
(1917)			Pennsylvania, (1919), (1920, 3)
Cornell University	(1911), (1912), (1917), (1920, 2)		New York
Fordham University	(1915), (1921), (1921)		New York
Long Island College Hospital	(1911), (1921)		New York
New York Homeo. Med. Coll. and Flower Hosp.	(1918)		Delaware
University and Bellevue Hospital Medical College	(1916), (1920, 2), (1921, 2)		New York
Medical College of Ohio	(1904)		New York
University of Oklahoma	(1915)		Oklahoma
Jefferson Medical College	(1896)		Pennsylvania, (1903)
(1908)			Pennsylvania, (1919)
(1920)			Pennsylvania, (1919)

Medico-Chirurgical College of Philadelphia	(1912)	Penna.
(1915)		New York
University of Pennsylvania	(1898)	S. Carolina
(1902), (1905), (1910), (1919)		Pennsylvania
University of Vermont	(1921)	Vermont
McGill University, Quebec	(1920)	New York
Queen's University, Ontario	(1902), (1918)	New York
Durham University, England	(1913)	Penna.
University of Budapest, Hungary	(1911)*	New York
University of Messina, Italy	(1905)*	Vermont
University of Naples, Italy	(1905)*	Penna.
University of Palermo, Italy	(1897)*	New York
Syrian Protestant College, Beirut	(1905)*	New York
Osteopaths	(1905)*	Missouri (3), Pennsylvania (1)

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Harvard University	(1920)		N. B. M. Ex.
University of Pennsylvania	(1919)		N. B. M. Ex.

* Graduation not verified.

Book Notices

INJURY, RECOVERY AND DEATH, IN RELATION TO CONDUCTIVITY AND PERMEABILITY. By W. J. V. Osterhout, Professor of Botany. Cloth. Price, \$2.50 net. Pp. 259, with 96 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

The publication of this series of monographs on experimental biology is a great credit to American scholarship, and, what is of more importance, a great stimulus to the progress of biologic science. Since the medical sciences are of necessity based on biology, the furtherance of these fundamental studies is of immediate importance to medicine. The present volume is one that is of particular interest to the pathologist, for the contributions of the author to our knowledge of cell vitality mark an important step toward illuminating the most fundamental of all mysteries—What changes accompany and determine cell death. These studies are based on the observation that any injury to cells is accompanied by changes in the electrical resistance of the cells, falling steadily until a level is reached which indicates that death is complete. This makes it possible to study loss of vitality in a quantitative way, and quantitative measurements are the desired goal of all thorough students of biologic processes. Such quantitative studies corroborate the views held by many physiologists since the days of Claude Bernard, that the death process is one which is always going on, even in a normal, actively growing cell. The death process is a normal part of living, producing no disturbance unless unduly accelerated by some agent which upsets the normal balance and causes such injury that the life process comes to a standstill. The demonstration by Osterhout that fundamental life processes obey the laws of chemical dynamics, and the introduction of methods permitting the quantitative study of these processes, mark a contribution of value as much to medicine as to the underlying biologic sciences.

CARRIERS IN INFECTIOUS DISEASES. A Manual on the Importance, Pathology, Diagnosis and Treatment of Human Carriers. By Henry J. Nichols, M.D., M.A., Instructor in Bacteriology, Parasitology and Preventive Medicine, Army Medical School, Washington, D. C. With a Section on Carriers in Veterinary Medicine. By R. A. Kelsner, D.V.M., M.A., in charge, Veterinary Laboratory, Army Medical School, Washington, D. C. Cloth. Price, \$3. Pp. 184, with 11 illustrations. Baltimore: Williams & Wilkins Company, 1922.

This little book presents the subject of infection carriers in a systematic and didactic manner, without many historical or bibliographic details, and with special reference to the practical needs of physicians, health officers and medical students. Part 1 deals with general considerations; Part 2 with special human diseases; Part 3 with the relations of phorology, a new word suggested by the senior author, to preventive medicine; and Part 4 with carriers in veterinary medicine, a welcome and useful expansion of the consideration of carriers. The use of the word "case" as synonymous with patient—"cases have also been called acute carriers," "the case, confined to bed"—in the first three parts will be criticized, of course. Pasteur and Sternberg independently discovered the pneumococcus in normal human sputum in 1881, not, as on page 87, in 1890. The names of certain bacteria seem to be chosen somewhat at random; *Bacillus aerogenes-capsulatus* is used for *B. welchii* (gas bacillus), and no mention seems to be made of the occurrence of either this bacillus

or the tetanus bacillus in the human intestine. Slips like these do not lessen the practical usefulness of the book, the teachings and recommendation of which are valid and wholesome. Its reading will broaden the understanding of the vast importance of carriers in the spread of infection, and help the physician in his responsible relations to their prevention and cure.

A TEXT-BOOK ON MINOR SURGERY. By John C. Vaughan, M.D., Director and Visiting Surgeon, Beckman Street Hospital, and Athel Campbell Burnham, M.D., in Charge of the Medical Department of Red Cross in Poland. Cloth. Price, \$7.75. Pp. 627, with 459 illustrations. Philadelphia: Lea & Febiger, 1922.

The authors state that minor surgery has advanced very rapidly in the past decade. This is due, according to them, to the industrial clinic, workers' compensation insurance, the use of local anesthesia, and the realization of economic and deforming complications, resulting from poorly treated or neglected conditions. Consideration is given especially to fractures, dislocations, and injuries and inflammations of the extremities. Various parts of the body are taken up and considered separately, including tumors and deformities. There are separate chapters on conditions of the generative organs of the male and female, bandaging, local anesthesia, and surgical technic. Surgical dressing and operating rooms of their ambulatory clinic are described as being similar to those in the best equipped hospitals. Under these ideal conditions, they perform breast amputations, excepting a radical dissection, operations for epithelioma of the lip, thyroglossal sinus and patent urachus, and a large number of operative procedures on bones and joints. However, some of the operations described should not be done in any ambulatory clinic, for they are far from being minor in any surgical sense of the word. Numerous conditions described require the most experienced surgical judgment, combined with careful hospital care, to prevent deformities, an economic waste of time, and not infrequently a loss of life. On page 567, there is a serious error in the strength of a solution of procain, 5 grams to the ounce of water being mentioned instead of 5 grains. The book is well written, however, unusually well illustrated, and covers a field not extensively covered in the average book on general surgery. It is practical, and is evidently based on well-founded experience.

DIE PFLANZENALKALOIDE. Von Dr. Richard Wolffenstein, A. O. Professor an der Technischen Hochschule zu Berlin. Third edition. Cloth. Price, \$4. Pp. 506. Berlin: Julius Springer, 1922.

This book treats of the theoretical chemistry of the alkaloids, and some attention is given to their pharmacologic properties. The treatment of the chemical constitution is not so complete or satisfactory as is given in other works, some of which are published in English and some in German. The discussion of the pharmacologic properties is too brief to be of much value to the physician, although doubtless it would serve a useful purpose to teachers of chemistry. Very little information is given which will be of value to analysts. It is unfortunate that an author should undertake to write a work on alkaloids which does not aim to give more information than has been given in previous books. In view of the excellent books already on the market which treat the subject more fully, this book cannot be recommended.

MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF RENAL DISEASE. By Hugh Maclean, M.D., D.Sc., Professor of Medicine, University of London. Cloth. Price, \$2. Pp. 102, with 4 illustrations. Philadelphia: Lea & Febiger, 1922.

This monograph was especially designed to give information, in such form as to be usable by the general practitioner, on the renal function tests that have been developed during recent years. Little emphasis is laid on symptoms, although the author points out that clinical observation should precede the application of functional tests. An excellent chapter deals with the significance of albuminuria and casts. In accordance with current beliefs, the author finds the Ambard coefficient method of little clinical value. He is inclined to favor the diastatic test, and considers the phenolsulphone-phthalein test difficult of application as it usually requires a colorimeter. For those especially interested in securing a brief presentation of the modern point of view in the handling of renal disease, this book may be especially recommended.

Miscellany

HEALTH PROBLEMS IN NEW YORK STATE

The committee appointed by the governor of the state of New York, Feb. 26, 1923, to consider certain health problems in that state has issued a report that deserves the most careful consideration, especially as it offers conclusions that do not always conform with those of the state department of health. Each of the several problems was studied by a sub-committee, and the conclusions and recommendations, here given in abstract, were adopted by the committee as a whole.

THE RURAL HEALTH PROBLEM

It is undoubtedly true that, in a certain small number of outlying rural communities in this state, there is a lack of physicians, particularly in the winter time; but it is doubtful in the extreme whether state subsidies would correct the situation in those communities. The number of physicians in a given county is governed by the laws of economics; and any decrease in this number is generally explained by lessened population, lessened morbidity and mortality, and the individual physician's ability to care for a greater number of patients than formerly, owing to the automobile, the telephone and the increased number of good roads. It is evident that the disproportion between the number of physicians in rural centers now and in the past is not so great as a superficial survey of the statistics would seem to indicate. Certainly there is no indication for the adoption of a state subsidy program.

There is another aspect to the rural health problem in the question of hospital, nursing and laboratory facilities in country communities. There is no question that, for the benefit of public health, it is absolutely essential that these facilities exist in number and position to be promptly available in every instance when needed. In the interest of public health, therefore, the state department of health should inaugurate an extensive educational campaign to urge local county authorities to meet their own needs. Experience teaches that local control and local support produce the best results in this field. Should isolated instances be found in which, for one reason or another, this is not possible, then, and only then, should subsidy and central control be considered.

MEDICAL RESEARCH

The methods employed in medical research have encountered a great deal of active opposition from a small, but aggressive, minority within the state. Despite the fact that investigation in the great scientific institutions of the day has resulted in benefits of untold value to the human race, this small group has consistently sought to hamper scientific research by restrictive legislation of various kinds.

It is the opinion of the committee that the laws surrounding the conduct of laboratories for research and investigation are adequate, from the point of view of humanitarianism as well as of regulation, and there is no need for any modification of, or addition to, the existing statutes.

MEDICAL EDUCATION

During the last twenty years, the science of medicine has made tremendous progress in America, and today we lead the world in medical research and in the prevention and cure of disease. This has been accomplished by adopting and maintaining high standards of medical education and practice. Despite these high requirements, there are sufficient physicians in the United States, though in many parts of the country the distribution is not satisfactory. In order that progress in medical science may be continued, it is vital that our educational standards be rigidly maintained.

The committee therefore recommends that: (1) the present educational requirements as they relate to the practice of the healing art be maintained; (2) the present laws being necessary and satisfactory to enforce a high standard of service, they be in no way modified; (3) no exceptions, exemptions or provisions in any respect invalidating the present laws be enacted. The medical profession is not

opposed to the practice of the healing art by any school, cult or method—even though in opposition to its own teachings—provided these would-be practitioners have the same preliminary training as the doctors of medicine.

THE MEDICAL PRACTICE ACT

Whatever our public health laws are to be, they must be enforced against all who violate them, not only because of the direct benefits to the public health, but also because of the broader aspect of the situation in connection with respect for the law generally. Even if cults are to be licensed—and to this, under proper regulation, we are not opposed—the public, for whose protection the laws are enacted, is entitled to know that only such individuals as are qualified under the law by education and training shall be entrusted with their health and lives, and that all others, whoever they may be and whatever theories they may hold, may not prey on their credulity and ignorance of the healing art.

It is submitted that the principal reason behind the apparent lack of efficient and effective enforcement of the medical practice act lies in the fact that there is no state organization whose function it is to enforce the act. The medical societies are rendered impotent because of the suspicion of selfish interest which is attached to their enforcement activities, and the state does not act.

With these facts in mind, the committee recommends the enactment of a bill providing that the entire matter of enforcement be placed in the control of the attorney-general's office, to be directly in charge of a deputy attorney-general appointed for the purpose.

THE NARCOTIC DRUG PROBLEM

No question has come before the committee of more importance, or has received more serious study, than that of narcotic drug addiction and its control. Thorough investigation established the fact that the ambulatory treatment of drug addicts is worse than useless. Not only does it fail to cure addiction, but, in many cases, it is an impetus to its continuation.

Contrary to popular belief, the majority of narcotic habits are criminals, with criminal records in the courts. In fact, narcoticism is so involved with criminality that to relax police vigilance over the one is to enhance the other. All drug addicts should, therefore, undergo institutional confinement, the criminal addict in penal institutions and the non-criminal addict in state-licensed and supervised public or private institutions. It is the sense of the committee that the criminal addict was a criminal prior to his addiction, or was arrested in some criminal act. When a criminal addict is confined in a penal institution, he should be placed under medical treatment.

PNEUMOTHORAX

Hygienic Laboratory Bulletin 132, issued by the U. S. Public Health Service, contains the report of a study by Barlow and Thompson. They investigated the causes of irregularities in the physical signs and clinical course of tuberculosis, and the discrepancies between these and the roentgen-ray appearances, and found that the most common cause of the irregularities mentioned is the presence of air in small pockets caused by the irregular pleural adhesions that are almost invariably present. The small pneumothoraces cause certain changes in the physical signs, and permit collapse of the most severe lesions. They modify the clinical course of the disease, giving rise to local pain, discomfort, and to various reflex symptoms, by causing tension on the pleura.

These areas are difficult to recognize in roentgenograms except when stereoscopic plates are used. The smaller ones tend to fill with fluid before death, and, even if present, are difficult to demonstrate at necropsy. This demonstration has been made in a number of cases, however, both by Barlow and Thompson and by other pathologists.

The first series of cases studied number 1,000, and from the other series mentioned in the study of special symptoms, it is evident that the authors must have studied several thou-

sand cases. Some of the studies of symptoms, such as dilatation of the pupils, the study of the blood pressure, the chapters on premanifest tuberculosis and reflex symptoms from the diaphragmatic pleura would, in themselves, be sufficient for special research articles. While it does not appear that any changes are made in the usual diagnosis and treatment of tuberculosis by this study, it is evident that the work clears up many things that have heretofore been puzzling. It should make the diagnosis of tuberculosis more certain in many doubtful cases, and be of value in guiding the treatment; it will help determine which of the quiescent and apparently arrested cases are most likely to relapse after the patient has been permitted to return to ordinary life.

There is a tendency for diseased lung to collapse as far as permitted by the elastic tension within the thorax. This observation led Barlow and his collaborators to apply the principal of "selective collapse" in artificial pneumothorax. They found that air introduced into the free pleural cavity became localized at the site of the lesions. If a partial artificial pneumothorax is maintained within the chest, it has the same effect in improving the clinical symptoms and modifying the course of the disease as is sometimes produced by a spontaneous small pneumothorax. The application of this method was first described by Morgan in April, 1917, but the studies carried out at New Haven seem to have brought out more clearly the need for unremitting attention in its use.

Medicolegal

Requirements—Liability for Malpractice—Evidence

(*Berkholz v. Benefe* (Minn.), 190 N. W. R. 800)

The Supreme Court of Minnesota says that a surgeon is not to be held negligent simply because results are bad. A plaintiff in a malpractice case must show that the poor result was due to negligent or unskilful treatment. The law requires a physician or surgeon to exercise only the care and professional skill usually exercised by the ordinary member of his profession in good standing. He is to be judged as to treatment only by the standard of the medical school to which he belongs. Ordinarily, the question whether the treatment was negligent cannot be determined by a jury of laymen without the aid of the opinion of medical experts. The surgeon is not responsible for the consequences of an honest mistake or error of judgment in his diagnosis or treatment when there is doubt as to what should be done in accordance with recognized authority and current good practice.

The plaintiff fractured both bones of his right leg a few inches above the ankle. He was taken to a hospital, and his employer called the defendant to attend him. Immediately, a cast was placed on the leg by the defendant, who attended the plaintiff for about two months, when the last cast was removed. Then, and at a previous time when the leg was bared, the plaintiff called the defendant's attention to a lump at the place of fracture, but was assured that it would disappear within two years. The plaintiff was not satisfied, and complained to his employer, who sent him to another physician. The latter advised an immediate operation, by breaking and resetting the fractures. This was done, and in about six months thereafter there was a serviceable leg. The evidence indicated that the fracture of the tibia was oblique. Good surgery required care in so setting and holding the bone that the broken ends would be likely to remain in apposition. Negligence in respect thereto was charged against the defendant, particularly in that he took no roentgenograms to aid in the diagnosis of the fracture or in ascertaining its condition during the curative process; he did not make use of a fracture box; the casts put on did not extend above the knee, and he did not use extension weights.

The plaintiff recovered a verdict against the defendant for \$3,500, which by the plaintiff's consent was reduced to \$1,800, as the alternative of having a new trial granted. Still, the verdict as reduced was assailed as excessive; but the supreme court does not think that it was, and affirms a judgment for

that amount. The defendant testified that a fracture of this sort ought to be cured in about eight or ten weeks. The plaintiff because of the defendant's negligence was incapacitated for an additional period of six months. It was true that his hospital and doctor's bills were paid, and the damages for loss of time were in a measure lessened to him because of the benefits of the workmen's compensation act; but the benefits so received did not go to mitigate or reduce the damages for additional lost time properly attributed to the defendant's negligence. The benefits derived under the compensation act can well be placed, at least as to wrongdoers, subsequent to the injury, in the same class as insurance carried by the injured party, which has been held not to mitigate the damages for which the wrongdoer is liable. But the loss of wages and the pain and suffering during the additional period required for a recovery because of the defendant's failure to use proper care and skill was considerable, and the supreme court is unable to say that the verdict as reduced was excessive.

There is in Minnesota no statute limiting medical experts to persons licensed to practice in the state. In the absence of such statute, it would seem clear that a graduate from any reputable school of medicine and surgery may qualify as an expert. The extent of his practice or want of practice affects merely the weight of his testimony.

Diagnosis May Be Established by Acts and Conduct

(*People v. Parish (Calif.)*, 210 Pac. R. 633)

The District Court of Appeal of California, Second District, Division 2, says that the defendant, who was convicted of practicing a mode of treating the sick and afflicted without a license, urged, as a ground for reversal, that the evidence failed to disclose any diagnosis of disease by him, and that one who does not diagnose does not practice medicine, within the meaning of the medical practice act of California of 1913. He was entirely correct as to this proposition of law (*People v. Jordan*, 172 Cal. 399, 156 Pac. 451). He stressed the point that he at no time made representations to those seeking treatment as to the nature of their various ailments, or that he would cure them. This fact was offered to show an entire lack of diagnosis. But diagnosis may be established by acts and conduct as well as by any representations that might be made to a patient. The *Jordan* case has decided that it is impossible to dissociate diagnosis from the practice of the art of healing by any physical, medical, mechanical, hygienic or surgical means. There was evidence in this case that the defendant used physical means in adjusting the vertebrae of witnesses. Hence, under the *Jordan* decision, the jury might lawfully have drawn the inference that the defendant made a diagnosis in connection with the treatment of one witness. However, the judgment of conviction must be reversed on account of the giving of an instruction which, in effect, assumed that the defendant had tried to convince the jury that he had attempted to secure a license, and had been discriminated against, when there was nothing in the record to show that he had ever attempted to secure a license to practice chiropractic or any other system of healing, or that his counsel had ever attempted to suggest that such a license could not be procured, or that the board of medical examiners had ever discriminated against him.

Acute Case of Pellagra Not a Chronic Disease— Privileged Communications

(*National Benevolent Society v. Barker (Ark.)*, 244 S. W. R. 720)

The Supreme Court of Arkansas, in affirming a judgment in favor of Mrs. Barker, the plaintiff, for the full amount of a certificate issued by the defendant society insuring the life of her daughter, says that, under the provisions of the certificate and by-laws of the society, the society was liable for only 10 per cent. of the face value of the certificate if the insured died of a chronic disease. There was evidence tending to show that she died from the effects of an acute case of pellagra. An acute disease, according to Webster, is one "attended with symptoms of some degree of severity and coming speedily to a crisis—opposed to chronic; and a chronic disease is one "continuing for a long time; lingering,

habitual." Under this definition, an acute case of pellagra would not come within the liability exemption clause in the policy and by-laws of the society.

In the course of the trial, the court permitted the plaintiff to show the cause of the insured's death by a physician who was called to see her in the month in which she died, but refused to permit the defendant to prove the cause of her death by her general attending physician in her last illness. The evidence of the latter physician was excluded because the information elicited was information acquired by him while attending the insured in a professional character. Such information is a matter of privilege under the Arkansas statute, and cannot be introduced in evidence without the consent of the patient or the patient's representative. It was urged by the defendant that the plaintiff waived the right to object to the testimony of his physician relative to the condition of the insured because she herself introduced the testimony of the other physician concerning the insured's condition. This court has decided otherwise.

Society Proceedings

COMING MEETINGS

- Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
- American Association for Thoracic Surgery, Chicago, May 28-29. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City.
- American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
- American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.
- American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
- American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
- American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
- American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
- American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia.
- American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
- American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
- American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
- Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Georgia, Medical Association of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
- Hawaii, Medical Society of, Honolulu, April 28-30. Dr. W. K. Chang, Honolulu, Secretary.
- Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
- Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
- Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
- Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
- Maine Medical Association, Houlton, June 5-7. Dr. B. I. Bryant, 265 Hammond Street, Bangor, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.
- Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBraycr, Sanatorium, Secretary.
- North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
- Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
- Rhode Island Medical Society, Providence, June 7. Dr. I. W. Lecch, 369 Broad Street, Providence, Secretary.
- South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
- Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
- Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, 1923, 25, No. 3

- *Value of Basal Metabolism in Diagnosis and Treatment of Cretinism. F. B. Talbot and M. E. Moriarty, Boston.—p. 185.
- *Bacteriology of Urine in Acute Nephritis in Children. L. W. Hill, E. F. Hunt and E. W. Brown, Boston.—p. 198.
- *Intraperitoneal Transfusion with Citrated Blood. A Clinical Study. D. M. Siperstein, Minneapolis.—p. 202.
- Polycystic Disease of Kidneys. Report of Case in Infant. A. Tow, New York.—p. 222.
- *Lead Poisoning in Infancy. L. E. Holt, Jr., Baltimore.—p. 229.
- *Types of Organism Found in Series of Tuberculous Children. J. K. Gordon and E. W. Brown.—p. 234.
- Calcium Absorption in Children on Diet Low in Fat. L. E. Holt and H. L. Fales, New York.—p. 247.

Value of Basal Metabolism in Diagnosis and Treatment of Cretinism.—Talbot and Moriarty show, first, that determinations of the basal metabolism make possible an early diagnosis of cretinism, before the usual clinical symptoms appear; second, the correct standard to use in childhood in determining whether a subject is suffering from hypothyroidism or not, and third, that determinations of the basal metabolism are of distinct value in indicating the amount of thyroid which may be given with maximum efficiency. The basal metabolism findings in a series of ten cretins are given, and it is shown that the basal metabolism and physical development of a cretin before treatment are considerably lower than they should be, illustrating the importance of the thyroid gland as a growth promoting factor. The metabolism of the untreated and treated cretins is plotted for comparison with the normal, showing the heat production for each square meter of body surface, total calories referred to weight, and total calories with reference to age. In the majority of cases studied, the most marked clinical improvement was not obtained until enough thyroid had been given to raise the metabolism to the expected metabolism for the age. Since the purpose of treatment in cretins is to bring them up to the average normal for the age, it seems wise to give sufficient thyroid to bring the metabolism to the expected total metabolism for the age. The evidence to date is that this level must be reached before the best therapeutic results can be obtained.

Bacteriology of Urine in Acute Nephritis in Children.—Twenty-one cases were studied by Hill, Hunt and Brown. In every instance the disease was in the acute stage, that is, the urine showed large amounts of blood, in almost all cases macroscopically. Cultures of the urine were obtained from three days to a month after the onset of the disease, and in about 50 per cent. of the cases, within a week after the onset. In sixteen cases, the urine was sterile. In two cases, *Staphylococcus albus* was found (probably a contamination), a diphtheroid bacillus in one case (unaccounted for), and colon bacilli in two cases. The cases which showed colon bacilli had high leukocyte counts (17,800 and 29,000), with a good deal of pus in the urine, as well as blood and casts, due probably to a complicating pyelitis. These results are said to indicate that in most cases of acute nephritis in children, after the disease has once been established, bacteria are not demonstrable in the urine, and there are probably none in the kidney. There is no fever, no elevation of the leukocyte count; in short, there is probably no bacterial infection of the kidney present during the course of the disease. However, these results do not rule out the possibility of bacterial infection of the kidney at the very onset of the disease, and this is a very strong possibility. The other possibility is that not bacteria, but soluble toxins absorbed from the infected focus (tonsils, cervical glands, etc.) produce the injury to the glomeruli.

Intraperitoneal Transfusion with Citrated Blood.—Siperstein resorted to the use of this method in cases of secondary anemia, congenital syphilis, dehydration, decomposition, and hemolytic anemia, hemoglobinuria. Among the five cases reported, favorable results were obtained in three. The intra-

peritoneal transfusion of citrated blood is simple to apply, practical and efficient. The intra-abdominal route should, if possible, not be the method of choice in emergency cases. When the anterior fontanel is closed, and surgical exposure of a vein is difficult, this new avenue of approach is suggested.

Lead Poisoning in Infancy.—Holt reports the case of a child, aged 8 months, which presented symptoms of lead poisoning—not very characteristic or pathognomonic—in which the source of the lead was a proprietary "diachylon compound" ointment (the chief constituent was lead acetate) which the mother had been using for a mild eczema of one of her breasts. The ointment had been applied continuously, except when the child was actually nursing. It was then wiped off, to be reapplied immediately afterward.

Types of Organism Found in Series of Tuberculous Children.—In a total of thirty cases of tuberculosis in children under the age of 12 years, examined by Gordon and Brown, the bovine organism was identified in ten instances. There was a greater actual incidence of bovine infection in the children under 5 years of age, although the number of bovine cases in patients between the ages of 5 and 12 years was relatively greater. Moreover, in the infants under 1 year of age, the bovine organism was identified only in a single instance. Twenty-two of the total number of cases were known to be fatal. Of these, four were of the bovine type. Permission for necropsy was obtained in twelve of the fatal cases. Of this number, the cases in which the point of origin of infection was found in the alimentary tract proved to be, without exception, bovine in type. The human bacillus was recovered from all those cases in which the point of origin, at necropsy, was in the respiratory tract. In five cases out of the total number, the history indicated that the children were exclusively breast fed. The reliability of this statement on the part of the parents may be regarded as doubtful, for although four of this number showed a human type of infection, the bovine organism was recovered in one instance. In seven cases of the total number a definite history of either familial tuberculosis or contact with tuberculous persons was obtained. Six of these proved to be cases of infection with the human and one with the bovine organism. In the latter instance, the patient had been infected by a younger brother who had previously died of generalized tuberculosis.

Annals of Clinical Medicine, Baltimore

January, 1923, 1, No. 4

- *Elective Localization of Streptococcus-Pneumococcus Group as Factor in Production of Disease. E. C. Rosenow, Rochester, Minn.—p. 211.
- Disseminated Sclerosis. J. Loudon, Toronto.—p. 231.
- Radiographic Diagnosis of Tuberculosis Pulmonalis. A. N. Sinclair, Honolulu, H. I.—p. 240.
- *Incidence of Goiter in College Students (Women). R. P. Guilder, Chicago.—p. 248.
- Chemistry and Pharmacologic Action of Thyroxin. E. C. Kendall, Rochester, Minn.—p. 256.
- Clinical Features of Thyroid Disease. W. A. Plummer, Rochester, Minn.—p. 259.
- *Larynx in Diseases of Thyroid. G. B. New, Rochester, Minn.—p. 262.
- End Result of Surgery of Thyroid. J. J. Pemberton, Rochester, Minn.—p. 266.
- *Heart in Thyroid Disease. F. A. Willius, Rochester, Minn.—p. 269.
- Clinical Value of Pathologist. W. C. MacCarty, Rochester, Minn.—p. 270.

Elective Localization of Streptococcus-Pneumococcus Group as Disease Factor.—Rosenow is convinced that in the light of the results of experiments with animals and the results obtained by numerous clinicians by the removal of foci of infection, there can be no doubt of the importance of the specific localizing power of bacteria and of foci of infection in the causation of many diseases.

Incidence of Goiter in College Students.—Examination of 609 women students at the University of Illinois revealed an enlarged thyroid in 276 instances (45.3 per cent.). The condition occurred with the greatest frequency in the youngest students, the highest percentage being 66.6 at 16 years of age. Of the 276 students showing an enlarged thyroid, 199 had spent their childhood in Illinois. The distribution of these 199 cases by the county shows that 55 per cent. of the children who had spent their childhood in Cook County showed an enlargement of the gland, and that the number of counties in which no students had shown enlargement was much

greater in the southwestern portion of the state than in the region nearer Lake Michigan.

Larynx in Diseases of Thyroid.—A mistaken idea with regard to patients with goiter, New says, is that if the voice is normal, the cords are not paralyzed. A patient's voice may be virtually normal and yet both recurrent laryngeal nerves be completely paralyzed. Hence the importance of a preoperative examination of the larynx in diseases of the thyroid cannot be overestimated as a protection to the physician and patient. The number of cases of serious paralysis of the laryngeal nerve after thyroidectomy is small, and in these cases the cords are in the so-called bilateral abductor position. The theories as to the cause of the bilateral abductor position of the cords are varied. The most common explanation is that the abductor fibers of the recurrent laryngeal nerve have been injured at operation or by secondary scarring and that the adductor fibers bring the cords to the middle line position. It would seem probable that this position of the cords following thyroidectomy is due to the action of the muscles of the larynx which are supplied by the superior laryngeal nerve. The cricothyroids, the external tensors, abduct the cords and the arytenoids adduct them; the resulting position would produce in these patients a voice characteristic of that following injury to the recurrent laryngeal nerve. Experimentally, New has been unable as yet to prove this, but clinically it seems to be the true explanation.

Heart in Thyroid Disease.—At the time of initial examination at the Mayo Clinic, auricular fibrillation is found in 7 per cent. of patients with exophthalmic goiter and in 9 per cent. of patients with hyperfunctioning adenoma. These percentages are doubled while the patient is under observation, that is, during the preoperative, operative and post-operative periods. New states that auricular fibrillation may occur as a permanent, intermittent, or paroxysmal disorder.

Annals of Medical History, New York

December, 1922, 4, No. 4

- "Liber De Medicinis Esperitis" Attributed to Galen. E. Wickersheimer, Strasburg, France.—p. 323.
Medicine and Humanities. C. L. Dana, New York.—p. 328.
William Heberden, M.D., F.R.S. P. B. Davidson, Boston.—p. 336.
Christopher Widmer. M. Charlton, Montreal.—p. 346.
Sixteenth Century Latin Poem on Diseases of Nurslings: "Paedotrophia," by Scevole De Sainte-Marthe. C. G. Cumston, Geneva, Switzerland.—p. 351.
Guy Patin and Medical Profession in Paris in Seventeenth Century. F. R. Packard, Philadelphia (concluded).—p. 357.

Archives of Dermatology and Syphilology, Chicago

March, 1923, 7, No. 3

- Certain Dermatoses of Monkeys and an Ape. Pemphigus, Scabies. Sebaceous Cyst, Local Subcutaneous Edema, Benign Superficial Blastomycotic Dermatitis and Tinea Capitis and Circinata. F. D. Weidman, Philadelphia.—p. 289.
*Granuloma Inguinale. I. M. Gage, New Orleans.—p. 303.
Case of Dermatomyositis. H. Joachim, Brooklyn.—p. 326.
*Pathogenesis of Mercurial Stomatitis. Review of Literature on Mercury Poisoning. D. H. Bessesen, Minneapolis.—p. 332.
Concerning Specificity of Cholesterinized Antigens in Serologic Diagnosis of Syphilis. R. A. Kilduffe, Pittsburgh.—p. 363.
Calcification of Skin, with Unusual Findings. R. R. Ducasse, Cincinnati.—p. 373.
Institutional Epidemics of Bullous Impetigo Contagiosa in Infants. F. C. Knowles and H. G. Munson, Philadelphia.—p. 376.
Histopathology of Cutaneous Tests. Second Communication. A. Strickler and E. J. Asnis, Philadelphia.—p. 379.

Granuloma Inguinale.—Gage states that granuloma inguinale occurs in the United States, being endemic in some states, especially in the extreme Southern states. It is endemic in Louisiana. The cause is probably the organism described by Donovan, possibly a protozoon. The disease presents definite clinical symptoms which extend over long periods. The symptoms vary somewhat in different persons, for the most part, showing a typical granuloma with a sero-sanguineous discharge. The pathologic picture is that of a sclerosing granuloma. Tartar emetic administered intravenously seems to be specific, although when the lesions are accessible to surgical excision, Gage says this procedure, combined with tartar emetic, will considerably shorten the healing time.

Mercurial Stomatitis.—The nine principal theories of the action of mercury on the body are summarized briefly by

Bessesen. The essential literature on the pathology of mercury poisoning is analyzed under the system of organs affected, in order to see whether the known facts indicate any general underlying effects which might be involved in local lesions, such as those that occur in the mouth. It is evident that there are distinct indications of blood and circulatory changes which must be taken into consideration in discussing any local lesion. The results of examining a large number of sections from tissue taken from cats and ferrets with mercury lesions are recorded. These results and their interpretations are fully in harmony with those deduced from an extensive review of the literature. Finally, in connection with the pathogenesis of mercurial stomatitis, Bessesen believes that the general systemic action is answerable for the lesions in the same degree as the local changes.

Boston Medical and Surgical Journal

March 8, 1923, 188, No. 10

- *New Operation for Correction of Retroflexion of Uterus. J. W. Keefe, Providence, R. I.—p. 299.
Carcinoma of Cervical Stump. Report of Eight Cases. L. Davis, Boston.—p. 304.
Compulsory Vaccination in Private Schools. S. B. Woodward, Worcester, Mass.—p. 309.
*Treatment of Pertussis by Roentgen Ray. H. I. Bowditch and R. D. Leonard, Boston.—p. 312.

March 15, 1923, 188, No. 11

- Progress in Study and Treatment of Cardiovascular Disease in 1922. Part I. P. D. White, Boston. (To be continued.)—p. 331.
*Leiomyoma of Stomach. Report of Case. E. L. Hunt, Worcester, Mass.—p. 349.
Esophageal Diverticula. Report of Case. F. H. Lahey, Boston.—p. 355.
Case of Diverticulum of Esophagus. L. C. Kingman, Providence, R. I.—p. 361.

New Operation for Correction of Retroflexion of Uterus.—This operation was described in THE JOURNAL, Oct. 21, 1922, p. 1452.

Treatment of Pertussis by Roentgen Ray.—A series of twenty-six cases of active pertussis were given roentgen-ray treatment by Bowditch and Leonard. The ages of the patients varied from 3 months to 40 years. The patients were in different stages of the disease, varying from one to ten weeks. Each patient received three or four applications of the roentgen ray at intervals of two or three days. The dosage was regulated according to the age of the patient and the total amount of roentgen ray given to any one patient was well under an erythema dose. There has resulted definite improvement in these patients which the authors state cannot be explained by mere accident. In a small percentage of these twenty-six cases after two or three applications of the roentgen ray covering a period of six days, the spasms and whoops entirely disappeared and the patients were clinically well, except for possibly a very slight cough. The bulk of the patients were "relieved." There was a gradual diminution in the number of spasms.

Leiomyoma of Stomach.—Hunt reviews the literature and adds one personal case in which the chief complaint was heartburn, hematemesis and bloody dejections. After roentgen-ray examination a diagnosis of duodenal ulcer was made. Operation was advised and accepted. A rounded, comparatively smooth, mass, the size of a lemon, was found above the pylorus extending under the liver. The first portion of the duodenum was indurated and apparently part of the mass. Pylorotomy, followed by a posterior isoperistaltic gastrojejunostomy, was carried out. The entire growth had somewhat the shape of a uterus though a little larger. It projected into the lumen of the duodenum by a rounded nodule, the central portion of which was ulcerated away so as to resemble an os uteri. In consistency it resembled the uterine myoma and on section it showed bands and whorls of parallel and interlacing striae. Microscopically, it consisted of bundles of spindle cells of rather uniform size, each having an elongated vesicular nucleus and acidophil protoplasm without visible intracellular substance. Eleven months after this operation, the patient was reexamined. Examination of the abdomen disclosed a rounded tumor in the epigastrium, about the size of a hen's egg and not adherent to the scar, evidently a recurrence. Operation was advised and rejected.

California State Journal of Medicine, San Francisco

February, 1923, 21, No. 2

- Hypertension. D. D. Comstock, Los Angeles.—p. 49.
Associated Syphilis and Tuberculosis, More Particularly as They Affect the Lungs. A. L. Brankamp, Banning.—p. 52.
*Bilateral Malignancy of Testes. C. O. Tanner, San Diego.—p. 55.
Glioma of Retina. Case Report. H. L. Gregory, Stockton.—p. 56.
Psychotic Sequelae of Epidemic Encephalitis. R. L. Richards, San Francisco.—p. 56.
Diagnosis and Surgical Treatment of Malignant Tumors of Kidney. W. E. Stevens, San Francisco.—p. 60.
Origin and Application of Pirquet Nem System of Child Feeding Under Hoover Relief Administration of Austria. H. M. Coulter, South Pasadena.—p. 62.
Present Status of Therapy in Pulmonary Tuberculosis. W. C. Voor-sanger, San Francisco.—p. 65.
Indications for and Results of Anchoring Head of Colon. O. O. Witherbee, Los Angeles.—p. 69.
Physiologic Effects of Nitrous Oxid. N. C. Trew, Los Angeles.—p. 70.
Study of Basal Metabolic Rates in Fatigue States. R. Cummings, Los Angeles.—p. 77.

Bilateral Malignancy of the Testes.—Tanner records the case of a man, aged 45, who had a carcinoma of both testes. A double orchidectomy was done with removal of almost the entire scrotum. The patient died three months afterward with numerous metastases. These cases are said to be exceedingly rare. As a rule, the disease is limited to one testis.

Illinois Medical Journal, Oak Park

March, 1923, 43, No. 3

- Relations of Nose to Eye and Ear. B. F. Andrews, Chicago.—p. 195.
Surgical Reconstruction of Paralytic Upper Extremity. A. Steindler, Iowa City, Iowa.—p. 197.
Two Cases of Placenta Previa in Which Cesarean Section was Done. J. A. Fisher, Metropolis.—p. 199.
Ductless Glands in Relation to Certain Dermatoses. M. L. Ravitch, Chicago.—p. 201.
Treatment and Results in Fractures. J. M. Dodd, Ashland, Wis.—p. 203.
Effects of Roentgen Rays and Radium Rays in Malignancy. H. Swanberg, Quincy.—p. 205.
Symptoms and Treatment of Deviations of Nasal Septum. E. E. Edmonson, Mt. Vernon.—p. 208.
Neoplasms of Larynx. C. M. Robertson, Chicago.—p. 210.
Injection Treatment of Hemorrhoids. W. A. Hinckle, Peoria.—p. 217.
Glaucoma Surgery. M. Goldenburg, Chicago.—p. 219.
Splitting the Cord in Indirect Inguinal Hernias. C. B. Ripley, Galesburg.—p. 223.
Diet During Pregnancy. E. Cary, Chicago.—p. 228.
Nitrous Oxid and Oxygen in Obstetrics. A. E. Rives, East St. Louis.—p. 230.
Case of Paget's Disease Involving the Ears, Nose and Mouth. G. W. Boot, Chicago.—p. 235.
Basic Principles of Deep Roentgen-Ray Therapy. L. S. Goin, Peoria.—p. 237.
Tuberculin as Therapeutic Agent in Certain Forms of Keratitis. W. G. Reeder, Chicago.—p. 241.
Tapeworm Segments Discharged Through Fecal Fistula Following Operation for Appendicitis and Calculous Suppurative Cholecystitis. A. P. Heineck, Chicago.—p. 245.

Iowa State Medical Society Journal, Des Moines

March, 1923, 13, No. 3

- Facing the New Day in Medicine. A. P. Stoner, Des Moines.—p. 79.
*Occlusion of Central Retinal Artery. F. F. Agnew, Independence.—p. 83.
Market Milk from Medical Standpoint. F. G. Murray, Cedar Rapids.—p. 87.
Diagnostic Surveys by Diagnostic Commissions for Asylum Populations. C. A. L. Reed, Cincinnati.—p. 94.
Aids to Diagnosis in Medicine. H. E. Tuley, Louisville.—p. 97.
Actinomycosis: Diagnosis and Treatment. P. A. White, Davenport.—p. 105.

Occlusion of Central Retinal Artery.—Agnew's patient was 58 years of age. He first noticed a blur in his right eye, which after a few minutes developed into total blindness of the eye. Ophthalmoscopic examination showed a collapsed temporal branch of the superior retinal artery, the point of obstruction being about one disk diameter from the origin of this branch. The obstruction was complete and the remainder of the artery appeared as a glistening white streak. Approximately one fourth of the total area of the retina, including the macular field, was blanched in the center, fusing into a pale pink as it approached the portion normally supplied with blood. The character of the obstructing object was not determined. Treatment was immediately begun with massage of the eyeball, cathartics, heat and iodids. Progress was fair and at the end of a month he was able to read

coarse print with his correction. When last seen, his condition had not improved. More and further treatment was considered useless. In a second similar case treatment was of no avail.

Johns Hopkins Hospital Bulletin, Baltimore

February, 1923, 34, No. 384

- *Existence of More Than Four Iso-agglutinin Groups in Human Blood. C. G. Guthrie and J. G. Huck, Baltimore.—p. 37.
Blood Pressures in Unanesthetized Dog. A. C. Kolls and J. R. Cash, Baltimore.—p. 49.
*Iso-agglutination in New-Born Infants and Their Mothers. Possible Relationship Between Interagglutination and Toxemias of Pregnancy. I. McQuarrie, Baltimore.—p. 51.
Periodic Variations in Spontaneous Contractions of Uterine Muscle, in Relation to Oestrous Cycle and Early Pregnancy. J. D. Keye, Baltimore.—p. 60.
Preparation of Nucleotides from Yeast Nucleic Acid. W. Jones and M. E. Perkins, Baltimore.—p. 63.
*Effect of Antiseptics on Bacterial Flora of Upper Air Passages. A. L. Bloomfield, Baltimore.—p. 65.
Hypoglycemia in Exophthalmic Goiter. E. F. Holman, Baltimore.—p. 69.

Existence of More Than Four Iso-Agglutinin Groups in Human Blood.—Guthrie and Huck report the case of a patient whose blood serum behaved like that of Group I and her red cells like those of Group III. These unusual agglutination reactions are interpreted as being indicative of a new or fifth iso-agglutinin group. Another blood with unusual reactions, apparently belongs to a sixth iso-agglutinin group. Details of all work done are given and full discussion is promised in a later publication.

Iso-Agglutination in New-Born Infants and Their Mothers.—The iso-agglutination reactions of 180 women, 54 white and 126 black, and those of their new-born infants have been studied by McQuarrie. The infants' blood group was apparently completely established in twenty of the cases, and partially established in more than one half of the cases. The red blood corpuscles of the new-born infants possessed receptors twice as frequently as the corresponding serums contained agglutinins. The mother's serum agglutinated her own infant's red blood cells in 23.3 per cent. of the cases studied, whereas the infant's serum agglutinated the mother's red blood cells in but 2.7 per cent. In 28.8 per cent. of the cases infant and mother apparently belonged to the same iso-agglutination group, while in 46.6 per cent. there was no evidence of iso-agglutinins in the serum and no receptors in the red blood cells of the infant. The distribution of the colored patients in the four iso-agglutination groups was odd, in that there were none in Group I and more in Group III than in Group II. It was found that more than 70 per cent. of the cases of toxemia (all forms included) occurred in the small group in which there was interagglutination between maternal and fetal blood. Toxemia occurred 16.5 times more frequently when the maternal and fetal bloods were demonstrated to be incompatible than when they were in the same iso-agglutination groups. The data submitted are believed to be very suggestive of the existence of some relationship between the incompatibility of maternal and fetal blood, on the one hand, and the development of eclampsia or pre-eclamptic toxemia on the other.

Effect of Antiseptics on Bacterial Flora of Upper Air Passages.—Certain antiseptic drugs representative of those used in rhinologic practice were studied by Bloomfield. They included potassium permanganate, silver preparations, mercurochrome 220, and another mercurial germicide. The experiments showed that while it was possible in some cases to modify the bacterial flora of the upper respiratory tract by intensive treatments, no essential or permanent alteration could be produced. It is obvious that the bacteria actually multiplying are very firmly lodged in the tissues and are not growing free on the surface or in the mouth secretions. It seems unlikely, therefore, that chemicals applied to the mucous surfaces could effect sterilization without destroying the superficial layers of epithelium at the same time. Mercurochrome penetrates to such an extent that the treated membrane shows a distinct red color even after twenty-four hours. None the less the flora remains essentially unaffected.

Hypoglycemia in Exophthalmic Goiter.—Holman has found that the marked hyperglycemia occurring immediately after

operations on the thyroid corresponds to the period of most active metabolism and the greatest mobilization of the available carbohydrate. This is followed by an abrupt fall in blood sugar content, corresponding to the exhaustion of the supply. In cases reacting favorably, there is, then, a rise in blood sugar, indicating probably a gradual disappearance and elimination of the active thyroid secretion. The rationale of the administration of glucose solutions intravenously is suggested by these studies. A definite plan of intravenous injections of glucose will need to be evolved, controlled by and dependent on successive blood sugar determinations. A weaker solution, from 5 to 10 per cent. in strength, administered in quantities of from 300 to 600 c.c. would probably be preferable to the 20 per cent. solution. Holman asserts that these findings also emphasize the importance of a high carbohydrate and high caloric diet in the preoperative treatment of exophthalmic goiter, and of the administration of 5 per cent. glucose solution per rectum in postoperative care. The administration of large quantities of fluid by infusion, by mouth, and by rectum, undoubtedly favors the elimination of the active thyroid secretion and is, therefore, also an important factor in reducing the severity of postoperative reaction.

Journal of Experimental Medicine, Baltimore

February, 1923, 37, No. 2

- *Influenza-Like Bacilli Isolated from Cats. T. M. Rivers and S. Bayne-Jones, Baltimore.—p. 131.
- Studies on Endothelial Reactions. VII. Changes in Distribution of Colloidal Carbon Noted in Lungs of Rabbits Following Splenectomy. N. C. Foot, Boston.—p. 139.
- Source of Agglutinins in Milk of Cows. T. Smith, M. L. Orcutt and R. B. Little, New York.—p. 153.
- Chlorid Retention in Experimental Hydronephrosis. N. M. Keith, Baltimore and D. S. Pulford, Jr., Rochester, Minn.—p. 175.
- *Blood Destruction During Exercise. III. Exercise as Bone Marrow Stimulus. G. O. Broun, New York.—p. 187.
- *Id. IV. Development of Equilibrium Between Blood Destruction and Regeneration After a Period of Training. G. O. Broun, New York.—p. 207.
- Cytologic Study of Nature of Rickettsia in Rocky Mountain Spotted Fever. F. M. Nicholson, New York.—p. 221.
- Microbic Virulence and Host Susceptibility in Mouse Typhoid Infection. L. T. Webster, New York.—p. 231.
- Manner of Spread of Mouse Typhoid Infection. L. T. Webster, New York.—p. 269.
- Bacterial Hypersusceptibility. II. H. Zinsser and J. T. Parker, New York.—p. 275.

Influenza-Like Bacilli Isolated from Cats.—Six strains of gram-negative nonmotile bacilli isolated from cats are described by Rivers and Jones. They do not grow on ordinary mediums. They do grow, however, on a medium to which an autoclave-labile substance has been added as an accessory growth factor. These bacilli are similar to *Bacillus para-influenzae* isolated from man. One strain of a gram-negative nonmotile bacillus more exacting in its food requirements than *B. influenzae* was found and for convenience has been placed for the present in the para-influenza group.

Exercise Stimulates Hematopoietic Tissue.—The fact is emphasized by Broun that exercise must be an important factor in the maintenance of an efficient hematopoietic tissue. A definite increase in the percentage of reticulocytes occurs after exercise in animals previously kept to a sedentary life. Concomitant changes in the hemoglobin percentage, plasma-cell ratio, and red count offer evidence in addition to that already reported by the author of the occurrence of an increase in blood destruction under such circumstances. Replacement by transfusion of blood destroyed during exercise prevents the reticulated cell reaction. Animals rendered plethoric and then exercised show no increase in reticulated cells while the plethora persists.

Blood Destruction During Exercise.—When a dog kept for a long time under sedentary conditions is exercised continuously for several weeks, Broun says, a decrease in cell volume occurs in the first or second week of exercise, but usually by the end of the third week the loss has been made up. Apparently by this time the hematopoietic tissues have adapted themselves to the increased demands made on them by the hastened rate of destruction. There is, furthermore, some anatomic evidence that such is the case.

Journal of Laboratory and Clinical Medicine, St. Louis

February, 1923, 8, No. 5

- *New Experiments with Vaughan's Crude Soluble Poison. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 289.
- Organic, Protein and Colloidal Silver Compounds; Their Antiseptic Efficiency and Silver-Ion Content as Basis for Their Classification. J. D. Pilcher and T. Sollmann, Cleveland.—p. 301.
- D'Helle's Phenomenon, Adaptation of Bacteriophage Antagonistic to *Bacillus Dysenteriae* and Other Bacilli to Various Cocci. Development of Polyvalent Bacteriolysant. E. B. McKinley, Ann Arbor, Mich.—p. 311.
- *Biological Assay of Pituitary Extract. E. E. Nelson, Ann Arbor, Mich.—p. 318.
- *New Method for Determination of Calcium, Magnesium, Potassium and Sodium in Human Blood. A. Mirkin and S. J. Druskin, New York.—p. 334.
- *Modification of Folin-Wu Blood Sugar Method. S. Morgulis, A. C. Edwards and E. A. Leggett, Omaha.—p. 339.
- Plea for Standardized Method of Reporting Wassermann Tests. R. A. Kilduffe, Pittsburgh.—p. 341.
- Blood Counts with Oxalated Blood Compared with Ordinary Counts. A. G. Foord, Chicago.—p. 343.
- Loss of Sugar in Oxalated Blood. D. E. Birchard, Los Angeles, Calif.—p. 346.

New Experiments with Vaughan's Crude Soluble Poison.—The observations made by Underhill and Kapsinow lead them to the view that the substance or substances included in the term "Vaughan's crude soluble poison" are products formed presumably by progressive hydrolytic change rather than that the protein molecule is split into a toxic portion and a nontoxic residue. On such an hypothesis may be explained the varying toxicity of different samples of Vaughan's crude soluble poison, and the observation that by altering environmental conditions changes in toxicity of various fractions may be obtained. It is, therefore, quite probable that Vaughan's crude soluble poison cannot be regarded as a chemical entity but must rather be looked on as a mixture of substances varying according to the conditions leading to its formation.

Biologic Assay of Pituitary Extract.—It is shown by Nelson that potassium chlorid and histamin are not suitable substances for the standardization of pituitary extract. Since no other material which is yet available has an action qualitatively similar to that of pituitary extract, it is felt that a preparation of the gland itself should be used as a standard. Because of the nonidentity of the oxytocic and pressor substances in the pituitary gland, the pressor method should not be employed in the assay of a drug which has its chief use for its oxytocic action.

New Method for Determination of Calcium, Magnesium, Potassium and Sodium in Human Blood.—The method worked out by Mirkin and Druskin is as follows: Calcium and magnesium are precipitated and weighed as stearates (more correctly as a mixture of stearates and palmitates). The latter are then dissolved in hundredth normal sulphuric acid, the precipitated stearic acid is filtered off and the excess of the sulphuric acid titrated with hundredth normal sodium hydroxid. The total amount of the stearates and of stearic acid contained in both being known, the respective amounts of calcium and magnesium can be calculated.

Modification of Folin-Wu Blood Sugar Method.—Morgulis, Edwards and Leggett use the uric acid reagent made according to Benedict's directions and add 8 c.c. of concentrated hydrochloric acid for 100 c.c. of the arsenophosphotungstate reagent. The results by their modified procedure agreed with those obtained on the same material by the Folin-Wu method.

Kentucky Medical Journal, Bowling Green

February, 1923, 21, No. 2

- Bronchopneumonia. J. H. Pritchett, Louisville.—p. 85.
- Diagnosis and Treatment of Acute Lobar Pneumonia. F. W. Fleischer, Louisville.—p. 87.
- Complications of Pneumonia. W. V. Neel, Henderson.—p. 89.
- Intermittent Postoperative Biliary Obstruction. Case Report. L. K. Baldauf, Louisville.—p. 96.
- Cystitis. W. Z. Jackson, Arlington.—p. 97.
- Acute Delirium Following Cataract Operation. Case Report. A. O. Pfingst, Louisville.—p. 99.
- Multiple Osteo-enchondroma: Case Report. I. A. Arnold, Louisville.—p. 99.
- Surgical Consideration of Empyema. J. W. Price, Jr., Louisville.—p. 100.
- Corrective Rhinoplasty. G. Aud, Louisville.—p. 105.

Laryngoscope, St. LouisFebruary, 1923, **33**, No. 2

- War Surgery of Larynx; Work at Cape May. G. Berry, Worcester, Mass.—p. 85.
- Mucocele of Left Frontal Sinus. H. Smith, New York.—p. 108.
- Case of Pachydermia Laryngis. H. Smith, New York.—p. 110.
- Removal of Laryngeal Papillomata with Simple Technic. R. McKinney, Memphis.—p. 111.
- Treatment of Severe Systemic Infections of Otitic Origin. E. B. Dench, New York.—p. 113.
- Methods of Mental Reconstruction of Deafened. H. M. Hays, New York.—p. 117.
- Internal Phases of Otitic Inflammations. H. Brooks, New York.—p. 126.
- Mastoiditis Associated with Acute Nephritis. C. M. Sautter, New York.—p. 131.
- Case of Round Cell Sarcoma and Case of Adenocarcinoma of Paranasal Sinuses. M. F. Butler, Philadelphia.—p. 135.
- Treatment of Ozena by Operation. L. E. Wolfson, Boston.—p. 139.
- Transfusion of Blood from Immunized Donors. L. J. Unger, New York.—p. 145.
- Important Points on La Force and Beck-Shenk Instruments. S. Cohen, Philadelphia.—p. 149.
- Pulmonary Abscess; Study of Ninety Cases. B. F. Glowacki, St. Louis.—p. 153.
- New Nasal Suction-Irrigation Apparatus. J. M. Lore, New York.—p. 157.

Minnesota Medicine, St. PaulFebruary, 1923, **6**, No. 2

- Recent Advances in Physiology of Alimentary Tract. A. J. Carlson, Chicago.—p. 71.
- Medical Men and Institutions of Petrograd in 1917 and 1922. M. Zlatovski, Duluth.—p. 74.
- Review of 153 Cases of Bladder Stone Removed by Lithotripsy. J. L. Crenshaw, Rochester, Minn.—p. 77.
- Bronchoscopic Extraction of Foreign Bodies from Air and Food Passages; Report of Twenty-Five Cases. K. A. Phelps, Minneapolis.—p. 80.
- Bilateral Induced Pneumothorax. E. K. Geer, St. Paul.—p. 86.
- Status Thymicolymphaticus in Infancy. C. O. Kohlbry, Duluth.—p. 89.
- Study of Tonsil Question with Preliminary Report of Roentgen Ray and Radium Therapy in Treatment of Pathologic Tonsils. L. A. Lane, Minneapolis.—p. 97.
- Essentials in Treatment of Peritonitis. D. K. Bacon, St. Paul.—p. 104.
- Diagnosis of Cancer of Uterus. O. C. Melson, Rochester, Minn.—p. 110.

Missouri State Medical Association Journal, St. LouisFebruary, 1923, **20**, No. 2

- Factor of Obesity in Surgical Operations. W. C. G. Kirchner, St. Louis.—p. 49.
- Epidermomycosis. W. Frick, Kansas City, Mo.—p. 55.
- Recent Advances in Dietetic Treatment of Diabetes Mellitus. F. Neuhoff, St. Louis.—p. 57.
- Toxic Thyroid. M. P. Overholser, Harrisonville.—p. 59.
- Lessons from Seven Prostatectomies. W. F. Grinstead, Cairo, Ill.—p. 63.
- Hospital Standardization from Standpoint of Hospital Superintendent. L. H. Burlingham, St. Louis.—p. 64.
- Problems in Rural Health Service and State Medicine. F. G. Nifong, Columbia, Mo.—p. 66.

New York Medical Journal and Medical RecordMarch 7, 1923, **118**, No. 5

- Clinical Errors in Diagnosis of Acute Contagious Diseases. H. R. Litchfield and L. H. Dembo, New York.—p. 257.
- *Rapid Cure of Cystitis in Children. J. C. Hirst, Philadelphia.—p. 263.
- Acute Mastoiditis with Facial Paralysis and Remittent Meningitis. A. Roth, Brooklyn.—p. 265.
- Value of Percussion in Early Diagnosis of Lobar Pneumonia in Children. J. Popper, New York.—p. 266.
- Typical Quinsy in an Infant. F. W. Graef, New York.—p. 267.
- Roentgen-Ray Studies of Cardiac Diseases in Children. W. M. Harts-horn and C. W. Perkins, New York.—p. 268.
- Myocarditis in Children. J. Epstein, New York.—p. 273.
- Diagnostic Points in Diphtheria. A. I. Blau, New York.—p. 275.
- Spasmophilia. S. A. Blauner, New York.—p. 276.
- Theory and Practice of Artificial Infant Feeding. S. Horwitt, New York.—p. 278.
- Infant Feeding. A. E. Mucklow, Brooklyn.—p. 283.
- Artificial Feeding of Infants. P. S. Potter, Syracuse, N. Y.—p. 287.
- Practical Consideration of Pirquet Feeding Method. Simplified for Children Up to One Year of Age. H. Apfel, Brooklyn.—p. 290.
- Febrile Conditions in Children. H. Goldstein, New York.—p. 293.
- *Comparative Chemical and Clinical Study of Boiled Butter and Cream in Infant Feeding. H. Lowenburg, Philadelphia.—p. 295.
- Blood Transfusion in Malnutrition and Infantile Atrophy. J. D. Leebron, Philadelphia.—p. 298.

Rapid Cure of Cystitis in Children.—The treatment employed by Hirst consists in the injection into the bladder of 5 c.c. of a 10 per cent. solution of silvol or neosilvol, to be retained, if possible. The retention of the solution seems to be of secondary importance, however. In most cases the solution will be retained from fifteen minutes to several hours. The younger the child the more likely the shorter

retention. The tenesmus promptly ceases, the frequency of urination diminishes or disappears, and the child is immediately comfortable and quiet. If the symptoms recur or the urine does not promptly clear, the injection can be repeated. Hirst has rarely found this necessary in the acute cases.

Boiled Butter in Infant Feeding.—Lowenburg reports his experience with the simple addition of boiled butter, instead of cream, to ordinary skim milk dilutions containing nothing more than skim milk, water, sugar and salt, with or without the addition of starch in the form of a cereal decoction or of a previously indeterminate amount of boiled and baked brown pulverized flour ball containing or not a small amount of extract of pancreatin and sodium bicarbonate. The addition of flour ball is mentioned to call attention to the fact that it is an old remedy of extreme usefulness and corresponds, in a sense, to the browned flour used in the butter-flour mixture of Czerny and Kleinschmidt and antedates this procedure by probably a century or more. The reason why it is possible to feed the large amount of fat as represented in the butter-flour mixture and not feed the same amount as represented by cream or top milk added to a formula which also contained starch, has not been stated definitely. The matter appeared to be of sufficient importance to Lowenburg to merit investigation, and the problem was first attacked clinically and later confirmed by chemical study. It was found that volatile fatty acids exist in butter in even less stable combination than they do in cream. Boiling butter five minutes slowly will drive off more than 50 per cent. of these acids. Boiling butter two minutes is sufficient for clinical purposes; however, from three to four minutes would probably be a safe average. Sweet butter contains less volatile fatty acids than does salted butter. Boiled butter appears to be a more acceptable addition to milk formulas than does cream. The presence of flour or other forms of starch, though acceptable, to ensure an even distribution of the fat, are not necessary essentials to the digestibility of boiled butter; especially they do not have to be present in equal amounts. Vomiting and diarrhea are neither inaugurated nor made worse by the addition of boiled butter; on the contrary, they often cease after the addition of this substance. Constipation has been the rule and the reaction of the stool has been found to be feebly or markedly alkaline. All infants free of parenteral disturbances, to whom this substance has been fed, have experienced a uniform gain in weight, averaging from 1 ounce to nearly 2 ounces per diem.

Nebraska State Medical Journal, NorfolkFebruary, 1923, **8**, No. 2

- Preliminary Report of Results and Conclusions from One Year's Experience in High Voltage Roentgen-Ray Therapy. R. L. Smith, Lincoln, Neb.—p. 41.
- Nonspecific Parenteral Therapy. C. H. Bastron, Lincoln.—p. 43.
- Relationship Between Sinus Infection and Lower Respiratory Tract Infection, with Special Reference to Apical Signs in Lung. G. W. Covey, Lincoln.—p. 47.
- *New Method of Treatment for Chronic Infections Involving Bone. H. W. Orr, Lincoln.—p. 50.
- Cases Illustrating Acute Treatment of Diabetes Mellitus. M. J. Breuer, Lincoln.—p. 52.
- Catheterization of Duodenum. C. Emerson, Lincoln.—p. 58.
- Fulguration in Treatment of Affections of Lower Genito-Urinary Tract. A. D. Munger, Lincoln.—p. 62.
- Modern Therapeutic and Diagnostic Measures. C. C. Johnson, Lincoln.—p. 65.
- Modern Scope of Orthopedic Surgery. J. E. M. Thomson, Lincoln.—p. 67.

New Method of Treatment for Chronic Infections Involving Bone.—The fundamental basis of the treatment which Orr proposes is founded on the principle of rest, and this applies to the wound and the wound surfaces as well as to the larger anatomic parts involved in the injury. He insists that at the time of injury, at the time of primary and secondary treatment, and throughout the entire course of the period of disability, there must be first, restoration of the injured parts to normal relationship; and second, immobilization and protection in correct position until complete healing has occurred. This may be accomplished either by plaster or by suitable splints. If the wound is infected, it must be drained. While draining, it must be dressed in such a way that it is not daily or twice daily reinfected. In operating for osteomyelitis of any kind or degree, Orr attempts to remove all infected

tissue, usually by "saucerizing" both soft tissue and bone. The wound is cleaned up as thoroughly as possible, and the saucer-like opening of both soft tissues and bone is gently packed with sterile petrolatum and gauze. The whole area is then covered with dry sterile gauze and the entire limb or part is encased in a well fitting cast of sufficient extent to immobilize completely the infected part. Casts are not split and no windows are cut. If there is no indication, on account of a rise of temperature, for a change in dressing, this dressing is left in place for from ten days to two or three weeks. Occasionally, on account of temperature or odor, the dressings must be changed earlier. One of the principal points in the treatment is infrequent dressing, that is, rest to the wound. The changing of dressings must be done with the same precautions as were employed at the time of the original operation. The wound is cleansed, dried, painted with iodine, a sterile petrolatum pack put on, and the whole is bandaged into place without in any way seriously disturbing the part or the wound. It should be left at each dressing in much the same condition as at the time of the original operation and first dressing. By this plan drainage is as free as may be required. Orr asserts that it is possible to treat such conditions in this way with much better results than formerly and without danger.

New York State Journal of Medicine

February, 1923, 23, No. 2

- *Functional Tests of the Circulation and Their Significance. W. W. Herrick, New York.—p. 53.
- *Causation of Symptoms in Cases Simulating Chronic Appendicitis. H. L. Prince, Rochester.—p. 59.
- *Intestinal Obstruction Following Unrecognized Cases of Appendicitis. A. M. Dickinson, Albany.—p. 61.
- Intestinal Obstruction; Its Early Recognition and Treatment. L. M. Kahn, New York.—p. 64.
- Should Gastro-Enterostomy be Performed in the Presence of Ruptured Duodenal Ulcer. D. Guthrie, Sayre, Pa.—p. 66.
- Functional Gastric Tests. A. H. Aaron, H. C. Schneider and E. C. Beck, Buffalo.—p. 69.
- General Management of Heart Conditions Among Children. M. G. Levy, Buffalo.—p. 71.
- The Physician in Court. G. W. Whiteside, New York.—p. 73.

Functional Tests of Circulation and Their Significance.—The development and practical value of the various means proposed for the estimation of circulatory function or efficiency are discussed by Herrick and the practical question propounded is: What will serve the practitioner as a rapid and fairly accurate test of circulatory efficiency? In addition to a developed clinical judgment and the information derivable from the ordinary history and physical examination, the simple exercise test will serve. The observation of the acceleration of the pulse on a definite amount of exercise and the time required for a return to the previous resting rate will satisfy ordinary clinical requirements. Should a higher degree of precision be desired, Schneider's system of rating is recommended. The special student may go further and adopt any or all of the more elaborate methods mentioned. The more factors he takes into account, the better. Always, however, he strives for the unattainable—an exact and thoroughly reliable test of circulatory efficiency.

Causation of Symptoms in Cases Simulating Chronic Appendicitis.—Whenever a patient complains of chronic pain in the right lower quadrant that is tender on examination, Prince says the appendix should be the last thing to consider, not the first; unless there is a history of colicky midline pain, the appendix is only a possible suspect. Indigestion, flatulence, constipation, etc., may be due to anything from cribbing to enteroptosis; from poor habits to bodily fatigue; from organic pathology to mental pathology, and until these fields have been surveyed, operations on the appendix should not be considered.

Intestinal Obstruction Following Unrecognized Cases of Appendicitis.—In the beginning, Dickinson's patient had an attack of appendicitis which was diagnosed as bladder trouble, from which he largely recovered, but with an appendix ready to light up with the slightest provocation. The last illness was caused by a recurrent attack of inflammation of the appendix, which, due to its damaged condition, allowed the infection to spread to the peritoneal cavity with the formation of pus. Nature in her attempt to wall off this infection

caused adhesions to form which were soft and vascular at first, but with a diminished blood supply they became tense and contracted, and so shut off the lumen of the bowel. The patient died in a state of shock.

Northwest Medicine, Seattle

February, 1923, 22, No. 2

- Psychoanalysis, Freudian and Otherwise—A Plea for Rational and Workable Methods. H. W. Wright, San Francisco.—p. 45.
- Facts and Fallacies About Psychotherapy. G. E. Price, Spokane, Wash.—p. 49.
- Focal Infection from Internist's Point of View. A. H. Rowe, Oakland, Calif.—p. 51.
- Focal Infection. A. D. Dunn, Omaha.—p. 57.
- Pain in and Referred from Sacro-iliac Joint. S. G. Brooks, Anacortes, Wash.—p. 60.
- Cooperation or Competition with Country Doctor. Lesson from Experience. H. E. Rich, Vernal, Utah.—p. 64.

Oklahoma State Medical Association Journal, Muskogee

February, 1923, 17, No. 2

- Suprapubic Prostatectomy. V. M. Gore, Clinton.—p. 29.
- Prostatectomy in Old. W. J. Wallace, Oklahoma City.—p. 31.
- Status Lymphaticus. J. W. Nieweg, Duncan.—p. 34.
- Urticaria. A. L. Stocks, Muskogee.—p. 36.
- Cooperation of Nurse in Prevention of Diseases in Infancy and Early Childhood. C. V. Rice, Muskogee.—p. 38.
- Diphtheria. C. W. Fisk, Kingfisher.—p. 40.
- Angina Pectoris. D. D. Paulus, Oklahoma City.—p. 43.
- Plastic Repair of Sectioned Tendo Achillis. M. E. Stout, Oklahoma City.—p. 44.

South Carolina Medical Association Journal, Greenville

February, 1923, 19, No. 2

- Prostatic Surgery. W. R. Barron, Columbia.—p. 395.
- Medical Nomenclature, Desirability of Uniformity and Suggestion of a Plan of Achievement. W. F. R. Phillips, Charleston.—p. 397.
- Blood Chemical Analysis in Diagnosis and Treatment. F. B. Johnson, Charleston.—p. 402.
- Pyelitis of Pregnancy. N. B. Edgerton, Columbia.—p. 406.

Virginia Medical Monthly, Richmond

February, 1923, 49, No. 11

- Ocular Examinations in Their Relation to General Medical and Surgical Investigation. G. E. de Schweinitz, Philadelphia.—p. 625.
- Diagnosis of Brain Tumor. B. R. Tucker, Richmond.—p. 628.
- Importance of Ophthalmology and Otology in Location of Intracranial Growths. J. Dunn, Richmond.—p. 633.
- Visual Disturbances in Brain Tumors. E. Hill, Richmond.—p. 636.
- Roentgen-Ray Examinations in Cases of Brain Tumor. D. D. Talley, Jr., Richmond.—p. 639.
- Treatment of Tumor of Brain. C. C. Coleman, Richmond.—p. 641.
- Difficulties Encountered in Diagnosis of Tuberculosis in Children. R. C. Carnal, Rochester, N. Y.—p. 644.
- Pneumoconiosis: Report of Two Cases. A. L. Gray and J. L. Tabb, Richmond.—p. 647.
- Case of Typhoid Fever with Perforation. R. M. Wiley, Salem.—p. 649.
- *Splenectomy in Treatment of Splenic Anemia. E. J. Horgan, Washington, D. C.—p. 652.
- Management of Urologic Cases. J. F. Geisinger, Richmond.—p. 656.
- *Relation Between Syphilis and Diabetes Mellitus. J. H. Smith, Richmond.—p. 662.
- Obstetric Statistics. M. P. Rucker, Richmond.—p. 665.
- The Neglected Latent Faculty. W. J. Jones, Crozet.—p. 670.
- Wail of the Young. S. Harnsberger, Warrenton.—p. 672.

Splenectomy in Splenic Anemia.—Horgan's patient, a male, aged 26, gave a history of having suffered for seventeen years, his illness progressively becoming worse. At the age of 20 he had a gastro-intestinal hemorrhage and another five years later. A surgeon made a diagnosis of gastric ulcer for which he did a gastro-enterostomy. Jan. 25, 1921, his abdomen was tapped on account of ascites, 12 quarts of fluid being withdrawn. Forty-five subsequent tapings were done. The total amount of fluid removed was 127 gallons. Examination revealed an hypertrophied spleen almost filling the left side of the abdomen. Cytologic study of the blood showed 2,500,000 red cells, and 7,700 white cells. The hemoglobin was 51 per cent. A diagnosis of splenic anemia was made and splenectomy advised. A markedly enlarged spleen was removed. The patient gained 50 pounds in weight, and there has been a steady improvement in the condition of his blood.

Syphilis and Diabetes Mellitus.—In a series of seventy-nine cases of diabetes Smith found clear evidence of syphilis in only two cases, both with heart lesions, probably also syphilitic.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 3, 1923, 1, No. 3244

- Fundamental Conceptions of Biology. J. S. Haldane.—p. 359.
*Late Results of Meningeal Hemorrhage of Newly Born. H. C. Cameron and A. A. Osman.—p. 363.
*Modification of Gastric Function by Means of Drugs. T. I. Bennett.—p. 366.
Treatment of Kala-Azar by "Bayer 205." W. Yorke.—p. 370.
*Treatment of Ankylostomiasis with Betanaphthol and Thymol. H. G. Phippen.—p. 371.
Splint for Median Paralysis: W. Mercer.—p. 371.
Relation of Sciatica to Sacro-Iliac Joint: Treatment by Diathermy. J. Cowan.—p. 372.
Portal Pyemia Secondary to Umbilical Infection. G. B. White.—p. 373.
*Excision of Fibula in Amputations Below Knee Joint. C. Noon.—p. 373.
*Bronchiectasis with Unusual Complications. I. J. Davies.—p. 374.

Meningeal Hemorrhage of Newly Born.—The etiologic relationship of prenatal cerebral hemorrhage to cerebral diplegia or paraplegia is discussed by Cameron and Osman. They state that among cases of infantile diplegia or paraplegia it is possible to recognize a group in which the defect is confined to the sensorimotor cortical areas. Probably all cases in this group are due to birth injury, although all cases of birth injury may not belong to the group. Since education at first proceeds almost entirely by sensorimotor paths there is in early childhood a deceptive appearance of gross mental defect. In later childhood progress may be rapid and recovery almost complete. The difficulty is overcome by the remarkable persistence in effort which is characteristic of most of these children. Even when voluntary movements remain stiff and awkward the child may be a quick learner by eye and ear. Incoordination may remain though character and intelligence may be on a high plane.

Modification of Gastric Function by Drugs.—Bennett agrees with other observers that atropin diminishes gastric secretion. The hypodermic injection of $\frac{1}{100}$ grain of atropin sulphate produces a very definite effect. Oral administration of atropin or belladonna produces the most marked effects. Pilocarpin increases gastric secretion. Sodium bicarbonate tends to excite the gastric mucosa to increased secretion, and this effect more than counterbalances the neutralizing effect of the salt. Other salts, particularly magnesium oxid and bismuth oxycarbonate, have far less stimulating effect, and the former, weight for weight, possesses greater neutralizing power. The rational method of employment of these salts in cases of hyperacidity is to administer them at such periods after meals as will lead to their neutralizing effect coming into play without there being the possibility of producing any marked effect on the actual gastric cells. In gastric therapy, sodium bicarbonate finds its greatest usefulness in those rather rare cases in which there is an excess of mucus secretion with low or absent hydrochloric acid. Atropin also delays gastric emptying; pilocarpin increases the rapidity of emptying. As to strychnin, Bennett says that in order to produce any beneficial effect on gastric atony very small doses of strychnin must be employed.

Treatment of Ancylostomiasis with Betanaphthol and Thymol.—Good results are reported by Phippen as accruing from his method of treatment of ancylostomiasis. He proceeds as follows: In the evening a powder containing calomel, 5 grains, and sodium bicarbonate, 10 grains, is given. This is followed at 7 a. m. with sodium sulphate, 3 drams, in 3 ounces of water. At 8 a. m. a mixture is given containing: betanaphthol, $\frac{1}{2}$ dram; thymol, $\frac{1}{2}$ dram; mucilage, q. s., and water to 1 ounce. At 10 a. m. the betanaphthol and thymol mixture is repeated, and the patient is kept in bed until about 4 p. m., not allowing him to have any food or liquid; after that time he is allowed a fluid diet only for the remainder of the day. Those desiring to leave hospital may do so, to report again in seven days for further treatment; but on the day after leaving hospital they send a specimen of feces for microscopic examination for the ova of ancylostoma. This is done after each treatment until the stool is free of these parasites. In no case were more than eight treatments required.

Excision of Fibula in Amputations Below Knee Joint.—In a considerable number of cases of amputation below the knee joint the presence of the fibula appears to cause considerable difficulty in fitting and wearing a satisfactory artificial limb. It is in these cases especially, in which atrophy has been excessive and in which pressure on the prominent head of the fibula causes pain, that Noon urges removal of the bone; in fact, he thinks it is an advantage to perform it in all cases in which the stump will not measure more than 4 inches.

Bronchiectasis with Unusual Complications.—In one of Davies' cases the accessory nasal sinuses became infected, requiring operation for empyema of the antra of Highmore. The fetid pus from the pulmonary cavities was often expelled in quantity and projected suddenly with much force into the mouth and nose, and infection of the accessory sinuses arose in this way. In a second case cited, the complications which chiefly deserve notice were a chronic glossitis, and a persistent severe albuminuria from chronic nephritis, both of which were probably of toxic origin from chronic infection.

Edinburgh Medical Journal

February, 1923, 30, No. 2

- Psychotherapy in General Practice. E. Bramwell.—p. 37.
*Fatal Case of Empyema Due to Anaerobic Infection. J. P. Leckie.—p. 60.
*Punctured Wound of Rectum and Bladder. W. M'D. Selby.—p. 68.

Fatal Case of Empyema.—The infection in Leckie's case was communicated directly from the pleura to the lung; and this infection attacked, in the first instance, not the air cells but the interstitial tissue of the lung. All the indications pointed to the conclusion that the disease was due, in this instance, to infection from extensive injury to the lungs, which permitted direct absorption of the bacteria into the blood stream. The nature of the infecting gram-positive fusiform bacilli could not be determined.

Punctured Wound of Rectum and Bladder.—Selby's patient inadvertently sat on the tines of a pitchfork and one tine penetrated his perineum, 1 inch to the right of the anus; the other point grazed the point of his penis. He was given anti-tetanic serum; otherwise nothing was done. The fork missed the rectum and narrowly missed the urethra. The man was walking about four days after receipt of the injury.

Indian Journal of Medicine, Calcutta

December, 1922, 3, No. 4

- Diabetes. J. P. Bose.—p. 252.
Dermatitis Blastomycetica Simulating Leprosy. J. C. Mukherji.—p. 263.
Colon Bacillus Infection. T. Sur.—p. 268.
Treatment of Compound Fractures. J. K. Banerji.—p. 276.
Seasonal Variations in Surgical Sepsis. K. K. Chatterji.—p. 280.
How Long Can a Fetus be Alive After Prolapse of the Hand? R. S. Tembe.—p. 282.
New Parasitic Ciliate Protozoon. (Anoplophrya cylindrica). E. Ghosh.—p. 283.

Lancet, London

March 3, 1923, 1, No. 5192

- Therapeutic Inoculation. L. Colebrook, E. J. Storer and A. E. Wright. (To be concluded.)—p. 417.
*Treatment of Menorrhagia by Radium. G. Blacker.—p. 421.
*Anesthetic Action of Pure Ether. H. H. Dale, C. F. Hadfield and H. King.—p. 424.
*Chronic Septic Splenomegaly. G. Ward.—p. 429.
Attacks of Arrested Respiration in the New-Born. G. F. Still.—p. 431.
Treatment of Chronic Intestinal Stasis by Colloidal Kaolin. A. C. Jordan.—p. 432.
Gonorrhea in Women Treated with Contramine Pessaries. G. W. Rundle.—p. 434.
Fracture of Head of Tibula. A. W. Lemarchand.—p. 434.
Case of "Infectious Mononucleosis." P. D. H. Chapman.—p. 434.

Treatment of Menorrhagia by Radium.—The results obtained by those who have employed radium in the treatment of hemorrhage from the uterus, Blacker says, show that it is a valuable and efficient method of controlling excessive hemorrhage at the menopause; that it can be employed safely for the same purpose in small uncomplicated fibroid tumors of the uterus, and that by its means excessive menorrhagia in young women, which resists ordinary methods of treatment, can be brought under control.

Anesthetic Action of Pure Ether.—Observations made by Dale, Hadfield and King give no support to the statements that pure ether is devoid of anesthetic action, and that the

activity in this direction of ordinary ether is due to impurities. On the contrary, so far as the anesthetic action of ether is affected by purification, it is in their experience improved by the removal of impurities, which irritate the respiratory mucosa and cause excessive secretion, but no other change. The purest ether is the best as an anesthetic.

Chronic Septic Splenomegaly.—Ward concludes that the underlying pathologic process is the same in all chronic splenomegalies of septic origin, and that the recognition of this origin will remove a large number of cases from the groups of idiopathic splenic anemia and Banti's disease. It also will greatly assist treatment.

Medical Journal of Australia, Sydney

Jan. 27, 1923, 1, No. 4

- Origin, Causation and Treatment of Rodent Ulcer. N. Paul.—p. 85.
Early Signs of Disease. W. Pern.—p. 90.
Diurnal Variations of Diastatic Content of Normal Urine. G. Cameron.—p. 91.
Napoleon I. C. MacLaurin.—p. 95.
Extensive Bronchiolectasis in a Young Child. D. L. Barlow.—p. 99.

Feb. 3, 1923, 1, No. 5

- Aims and Ideals of Antenatal Work. A. M. Wilson.—p. 113.
Antenatal Care. R. W. Chambers.—p. 115.
Antenatal Notes. R. Fowler.—p. 117.
Use of Digitalis in Heart Failure. H. Ritchie.—p. 119.

Feb. 10, 1923, 1, No. 6

- Psychic Aspect of Stammering: Its Basis, with Corrective Measures. T. G. Leary.—p. 141.
*Nervous Mechanism of Functional Disorders of Digestion, with Special Reference to Hypertonic and Hypotonic Dyspepsia and Nervous Colitis. C. B. Blackburn.—p. 145.
*Auricular Fibrillation; Death After Administration of Quinidin Sulphate. C. T. De Crespigny.—p. 150.
*Case of Primary Multiple Tuberculoma of Liver with Degenerated Hydatid Cyst. C. T. De Crespigny and J. B. Cleland.—p. 151.
Three Cases of Headache of Intranasal Origin. W. Sangster.—p. 152.
*Two Unusual Cases of Abdominal Cancer. J. B. Dawson.—p. 153.
Apparently Undescribed Form of Ligneous Edema of Neck. R. Palleine.—p. 153.

Treatment of Functional Disorders of Digestion.—In treating these cases Blackburn gives first consideration to the nervous side, eliminating worry, overwork, etc. Very thin, miserable, underfed patients are ordered to begin with rest in bed and massage. Diet requires careful attention, as most patients suffer from malnutrition. A liberal, plain, mixed diet, containing fresh butter, eggs, vegetables and fruit, is ordered. When there is a morning diarrhea, a low level lavage, with 1¾ to 2¼ liters (3 or 4 pints) of plain saline solution immediately on rising, or after the first evacuation, will often clear the bowel and restore a regular single evacuation. Drug treatment should aim mainly at improving the nerve tone. Astringents and intestinal antiseptics have, in Blackburn's opinion, a very limited sphere of usefulness.

Auricular Fibrillation: Death After Administration of Quinidin Sulphate.—On admission, de Crespigny gave his patient, male, aged 38, tincture of digitalis in doses of 1.8 mils every six hours for twenty-four hours and then 1.2 mils every six hours. Twelve days later quinidin sulphate was given three times a day in doses of 0.2 gm. for two days and thereafter in doses of 0.4 gm. every four hours. Three days later the pulse rate was 100 and quite regular. Examination of the heart revealed a systolic bruit at the apex. The same day, at 4:30 p. m., there was a sudden onset of coma with clonic spasms, but no evidence of paresis. The right pupil was fully dilated. The man died at 9 p. m. The postmortem examination failed to disclose any anatomic or pathologic condition which could account for the sudden death.

Primary Multiple Tuberculoma of Liver with Degenerated Hydatid Cyst.—de Crespigny and Cleland believe that in this case the hydatid disease of the liver may have lessened the protective influence of the cells of the liver against tuberculosis, with the result that an accidental introduction of tubercle bacilli, perhaps by the alimentary canal, led to their establishment in the liver. Primary tuberculosis of the liver is a very rare occurrence. No old tuberculous lesions were met with in other parts, though especially searched for.

Ring Carcinoma of Small Intestine: Carcinoma of Prolapsed Stomach.—Dawson relates the case of a woman, aged 62, who presented all the usual signs of partial and increas-

ing intestinal obstruction. The clinical picture seemed to fit the diagnosis of carcinoma of the large intestine. Abdominal palpation under the anesthetic revealed a palpable tumor situated 7.5 cm. to the right of the umbilicus, a small, hard lump anchored posteriorly. Exploration showed this to be a ring carcinoma of the small intestine. The second patient, female, aged 64, had an intense desire for food, followed by severe nausea when confronted with it. She also complained of rapid loss of weight and progressive weakness. A mass the size of an orange was clearly visible in the midline, just above the umbilicus. The mass was unusually mobile; there was no part of the abdomen to which it could not be pushed, but it was not possible to place it in the pelvic basin. The primary diagnosis was carcinoma of a prolapsed transverse colon. The lump proved to be a cancer of a prolapsed stomach.

Journal of Oriental Medicine, Dairen, Manchuria

February, 1923, 1, No. 1

- Formation of "Crusta Phlogistica" on Venous Blood. J. Murakami.—p. 3.
*Position of Heart in Acute Pericarditis with Effusion. G. Totani, S. Okada and Y. Shima.—p. 11.
Constitution of "Tien-shien-tszu." M. Nakao.—p. 19.
*Problem of Child Welfare in Manchuria. T. Suzuki.—p. 23.
*Tuberculosis Among Japanese in Manchuria. H. Yanagihara.—p. 29.
Influence of Sun and Color Stain Solutions on Hemolytic Action of Red Blood Corpuscles Taken from Goats. H. Yanagihara and H. Hirata.—p. 31.
Case of "Situs Inversus Viscerum Totalis." J. Murakami and H. Nishida.—p. 33.
Differential Diagnosis of Exudates and Transudates by Means of Permanganate Reduction Strength. K. Ikeda.—p. 34.
*Study of Presence of Acetone-Body in Urine of Measles Patient. Nagahara.—p. 35.
Treatment of Dysentery with Bakteriophage. T. Suzuki, K. Tokuye and K. Hatai.—p. 36.

Rotation of Heart in Acute Pericarditis.—A case of pericarditis with effusion is reported by Totani, Okada and Shima, in which a conspicuous deviation was noted in the electrocardiograms during the progress of the disease which suggested that rotation of the heart around its own axis occurred, accompanied by displacement. The importance of electrocardiographic studies in cases of pericarditis is discussed.

Infant Mortality in Manchuria.—The infant mortality in Manchuria (averaged for a period of two years), according to Suzuki, was 134—, lower than in the large cities of Japan proper. The highest mortality rate was for infants under 1 year of age. The second highest period was from the ages of 3 to 5. The third highest period was in the third decade. The five most important children's diseases in Manchuria are: pneumonia, enteritis, beriberi, meningitis and tuberculosis. Premature births occur frequently. In 1918 there were 1,690 births and eighty-three stillbirths.

Tuberculosis of Skin Among Japanese.—Of 9,421 Japanese in Manchuria who had tuberculosis, Yanagihara found only eighteen (0.19 per cent.) with tuberculosis of the skin. In Japan proper, this disease is far more common, ranging as high as 0.76 per cent. Yanagihara ascribes the less frequent occurrence of skin tuberculosis among the Japanese to: the Japanese are rich in skin pigment; their habits of living and clothing make it easier to take sun baths; the Japanese custom of taking hot baths frequently; the diet, consisting largely of vegetables instead of meat.

Acetone in Urine in Measles.—Of the twenty-five children who had measles, fifteen showed the presence of acetone in the urine. It was first visible on the third day of the disease, and was present in considerable amount from the fifth to the eighth day. After the eleventh day it gradually lessened in amount, and by the thirteenth day it had disappeared altogether. The appearance of the acetone was coincident with the appearance of the Koplik spots, and was very heavy during the eruption period.

South African Medical Record, Cape Town

Feb. 10, 1923, 21, No. 3

- Widal versus Complement Fixation. A. Pijper (to be continued).—p. 51.

Annales des Maladies Vénériennes, Paris

December, 1922, 17, No. 12

- *Fatal Case of Late Jaundice Due to Neo-Arsphenamin. J. Golay.—p. 881.
*Absorption of Bismuth Preparations. Lévy-Bing et al.—p. 887.
*Mycotic Chancre Simulating Syphilitic Chancre. Mouradian.—p. 899.
Fordyce's Disease Limited to Vulva. R. Barthélemy.—p. 901.

Fatal Case of Jaundice Due to Arsphenamin Derivative.—Golay publishes the history of a patient who died from yellow atrophy of the liver two months after the last injection of an arsphenamin derivative and ten days after the last injection of salicylate of mercury. The Wassermann reaction was negative. He attributes this fatal outcome to the toxic influence of arsphenamin on the liver and refutes the theory of syphilitic origin of such disturbances of the liver.

Radiographic Research on the Absorption of Bismuth Preparations.—Lévy-Bing, Belgodère and Auclair publish roentgenograms of the results of 100 intramuscular injections of 15 cg. of bismuth hydroxid.

Mycotic Chancre Simulating Syphilitic Chancre.—The patient had a negative Wassermann reaction and recovered promptly after treatment with iodids.

January, 1923, 18, No. 1

- *Syphilis of the Sympathetic Nervous System. A. Lévy-Franckel and E. Juster.—p. 1.
Elimination of Arsenicals by the Urine. Lévy-Bing and Féron.—p. 24.
Gummatous Osteitis in Infant. H. Haxthausen.—p. 59.

Syphilis of the Sympathetic Nervous System.—Lévy-Franckel and Juster review pathologic conditions due to affections of the sympathetic nervous system or endocrine glands, and emphasize the importance of considering the possible syphilitic etiology in these diseases. It is important in diabetes, exophthalmic goiter, prurigo, Raynaud's and Addison's diseases, acanthosis nigricans, though tuberculosis is the much more frequent cause in Addison's disease, and cancer in acanthosis. Arrhythmia may also be due to syphilis.

Gynécologie et Obstétrique, Paris

December, 1922, 6, No. 6

- *Treatment of Uterine Fibromas. J. B. Kouwer.—p. 385.
*Ovarian Cysts and Pregnancy. J. Szymanowicz.—p. 405.
*Partial Hysterectomy. H. Hartmann.—p. 420.

Radiotherapy and Surgical Treatment of Uterine Fibromas.—Kouwer recommends restricting the treatment with roentgen rays to an extremely small number of uterine fibromas. He finds that more than half do not need any treatment at all. For the rest, laparotomy is the method of choice. He reviews his failures and finds that only in two patients who died, would roentgenotherapy have been indicated. He believes that the dangers from operation should be rated lower than the dangers from roentgen and radium treatment, to which he makes three objections: 1. The roentgen rays castrate the patient unnecessarily. It would be a mistake to believe that the ovary is important only in young persons. Even after the fiftieth year there may be very severe ovariprival symptoms after castration. Among 134 laparotomies performed by Kouwer, he was able to save both ovaries in 107 women. His second objection to radiotherapy is that it sacrifices the uterus also, while operation may allow gestation in suitable cases. The third objection is that radiotherapy is hazardous in a condition in which the exact diagnosis cannot be made without an operation. Radiologists do not treat submucous or polypous fibroids. Yet the diagnosis of this condition was impossible before operation in 24 out of 45 of Kouwer's cases. The same uterus may contain different sorts of fibroids. Sarcomatous or carcinomatous changes of the tumor (another admitted contraindication for radiotherapy) usually cannot be clinically recognized. Diagnostic curettage in a uterine cavity which is deformed by fibromatous masses, cannot reach the whole inner surface, but can injure the tumor and cause necrosis or infection. He gives statistics on unexpected circumstances found in his 493 operations, and publishes 13 failures of radiotherapy performed by competent radiologists. He protests energetically against the "innocence and efficiency" of radiotherapy of fibroids. His opinion on the treatment of climacteric menorrhagia is the same. His treatment of this condition consists in energetic curettage, which is also indicated for diagnostic

purposes, and hot (at least 50 C.) vaginal irrigations for several months. He has not seen any cases which would have required hysterectomy or castration with roentgen rays.

Ovarian Cysts and Pregnancy.—Szymanowicz publishes thirty-five cases of ovarian cysts in pregnancy. Only 8.6 per cent. of the operations were followed by a miscarriage. He operates immediately after the diagnosis is made. The only exceptions are cysts of corpus luteum with hydatidiform mole, because they disappear, and bilateral ovarian cysts in women who insist on having children.

Fundus Uteri Hysterectomy.—Hartmann describes in detail his technic for the operation recommended recently by Lecène and Gaudart d'Allaines. The operation consists in the ablation of the fundus uteri and both tubes, with conservation of at least a large fragment of an ovary. Menstruation continues in such cases; this is especially important in young nervous women.

Presse Médicale, Paris

Feb. 7, 1923, 31, No. 11

- *Epilepsy and General Paralysis. L. Marchand.—p. 121.
*Materia Medica of Pituitary Preparations. Choay.—p. 123.
*Intraspinal Anesthesia. R. Bloch and Hertz.—p. 125.

Feb. 10, 1923, 31, No. 12

- Epididymectomy in Genital Tuberculosis. Marion.—p. 129.
Rapid Serial Roentgenography in Diagnosis of Duodenal Ulcers. A. Carrié and Keller.—p. 130.
Splenectomy with Adherent Spleen. P. Lombard.—p. 132.
Wound of Heart with Thrombosis in Left Axillary Artery. G. L. Hartmann-Keppel.—p. 133.
The Abuses with New Remedies. L. Cheinisse.—p. 134.

Epilepsy and General Paralysis.—Marchand discusses the literature on syphilis in epileptics, epilepsy in syphilitics, and the connection between infantile paralysis and epilepsy with inherited syphilis. It is often difficult to distinguish true epileptic seizures from the convulsions which may usher in general paresis. The term syphilitic epilepsy should be reserved for cases in which the seizures form the dominant symptom of the specific infection. In certain cases the epilepsy subsides under specific treatment, but the seizures may return years afterward accompanying general paralysis. In one of his own cases the first seizures occurred at the age of 22, a few months after infection; no seizures were observed after the age of 28 for five years. Then they reappeared at 33, and two years later the clinical picture of general paralysis was complete. The history of the case, the course and the findings in the spinal fluid differentiate the affection sooner or later.

Pituitary Extracts.—Choay compares the pituitary from different animals, and different parts of the organ, and gives the preferable technic for obtaining extracts.

Intraspinal Anesthesia.—Bloch and Hertz cite further experiences of their own and of others which confirm, they say, the advantages of intraspinal injection of caffeine in case of syncope from intraspinal injection of procain. It answered the purpose perfectly in eleven of the thirteen cases in which it was applied after failure of artificial respiration and subcutaneous injection of caffeine. In the one fatal case the syncope occurred after hysterectomy as the table was lowered to the horizontal. Intraspinal injection of 0.1 gm. of caffeine revived the patient, but only temporarily, and a second injection had no apparent effect. The others, all with extreme syncope, recovered after intraspinal injection of from 0.25 to 0.37 gm. In prophylaxis, they mix 0.15 gm. of the procain preparation with 0.12 gm. of caffeine and 0.15 gm. of sodium benzoate (to dissolve the caffeine).

Revue Médicale de la Suisse Romande, Geneva

December, 1922, 42, No. 12

- Traumatic Neuroses in the Insured as Observed by a Judge. P. Piccard.—p. 769. Cont'd.
*Serous Apoplexy Following Arsphenamin. R. Gonin.—p. 775.
Elementary Notions of Physical Chemistry. J. Perrier.—p. 791.
*The Cerebrospinal Fluid in Tuberculous Meningitis. G. Bickel.—p. 800.
*Caffeinism. R. Guillermin.—p. 808.
A New Fracture of the Calcaneum. H. Vulliet.—p. 815.

Serous Apoplexy Following Arsphenamin.—Gonin publishes two cases of serous apoplexy (hemorrhagic encephalitis) following administration of arsphenamin. He reviews the present knowledge of such mishaps during the treatment of

syphilis. This condition usually starts on the third day after the injection, with headaches and convulsions, which may be followed by coma and death within from twenty-four to forty-eight hours. The serous apoplexy is due to intolerance for the drug, and may occur even in the first stage of syphilis. Serous apoplexy follows more often the second or third injection, while the Herxheimer reaction is more likely to appear after the first. The apoplexy requires immediate administration of epinephrin (0.25 mg. intravenously, followed by injections of from 1 to 2 mg. intramuscularly), and a change of the drug. Herxheimer's reaction passes, if the antisyphilitic treatment is continued. It is impossible to predict serous apoplexy. The condition is often fatal, but there are no sequelae if the patient survives. Milian calls it a nitritoid crisis localized in the brain. The Germans call it hemorrhagic encephalitis.

The Evolution of the Cerebrospinal Fluid in a Case of Tuberculous Meningitis with Recovery.—Bickel publishes a series of eleven samples of very carefully examined cerebrospinal fluid taken from a case of bacteriologically confirmed tuberculous meningitis, which recovered. The early strong lymphocytosis changed into exclusive lymphocytosis on the hundred and sixth day. The number of cells diminished with the amelioration of the clinical state, but remained above normal. The amount of protein paralleled the cell count, while chlorids and sugar were low at the beginning and increased slowly. The permeability for nitrates was great at the beginning and diminished afterward. Many of these rare cases which recover from the first attack of tuberculous meningitis, die from another attack.

Caffeinism.—Guillermín reviews the different findings of untoward effects of coffee. He states that coffee prepared in the Turkish fashion does not cause insomnia, and keeps the aroma and the stimulating effects of the coffee. He attributes this to the loss of some noxious volatile substances originating in the roasting of the bean. Turkish coffee is prepared, he relates, by boiling the finely pulverized coffee in an open container. It is ground as fine as flour. It is boiled up three times and the boiling is interrupted.

Archivio Italiano di Chirurgia, Bologna

December, 1922, 6, No. 5

- Wounds of the Common Carotid. D. Calzavara.—p. 433.
 *Asepsis in Gastro-Intestinal Operations. F. Cinquemani.—p. 445.
 Retroperitoneal Hydatid Cyst. A. Caucci.—p. 481.
 Supra-Umbilical Spinal Anesthesia. M. Fasano.—p. 507.
 Improved Instruments for Resection of Stomach. G. Solaro.—p. 519.

Asepsis in Gastro-Intestinal Operations.—Cinquemani gives twenty-four illustrations of various devices and methods devised by Parlavacchio and his school at Palermo to insure asepsis in operations on the stomach and bowel. One of his principles is that the two clamps must be applied so close together that there is room between them only for the iodized bistoury to sever the bowel. Not a glimpse is obtained of the mucosa of the stumps. His enterostome is two clamps that fit and lock into one when the clamped stumps are brought together. The serosa is then drawn up and sutured over the double locked clamps. For side-to-side anastomosis, he takes up a fold in the two loops and sutures the serosa side to side, leaving the ends of the thread long, with a third thread in the center to draw up the sutured loops into a peak. This peak is then grasped with a clamp the blades of which are broad oval plates that compress the peak over a broad extent, and expel all the contents and blood from both loops. Then an elastic curved clamp, which fits close against the convex edge of the clamp plates, is applied below, and the side-to-side suture is completed above the narrow curving branches of this clamp. For exclusion of the pylorus, cotton tape, 1.5 cm. wide, is used. The ends are sutured, not tied, as a knot injures the tissues. The tape method has proved harmless and effectual in years of practice. For resection of the bowel, he draws the loop outside the peritoneum, and sutures the incision behind it, before he cuts the bowel with the end-to-end technic described above. In a recent case of extensive cancer requiring resection of part of the ileum, cecum and colon, there was suppuration in the preperitoneal space, with final recovery. If the loop had been inside the peritoneum, this complication would certainly have been fatal.

Riforma Medica, Naples

Jan. 8, 1923, 39, No. 2

- *Permeability of Meninges for Iodids. G. de Toni.—p. 25.
 *Gastric Secretion in Cardiac Insufficiency. M. Garofeano.—p. 27.
 Colloidal Cancer of Vater's Papilla. A. Angeli.—p. 28.
 Radical Treatment of Ingrowing Nails. D. Taddei.—p. 33.

Permeability of Meninges.—De Toni injected dogs with 0.05 to 0.1 gm. of potassium iodid per kilogram of body weight. The injections were made into the fourth ventricle or subcutaneously, and the resorption was tested by the conjunctival reaction to calomel. As Sicard has already demonstrated, there was no difference in the resorption by these different routes. In children the results were similar, both in the healthy and in those with tuberculous meningitis, the resorption being tested by the urine. Other drugs were also resorbed rapidly from the cerebrospinal fluid. To test the opposite mode of resorption—from blood into the cerebrospinal fluid—de Toni injected calomel into the fourth ventricle. After the subcutaneous injection of potassium iodid, mercurous iodid was found in the ventricle, thus establishing the permeability of the meninges.

Gastric Secretion in Cardiac Insufficiency.—Garofeano examined the gastric secretion in twelve cases of cardiac insufficiency. Free hydrochloric acid was diminished or absent, especially with mitral stenosis. The combined and total acidity was also diminished, and organic acids (in four cases, lactic acid) were present in all of the cases. Pepsin was diminished, and absent in two cases. He believes that the dyspepsia in heart disease is of the hypopeptic type, and with mitral disease is due to the venous stasis, the passive congestion affecting the stomach as well as other organs. With aortic affections, it is due to the inadequate blood supply.

Archivos Españoles de Pediatría, Madrid

December, 1922, 6, No. 12

- *Inherited Syphilis Aroused by Trauma. González J. Meneses.—p. 705.
 Dyspepsia in Infants and Young Children. A. R. Lozano.—p. 710.

Latent Inherited Cerebral Syphilis Aroused by Trauma.—Meneses reports that epileptiform seizures developed for the first time twenty days after the boy had been knocked down by a bicycle. The typical seizure was followed by repeated jacksonian convulsions. The Wassermann reaction was positive, and stigmata of syphilis were unmistakable, although there had been no previous symptoms. After a decompression operation, the convulsions continued but only nine or ten occurred during the day instead of the twenty or thirty at first. Mercurial treatment was instituted and supplemented with neo-arsphenamin. There were no further convulsions after the first intravenous injection of the arsenical, and the child now aged 5, has developed apparently normally during the year since. Meneses adds that if specific treatment had been begun earlier, the operation on the skull might possibly have been avoided. The trauma had evidently reduced the defensive forces of the brain and allowed the spirochetes to bring on the acute hydrocephalus responsible for the convulsions. The Rolandic region appeared entirely normal.

January, 1923, 7, No. 1

- *Atrophy of the Lower Jaw. V. Juaristi and D. Arraiza.—p. 5.
 *Spastic Paralysis in Children. R. Duarte Salcedo.—p. 14.

Acquired Atrophy of the Lower Jaw.—Juaristi and Arraiza give several illustrations of four cases and cite others, all presenting malformation of the mandible in consequence of some infectious process or trauma. The atrophy may be due to long immobilization, or loss of substance, or it may be the result of injury of the sympathetic nervous system. They have witnessed it develop from this latter cause the same as when the cause acts on a long bone. They urge the necessity for prompt measures to correct any tendency to ankylosis, since otherwise speech and the teeth develop defectively, while atrophy may entail grave deformity.

Congenital Spastic Paralysis in Children.—Duarte Salcedo contends that infantile hemiplegia, Little's disease and other forms of spastic paralysis in children are not isolated affections but form a great syndrome of spastic paralysis from congenital encephalopathies. The clinical picture varies with the different regions involved, but the etiology, pathogenesis

and treatment have characters common to all. Inherited syphilis is responsible for about 95 per cent. of the cases; birth trauma for 4 per cent.; and infections and intoxications for 1 per cent.

Repertorio, Bogota

October, 1922, 14, No. 1

Bill Before Congress to Regulate Practice of Medicine in Colombia.

L. F. Angel, J. I. Vernaza and M. J. Lucio.—p. 5.

Benzyl Benzoate in Treatment of Spastic Conditions. V. Peñuela Rodríguez.—p. 6.

*Espundia in Colombia. A. Peña Chabarría.—p. 10.

Espundia in Colombia.—Peña Chabarría states that none of the early medical writers mentioned espundia or Velez bubon, as he calls it, and it must be of comparatively modern importation. Camacho was the first South American to describe it, in 1889, but Mateus and Franco in 1893 described it more fully—all in Colombia. Its nature as a blastomycosis is now generally accepted but the intermediate host in Colombia seems to be *Rhodnius prolixus* and not *Conorhinus megistus*, as in Brazil. The disease has two phases, first the skin ulcerates and later the mucosa of nose, pharynx and throat develops ulcerations. The first stage lasts from six months to two years, as a rule, but the ulcers may persist for years, although seldom entailing much of a defect. He has encountered four cases of this blastomycosis among 148 patients with various skin ulcerations, in the last eight months. In the second stage, the ulcerations in the nose and throat are destructive; they rarely appear until the skin lesions are subsiding. An important differentiating point is that the lymph glands are not enlarged. The article is continued.

Revista del Instituto Bacteriológico, Buenos Aires

December, 1922, 3, No. 2

Atypical Paratyphoid B Bacilli. A. Bachmann.—p. 3.

*Prophylaxis of Bubonic Plague. M. V. Carbonell.—p. 17.

*Oligodynamia. R. Wernicke and A. Sordelli.—p. 29.

Natural Reinforced Rabies Virus. R. Biglieri.—p. 57.

*The Kurloff Bodies. A. Senez.—p. 61.

Strongyloidosis of the Dog Kidney. G. Pacella and R. Esquivel.—p. 73.

Sterilization of Grain Bags.—Carbonell gives an illustrated description of a furnace and hot air chamber for sterilization of burlap grain sacks by superheated air. An electric ventilator forces the air through the sacks down to the bottom of the furnace and draws the air up through the furnace again, a constant circle. Thousands of bags can be sterilized rapidly in this way, supplemented by the usual formaldehyd and ammonia sterilization in the same hot air chamber.

Research on Oligodynamia.—This term was coined by Naegeli to express the toxic action exerted by certain metallic salts in extremely dilute solutions. The research here described shows that simple contact of the metal with the water—even for months—does not confer oligodynamic properties on it. But when the metal salt is dissolved in the water, it rapidly becomes strongly oligodynamic. Hence the oligodynamia observed with distilled water is due to the minute quantities of dissolved copper in it. And the dissolving of the copper is due to the gases present.

Kurloff Bodies.—Senez concludes from his extensive research that the Kurloff bodies in the mononuclear corpuscles of guinea-pigs are parasites, of the type of Prowazek's chlamydozoa. They are not found in the blood at birth but they appear the seventh day, even if the young are kept separate from the mother. Attempts at transmission never succeeded.

Revista de Medicina y Cirugía, Havana

Feb. 25, 1923, 28, No. 4

*Indications for Tonsillectomy. Fernández Soto.—p. 127.

*Therapeutic Transfusion of Blood. A. Recio and A. Figueras.—p. 145. Begun in No. 3, p. 85.

Indications and Contraindications to Tonsillectomy.—Fernández Soto relates that Celsus removed tonsils twenty centuries ago, but Farlow of Boston resuscitated the operation in the nineties. This communication is the result of his personal impressions from 204 cases long under supervision. He disapproves of removing the tonsils before the age of 6. The best and most durable results were in children between

7 and 12. Before this age he temporizes, merely removing obstructing adenoids, as the operative shock or anesthesia may prove fatal, with a tendency to the status lymphaticus, while the children are more apt to have acquired immunity to respiratory infections by the age of 7 or older. Chronic otitis and mastoiditis are rare in Cuba, so that postponing the tonsillectomy is less dangerous than farther north. One young man died from pulmonary tuberculosis which flared up a month after the tonsillectomy, although there had been no signs of an active process before. He ascribes this fatality to the general anesthesia. He now operates only in afebrile cases, and only under local anesthesia. He emphasizes the need for keeping patients in bed after tonsillectomy; two days for adults and five days for children. This gives a chance to feed the children properly. Otherwise they refrain from eating as it is painful, and they lose in weight.

Therapeutic Transfusion of Blood.—Recio and Figueras have organized a systematic service for blood transfusion in Cuba with classified donors at the army hospital. They describe the history of the procedure, the various methods in vogue, and the indications and contraindications. The Lindemann indirect method was selected as superior to others; the blood is not treated with any chemical. The donors belong to the army and are thus available at any hour. The remuneration has been fixed at \$50. The amounts transfused have ranged from 100 to 1,000 c.c. during the six months the service has been in operation. The third and the fifth patients in the series of thirty-four died within three hours of the transfusion, both presenting the same picture of precordial distress, vomiting and drop in blood pressure. In all the other cases the outcome surpassed all anticipations. The details of twenty-seven cases are given in full. Aside from urticaria in four cases in which the amount of blood transfused was more than 500 c.c. no by-effects were observed.

Revista Médica del Uruguay, Montevideo

December, 1922, 25, No. 12

Case of Essential Syphilitic Fever. J. Montes Pareja.—p. 853.

*Lumbar Puncture in Diabetes. C. Bordoni Posse.—p. 858.

Bismuth in Treatment of Inherited Syphilis. M. Ferrería.—p. 862.

*Sensory Disturbances with Cortical Lesions. A. Sarno.—p. 865.

Cure of Cicatricial Stenosis of Esophagus. Aquiles di Lorenzo.—p. 877.

Pneumococcus Peritonitis in Infant. P. E. Duprat.—p. 882.

Osteomyelitis with Multiple Foci. R. M. del Campo.—p. 888.

Serologic Tests of Cerebrospinal Fluid. A. Prunell.—p. 893.

Lumbar Puncture in Diabetic Acidosis.—Bordoni Posse adds another case to the few on record in which diabetes seemed to be favorably influenced by lumbar puncture. Lhermitte has reported subsidence of glycosuria and polyuria after lumbar puncture in two cases of diabetes. In Bordoni Posse's case there was intense acetonuria and diaceturia, and 6 liters of urine. After lumbar puncture, without change of diet, the glycosuria dropped from 360 to 5 gm. and the polyuria to 1 liter. The acetonuria persisted, but finally subsided after an oatmeal day. The man, aged 35, left the hospital free from glycosuria and polyuria and acetonuria. The diet contained 1,900 calories and 60 gm. of carbohydrates. The sugar content of the blood was 1.15. The author suggests that lumbar puncture relieves pressure on the central nerve centers which control the sugar content of the blood.

Sensory Disturbances from Cortical Lesions.—Sarno describes a personal case and mentions several from the literature which indicate a radicular distribution of sensory disturbances from injury of the cerebral cortex.

Archiv für Gynäkologie, Berlin

Jan. 27, 1923, 116, No. 3

*The Capillary Circulation in Eclampsia. Hinselmann et al.—p. 443. Relations Between Polycythemia and Hypercholesteremia in the Pregnant. R. Benda.—p. 506.

*Metabolism and Internal Secretion During Pregnancy. Knipping.—p. 520.

*Pregnancy Kidney Disease. Hinselmann et al.—p. 535.

Wassermann and Sachs-Georgi Reactions During Childbirth. Willenbücher.—p. 558.

*Action of Placenta Extracts: Placenta Optones. E. Puppel.—p. 571.

Teratoma of Umbilical Cord. P. Haendly.—p. 578.

*Immunization Against Streptococcus Infection. N. K. Louros.—p. 589. Overlapping Placentas with Bichorial Twins. R. Meyer.—p. 599.

*Metastasis with Ovarian Cancers. A. Lessing.—p. 621.

Angiosarcomamyoma of the Uterus. R. Meyer.—p. 638.

*Nature of the Different Cells of Sex Glands. F. Scheunig.—p. 660.

The Capillary Circulation in Eclampsia.—Hinselmann and his co-workers give charts showing the fluctuations in the circulation through the capillaries in nineteen cases. They have records of six other cases and Nevermann has published eight others. There is thus a total of thirty-three cases of eclampsia systematically tested. The circulation in the capillaries was found abnormal in 90 per cent.; "a new fact," they say, "of the utmost importance." Intermittent spasm of the capillaries repeatedly arrested the blood stream completely, but even between these periods of complete stasis the blood stream in the capillaries was found exceptionally sluggish. Delivery is the most potent means at our command for influencing the capillary circulation. Venesection likewise aids, but no influence was manifest from the drugs and organ extracts tested to date. A tendency to capillary spasm was found in healthy pregnant women to an average stasis of 4.6 per cent.; in kidney disease, just before delivery, the stasis averaged 16 per cent. In severe eclampsia it averaged up to 100 per cent.; that is, the circulation in the capillaries was entirely arrested. The pregnancy induces the angiospasm. The angiospasm subsides after delivery, sometimes promptly, but usually slowly. Search for the reasons for this leads into an entirely new field. There is every reason to assume that the tendency to spasm—which we can inspect and record in the capillaries—affects the internal organs likewise. A skin-kidney-brain combination would explain much of the clinical picture in eclampsia. One of the charts in a severe case of pre-eclampsia shows in one eight-minute period that the stream was arrested sixty-three times, the stasis forming 42 per cent. of the total period.

The Internal Secretions During and After Pregnancy.—Knipping presents evidence to sustain the assumption that changes in the pituitary are responsible for the changes in the basal metabolism toward the close of pregnancy. The pituitary seems to be responsible also for the tendency to corpulence at the menopause. He thus exculpates the ovary and thyroid, and incriminates the anterior lobe of the pituitary, which opens up a prospect of more effectual treatment, especially in the corpulence or cachexia that develops in connection with a childbirth.

Pregnancy Kidney Disease.—Charts from six cases demonstrate the extremely abnormal condition of the capillary circulation in pregnancy kidney. The supply of blood to the tissues is thus intensively impaired. The disturbance in the circulation may persist for months afterward. The pregnancy kidney disease seems to obey in every respect the laws of acute kidney disease of any kind. Microscopic study of the capillary circulation seems to be giving an insight into some of these laws.

Experimental Research with Placenta Extracts.—Puppel asserts, on the basis of the research described, that placenta extract obtained by Abderhalden's method exerts a specific action indicating an internal secretion.

To Immunize Against Puerperal Infection.—Louros has been applying on a large scale at Athens preventive vaccine therapy of streptococcus infection, when the women could be treated a few days before delivery. He also applied vaccine treatment as a routine measure at delivery. The agglutinins in the blood seemed to indicate that the preferable method was the injection of 250 and 500 millions about the twentieth and the tenth day before delivery. There were no failures, he says, among the hundreds of women thus treated. He adds that Bumm is now trying at Berlin this active and simultaneous immunization against puerperal streptococcus sepsis.

Ovarian Cancer.—Lessing reports four cases of primary or secondary ovarian carcinoma. In one case the primary cancer was in the left ovary and there was metastasis in the other ovary, both tubes and the uterus.

Nature of Different Cells in Sex Glands.—Scheunig examined sections of testicles and ovaries from fetuses at 2 months to term, with special study of what Steinach calls

F cells. Six colored plates of the findings from thirteen fetuses sustain his views, which do not harmonize with those of Steinach.

Archiv für klinische Chirurgie, Berlin

Jan. 27, 1923, 122, No. 3

Case of Cystic Adamantinoma. H. Winter.—p. 567.

Bone Changes from Inadequate Diet. Seeliger.—p. 588.

*Fatality After Local Anesthesia. R. Eidens.—p. 603.

Idiopathic Cysts in Common Bile Duct. K. Zipf.—p. 615.

Phlegmons and Gangrene of Penis and Scrotum. Esau.—p. 635.

Subcutaneous Rupture of Rectus Muscle. K. Wohlgenuth.—p. 649.

Chronic Parotitis. K. Vogeler.—p. 655.

*Exophthalmic Goiter: Diagnosis and Prognosis. A. Troell.—p. 664.

*Postoperative Tetany. M. and K. Grasmann.—p. 699.

Hydronephrosis from Accessory Renal Vessels. C. Häbler.—p. 732.

*Resection of Choroid Plexus. C. Hinrichsmeyer.—p. 742.

*Transfusion of Blood to Arrest Hemorrhages. H. Stegemann.—p. 759.

Intestinal Injury Diagnosed from Track of Bullet. Büsing.—p. 782.

Fatalities with Local Anesthesia.—Eidens compares a personal fatal case of procain poisoning with a number of similar cases from the records. In all, the anesthetic had been injected into the neck region. In his case this was for removal of a cancer of the tongue in a man aged 62. Analysis of the data teaches that the dose of procain should be considerably smaller for blocking the nerves in the neck than elsewhere, as the balance between the vagus and sympathetic systems here is easily upset. The anesthetic is absorbed by the large nerves or reaches the nerves by getting into the blood. If collapse occurs, injection of 1 c.c. of 1:1,000 epinephrin solution directly into the heart might be tried as a last resort.

Exophthalmic Goiter.—Troell's report on sixty-two cases of exophthalmic goiter since 1919 has already been summarized (May 27, 1922, p. 1674), when published elsewhere. He reiterates that the anatomic changes in the thyroid are what determine the special symptoms in the different cases. In particular, the evidence indicates that not merely excessive, but perverted, functioning of the thyroid may be responsible for exophthalmic goiter. The resulting symptoms fall naturally into two groups. Each group is influenced by certain measures and not by others. The more toxic goiters are of the diffuse type; the blood pressure is high, the tolerance for carbohydrates low.

Postoperative Tetany.—Study of facts suggests that lack of care in avoiding the removal of the parathyroids is increasing the incidence of postoperative tetany. The upper parathyroids can almost always be left unmolested, by leaving intact the posterior branch of the superior thyroid artery. The authors denounce the practice of ligating all four arteries, and expatiate on the gravity of postoperative tetany. In Guleke's compilation of 160 cases, it proved fatal in 25 per cent. and incapacitated a further 17 per cent.

Resection of the Choroid Plexus.—In Hinrichsmeyer's case the hydrocephalus had induced spastic hemiplegia and finally progressive epilepsy. The patient was a boy, aged 10, and the hydrocephalus was ascribed to birth trauma. After two operations to divert the fluid it was secreted in enormous amounts. To arrest this, Hinrichsmeyer resected the choroid plexus on that side, and the production of fluid materially declined. The boy died in epileptic coma three weeks later. The right lateral ventricle had been transformed into an actual cyst.

Arrest of Hemorrhage by Transfusion of Blood.—Stegemann asserts that this is the surest and most rapidly acting means to arrest parenchymatous hemorrhage and hemorrhage from small vessels. Transfusion of blood supplies the lacking elements in the blood directly, and also stimulates indirectly their production. Its special field is in hemophilic bleeding and in anemia from excessive loss of blood. To arrest hemorrhage, small amounts, about 200 c.c., are all that is necessary.

Feb. 10, 1923, 122, No. 4

*Gastric Ulcer with Goiter. Haberer.—p. 789.

*Draining the Common Bile Duct into the Duodenum. Haberer.—p. 796.

*Chronic Subphrenic Peritonitis. O. M. Chiari.—p. 804.

Abnormal Fat Deposits in Omentum. O. Maier.—p. 810.

*Intratracheal Thyroid Tumors. O. Maier.—p. 825.

Mechanism of Development of Retropharyngeal Goiter. O. Maier.—p. 836.

*Clinical Features of Goiter. H. Czermak.—p. 843.

*Influenza as Factor in Operative Complications. H. Czermak.—p. 916.
*Mechanism and Fate of Pseudarthrosis. S. Mitterstiller.—p. 939.

Gastric Ulcer with Goiter.—In Haberer's patient a diverticulum in the esophagus, a retrosternal goiter, and a bleeding gastric ulcer all required separate operations at the same time. He has witnessed this association of gastric ulcer or catarrh with a large goiter in other cases, and regards the interference with the circulation from the goiter as the main factor in the stomach disease.

Draining Common Bile Duct Into Duodenum.—Haberer refers to cases in which there is a possibility of calculi being left when the lower end of the bile duct is thick and the lumen small. Under these conditions he joins the common bile duct, side-to-side, with the upper duodenum, always with good results.

Chronic Subphrenic Peritonitis.—Chiari found the symptom that first attracted attention was a peritoneal friction sound. This sound lasted sometimes only a few hours or days and then disappeared, but returned at the slightest "cold." The intervals sometimes reached months. The sound can be heard at the costal arch from the median line to the axillary line and can be perceived with the hand laid flat on the wall. A history of pleurisy aids in the diagnosis. The pains in some cases resembled gallbladder colic and there was generally pain in the shoulder. The pains are aggravated by movements and deep breathing more than is the case with gallbladder and stomach affections. Treatment as for rheumatism is generally promptly effective. Adhesions between the liver and the diaphragm testify to the preceding inflammatory process. The infection is not virulent and the general health does not suffer much. The ordinary laparotomy incision does not reveal this inflammatory subphrenic peritonitis. It may thus have escaped detection in certain cases of supposed appendicitis in which nothing to explain the abdominal symptoms was discovered.

Intratracheal Tumors.—Maier compares two cases of intratracheal tumor at the Innsbruck surgical clinic with twenty-seven from the records. The intratracheal adenopapilloma and cystadenoma, originating in the thyroid in his personal cases, were successfully removed. Zimmermann's case warns that an intratracheal tumor should be looked for when the breathing is still defective after thyroidectomy.

Goiter.—Czermak devotes seventy-three pages to this study of the etiology, treatment and outcome of goiter. It is based on 2,005 cases in Haberer's surgical service at Innsbruck since 1912. Exophthalmic goiter was noted in 2.6 per cent. of 1,657 cases. All were apparently cured by operation.

Influenza and Surgery.—Czermak discusses influenza complicating a surgical affection, and surgical complications of influenza. It reduces the resisting powers to such an extent that postoperative sepsis is more liable. No operations that can be deferred should be attempted within four months of an attack of influenza. Haberer always inquires in regard to this when contemplating an operation.

Pseudarthrosis.—Thirty-six photomicrograms accompany Mitterstiller's seventy-page article on the conditions inducing pseudarthrosis, the microscopic findings, and the outcome. It is based on four cases.

Deutsches Archiv für klinische Medizin, Leipzig

December, 1922, 141, No. 3-4

- *Diseases Due to Strongyloides Intestinalis. E. Thomas.—p. 129.
- *Epinephrin and White Corpuscles. F. O. Hess.—p. 151.
- *Endocarditis Lenta. Lämpe.—p. 165.
- *Silicic Acid in Treatment of Infectious Diseases. E. Thoma.—p. 175.
- Calcium in Cerebrospinal Fluid. H. Leicher.—p. 196.
- Liver Function Tests. R. Stahl.—p. 204.
- Wilson's Disease. J. Löwy.—p. 213.
- "Metabolism of Infants." Edelstein and Langstein.—p. 219.
- Reply. S. Lauter.—p. 223.
- Physiology of the Thymus. H. W. Knipping.—p. 224.
- Urobilinogen Determination. W. Hueck and T. Brehme.—p. 233.
- Blood Stream in Capillaries. W. Parrisius and Winterlin.—p. 243.
- Addition to "Corynebacterium Abortus Infectiosi Bang." M. Klimmer and H. Haupt.—p. 252.

Disease Due to Strongyloides Stercoralis.—Thomas reviews the literature on this parasite, *Anguillula intestinalis*, and publishes a case with recovery after thymol. The patient suffered from attacks of diarrhea, with blood, mucus and

many larvae of anguillula in the feces. There was an increase in eosinophils in the blood and stools, and many Charcot-Leyden crystals in the feces.

Epinephrin and White Corpuscles.—Hess attributes the divergences in the literature to several causes. The time of taking the blood sample and the stage of the disease are important. In the beginning of typhoid the reaction is normal. During the high fever, the reaction is minimal, but it becomes very strong during the stage of remission. The most important factor was found by Csépai and Sanguinetti, who showed that the supposed lack of reaction (increased blood pressure) to epinephrin is chiefly due to diminished resorption in the subcutaneous tissue, although it does not explain all cases. The intravenous injection is disagreeable to the patient and the blood changes pass too quickly.

Endocarditis Lenta.—Lämpe reports his experience with nineteen cases of this disease. It seems that its character has changed in the last few years although the most important signs described by Schottmüller were present in most of them. A valvular defect (usually aortic), anemia, enlarged spleen, and remittent fever are the cardiac symptoms. Embolism occurs later. The first kidney signs of the disease are red corpuscles in the sediment, which must be examined even in the absence of albumin. The blood culture was very often negative, and in some cases hemolytic streptococci grew instead of the expected viridans. The disease lasts for months, and most of the patients die.

Silicic Acid in Treatment of Infectious Diseases.—Thoma injected a colloidal solution of silicic acid into rabbits. He found that it can prevent infection by human tubercle bacilli, but it did not show any therapeutic effects on animals previously infected. He had the impression that the infection spread rather more extensively in the treated animals. Similar negative results were obtained in several patients, with only one exception. Leukocytosis and fever follow the injection. He tried the preparation in a few cases of typhoid, a dysenteric polyarthritis, and an influenza bronchopneumonia, and believes that it had a favorable influence in these cases, due to the general action of colloids.

Jahrbuch für Kinderheilkunde, Berlin

December, 1922, 100, No. 3-4

- *Kidney Function Tests in Children. L. Mendel.—p. 123.
- *Scurvy and Infections. Hamburger and Goldschmidt.—p. 210.
- Whooping Cough in Infants. K. Gottlieb and B. Möller.—p. 222.
- *Instability of Colloids in Infants' Serum. J. Duzár.—p. 237.
- *Associated Tonsillitis. A. Orgler.—p. 243.

Kidney Function Tests in Children.—Mendel used the dilution and concentration tests, and determination of hydremia, blood chlorids and nonprotein nitrogen in healthy and nephritic children. He complains of the complications brought into the valuation of the tests by simultaneous affections of the tissues. He found, in healthy children, brief hydremia following the ingestion of fluids and preceding the diuresis.

Scurvy and Resistance to Infection.—Hamburger and Goldschmidt examined the serum of children and animals suffering from scurvy. They found that the serum had the same amount of normal amboceptor and complement, as the healthy controls.

Instability of Colloids in Infants' Serum as Modified by Age.—Duzár tested the serum of infants with dilute alcohol and noted the intensity of flocculation produced. The serum of the new-born is labile, though less than in adults; it increases in stability up to the second month. After this period the stability decreases. He agrees with Ruzicka's theory of the hysteresis of protoplasm, which explains the process of growing old as a function of decrease of the dispersity of colloids.

Associated Tonsillitis.—Orgler observed the tonsils in vaccinated children and found in some on the fifth and sixth day a swelling. In others little points appeared, while other children had a typical follicular tonsillitis on the seventh and tenth day after vaccination. He points to the possibility that tonsillitis in infectious diseases does not prove that the tonsils are the portal of infection.

Monatsschrift für Kinderheilkunde, LeipzigDecember, 1922, **24**, No. 3

- *Spontaneous Pneumothorax in Children. B. Schönfeldt.—p. 225.
 *Syphilis in Third Generation. A. Kraus.—p. 236.
 *Chemistry of Brain in Dystrophy. S. Ederer.—p. 244.
 Xerophthalmia in Children. G. Genck.—p. 251.
 Recent Works on Milk Hygiene and Dairies. Grimmer.—p. 257.
 Recent Literature on Helminthiasis in Children. H. Brüning.—p. 331.

Spontaneous Pneumothorax in Children.—Schönfeldt observed four fatal cases of spontaneous pneumothorax and two of emphysema of the mediastinum and subcutaneous tissue in children suffering from influenzal pneumonia. One of the latter cases recovered. Two of the cases were caused by perforation of an abscess, one by rupture of an emphysematous bubble. The fatal case of mediastinal emphysema was due to perforation of a large bronchus in tuberculous tissue. Roentgen rays may furnish the only decisive diagnostic sign in some cases.

Syphilis in Third Generation.—Kraus describes a case of congenital syphilis in an infant whose mother had been also treated for syphilis shortly after her birth. The mother has Argyll Robertson pupils. The Wassermann reaction was positive in the infant, in the 23 year old mother, and in the grandmother, who had had several abortions preceding the birth of the mother. The father of the infant has no signs of syphilis, and responded negatively to the Wassermann test on two occasions.

Chemistry of Brain in Dystrophy.—Ederer found in the brains of dystrophic infants a decrease in unsaturated phosphatids to a third of the normal, and an increase in the saturated phosphatids, cerebrosids and sulphatids to twice the normal values.

Zeitschrift für Tuberkulose, LeipzigJanuary, 1923, **37**, No. 4

- *Transient Tuberculous Phenomena in Children. E. Rüscher.—p. 241.
 *Forms of Tuberculosis and the Age. K. Lydtin.—p. 260.
 *Origin of Tuberculosis of Suprarenal Capsules. F. Schwarz.—p. 271.
 Conc'n.

Passing Inflammatory Tuberculous Phenomena in Children.—Rüscher discusses different inflammatory conditions in tuberculous patients, and publishes some cases. The toxic etiology of these passing affections becomes more and more restricted in favor of tubercle bacilli. Tuberculids of the skin, phlyctenosis, purpura, some cases of arthritis, serous meningitis, and other exudative processes on serous membranes belong to this borderline between toxic and bacillary reactions.

Relation of Different Forms of Tuberculosis to the Age.—Lydtin examined in approximately 200 patients the relation of the age to the form of the tuberculosis. The percentage of proliferating, cirrhotic and exudative forms is the same in every age. The development of these forms is different. In young persons the tendency goes from a proliferating to an exudative form, while the exudative form in older people has temporary ameliorations of the cirrhosis and cavity types.

Origin of Tuberculosis of Suprarenal Capsules.—Schwarz examined in serial sections the suprarenal capsules from twenty cases of tuberculosis. In 83 per cent. of the cases of miliary tuberculosis, the suprarenals, especially the right, were affected. There was no difference between cortex and medulla. In sixty-five cases of chronic tuberculosis of suprarenals, hematogenous infection from a primary tuberculosis of the lungs was the cause.

Zentralblatt für Chirurgie, LeipzigFeb. 10, 1923, **50**, No. 6

- Cuff Method of Anastomosis After Stomach Resection. Goepel.—p. 201.
 Kappis' Splanchnicus Anesthesia in Diagnosis. Kulenkampff.—p. 208.
 An Artificial Knee Joint. C. ten Horn.—p. 213.
 *Roentgen-Ray Examination of Subphrenic Abscess. J. Sommer.—p. 215.
 *Operative Fixation of Floating Kidney. S. Kostlivy.—p. 217.
 Incarcerated Hernia. E. Pólya.—p. 219.
 What Causes a Ligature of Cystic Duct to Open? Hofmann.—p. 220.
 Laceration of Carotid Artery from Blow in Face. Pólya.—p. 223.

Roentgen-Ray Examination of Subphrenic Abscess.—Sommer recalls that the air bubble over the abscess always rises to the highest point of the abscess cavity. The shifting of

the position of the air bubble as the body is moved and twisted allows exact localization, and shows the most direct mode of access. If the abscess does not contain air, 30 c.c. of the fluid can be withdrawn and air injected.

Operative Fixation of Floating Kidney.—Kostlivy describes a method of fixation of the kidney that he has employed with good success in twenty-six cases. The use of a strip of fascia to suspend the floating kidney is not new, but other surgeons have sought to raise the lower pole. This throws the kidney into a position in which its equilibrium is easily disturbed; for instance, an extreme drop of the diaphragm, as in vomiting, may easily tip it forward, as Kostlivy observed in a case in which the Henschen method of fixation had been used. Therefore, he encircles the kidney with the strip of fascia at its smallest transverse diameter. The interval since operation in many of the cases is up to two years, and recent examinations show the kidney still firmly in place. The article has one illustration, which makes plain the technic.

Feb. 17, 1923, **50**, No. 7

- The Milk-Sirup Enema. H. Küttner.—p. 249.
 Technic of Rectum Amputation. H. Braun.—p. 250.
 Hemorrhagic Erosions in Mucosa of Excluded Pylorus. Aoyama.—p. 252.
 Physiologic Gastro-Enteropexy. C. Hammesfahr.—p. 254.
 *Recognition of Benign Gastric Tumors. F. Erkes.—p. 256.
 Suture of Opening in Broad-Based Hernias. C. Bayer.—p. 257.
 *Construction of Artificial Vagina. N. Hortolomei.—p. 259.
 *Open Treatment of Fracture of Heel-Bone. E. Becker.—p. 262.
 *Parchment Paper for Drains. M. Madlener.—p. 264.
 Action Current of Granulating Wounds. Melchior and Rahm.—p. 265.

The Recognition of Benign Gastric Tumors.—Erkes states that benign gastric tumors are rare. Tilger found in 3,500 necropsies only fourteen gastric tumors consisting of connective tissue and muscle. In his own case the correct diagnosis was established by a roentgenogram. The circular-shaped filling defect, with almost smooth edges, pointed to a benign tumor. The same observations were made by Dessecker and Konjetzny in their recent cases, in Dessecker's case a fibromyoma and in Konjetzny's case a fibroma. A carcinoma always shows irregular outlines in the roentgenogram. Transverse stomach resection, such as was employed in Dessecker's case, would seem scarcely necessary, as simple excision at the base of the pedicle, as was done in Konjetzny's case and with success in his own case, accomplishes the purpose in a simpler manner.

Construction of Artificial Vagina from the Small Intestine.—Hortolomei reports 4 cases in which he constructed an artificial vagina in accordance with the Mori-Baldwin procedure. In 3 cases the vagina so constructed functioned properly and was durable. In the fourth case death ensued from peritonitis. The records show a total of 55 cases in which this method was applied, with a mortality of 21.8 per cent. On the other hand, the Schubert procedure has been employed in 48 cases without a single death. The Schubert method (construction of the vagina from the large intestine) is comparatively free from danger, as the peritoneum is not opened, but the Mori-Baldwin procedure is easier technically.

Fracture of Os Calcis.—Becker discusses the best means of securing coaptation in comminuted or compression fractures of the os calcis. Casts, splints and bandages are not sufficient to keep even the coaptated fragments in place. He prescribes complete rest and applies an ice bag for from ten to fourteen days or until the effused blood has been mainly absorbed. Then, without expelling the blood from the operative area, about a thumb's width below the external malleolus he makes a horizontal incision a few centimeters in length. Through this incision an elevator is passed downward and pushed directly under the lower surface of the bone toward the inner margin of the foot. By lowering the handle of the elevator, the tip is felt under the skin just below the internal malleolus. After making a small horizontal incision, the elevator is pushed through and by energetic traction on the tip and handle, the fragments are reduced to place. One perceives at once that the traumatic flatfoot is disappearing under one's hand and that the normal arch is being perfectly restored. Mechanical fixation of the reduced fragments follows: While an assistant holds the elevator in position, the operator passes an electric drill postero-anteriorly through

the skin and bone of the calcaneum. The drill is left in the fractured bone, lest its withdrawal and the insertion of a nail or a screw disturb the relations of the fragments. The elevator is now removed, and a bandage is applied to maintain the arch of the foot. A roentgenogram will show whether the drill lies properly and whether the fragments are coapted in the manner desired. A projecting bone splinter may be removed after about six weeks, and then the drill is also removed. When the wound heals, the usual medicomechanical after-treatment is begun. Becker's results were good in every instance with this operative reduction of the bone fragments and fixation with a drill left in place until healing is complete.

Parchment Paper for Drains.—Madlener again calls attention to the value of parchment paper for drains. Parchment paper does not irritate the wound, does not imbibe moisture and does not exert as much pressure as a glass tube. The parchment is sterilized and used dry. It becomes soft from the action of the wound secretions, does not adhere to the surrounding tissues, and is easily removed without causing pain. As thousands of cases have shown, it functions well as a drain. Secretions drain along both the inner and the outer walls.

Zentralblatt für Gynäkologie, Leipzig

Feb. 3, 1923, 47, No. 5

- Lumbar Puncture in Treatment of Eclampsia. Heynemann.—p. 186.
Skin Affections of the Menopause. R. Bauer.—p. 188.
Primary Abdominal Pregnancy. L. Seeligmann.—p. 190.
Ovarian Pregnancy at Term. J. Jacob.—p. 193.
*Conservative Treatment of Pyosalpinx. E. Hönck.—p. 195.
My Experiences with the Kjelland Forceps. E. Meunann.—p. 197.
Treatment of Leukorrhea. A. Loeser.—p. 205.
"Rupture of Symphysis During Childbirth." Stiassny.—p. 207.

Conservative Treatment of Pyosalpinx by Abdominal Incision.—Hönck refers to Ehrlich's case in which gonorrhea had been acquired during pregnancy and had given rise to bilateral pyosalpinx. The pain became so severe that laparotomy was resorted to, and both tubes were found swollen to the size of the thumb and filled with pus. Without further intervention the abdomen was closed. The patient recovered, and the pregnancy progressed to term. Hönck gives three similar cases that he has observed. From his observations he would not hesitate in suitable cases to open the abdomen, as a conservative form of treatment of pyosalpinx. The operation itself, together with the manipulation of the diseased organs, evidently produces marked resorption processes, similar to those often observed in tuberculosis of the peritoneum. Many cases of pyosalpinx do not heal after months and even years of treatment, and continue to cause pain and discomfort. Heretofore a radical operation on such organs could not always be avoided, even in young persons. In the future, we may try breaking up some of the worst adhesions, avoiding the release of pus. To increase the reactive process, Hönck proposes, in the presence of indolent tumors, to apply artificial heliotherapy directly to the diseased organs. If proper care is taken, no damage will be done.

Feb. 10, 1923, 47, No. 6

- *Premature Births and Congenital Syphilis. E. Kehrler.—p. 226.
Rectovaginal Adenomyohyperplasia. Pincsohn.—p. 231.
Umbilicus Sign of Intraperitoneal Hemorrhage. Schmid.—p. 234.
Spontaneous Separation of Ovarian Cyst in Douglas' Pouch. Alex.—p. 236.
Death from Gas Embolism After Abortion. H. Naujoks.—p. 240.
Subcutaneous Emphysema During Childbirth. Mittweg.—p. 243.
Combined Interruption of Pregnancy and Sterilization. Doerfler.—p. 244.

Premature Births and Congenital Syphilis.—Kehrler gives the results of his studies on the frequency of syphilis in premature births; the influence of syphilitic mothers on the child; and the prognosis for children with congenital syphilis. He interprets his statistics—17,167 childbirths, including 1,541 premature—as showing that syphilis plays no considerable part as a direct cause of premature births, or, in any event, that it does not possess the importance which has hitherto been ascribed to it. However, he found that the prognosis for all children born of syphilitic mothers is bad; not only during intrauterine development but also as regards susceptibility to external influences after birth.

Feb. 17, 1923, 47, No. 7

- Pathology and Therapy of Posterior Parametritis. Bröse.—p. 258.
*Phlorizin Test in Diagnosis of Pregnancy. K. Burger.—p. 260.
Diffuse Hypertrophy of Mammary at Puberty. A. Heyn.—p. 263.
*Roentgen Irradiation in Epilepsy. M. Fraenkel.—p. 265.
*Plastic Closure of Hernial Opening. Hilgenreiner.—p. 268.
Sliding Hernia with Involvement of Tube. F. Seibold.—p. 270.
*Suture of Uterus in Cesarean Section. A. von Reding.—p. 272.
Operative Treatment of Uterine Hemorrhages. Pfeilsticker.—p. 275.

The Phlorizin Test in the Diagnosis of Pregnancy.—Burger applied the phlorizin test to 55 women, 28 of whom were pregnant and 27 were not. Of the 27 nonpregnant women five gave a positive reaction, or 18.5 per cent. Of the 28 pregnant women five gave a negative reaction. Pregnancy was in most cases less than three months advanced. Since the test when applied to pregnant women is positive in a large majority of cases, it may be regarded, when positive, as indicating, with a high degree of probability, a state of pregnancy.

Roentgen Irradiation in Epilepsy.—Fraenkel describes in detail a case of epilepsy in a woman aged 42, in which roentgen irradiation combined with arsenic medication effected a complete cure. He refers to Strauss' contention that epilepsy is not a brain disease as is frequently erroneously assumed, but is a constitutional disease, the essential character of which lies in a disturbance of the functioning of endocrine glands.

Plastic Closure of Hernial Opening by Means of the Uterus.—Hilgenreiner emphasizes the point that plastic closure of a hernial opening by means of the uterus should be applied only exceptionally; as when the usual radical operations do not suffice, or when this method is simpler than other methods.

Suture of the Uterus and Uterine Drainage in Cesarean Section.—Von Reding holds that even a single suture in the uterus is not indicated in all cases of cesarean section, but only in the "clean" cases in which no infection need be feared. In the contaminated cases, in which the wound must be regarded as infected or in which the possibility of a wound infection is present, he regards suturing of the uterus as contraindicated, because this is entirely opposed to the surgical principles of wound treatment. No experienced surgeon, he argues, would think of suturing an infected or even a suspicious looking wound, though it were only a superficial wound, since, in case of subsequent pus formation, the outflow of the pus would be obstructed and would lead to severe retention symptoms of a general and local nature. Retention of pus may lead either to general infection, or, more frequently, remains localized and an abscess forms. If the uterine wound is left open and an abscess develops, it can extend in the direction of the uterine cavity and thus find an outlet. Moreover, leaving the uterus wound open presents no essential disadvantages; in case no complications arise, a primary, though somewhat delayed, wound closure can be expected. Von Reding explains also his drainage method, with several stout catgut loops tied through the edges of the wound on each side. This holds the lips of the incision slightly apart.

Polska Gazeta Lekarska, Lwow

July 9, 1922, 1, No. 28

- Spondylitic Ankylosis of the Spine. L. Sobieszczanski.—p. 573.
Wassermann Reaction and Its Practical Use. F. Venulet.—p. 574.
*Treatment of Typhus Fever. J. Tomanowski.—p. 577.
Colloids and Non-specific Proteins in the Treatment of Skin and Venereal Diseases. W. Lukasiewicz.—p. 577. Conc'n No. 30.
Dentistry in Poland. A. Cieszynski.—p. 585. Conc'n No. 29.

July 16, 1922, 1, No. 29

- Hysteric Paralysis of Lower Extremities with Pseudo Symptoms of Mendel-Bechterev and Rossolino. A. Domaszewicz.—p. 589.
Mechanism of Pulse Acceleration in Different Pathologic States. W. Janowski.—p. 590.
Antisyphilitic Action of Bismuth. J. Merenlender.—p. 592. Cont'd.

July 23, 1922, 1, No. 30

- Auto-hemotherapy in Pruritic Skin Diseases. T. Dybowski.—p. 605.
Pathology of Lupus Erythematoses. L. Füllenbaum and D. Goldman.—p. 607.

Treatment of Typhus Fever by Method of Dr. A. Brenner.—Tomanowski reports thirty-four cases of typhus treated

with inhalation of oxidized turpentine, according to Brenner's technic. All patients recovered, while in a previous series of fifty-one patients, treated by ordinary methods, seven died. This is a death rate of 14 per cent. Tomanowski gives the following advantages of Brenner's method over others: 1. The patient sleeps better under the turpentine treatment. 2. Delirium and other nervous manifestations are much less than with other methods of treatment and the patient is quiet. 3. The inhalation of turpentine materially reduces the tendency to respiratory complications. 4. The patient eats better. 5. The ozonized turpentine given by inhalation refreshes the air in the wards.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 16, 1922, 2, No. 25

*Syphilitic Disease of Cutaneous Vessels. S. Mendes da Costa.—p. 2695.

*Influence of Infectious Diseases on Heart and Vessels. J. Kuiper.—p. 2704.

*Rupture of the Aorta. W. M. de Vries.—p. 2713.

Cardiovascular Diseases and the Eyes. W. P. C. Zeeman.—p. 2741.

Accidental Heart Murmurs in Children. J. de Bruin.—p. 2757.

Fibrillation of Part of Heart. S. de Boer.—p. 2772.

Radiology of Disease in Heart and Aorta. N. Voorhoeve.—p. 2797.

*Vascular Disease in Women. A. H. van Rooy.—p. 2817.

Drugs and Baths in Cardiovascular Disease. E. Laqueur.—p. 2839.

*Hemangiomas. S. Mendes da Costa.—p. 2874.

Disease of the Cardiovascular System.—The ten long articles in this bulky number are the lectures delivered by the members of the medical faculty at Amsterdam in a post-graduate course on the heart and vessels. The topics in the three preceding years of this annual course were syphilis, tuberculosis and cancer.

Syphilitic Disease of the Vessels in the Skin.—Da Costa discusses the vascular changes in syphilids; also in syphilitic phlebitis and arteries, and in livedo racemosa.

Influence of Infectious Diseases on Heart and Vessels.—In the course of this review, Kuiper warns that we cannot place much reliance on digitalis in acute infectious diseases. Camphor, caffeine and strychnin are better. Sleep may be of more value than drugs, and hence caffeine had better not be given in the evening. Epinephrin dilates the coronary and contracts other arteries; consequently it helps to maintain a failing heart. With dyspnea from weakness of the heart, oxygen may give great relief, and in whooping cough may tide the patient past a danger point. He gives the oxygen at first for fifteen minutes and then for five in each fifteen minutes. In conclusion he warns the physician to oversee the first application of febrifuge baths in acute infectious diseases. They are liable to depress the heart more than is generally suspected.

Rupture of Aorta.—De Vries draws the clinical picture of rupture of the aorta as he observed it in 4 traumatic cases. In 5 others the rupture was spontaneous, and in 10 rupture of an aortic aneurysm occurred. Five cases were associated with carcinoma of the esophagus. These 24 cases were encountered in the course of 6,500 necropsies.

Pathology of the Vascular System in Women.—Van Rooy, for varices in the external genitals recommends compression in preference to incision. Clamping a varicose vein to arrest hemorrhage often entails rupture at another point. Embolism is the great danger from simple thrombophlebitis and phlegmasia alba. It is encountered in about 0.3 per cent. of the cases. The electric light bath is useful in treatment and does not require the moving of the leg. No active movements should be allowed until the temperature has been normal for two weeks, and the patient should not be allowed to leave the bed for a month at least. Some insist that 60 per cent. of these patients never regain the full use of the limb. Symptoms suggesting chronic salpingitis but with negative gross findings on palpation may be traceable to varicose enlargement of veins in the broad ligament. If the symptoms persist under palliative measures, an operation on the varicocele is advisable. Several illustrative cases are given. In van Rooy's four cases, years of treatment had been futile as the symptoms constantly returned, but cure was complete after operation in three cases. The fourth case was complicated by general asthenia and the cure is not so complete. In one of the cases a phlebolith had formed in the vein.

Hemangiomas.—Da Costa reviews ten kinds of hemangiomas in addition to the idiopathic telangiectasias.

Dec. 23, 1922, 2, No. 26

*Excretion of Hippuric Acid. I. Snapper and A. Grunbaum.—p. 2910.

*Continuous Lumbar Drainage. J. F. W. S. v. N. Schuuren.—p. 2916.

*Eye Disturbance in Hysteria. F. S. Stibbe.—p. 2921.

*Card Library. W. Schuurmans Stekhoven.—p. 2926.

*Organs Without Local Nervous Apparatus. G. van Rijnberk.—p. 2930.

Cause of Delay in Excretion of Hippuric Acid with Contracted Kidney.—Snapper and Grunbaum found only traces or no hippuric acid in the blood in three normal subjects. With incipient kidney disease, from 10 to 25 mg. of hippuric acid was found in 250 c.c. of blood, and very little was excreted. The amount excreted was still less in four patients with severe renal insufficiency and the blood showed from 60 to 90 mg.

Continuous Lumbar Drainage.—Schuuren relates that a boy aged 5 seemed to be recovering from meningococcus meningitis by the thirteenth day. Marked benefit had followed lumbar puncture. Then severe symptoms flared up again and Schuuren arranged for continuous drainage of spinal fluid. The benefit was pronounced. The flow of fluid was easily regulated by raising or lowering the foot of the bed. No by-effects were observed during the two weeks of this drainage. Recovery was complete, except for deafness, by the end of a month from the first symptoms. The drainage was carried out with a loop of silver wire introduced through the cannula after withdrawal of the needle. The cannula was then removed. The antiserum could be injected at a higher interspace to avoid interfering with the drainage. None had been given in this case. Continuous wire drainage seems logical and effectual, and is certainly less strain than often repeated lumbar puncture.

Visual Disturbances in Hysteria.—Stibbe's patients were a young man and young woman, natives of Java. The visual disturbances were concentric contraction of the visual field, achromatopsia and dyschromatopsia, with diplopia in only one eye. The diplopia was not modified by instillation of atropin.

A Card Library.—Stekhoven describes a method for the separate alphabetical filing of each abstract. A library of contemporaneous periodical literature with the maximum of accessibility can be thus provided. He has organized a central cooperative exchange for foreign medical journals, and has now planned this card system to supplement it.

Organs Without Local Nervous Apparatus.—Van Rijnberk argues that organs which do not possess a local nervous apparatus all have one thing in common, their function is subordinate to a higher and more general function. The striped muscles, the sweat glands, the glands with a known internal secretion, the liver, the kidneys, the testicles and ovaries are all under strict nervous and chemical control to insure the best results for the organism as a whole. We can thus assume that the function of organs with an independent nervous system is more of local than of general importance.

Hygiea, Stockholm

Feb. 15, 1923, 85, No. 3

*Origin of Vesicular Breathing Sounds. E. Törnell.—p. 65.

*Autoplastic and Heteroplastic Bone Grafts. A. Troell.—p. 79.

Mechanism of Vesicular Breath Sounds.—Törnell theorizes on the factors involved in vesicular breath sounds and heart murmurs. His experiments with rabbits were inconclusive.

Fate of Bone Grafts.—Troell gives eleven plates of the findings in thirteen cats after implanting a strip of the tibia close to the head or neck of the femur or else at some other point where conditions were favorable for the healing of the graft in place. The implant always died and was absorbed, but new bone formed in its place. However, as there were no functional demands on the new bone, this, too, was resorbed in time. The roentgenograms and photomicrograms show that the new bone finally formed, differs materially from normal bone, although macroscopically it seems normal. The process is entirely different with ivory implants.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 16

CHICAGO, ILLINOIS

APRIL 21, 1923

ETIOLOGIC STUDY OF A SERIES OF OPTIC NEUROPATHIES *

ALAN C. WOODS, M.D.

BALTIMORE

AND

J. RALPH DUNN, M.D.

SUMTER, S. C.

During the past five years many articles have appeared, especially in the American literature, that attribute various types of the optic neuropathies to disease of the accessory nasal sinuses; and, notably, White¹ has reported a large number of such cases. In several papers, papilledema of a high degree has been ascribed to an infection of the posterior ethmoidal and sphenoidal sinuses. Visual disturbances, and even organic changes in the optic nerve, have been attributed to sinus disease in patients who have no discharge, polyps, local redness, or swelling of the mucous membrane around the orifices of the sinuses, or, indeed, any other of the usual manifestations of sinus disease. This has been a source of confusion to the laryngologist and internist, and particularly to the ophthalmologist, the neurologist and the neurologic surgeon.² Moreover, the emphasis that has been placed on sinus disease as an etiologic factor in optic neuropathies has given rise to the danger that an actual infection of the sinuses may unjustifiably be assumed to be the true cause of an optic neuropathy, and the actual, more deep seated cause, may be overlooked. We have observed several patients in whom this mistake has been made. Therefore, both to protect the patient from a series of unnecessary nasal operations, and to guard the diagnosis of an optic neuropathy secondary to sinus disease, the relation of the accessory nasal sinuses to disease of the optic nerve deserves the most careful study.

The anatomic studies of Onodi³ and others have shown that the optic nerve, just anterior to the chiasm, is often separated from the posterior ethmoidal cells by the thinnest layer of bone or fibrous tissue. Onodi has also shown that the optic nerve may actually lie inside the sphenoidal sinus for a distance of a centimeter or more. It has also been known for some years that an infection of these sinuses may, in some persons, cause an inflammation of the portion of the optic nerve that lies in the bony canal and so give rise to visual disturbances. These visual disturbances usually con-

sist of an impairment of the central vision, and are not associated with edema or other visible changes in the optic nerve. They appear to be due to a retrobulbar involvement of the papillomacular bundle. The term "retrobulbar neuritis" has usually been employed to describe such conditions.

Our purpose in this paper is to present our experience in the study of a group of eighty-six patients that presented various optic nerve changes, and to determine the possible relationship of any of these changes to disease of the accessory nasal sinuses.

SELECTION OF CASES

The eighty-six cases of optic neuropathy on which this report is based were in patients who presented themselves at the clinic primarily for visual disturbances, and who had no knowledge of the cause of their trouble. All patients referred to the eye department for consultation from other departments are excluded. Likewise, we have excluded all cases in which there was a history of trauma, and all those in which the optic nerve condition was due to a primary disease of the eye, such as glaucoma, and retinitis pigmentosa.

Each of the eighty-six patients included in this series was subjected, with the few exceptions specifically noted, to a complete diagnostic study as outlined below:

1. *Ophthalmologic*.—External examination of the eyes, including pupillary reactions, visual acuity and refraction; ophthalmoscopic examination, and visual fields. On the data thus obtained, a clinical diagnosis was made of one or the other of the following conditions: primary atrophy of the optic nerves; secondary atrophy of the optic nerves; atrophy of the papillomacular bundles; retrobulbar neuritis; papillo-edema. (This group was subdivided, at the time of the ophthalmologic examination, if possible, or if not then, at the conclusion of the diagnostic study, into one of the two subdivisions, optic neuritis and choked disk.)⁴

4. Throughout this paper, these terms are used with the following meanings:

Primary atrophy: Atrophy involving the entire nerve, without the presence of visible, ophthalmoscopic, evidence of any preceding inflammation of the nerve.

Secondary atrophy: Any atrophy of the nerve in which there was present visible, ophthalmoscopic evidence of preceding inflammation; i. e., obscuration of the physiologic cup, blurring of the lamina cribrosa, or deposition of connective tissue in the cup or on the nerve head.

Atrophy of the papillomacular bundle: An atrophic process especially localized in the papillomacular bundle, giving the clinical picture of pallor of the temporal sector of the nerve, diminished central vision, and normal field outlines for form, but with central or paracentral scotomas for either form or color.

Retrobulbar neuritis: Diminished central vision, normal fundus and nerve head to ophthalmoscopic examination, normal field outlines for form, or concentric contraction, with the presence of central scotoma for either form or color.

Papillo-edema: A definite elevation of the nerve head. The subdivision of this group is based on which of the two etiologic factors—inflammation in the nerve or increased intracranial pressure—appears to be the predominating cause. Thus, when it was manifest that the papillo-edema was dependent on an inflammation in the nerve, the diagnosis of "optic neuritis" was made. Similarly, when it was manifest that the papilledema was primarily dependent on increased intracranial pressure, the diagnosis of "choked disk" was made. Until it appeared justifiable to make a diagnosis of either of these two conditions, the tentative diagnosis of papillo-edema was retained.

* From the Department of Surgery of the Johns Hopkins Hospital and University.

1. White, L. E.: The Diagnosis and Prognosis of Loss of Vision from Accessory Sinus Disease, J. A. M. A. 74: 1510 (May 29) 1920.

2. Cushing, Harvey: Accessory Sinus Disease and Choked Disk, J. A. M. A. 75: 236 (July 24) 1920.

3. Onodi, A.: Der Sehnerv und die Nebenhöhlen der Nase, Vienna, A. Holder, 1907.

2. *Medical Examination.*—To include physical examination, usual laboratory procedures—Wassermann test, urine examination, and kidney function if indicated, and lateral stereoröntgenograms of the head.

3. *Neurologic Examination.*—To determine or exclude other neurologic conditions, and to include any especial neurologic diagnostic procedure that might be indicated.

4. *Laryngologic Examination.*—Complete, painstaking examination of the nose, throat, ears and accessory nasal sinuses, and to include a roentgenogram of the sinuses in all suspicious cases. The nose is always cocaineized, and the orifices of the sinuses are carefully scrutinized with the aid of an electrically lighted nasopharyngoscope.

5. *Serology.*—Blood serum and spinal fluid Wassermann tests of all patients. Provocative arsphenamin and icebox incubation of Wassermann tests were included whenever indicated.

RESULTS

The composite results of this statistical study are shown in Table 1. Thirty-five optic neuropathies, approximately 40 per cent. of the eighty-six cases studied, were caused by syphilis. Eleven, or 12.7 per cent., were caused by sinus disease. Ten, or 11.6 per cent., were secondary to tumors of the cerebrum or optic nerve. Five, or 5.8 per cent. were caused by multiple sclerosis. Ten, or 11.6 per

TABLE 1.—Results of Study

	Total	Central Nervous System Syphilis	Sinus-itis	Brain Tumor	Multiple Sclerosis	Toxic Amblyopia	Seating	Unknown
Primary atrophies.....	35	25	0	0	1	4	0	5
Papillomacular atrophies....	24	4	5	1	4	5 (Friedreich's disease group)	1	3
Secondary atrophies.....	13	2	2	4	0	0 (Mongolian idiocy)	1	4
Optic neuritis..	5	3	0	0	0	1 (Encephalitis)	1	0
Choked disk...	4	0	0	4	0	0	0	0
Retrobulbar neuritis.....	5	1	4	1	0	0	0	0
Totals.....	86	35 40%	11 12.7%	10 11.6%	5 5.8%	10 11.6%	3 3.5%	12 13.8%

cent., belonged to the toxic amblyopia group. Three cases, 3.5 per cent., occurred in widely separated conditions: heredocerebellar ataxia (Friedreich's disease group), mongolian idiocy, and epidemic (lethargic) encephalitis. In twelve cases, 14 per cent., no definite diagnosis seemed justifiable.

If the series is viewed from the standpoint of the clinical ophthalmologist, the distribution is as follows: There were thirty-five cases of primary atrophy. Twenty-five of these were due to syphilis, one to multiple sclerosis, and four to the toxic amblyopia group; five were undetermined.

There were thirteen cases of secondary atrophy, thus distributed: Two were due to syphilis, two were due to sinus disease, four were secondary to brain tumor, one occurred in mongolian idiocy, and four were undetermined.

There were twenty-four cases of atrophy of the papillomacular bundle. Four of these were apparently due to syphilis, six to sinus disease, one to brain tumor, four to multiple sclerosis, five to the toxic amblyopia group, one to the Friedreich's disease group, and three were undetermined.

There were five cases of optic neuritis. Three occurred in syphilis, one in the toxic amblyopia group, and one in epidemic encephalitis.

Four cases of choked disk were observed. In each of these patients a brain tumor was demonstrated by an exploratory craniotomy.

Five cases of retrobulbar neuritis complete the series. One of these was due to syphilis, four to sinus disease, and in one the cause was a prechiasmal tumor of the left optic nerve.

A more careful analysis of the optic neuropathies occurring in the various etiologic diseases shows several interesting facts and subgroups that it is well to consider in somewhat greater detail.

SYPHILIS

Thirty-five, or 40 per cent. of the series of eighty-six optic neuropathies, were caused by syphilis. In all but one patient there was positive serologic evidence of the disease. The neuropathies reported here all occurred in acquired syphilis, without evidence of any associated keratitis. The predominating type of syphilitic lesion was primary optic atrophy. Twenty-five patients, or 73 per cent. of the syphilitic series, had this type of lesion. Positive Wassermann reactions were present in both the blood and the spinal fluid of sixteen of these patients. The blood serum Wassermann reaction was positive and the spinal fluid Wassermann reaction was negative in three patients, while the blood serum Wassermann reaction was negative and the spinal fluid Wassermann reaction was positive in five patients. One of these patients had negative Wassermann reactions in both the blood serum and the spinal fluid, but this patient gave a positive history, and the clinical picture was clearly that of a *tabes dorsalis*.

Four patients of the syphilitic group had an ophthalmologic picture that was clearly that of an atrophy of the papillomacular bundle with the changes described in the preceding footnote. These patients had positive Wassermann reactions in both the blood serum and the spinal fluid. All other special examinations were negative. One patient gave a history suggestive of an old basilar meningitis. In this patient a possibility is a bilateral involvement of the exposed tracts by the meningitic process, affecting the sensitive papillomacular bundle fibers, and so causing a descending atrophy. In the other three patients it is not so easy to visualize the process. The possibilities are that the picture observed is the end-process of either a retrobulbar involvement of the nerves, or of an optic neuritis which passed without leaving any ophthalmoscopic evidence of inflammation. However, as we have observed only one case of retrobulbar neuritis secondary to syphilis, this appears to be an infrequent syphilitic lesion.

The three cases of syphilitic optic neuritis were in no way remarkable. The same is true of the two cases of secondary atrophy encountered in this syphilitic series. They doubtless represented the end-stage of an old optic neuritis.

SINUS DISEASE

Eleven cases of optic neuropathy were observed which could be traced to disease of the accessory nasal sinuses. Four of these were in the acute stage, and seven in the atropic stage. The four patients in the acute stage all presented the same picture—that of a retrobulbar neuritis. The patients all had greatly diminished vision in the affected eye, clear media and normal fundi. Visual fields showed a disturbance in central vision with a central scotoma, varying in intensity from a relative color scotoma to an absolute scotoma for both form and color. Three of these

patients had a pyogenic infection of the ethmoidal sinuses, and two of these showed a complicating infection of the sphenoidal sinus. The fourth patient had nothing except polyps in the posterior ethmoidal cells, which were apparently in direct juxtaposition to the optic nerve. All of these four patients were operated on by Dr. S. J. Crowe. All four made a complete recovery, with a clearing up of the central scotomas and a restoration of vision to normal in the affected eyes.

Five of the patients in the atrophic stage had the ophthalmologic picture of a primary atrophy of the papillomacular bundle, without any visible evidence of preceding inflammation around the nerve head. One patient showed a generalized atrophy, especially marked in the papillomacular bundle area, with a definite blurring of the margins and a deposition of new connective tissue in the physiologic cup: the picture of secondary atrophy, especially marked in the papillomacular bundle. The last patient in this series showed an ordinary secondary atrophy of the optic nerve. This patient also had evidence of an old ethmoidal infection. There was a history of a former positive Wassermann reaction, but two Wassermann reactions in the Johns Hopkins Hospital were negative, and our only positive findings was the old ethmoiditis. For that reason this case is included in the group of neuropathies secondary to sinus infection.

TABLE 2.—*Observations in Four Cases*

No.	Ocular Picture	Condition to Which Attributed	Condition Found
1	Atrophy of the papillomacular bundle	Ethmoiditis	Central nervous system syphilis
2	Retrolbulbar neuritis	Ethmoiditis	Central nervous system syphilis
3	Elevation of the disks of 5 diop- ters; no atrophy	Sphenoiditis	Tumor of right cerebrum
4	Elevation of the disks of 4 diop- ters; disks atrophic	Pansinusitis	Brain tumor of cerebellopontile angle

In one of these eleven cases, the laryngologic diagnosis was chronic sphenoiditis. The diagnosis in the remaining ten cases was ethmoiditis, complicated in two by a sphenoiditis; in two, by an infection of the antrums, and in two by a pansinusitis.

Our experience with optic neuropathies caused by sinus disease may be thus summarized: The cases in the acute stage have all been cases by retrolbulbar neuritis showing normal fundi, without any elevation of the disk or changes around the nerve head. The operative result in all these cases was excellent. Of the cases in the atrophic stage, five, or 70 per cent., showed an ophthalmoscopic picture of primary papillomacular bundle atrophy, which may reasonably be interpreted as a descending atrophy, secondary to an old retrolbulbar neuritis similar to that observed in our acute cases. The remaining two cases both showed some ophthalmoscopic evidence of preceding inflammation around the nerve head. It may justly be assumed that these two cases in the acute stage showed some elevation of the disk, or changes around it, although we have never observed this actual condition. All of our cases were secondary to disease of the posterior ethmoids or the sphenoids, ethmoidal disease predominating as the etiologic factor.

There were four cases, included in other groups, that are worthy of especial mention here. When these cases came to our attention, the optic neuropathy had already been diagnosed as secondary to sinus disease,

and in all four, to a greater or lesser degree, there was some sinus disturbance. Study of these cases revealed other disorders which were apparently the true cause of the optic neuropathy. These cases are shown in Table 2.

BRAIN TUMOR

There were ten patients in whom brain tumors were responsible for the optic nerve disorder. Four patients had tumors of the cerebellopontile angle, and three of these showed an elevation of the nerve head of 4 diopters or more. The fourth patient showed advanced secondary atrophy, probably the result of an earlier elevation of the nerve head.

Two of the patients had hypophysial tumors, and, contrary to the usual observation, in both of these patients the atrophy was distinctly of the secondary type.

Two patients had tumors of the cerebrum. One, with a tumor of the floor of the third ventricle blocking the foramen of Monro, showed a choked disk. The second, with a tumor of the right temporal lobe, showed a secondary atrophy. This patient had already undergone decompression in the effort to preserve sight, before he came under observation.

One patient had a tumor of the floor of the fourth ventricle. The ocular picture was an atrophy of the papillomacular bundles, with a left sixth nerve palsy. The tumor was localized by injections of air into the lateral ventricles, and on operation was found to be a solitary tubercle.

The last case was one of a prechiasmal tumor of the left optic nerve, giving the clinical picture of a retrolbulbar neuritis. This case has been reported in detail by Dandy.⁵

MULTIPLE SCLEROSIS

The five cases in which multiple sclerosis appeared to be the causative factor in the optic nerve disease were in no way remarkable. In four of these patients the picture was the common one of an atrophy especially localized in the papillomacular bundles, while in the remaining one the atrophy was generalized and of the primary type.

TOXIC AMBLYOPIA GROUP

There were ten cases in the toxic amblyopia group. In two of the patients the diagnosis of toxic amblyopia due to ethyl alcohol poisoning was made. The diagnosis was made on the history, supported by completely negative findings in the medical study.

The remaining eight cases were all due to methyl alcohol poisoning. In four of these patients, no spinal punctures and studies of the cerebrospinal fluid were made. In these patients the histories and pictures were so clear-cut that this procedure did not appear justified. Formic acid, the end-product of methyl alcohol, was found in the urine of one patient in the acute stage of poisoning. An interesting sociological observation is that only two of these cases can be classed as "guilty cases," occurring in chronic alcoholics.

Five of these patients, observed in the atrophic stages, showed the picture of atrophy of the papillomacular bundles. Four showed the picture of a primary atrophy, and one, seen in the acute stage, showed an optic neuritis.

MISCELLANEOUS CASES

The three cases occurring in this group are not especially noteworthy. One was a case of mongolian idiocy

5. Dandy, W. E.: Prechiasmal Intracranial Tumors of the Optic Nerves, *Am. J. Ophth.* 5: 169 (March) 1922.

in which the patient had been brought in for diagnosis. This patient showed a secondary atrophy of the optic nerves. The second case was one of bilateral atrophy of the optic nerves, involving especially the papillomacular bundles. This case was subsequently diagnosed as belonging to Friedreich's disease group of heredocerebellar ataxia. The third patient showed a low grade of papilledema, with normal vision and visual fields, and presented definitely a case of epidemic encephalitis.

UNDETERMINED CASES

There were twelve patients in whom, at the conclusion of the diagnostic study, a definite diagnosis appeared unwarranted. Five of these twelve patients showed a primary optic atrophy, four a secondary optic atrophy, and three an atrophy especially localized in the papillomacular bundles.

In three of these patients there was some reason to suspect syphilis. Two of these were cases of secondary atrophy, and one was a case of primary atrophy of the optic nerves. There was, however, in each of these patients, insufficient evidence to make the diagnosis even of a burnt-out syphilis.

In two patients, one with a primary atrophy and one with a papillomacular bundle atrophy, multiple sclerosis was suspected; but, again, the evidence was insufficient to make a diagnosis.

Three cases, one of primary atrophy, one of secondary atrophy, and one of atrophy of the papillomacular bundles, were undoubtedly cases of organic brain disease, but in each of these patients the picture was so confused that it was impossible to make a more accurate diagnosis, and the cases are therefore classed as undetermined.

In four patients, three with a primary atrophy, and one with a secondary atrophy, at the end of the diagnostic study, we were as much in the dark as we were at the beginning. In neither of these patients did it seem justifiable to advise air injections of the ventricles as an additional diagnostic procedure, and we were forced to discharge the patients with no diagnosis.

COMMENT

With the development of more accurate diagnostic procedures, it becomes increasingly easier to diagnose the etiologic factor in optic neuropathies. Thus, any comparison with earlier statistical reports is manifestly unfair. Yet it is of interest to compare the results of this study, shown in Table 1, with the earlier statistical study of Derby.⁶ Excluding traumatic cases, Derby reported 108 cases of optic atrophy; 7.3 per cent. were due to syphilis, 10.3 per cent. to toxic amblyopia, 8.2 per cent. to multiple sclerosis, 1.7 per cent. to brain tumor, and 5.5 per cent. to brain disease; 8.2 per cent. were scattering, while 67 per cent. were undetermined. It would seem that it is in the diagnosis of syphilis, brain tumor and sinus disease that diagnosis has made its greatest advance.

In regard to the sinus phase of the question, the point that prompted this study, it seems clear to us that the type of optic nerve disturbance caused by sinus disease is generally a rather definite clinical entity. The picture we have constantly observed is that of a retrobulbar nerve disturbance: diminished vision, the defect being in the central field and manifest by a central scotoma of varying intensity, normal field outlines, and

normal media and fundus. We have yet to observe any case of active, optic nerve disturbance secondary to sinus disease, which at the papilla showed any manifest, visible, ophthalmoscopic signs of inflammation or elevation of the disk. Yet we are not prepared to say that such findings may not occur. In our series there are two neuropathies observed in the atrophic stage, in which there must have been at one time visible inflammation or elevation of the nerve head, for the atrophies were distinctly secondary in type. The only etiologic factor that could be found to account for these pictures was evidence of an old chronic infection of the ethmoidal sinuses. Whether these infections were the true cause of the optic nerve disturbance, or whether some other cause was present at the time of the active lesion, cannot be said when the patients were seen only in the atrophic stage. But, certainly, any inflammation or elevation of the optic disk must be an exception, rather than the rule, in the disorders of the optic nerve caused by sinus disease.

There is one further point we should like to emphasize, and that concerns the nomenclature commonly in vogue to describe the various optic neuropathies. Throughout much of the literature, the terms "optic neuritis," "axial neuritis," "ascending" and "descending" neuritis, and "choked disk" are freely and confusingly used. The rather simple terminology used in this paper seems adequate to describe the various conditions. Concerning the terms "primary" and "secondary" atrophy, there will probably be very little difference of opinion. Likewise the term "retrobulbar" neuritis is usually used with the generally accepted meaning. The greatest confusion arises in the indiscriminate use of the terms "optic neuritis" and "choked disk." Elevation of the optic disk, or papilledema, can be caused by two widely different mechanisms. These mechanisms, respectively, are inflammation in the nerve itself, and increased intracranial pressure. Probably one condition is never present without the other being present in some degree. But in any given case of papilledema, either the inflammatory factor or the increased intracranial pressure factor is the predominating cause. If the term "optic neuritis" is reserved for the class of case in which actual inflammation in the optic nerve is the cause of the papillo-edema, and the term "choked disk" is reserved for the class in which increased intracranial pressure is the predominating etiologic factor, much confusion will be saved. If it is impossible to determine from the existing evidence which diagnosis is correct, no other diagnosis than papilledema is justified from the ophthalmologic picture. Such a system not only would greatly clarify the ophthalmologic terminology, but also would be a boon to the internist who is forced to deal with such conditions. There seems to be little excuse for the terms "axial neuritis" and "ascending" and "descending" neuritis. The condition can be described in less confusing terms, and in language more likely to be universally understood by both the ophthalmologist and the internist. Considerable sympathy must be felt for the internist who is forced to handle the present intricate and technical nomenclature, used frequently in such an indiscriminate manner.

SUMMARY

An analysis of eighty-six cases of various optic neuropathies has shown the following etiologic causes: syphilis, 40 per cent.; sinus disease, 12.7 per cent.; brain tumors, 11.6 per cent.; multiple sclerosis, 5.8 per cent.;

6. Derby, Haskett: Amaurosis (Atrophy of the Optic Nerve) and Its Treatment by the Subcutaneous Injection of Strychnia, Boston M. & S. J. 66: 508, 1902.

toxic amblyopia group, 11.6 per cent.; scattering, 3.5 per cent.; undetermined, 14 per cent.

The acute cases observed secondary to sinus disease all gave the clinical picture of a retrobulbar neuritis, without ophthalmoscopic evidence of inflammation or elevation of the papilla.

842 Park Avenue.

OPENING THE PERITONEUM IN OPERATIONS FOR EMPYEMA*

REPORT OF FOUR CASES

HOWARD L. BEYE, M.D.

IOWA CITY

In a study of a series of cases of empyema in which drainage had been performed at varying periods after the onset of the condition, and in which the cavities did not heal, it was determined that one of the commonest causes for failure to obtain a cure was that drainage had not been instituted at a dependent portion of the cavity.

In such cases a residuum of purulent exudate remains below the level of the drainage opening, no matter what position the patient assumes. This is particularly true of the empyema whose floor is formed by the diaphragm, which is the situation of most empyemas. An empyema cavity thus inadequately drained tends to be maintained not only because of the accumulated pus, but also because of the continuation of the infection of the pleura. The resultant cavity is therefore usually much larger than can be accounted for merely by the amount of exudate which collects at the bottom of the cavity below the level of the drainage opening. Acutely ill patients, in whom drainage has been performed through an opening improperly placed, may eventually recover, but the period of invalidism is greatly prolonged.

The establishment of dependent drainage of an empyema which has been improperly drained at a previous operation will be followed by a cure in the majority of cases. This is true even though the condition has been existent over a long period of time. Even an associated bronchial fistula will usually heal spontaneously as the empyema cavity drains, and becomes obliterated.

In very large chronic cavities it is often best to drain at two dependent points, so that there will be no stagnation of purulent exudate no matter what position the patient may assume. Particularly is this true if the cavity is irregular in shape and there is a recess which does not communicate freely with the main cavity.

Dakin's irrigation of a chronic cavity is undoubtedly of great value, but must be preceded by adequate drainage of the cavity.

The site of election for the establishment of drainage in either an acute or a chronic case should be not only in the lowest level of the cavity—just above the diaphragm in the great majority of instances—but in the posterior portion as well. An opening so placed allows of the most adequate drainage with the patient in either the dorsal position or the upright position following operation.

Accepting the principle of dependent drainage in empyema, one must realize that there is a certain risk in putting it into practice; namely, the danger of open-

ing the peritoneum through or below the diaphragm. This operative mishap may occur because of the obliteration of the costophrenic gutter in the pleural cavity, or because the diaphragm has risen to a level which is higher than normal. In either case the operator resects a piece of rib which normally is over the pleural cavity, and finds out too late that the anatomic relations are disturbed.

Demonstration of pus by the aspirating needle should always be carried out immediately before the operation is begun. This is a fundamental principle, and there are few cases in which it may be ignored. It is not enough that pus has been obtained by some other physician or by oneself even a short time before the patient is brought to the operating room; aspiration of pus must be the preliminary step in the operation. This should be done in what is felt to be the lowest portion of the cavity. In passing the needle through the chest wall, one must take care to hold it at right angles to the wall. There is a tendency to insert the needle obliquely upward, and in this way one may pass the needle through the diaphragm into the empyema cavity without realizing it.

When pus has been found by aspiration, subperiosteal resection is made of a portion of the rib immediately below the needle. Before the pleura is incised through the rib bed, however, the needle must be reinserted to make sure that the rib resection has been made over the cavity and not over or below the diaphragm. If at the level of the diaphragm, then the incision may be made in the interspace at this point into the empyema. In case this will not give sufficient room for drainage, resection of the rib above should be done.

By following the procedure as outlined, one may institute drainage of an empyema cavity in its dependent portion without opening through or below the diaphragm. It is not intended to discuss in this paper the relative merits of open and closed drainage, the value of irrigations with surgical solution of chlorinated soda (Dakin's solution) or other questions pertinent to the treatment of acute or chronic empyema.

In the cases of empyema treated in the surgical service of the University Hospital, the peritoneum has been opened four times in the experience of three different surgeons. This surgical mishap is mentioned so infrequently in medical literature, and so little stress is placed on it in surgical textbooks, that these cases are briefly reported.

REPORT OF CASES

CASE 1.—A boy, aged 17 years, who entered the hospital, Dec. 6, 1919, had developed empyema as a complication of influenza, and was admitted to the surgical service about one month after the symptoms of empyema developed. Pus had been found by his physician on aspiration. He had a high fever and a leukocytosis of 18,000. Signs of fluid were present in the right pleural cavity. Under procain and nitrous oxid anesthesia, aspiration, performed in the fifth interspace in the anterior axillary line, found thick pus. One inch of the sixth rib was resected subperiosteally below the needle puncture. What seemed to be thick pleura was incised beneath this point and the diaphragm was cut into, opening the general peritoneal cavity and the empyema cavity at the same time. The patient coughed, and some of the pus entered the abdominal cavity. The incision was drained by two tubes, one into the empyema and one below the diaphragm. Symptoms referable to the pleural infection rapidly subsided. Drainage was ordinarily profuse from the tube in the empyema. No drainage came from the other. The patient complained of abdominal pain, tenderness over the lower abdomen, and distention, and the postoperative febrile reaction was greater and more continuous than usual. On the

* From the Department of Surgery, State University of Iowa College of Medicine.

twenty-third day following operation, a tender bulging was found in the posterior wall of the rectum, an abscess in the culdesac. Under nitrous oxid anesthesia, an incision was made through the rectal wall, and a localized abscess containing several ounces of pus was drained. Cultures of this were sterile. The boy developed pneumonia following operation, and died on the eighth day.

The aspirating needle had passed just above the diaphragm, so that the rib resection was at the diaphragm level. If a needle had been again used before an opening was made into the rib bed, the relation of the diaphragm to the incision would have been noted and the opening into the empyema cavity would have been made above the diaphragm.

CASE 2.—A woman, aged 40, admitted, Feb. 4, 1919, presented symptoms of empyema of one week's standing. She had a high fever, and a leukocytosis of 23,000. There were signs of empyema on the right side. Aspiration by an internist in the eighth interspace in the level of the scapular angle had obtained pus. Under nitrous oxid-oxygen anesthesia, aspiration was made in the eighth interspace at the point at which pus had been observed in the morning, but none was found. Resection of a portion of the ninth rib was made in this line, and what seemed to be thick pleura exposed. It was pierced by a sharp pointed hemostat and proved to be diaphragm, for the abdominal cavity was opened, exposing the dome of the liver. The opening in the diaphragm was closed by catgut suture. The rib above was then resected, and the empyema cavity opened through thick pleura. A pneumococcus was grown from the pus. The patient had a regularly remittent fever to 102 F. for several days, with a gradual return to normal. She had a chill on the eighteenth day. The drainage tube was removed from the empyema cavity on the forty-seventh day, and the patient sent home apparently well on the fifty-fifth day. She returned in two weeks because of pain and tenderness under the costal border to the right of the epigastrium. A subdiaphragmatic abscess was drained anteriorly, after which the patient made an uneventful recovery.

In this case the needle was probably passed through the chest wall obliquely into the empyema cavity, and pus was found by the internist. The surgeon aspirated in exactly the same place at operation a short time later, and found no pus. Contrary to the principle laid down, needle exploration was not then repeated until pus was found. The peritoneal opening and subsequent infection might have been avoided if it had been, and certainly if the needle had been used before opening into what was erroneously taken to be pleura.

CASE 3.—A man, aged 42, developed streptococcic empyema on the left side following influenzal pneumonia. This was treated by three aspirations and injections of 2 per cent. dilution of liquor formaldehydi in glycerin, with a subsidence of the acute symptoms. Under nitrous oxid-chloroform anesthesia, three months after onset, aspiration in the eighth interspace in the posterior axillary line found pus. Subperiosteal resection was done of a portion of the ninth rib in this line. An opening was made through the pleura with a hemostat; this also opened the diaphragm. The opening in the peritoneum was sutured at once, and the empyema drained by tube. Recovery from the pleural infection was uneventful with no evidence of peritoneal involvement.

This case illustrates the point that demonstration of the empyema cavity by needle passed through the site of the resected rib should be carried out as an essential safeguard against injury to the diaphragm, when dependent drainage of a cavity is being sought.

CASE 4.—A man, aged 36, admitted, Nov. 7, 1920, had had pneumonia fourteen years before, followed by empyema of the left side, which was drained by rib resection. He wore a drainage tube until one year before admission, and then the wound healed. He entered the hospital because of malaise, pain in the chest and fever. Leukocytes numbered 13,000. Under ether anesthesia, aspiration, performed in four places posteriorly, was negative. Aspiration in the left anterior axillary line in the old scar obtained foul smelling pus. An incision was made over the rib just below, and a piece of rib resected. When an incision of what appeared to be pleura was made, the peritoneal cavity was entered, and

omentum and a loop of bowel appeared. The diaphragm lay above the level of the opening. A tube was carried to the opening and surrounded by a strip of iodoform gauze, and the incision was closed to them. Aspiration in the second higher interspace found pus, and resection of the rib below was done and the pleura opened. A long, narrow cavity was found containing a 6 inch soft rubber drainage tube lying on the diaphragm. The cavity was drained by a tube which was long enough to extend a considerable distance away from the wound. The incision was closed snugly to the tube. Cultures from the pus yielded a variety of bacteria, including the staphylococcus and hemolytic streptococcus. There was uneventful recovery from the pleural infection in spite of the fact that there was a bronchial fistula communicating with the cavity. The latter became completely obliterated. There was no evidence of peritoneal infection.

This is another case in which the first aspiration was probably done with the needle pointing obliquely to pass through the diaphragm into the empyema. Also, the peritoneum would not have been opened if the aspirating needle had been used after rib resection but before incising what was taken to be the pleura.

CONCLUSIONS

Drainage should be obtained in the most dependent portion of an empyema, acute or chronic.

When the empyema rests on the diaphragm, there is a certain danger of opening the peritoneal cavity either through or below the diaphragm.

Localization of the pus by the aspirating needle at the beginning of the operation and again after resecting a rib before incising into the empyema will obviate the danger of opening the peritoneum.

THE WASSERMANN REACTION IN SCARLET FEVER PATIENTS

GROVER E. CHRISTENSEN, B.S., M.D.
PAYSON, UTAH

The idea that the Wassermann reaction may be positive because of scarlet fever, independently of syphilis, is apparently current. Having had a desire to learn more as to the truth of such an idea, I have been prompted to make this investigation. The purpose of this report is briefly to summarize the literature bearing on this topic, and to give the results of my own investigations.

At a time when the Wassermann reaction was first beginning to attract attention—before the technic was well standardized, and when many observers were publishing many sorts of conclusions based on their faulty work—there appeared an article by Much and Eichelberg¹ to the effect that this reaction was positive in a large proportion of patients with scarlet fever. Appearing at the time it did, this article naturally made a more profound impression than it would have made if it had appeared later. The impression made by this and certain other confirmatory publications is still with us, though, I believe, it is erroneous. In the same, and the succeeding year as the publication of Much and Eichelberg, there appeared at least thirteen papers bearing on the subject and all by German authors. These are summarized in Table 1. In the light of more recent experience it would not seem unlikely that many of these authors used antigens which were anticomplementary or otherwise defective, and faulty technic. It is more instructive to examine the work of the later writers, who have used a more modern and better standardized technic.

1. Much and Eichelberg: Die Komplementbindung mit wasserigen Luesextrakt bei nichtsyphilitischen Krankheiten, Med. Klin. 4: 671, 1908.

Noguchi,² using his acetone-insoluble lipoid antigen, found two weakly positive reactions in sixty-two cases of scarlet fever.

In 1911, Kolmer,³ using as antigen alcoholic extract of liver, noted five positive reactions in 250 cases of scarlet fever. These were observed at single examinations ranging from the thirteenth to the fortieth day of the disease. Apparently none of the patients were reexamined at a later time. In the same material, using the Noguchi antigen, he found sixteen positive reactions. In none of the patients was there a history or sign of syphilis. However, he evidently considers the cases as syphilitic, and concludes that the Wassermann reaction in scarlet fever is uniformly negative.

were fifty-two tests, thus distributed according to the week of the disease: first week, twenty; second week, seventeen; third week, five; fourth week, four; fifth week, two; sixth week, one; seventh week, one, and not stated, two. Five patients gave positive reactions in their serum, but only with the cholesterolized antigen. On four of these patients, subsequent reactions were negative. These are summarized in Table 2.

Of the fifty-eight cases, that I studied, nineteen were observed in the contagious wards of the St. Louis Children's Hospital, and thirty-nine in the St. Louis Isolation Hospital. So far as possible, a Wassermann test was made weekly during the hospital stay, beginning with the febrile period during the first week.

TABLE 1.—Early Reports of Wassermann Reaction in Scarlet Fever

Authors	Antigen Used	No. of Cases	Positive		Comment
			Number	Percentage	
Much and Eichelberg: Med. Klin. 4: 671, 1908	Watery extract of syphilitic liver	25	10	40	Antigen evidently defective
Seligmann and Klopstock: Berl. klin. Wehnschr. 45: 1719, 1908	Alcoholic extract of normal human heart	30	16	53	Apparently suspect their own antigen
Halberstaedt, Müller and Reiche: Berl. klin. Wehnschr. 45: 1917, 1908	Several from syphilitic liver	10	5	50	Weakly positive with one antigen, negative with another
Fraenkel and Much: München. med. Wehnschr. 55: 2479, 1908	Alcoholic extract of syphilitic liver	12	5	42	
Bruck and Cohn: Berl. klin. Wehnschr. 45: 2268, 1908	Alcoholic extract of syphilitic liver	28	8	28.5	
Fua and Koch: Wien. klin. Wehnschr. 22: 522, 1909	Alcoholic extract of guinea-pig heart	57	14	24.5	
Haendel and Schultz: Ztschr. f. Immunitätsforsch., Orig. 1: 91, 1908	Alcoholic extract of syphilitic liver	48	7	14.5	
Zeissler: Berl. klin. Wehnschr. 45: 1887, 1909	Alcoholic extract of human heart	42	3	7	
Boas and Hauge: Berl. klin. Wehnschr. 45: 1566, 1908	Alcoholic extract of normal human heart	61	3	5	Later reactions negative
Jochmann and Töpfer: München. med. Wehnschr. 55: 1690, 1908	.....	33	1	3	Negative at later examinations
Hecht, Lateiner and Wilenko: Wien. klin. Wehnschr. 22: 523, 1909	Alcoholic extract of guinea-pig heart	105	3	3	All reacting positively had nephritis
Meier: Med. Klin. 4: 1383, 1908.....	Watery extract of syphilitic liver	52	1	2	Weakly positive
Schleissner: Wien. klin. Wehnschr. 21: 1375, 1908	Alcoholic extract of guinea-pig heart	20	0	0	
Hoehne: Berl. klin. Wehnschr. 45: 1717, 1908	Alcoholic extract of syphilitic liver	37	0	0	

Laederich and Bory⁴ report a series of twenty cases, of which nineteen gave positive reactions with a cholesterolized antigen during the first four days of the disease. The reaction then became weak, and was always negative by the fifteenth day. The reaction with the less sensitive antigen was rarely positive, even during the first few days of the disease.

My report concerns a total of 110 cases, of which fifty-two were compiled from the records of the St. Louis Children's Hospital, and fifty-eight were observed by me during the course of this investigation. The Wassermann reactions were performed in the laboratory of the St. Louis Children's Hospital, along with the routine Wassermann tests of that institution. All were carried out with 0.1 c.c. of inactivated serum, with both the alcoholic and the cholesterolized antigens at incubator temperature.

In the compilation of the records of the St. Louis Children's Hospital, the records of all the scarlet fever patients that had been admitted to the hospital in recent years, on whom a Wassermann test had been made, were carefully reviewed. In addition to the fifty-two cases described, there were four cases of clearly defined syphilis, all of which gave positive reactions in both antigens at every examination. Of the fifty-two cases, forty-seven cases gave negative reactions. Five of these patients were examined twice, so that in all there

One patient under observation was not included in this report, as she was known to have had syphilis previously. Of the fifty-eight cases, fifty-three gave negative reactions at all observations. In these fifty-eight cases, 183 observations were made, thus distributed according to the week of disease: first week, thirty-seven; second week, forty-three; third week, forty-three; fourth week, thirty-one; fifth week, eighteen; sixth week, ten, and seventh week, one. Five patients

TABLE 2.—Wassermann Reactions in Five Cases of Scarlet Fever

Patient	Week of the Disease			
	2	3	4	
W. E.	C 2 plus	C 3 plus	Neg. 6/11/19 1/ 4/20
V. E.	C 4 plus	Negative	Negative	
M. B.	C 2 plus	Negative	Negative	
E. C.	C 2 plus	C 2 plus		
H. H. ....	.....	C 3 plus	Negative

gave positive reactions in their serum, but only with the cholesterolized antigen. All five gave negative reactions subsequently. The positive cases are summarized in Table 3.

COMMENT

There were ten positive reactions observed in 110 cases of scarlet fever. They were positive only in the cholesterolized antigen, and then the positiveness was only transitory.

It must be admitted that a positive Wassermann reaction occurs as a result of scarlet fever; but such a

2. Noguchi, Hideyo: Serum Diagnosis of Syphilis, Philadelphia, 1911, p. 130.
3. Kolmer, J. A.: Complement Deviation in Scarlet Fever, with Comparative Studies of the Wassermann and Noguchi Systems, J. Exper. Med. 14: 235 (Sept.) 1911.
4. Laederich and Bory: Bull. et mém. Soc. méd. d. hôp. de Paris 43: 504 (May 29) 1919.

statement whenever made, should have considerable qualifications. In the vast majority of instances of hereditary syphilis, whether latent or active, the Wassermann reaction is positive with the least delicate of antigens. It is seldom that one is called on to give serious consideration to a weakly positive Wassermann reaction in childhood. A strongly positive Wasser-

The incidence of positive protein tests, however, drops from a high percentage in children to a very low figure in the adult eczemas. The percentage of positive tests drops off sharply in the second and third years of life. I have had an opportunity to follow some of these cases of eczema for periods of from two to three years. During this time the eczema in many of the children recurred at irregular intervals. These recurrences could usually be traced to a dietary indiscretion, and in most instances were promptly effaced by dietary adjustments.

TABLE 3.—Wassermann Reactions in Five Cases of Scarlet Fever

Patient	Week of the Disease				
	1	2	3	4	5
M. S.	Negative	C 2 plus	Negative	Negative	
M. R.	C 3 plus	Negative	Negative	Negative	
E. P.	Negative	C 4 plus	Negative	Negative	
B. B.	C 4 plus	Negative	Negative	Negative	Negative
H. W.	C 2 plus	Negative			

mann reaction in scarlet fever, in my opinion, would be as good evidence as at any other time. I see no reason why scarlet fever should interfere with the diagnostic value of the Wassermann reaction in childhood. Should any difficulty arise as to the interpretation of a weakly positive reaction in an older person, it is not difficult to retest at a later time.

A cholesterin 2 plus reading in childhood is not looked on in the pediatric department of the Washington University School of Medicine as of any significance in diagnosis, although it may be of some importance in treatment, as in the case of E. C. and two others. Such a reaction would be disregarded, whether scarlet fever is present or not.

While under observation, some of the children showed a positive test to one or more proteins during the early months of life. Under the influence of a proper diet and of the blood's natural tendency toward desensitization, the positive tests often became fainter, and finally disappeared.

This was the case even when the child remained sensitive to the given protein, as was shown by clinical tests, viz., ingestion of suitable amounts of the offending protein. It seems from such evidence that eczema may result from protein sensitivity, in a certain percentage of cases, in spite of a negative cutaneous test.

REPORT OF CASES

CASE 1.—B. C., a boy, aged 2 years, seen in February, 1920, with negative family history, had been breast fed for one year, and then given a suitable general diet. He had acute otitis media six months before I saw him, and a gastrointestinal upset three months before. He vomited and had frequent loose movements for five days. Then followed very closely a scattered papular eruption on the skin. This eruption had persisted. His birth had been normal. There was a slight rosary. The throat, heart and lungs were normal. The abdomen was prominent and flabby. The extremities were normal. Scattered on the skin were papular lesions. There were two annular lesions on the left arm, scaling. Behind the ears were scaling moist lesions.

Protein cutaneous tests were positive to egg yolk, egg white and oat; negative to casein, lactalbumin, wheat, beef, wheat glutenin, wheat gliadin, wheat proteose, wheat globulin, wheat leukosin, almond, pork, rye, pea, lamb and orange. It will be noted that neither casein nor lactalbumin gave a positive test.

Following these tests, egg and oat were omitted from the diet. The eczema improved but did not entirely clear up, showing occasional exacerbations until ten months later, when the following occurred:

Four days preceding the attack to be described, the child had a birthday party. Milk had been limited in the child's diet, but the mother felt that junket would be a safe treat. The child ate three large saucerfuls of junket. The following day he had a poor appetite, slept poorly that night, and complained of general abdominal pain in the morning. He ate no breakfast, and vomited several times; still he complained of abdominal pains during the day.

Examination showed a rapid pulse, respirations of 40, and a normal temperature. Breathing was labored, with sub-sternal and suprasternal retraction. Auscultation revealed many scattered musical râles with prolonged expiration. The skin showed scattered patches of eczema which, according to the mother, had become definitely worse since the party. Examination was otherwise negative.

All milk and milk products were eliminated from the child's diet. In three days this typical asthmatic attack subsided; the skin condition improved and finally cleared entirely.

Skin tests for casein and lactalbumin were again negative. Two months later the mother started giving top milk, and a marked exacerbation of the eczema occurred. She was again instructed to omit milk.

Seven months later, the child had an attack of vomiting lasting for two days. This followed ingestion of milk used in corn bread.

Five months later, he had an attack of asthma, following the eating of milk chocolate.

PROTEIN SENSITIVITY IN CHILDREN WITH NEGATIVE CUTANEOUS REACTIONS

EDWARD SCOTT O'KEEFE, M.D.

Physician, Children's Medical Outpatient Department, Massachusetts General Hospital

BOSTON

The percentage of positive protein cutaneous tests in the eczema of infants and younger children has been variously estimated as between 40 and 65 per cent. of the cases.¹ The presumption has been that the remaining negative cases were not due to protein sensitivity. There are, however, a not insignificant number of the remaining cases negative to all proteins used which can clinically be demonstrated to have a protein as the underlying causative factor. Schloss mentions this phenomenon. He reports cases in which there is shown clinically a definite food idiosyncrasy in spite of negative cutaneous protein tests. He states that the ingestion of certain foods, very often cow's milk, results in a gastrointestinal upset. The type of case I will discuss differs from Schloss' cases in that the reaction to the ingestion of the offending protein is cutaneous, in the form of eczema, rather than gastro-intestinal, as in his cases.

Many cases of eczema run an uninterrupted course from infancy, through early childhood, into adult life and are presumably due to the same etiologic factor.

1. Blackfan, K. D.: Am. J. M. Sc. 160: 341 (Sept.) 1920. O'Keefe, E. S.: Boston M. & S. J. 183: 569 (Nov. 11) 1920; A Dietary Consideration of Eczema in Younger Children, J. A. M. A. 78: 483 (Feb. 18) 1922. Schloss, O. M.: Allergy in Infants and Children, Am. J. Dis. Child. 19: 433 (June) 1920. Sidlick, D. M., and Knowles, F. C.: Value of Cutaneous Sensitization Tests Employed in Eczema and Papular Urticaria of Childhood, Am. J. Dis. Child. 23: 316 (April) 1922. Engman, M. F., and Wander, W. G.: Application of Cutaneous Sensitization to Diseases of Skin, Arch. Dermat. & Syph. 3: 223 (April) 1921.

This child, however, gave negative tests to both milk proteins during these two years, in spite of repeated attacks of asthma and exacerbations of eczema following ingestion of milk proteins.

CASE 2.—A child, aged 9 months, receiving breast milk, with one bottle composed of 6 ounces of whole milk and 2 ounces of water, had had eczema since 4 months of age, the condition being worse when supplementary feeding was added.

The cutaneous test for casein was positive.

Supplementary feeding was changed to a formula of 3 per cent. fat, 6 per cent carbohydrate and 0.25 per cent. protein. Breast feeding was continued. The child remained on this feeding schedule for three months, during which time the skin improved very decidedly. A small patch persisted on the arm, and a recurrent patch near one ear. Both were about 1.5 cm. in diameter. Soups, cereals and crackers were added to the diet.

As the child approached the age of 1 year, more bottles of the foregoing formula were added without evident harm.

After six months on this low milk protein diet, the cutaneous test for casein was negative. Increase of the casein content of the formula at this time showed, however, that the child was still sensitive to casein, in spite of the negative cutaneous test.

COMMENT

In the three years' existence of the eczema clinic at this hospital, numerous similar instances have occurred in which protein sensitivity could be clinically demonstrated in spite of negative cutaneous tests.

Temporary desensitization will not account for the phenomenon described, since the protein tests were repeatedly negative rather than negative only during a time of possible antianaphylaxis.

A lack of skin sensitivity is suggested by Schloss in regard to his cases of allergy which showed gastric intestinal manifestations. Such a lack of skin sensitivity does not exist, however, in the type of cases under discussion, as shown by the frequent recurrences of eczema following ingestion of the offending protein.

The phenomenon does suggest the possibility of a threshold of skin sensitivity to protein. Such a threshold we may presume to be higher in some cases than in others. In the first case outlined, the threshold is too high for the cutaneous test to elicit a response. A response occurred only after larger doses of protein were brought to the skin. Such larger doses, we may presume, are brought through the natural circulatory channels after ingestion of a given protein—doses large enough to cross the heightened threshold of skin sensitivity. A response is elicited, and manifests itself clinically as an eczema.

The raising of this threshold as the patient gets older would explain the diminished frequency of eczema after the early years of life. It would also explain the infrequency of positive cutaneous tests in those older children and adults in whom eczema does occur.

Individual variation in the height of the threshold of stimulation in various organs might well explain why ingestion of egg albumin, for instance, may result in eczema in one child, while, in another, asthma results.

Variation of the threshold height among the different tissues in a given child would explain the occurrence, as in Case 1, of an eczema first with an asthma later when the protein stimulus is increased.

SUMMARY

In the eczema of infancy there exists a certain percentage of cases in which the patient can be clinically demonstrated to be sensitive to a given protein. These patients do not give any cutaneous response to the protein tests.

Variation of the height of the threshold of sensitivity in the various tissues of a given individual may be the factor which determines whether hay-fever, asthma or eczema will result from foreign proteins with which the tissues are brought in contact.

483 Beacon Street.

THE RÔLE OF TRANSILLUMINATION IN DISEASES OF THE NASAL ACCESSORY SINUSES

EDWARD L. PRATT, M.D.

NEW YORK

The majority of textbooks dealing with diseases of the nasal accessory sinuses affirm or concede that transillumination is a more or less valuable diagnostic agent in conditions affecting the maxillary and frontal sinuses. In practice, however, one is surprised to find how infrequently it is used, and with what skepticism its value is appraised. As a result, the diagnosis of maxillary sinusitis, which should be the easiest to diagnose of all the sinuses, is missed in an astonishingly large percentage of cases.

In a recent article, Billings¹ says: "Diagnosis is the most important factor in the practice of medicine. Until the diagnosis is made, treatment may be ineffectual and often is irrational." The importance—economic as well as physical—of making an early diagnosis in sinus disease is too obvious a fact to need embellishment. It is nevertheless true that an early diagnosis of sinus disease is seldom made by the general practitioner unless the patient is suffering with localized pain over the region of the sinus affected.

The average internist has neither the training nor the equipment to detect pus between the middle turbinate and the outer wall of the nose. He is therefore often surprised and not a little chagrined when he sees an ounce or more of foul pus washed out of an antrum of a patient he has been unsuccessfully treating for a "cold" for two or more weeks. The patient is likewise chagrined when informed that he must have daily irrigations for another ten days or two weeks, for this involves an economic as well as physical hardship.

In such cases the specialist is frequently asked by the general practitioner how he may suspect an antrum infection, since the patient does not complain of pain. This is best answered by again quoting from Billings:

The general practitioner cannot be proficient in the more refined methods of examination which are necessary in the practice of the specialties of medicine and surgery. But he can and should be able to recognize the more common diseases of the eye, ear, pharynx, accessory nasal sinuses, locomotor apparatus, rectum and female pelvic organs with the simple available means at hand; furthermore, he should possess and use in routine practice . . . rectal, aural and vaginal specula, laryngeal mirrors, head mirror, . . . and an inexpensive electric light device, with storage battery, if this is needed, is now available for transillumination of the nasal accessory sinuses, jaws and other tissues. Daily use of these instruments will develop technical skill and make them valuable aids in diagnosis.

If the general practitioner who lacks the training essential for a proper nasal examination will disillusion himself of the erroneous idea that one cannot have sinusitis without pain, and if he will equip himself with a small portable transilluminator and use it as a routine in all cases in which the patient complains of a rhinitis,

1. Billings, Frank: *The Resourceful General Practitioner of Modern Medicine*, J. A. M. A. 80: 519 (Feb. 24) 1923.

he will seldom fail to diagnose a sinus infection, especially if it is unilateral and involves one of the maxillary sinuses. It must not be inferred from the foregoing statement that transillumination is *the* diagnostic sign in sinusitis. It is not. There is no one diagnostic sign in sinusitis, not even roentgenograms. But transillumination is such a simple procedure, requiring no special training or skill in its employment, and it so very frequently gives a hint or suggestion, that its positive evidence always merits thorough investigation.

The indictment of the general practitioner in the case of sinusitis applies with almost equal force to too many specialists in rhinology. Some idea of how frequently the specialist fails to diagnose sinus involvement may be gained from a perusal of the reports of the nose and throat clinics in any large city. The statistics given in the accompanying table are taken from the reports of four large nose and throat clinics in New York City.

Diagnosis of Sinus Involvement in Four Clinics

Number of nose cases treated	3,190	Maxillary sinus cases.....	9
Number of nose cases treated (four consecutive years)	5,637	Antrum punctures.....	12
Number of nose and throat cases treated.....	1,051	Acute sinus cases.....	3
Number of cases of rhinopharyngitis	1,175	Chronic sinus cases.....	14
		No sinus cases noted.....	—
Total	11,053		38

Those who are familiar with prevalence of sinusitis throughout the country, not even excepting California, will realize that these figures signify only one thing, namely, failure to recognize sinus disease. What the cause of this failure is, it is idle to discuss. The method of remedying it, however, is very simple—to make transillumination a part of every routine examination of the nose. Nor is the failure confined to the clinics alone: it is seen almost daily in private practice. A recent case of mine illustrates what is by no means an infrequent occurrence:

Mrs. J. K., aged 53, had been troubled with nasal discharge and polypi since 15 years of age. She had had polypi, "bone and flesh" removed from the nose at least twenty times by five recognized specialists. During this period she had suffered constantly with asthma. Questioned concerning any treatment of the sinuses (before I had made any examination), she stated that nothing had been done to the sinuses except that a year before some roentgenograms were taken, and she was told that they showed nothing except some "granulations." Following the roentgenograms she had an intranasal operation on the left ethmoids. Examination of the nose revealed both nares very spacious and filled with pus. Both middle turbinates had been entirely removed, and a large portion of both inferior turbinates had likewise been sacrificed. There was edematous, polypoid tissue in the left middle meatus in the region of the left nasofrontal canal. Transillumination of the sinuses showed a right frontal sinus that illuminated fairly well, the left frontal sinus being considerably darker. Both antrums were very dark. Examination of roentgenograms confirmed the findings on transillumination; i. e., the right frontal sinus was only slightly cloudy; the left frontal sinus and both antrums very cloudy. Both naso-antral walls were cocaineized beneath the inferior turbinates, and punctured and washed out. Nearly an ounce of broken down pus was washed out of both maxillary sinuses. The next day, the frontal sinuses were both irrigated; the return fluid was clear from the right frontal sinus, and contained a small amount of pus from the left side.

For thirty-eight years, this patient had been consulting recognized specialists from time to time; not one of the five had ever investigated the sinuses except

the one who had some roentgenograms taken, and he had accepted the roentgenographer's report as a final diagnosis. It may be argued that the presence of polypi and discharge should have, in themselves, been sufficient indication of sinus involvement, and that transillumination was not essential. This brings us to the next important feature about transillumination—its value as an indicator of what sinuses may be involved. It is no unwarranted assumption to state that, in the case here reported, a diagnosis of ethmoiditis was made, for the treatment was directed solely to this region. Had transillumination been employed and the darkness of the antrums investigated, treatment of the latter would probably have avoided the sacrifice of both middle turbinates and the entire ethmoid labyrinths. The common error of directing treatment to the ethmoid cells, often to the extent of sacrificing them in toto, while allowing an antrum full of pus to remain neglected, is in large part traceable to failure regularly to employ or properly to interpret transillumination.

The criticism that transillumination is unreliable is based on the fallacious premise that occasionally an antrum will illuminate darkly, and on puncture will be found to contain no secretion. This does occur; but if one will consider transillumination as only one of the signs of sinusitis, and if he will correlate its evidence with the other physical signs and compare the transillumination with the roentgenographic evidence (not the report of the roentgenographer), he will seldom be misled. Better by far to puncture an antrum with negative results than to allow an antrum filled with pus to escape proper treatment. No harm results from a properly conducted diagnostic puncture, while irreparable damage is done by removing large amounts of nasal mucous membrane from the ethmoid region—tissue capable of returning to a normal state—leaving untouched a reservoir of pus in the maxillary sinus.

CONCLUSIONS

In order to appreciate the valuable aid obtained by transillumination in diseases of the maxillary and frontal sinuses, these points should be kept in mind:

1. It must be used as a routine part of every nasal examination.
2. Its evidence is not infallible, but must be correlated with the other signs of sinusitis—the history, the presence and location of pus in the nose, and the appearance of roentgenograms.
3. Positive findings always merit full investigation, even puncture and irrigation.
4. Negative evidence on transillumination does not rule out sinusitis in the presence of other positive signs.
5. Due allowance must be made for the degree of illumination to be expected in patients with thick bones as compared to fair skinned, thin walled patients. Patients who have had one or more previous attacks of sinusitis with a resultant thickening of the mucous membrane lining the sinus will often illuminate with varying degrees of darkness, even though no secretion is present in the sinus.

When used in this manner, the accumulated experience obtained by routine daily use will prove transillumination to be a most valuable aid (1) for the general practitioner untrained in nasal examination; (2) as an indication that something more than the ethmoid sinuses is involved; (3) as a check on the interpretation of roentgenograms, and (4) as an indication of the progress of treatment.

29 East Sixty-Fourth Street.

POSITIVE WASSERMANN TEST IN
A FATAL CASE OF ESTIVO-
AUTUMNAL MALARIA *

GUTHRIE McCONNELL, M.D.†

CLEVELAND

This case is reported because of the control of a positive Wassermann reaction by necropsy in a case of malaria, that clinically showed no evidence of syphilis. The earlier statements to the effect that a positive Wassermann reaction may occur in malaria, without syphilis, were based largely on clinical examinations.

REPORT OF CASE

History.—L. D., a white man, aged 48, well developed and well nourished, a structural iron worker, stated that he had had several attacks of gonorrhea, and that about twenty-five years before he had had a chancre for which he received intravenous therapy. Examination revealed a slight scar on the corona. In July, 1921, about three months before admission, he noticed that he did not seem as strong as usual and was unable to do the heavy work required. He was in New Orleans at the time, and remained there until about a week before admission, when he "beat" his way north to Cleveland. For three weeks he had noticed that he staggered slightly on walking, and he had been somewhat dizzy. He was somewhat amnesic.

Examination.—The pupils were small, irregular and reacted sluggishly to light, and also, though to a less degree, to accommodation. On account of his general condition, no Romberg test was made. The tendon reflexes were present and normal; the abdominal and cremasteric reflexes were absent. No other abnormalities were found.

The temperature on admission, Oct. 15, 1921, was 38 C. (100.4 F.) and rose to 40.8 C. (105.2 F.) at midnight. On the following days it would fall to 37.4 C. (99.3 F.) and then rise to 40.4 C. (104.7 F.). He became progressively worse, and developed icterus and delirium; death took place, October 19. Blood examinations showed an average of about 11,000 white cells, 3,500,000 red cells, and 75 per cent. hemoglobin. Many parasites were found in the red cells, but only three definite crescents were observed. The urine contained albumin, granular casts and a few leukocytes, but no red cells. There was no hemoglobinuria.

The spinal fluid was clear without increase in pressure; ten cells were present, all mononuclear; globulin tests were negative. The Wassermann reaction with blood taken during the febrile stage was four plus; no particular significance was attached to this, as it was thought it was due to the presence of malaria.

The clinical diagnosis was malignant tertian malaria.

Necropsy.—This was performed twenty-four hours after death. No abnormalities of the external genitalia were noticed. The heart weighed 450 gm.; the muscle was pale brown and very flabby. The aortic orifice measured 10 cm., and the aortic leaflets were distinctly and uniformly thickened, but there were no vegetations. The coronary cusps were slightly adherent at their attachments. Nothing abnormal was noted in the remaining orifices or leaflets. Immediately above the aortic orifice and extending, in diminishing degree, to the celiac axis, there was an extensive mesaortitis. The surface of the vessel was thrown into many fine longitudinal wrinkles, and scattered throughout were many circumscribed areas of a pearly gray, hyaline fibrosis. In addition, there were irregular, yellowish areas of atheroma, and in many places definite scars with a disappearance of the media. These scars were depressed, and stellate in shape. About 4 cm. above the aortic leaflets, on the anterior wall of the

aorta, was a slightly bulging area about 1 cm. in diameter. This was composed of scar tissue and, when held to the light, was thin and translucent; it was apparently a beginning aneurysm. The spleen weighed 500 gm. Its capsule was light purple, and ruptured readily, allowing the semiliquid, dark red pulp to escape. Not the slightest differentiation could be made out. The organ seemed to be enlarged upward under the diaphragm rather than downward. The kidneys weighed 350 gm., and were slightly enlarged, pale and flabby. The capsule stripped easily and allowed the tissue to bulge. The cut surface was pale, the cortex was somewhat thickened, and striations were indistinct. The glomeruli were not apparent. In some places there was very little differentiation between pyramids and cortex. In the lower poles the pyramids were congested and striated. The pelves were normal. The liver weighed 2,000 gm., and presented evidences of an old hepatitis on the upper surface of the right lobe.

Microscopic Examination.—This was incomplete, but the principal features discovered were: The heart muscle fiber bundles were somewhat pushed apart by edema, and some areas showed definite increase of connective tissue around the individual fibers. Many of the fibers contained much granular, yellow pigment that extended outward from the opposite poles of the nuclei. There was also some fragmentation. The liver presented a dense lymphocytic infiltration around the portal vessels. The lobules were congested, particularly in the peripheral zone, and the sinusoids contained a large amount of almost black pigment granules. Some pigment was free, but most of it was within endothelial cells. Many of the liver cells also contained a large amount of a similar pigment. The spleen was so congested that normal relations were destroyed. The entire tissue was filled with a dark brown, almost black, granular pigment, which was both intracellular and extracellular. The pigmented cells had a large oval nucleus surrounded by a large amount of cytoplasm.

The aorta presented slight subintimal degeneration, but the chief changes were within the tunica media. There were many large areas of well advanced fibrosis containing many lymphocytes and some plasma cells. The round cell infiltration was particularly conspicuous along the course of the vasa vasorum. An extensive infiltration of similar nature was present in the adventitia.

The cerebral capillaries were congested and many of the red cells in these vessels contained a definite granule, or a small mass of minute granules, of an almost black pigment. Similar congestion and pigmentation of the red cells was observed in the vessels of the cerebellum.

Anatomic Diagnosis.—This was: edema of the brain, with intravascular pigmentation; anthracosis, edema and congestion of the lungs, with catarrhal bronchitis, and bronchopneumonia; cloudy swelling of the myocardium; insufficiency of the aortic orifice, syphilitic mesaortitis and beginning aneurysm of the aorta; slight cardiac hypertrophy and dilatation; chronic parenchymatous nephritis, with an acute exacerbation; acute splenic tumor; chronic perihepatitis; pigmentation of the liver, spleen and brain.

COMMENT

In this case there were no clinical findings indicative of syphilitic changes, in spite of the history of infection. The necropsy, however, disclosed very definite syphilitic lesions of the aorta, with involvement of the aortic leaflets. In general, experience at this hospital has been that when a necropsy has been performed on a body from a person who has given a positive blood Wassermann reaction, lesions have been discovered that were evidently syphilitic in nature. This case of malaria proved no exception to the rule.

Modern Science and Current Practice.—The findings of modern science have shaken the hold of the sources of medieval authority, but they have done little as yet to loosen our inveterate habit of relying on the more insidious authority of current practice and belief.—Robinson: The Mind in the Making.

* From the Departments of Pathology, Cleveland City Hospital and Western Reserve University.

† Owing to lack of space, this article is abbreviated in THE JOURNAL by omission of a review of previous literature. The complete article appears in the author's reprints.

† Dr. McConnell died, January 5. Among his papers was a report of the case here recorded, which was prepared for publication by Dr. Howard T. Karsner and Dr. E. E. Ecker.

AUTOSERUM TREATMENT OF PNEUMOCOCCUS MENINGITIS COMPLICATED BY SYPHILIS

WILL S. HORN, B.S., M.D.
FORT WORTH, TEXAS

Intraspinal injection of autoserum has recently been used with considerable success in the treatment of pneumococcus meningitis;¹ but references in the literature² warn against its use in cases complicated by syphilis, for fear of spreading this disease to the meninges. This caution seems to be founded on premature judgment, for the patient with syphilis who develops a secondary meningitis may be safely and wisely so treated by combining the autoserum with arsphenamin in the form of modified Swift-Ellis treatment.

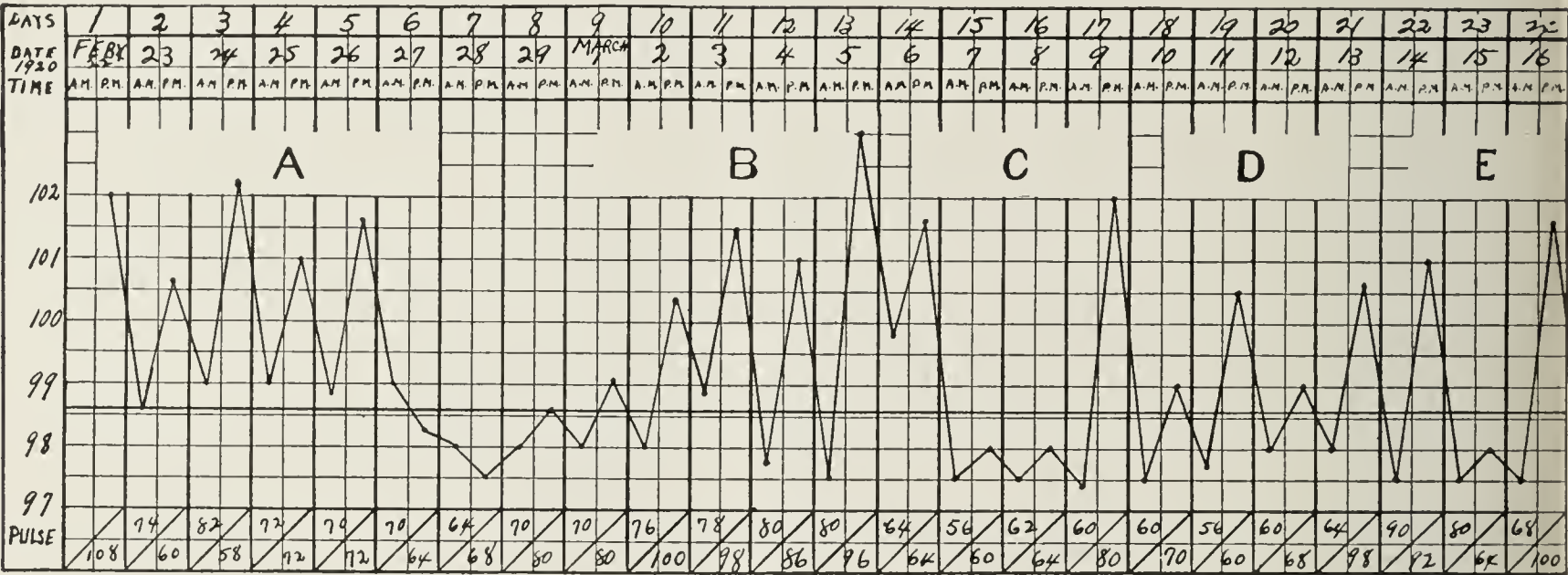
REPORT OF CASE

History.—G. H. S., an American farmer, aged 22, married, entered the hospital, Feb. 22, 1920, complaining of headache, vomiting and fever. Two weeks before, he had

were negative, and ophthalmoscopic examination revealed double choked disks. Spinal puncture yielded 30 c.c. of a very cloudy fluid under greatly increased pressure.

Laboratory Examination.—The red blood cells were 4,070,000; white cells, 25,000; hemoglobin 70 per cent., and the blood Wassermann reaction positive (++++). The specific gravity of the urine was 1.034; the urine was acid in reaction, with a trace of albumin but no sugar, casts or pus. The spinal fluid cell count was 16,400, of which 96 per cent. were polymorphonuclears. No organisms were found in the direct smear, but a twenty-four hour culture yielded numerous small, moist colonies with a greenish halo about them. Smears revealed a lanceolate, encapsulated, gram-positive diplococcus identified as pneumococcus.

Clinical Course.—This divides itself into six periods. The period of treatment with polyvalent antipneumococcus serum includes the first five days. As a precautionary measure, 30 c.c. of meningitis serum was given intravenously on admission, and twelve hours later 30 c.c. intraspinally; but at the end of twenty-four hours a positive diagnosis of pneumococcus meningitis had been made, and thereafter polyvalent pneumococcus serum was given in the vein at twelve and twenty-four hour intervals, totaling 250 c.c. in four days. The spinal cell count rose, February 23, to 20,000 per cubic millimeter, but, February 27, it had dropped to 3,500, and



Temperature: A, severe, acute, meningeal symptoms—headache, vomiting, partial deafness and delirium; polyvalent antipneumococcus serum, autoserum intraspinally—phenomenal relief of symptoms; D, period of spinal irrigations with from 50 to 100 c.c. of physiologic sodium chlorid; ventricle infection in which there was intermittent drainage, but ventricular puncture not done; F, period of arsphenaminized autoserum with no sequel except impaired hearing, slight in both ears; blood and spinal Wassermann reactions negative.

had influenza complicated by influenzal pneumonia, but for three or four days had been up and around the house. Twenty-four hours before admission, he began to ache all over, and had a severe headache, high fever, rigidity of the neck, nausea and vomiting. The condition progressed until he had become more or less unconscious and delirious. During this time, his entire family had had influenzal pneumonia; two children died, a third was seriously ill, and his wife was not expected to live. There was nothing significant in the previous history except syphilitic ulcer in 1915, for which he had been given one dose of arsphenamin and several doses of sodium cacodylate. The Wassermann test had never been made.

Physical Examination.—The patient was rather anemic and undernourished; he lay with the head retracted, the thighs flexed, and in a state of delirium. Every few minutes he would cry out and put his hands to his head, as though in pain. There was more or less constant muttering, with extreme restlessness and frequent attempts to get out of bed. The neck was extremely rigid; the pupils were small but equal; respiration was shallow, and the abdomen was of the scaphoid type, with no evidence of pathologic change in the chest or the abdomen. A scar on the penis near the frenum was observed. Koenig's sign was positive; the knee jerks were normal; the Babinski and Gordon-Oppenheim tests

treatment was discontinued. Marked impairment of hearing had been observed, February 23, and the patient had complained of blurred vision. February 27, he developed an arthritis of the left wrist, but otherwise was rapidly improving and apparently cured of his meningeal infection, the temperature remaining normal three days.

March 1, the period of urticaria began, and with it meningeal symptoms returned. For four days the temperature fluctuated, going as high as 103 F., and the spinal cell count ranged from 3,240 to 4,450. Owing to fear of anaphylactic shock, the use of antipneumococcus serum was not resumed, since desensitization in other cases had proved unsatisfactory and dangerous. Spinal punctures gave temporary relief, but the patient was becoming progressively worse, and seemed doomed. It was at this time, March 6, that autoserum treatment was instituted, and 20 c.c. of the patient's own blood serum injected intraspinally. The first dose caused the spinal cell count to jump from 7,612 to 24,600 in eight hours and the temperature to normal in twelve hours, where it remained for more than two days, at which time the spinal cell count had dropped to 650; and, again, it appeared as though the patient were recovering. He received four injections of autoserum at twenty-four hour intervals, but prior to the last, March 9, he had a second relapse with temperature rising to 103 F. and spinal cell count to 18,100. Smear of the spinal fluid at this time showed

1. Sanders, T. M.: Am. J. M. Sc. 159: 246 (Feb.) 1920.
2. Goodman, A. L.: Arch. Pediat. 33: 649 (Sept.) 1916.

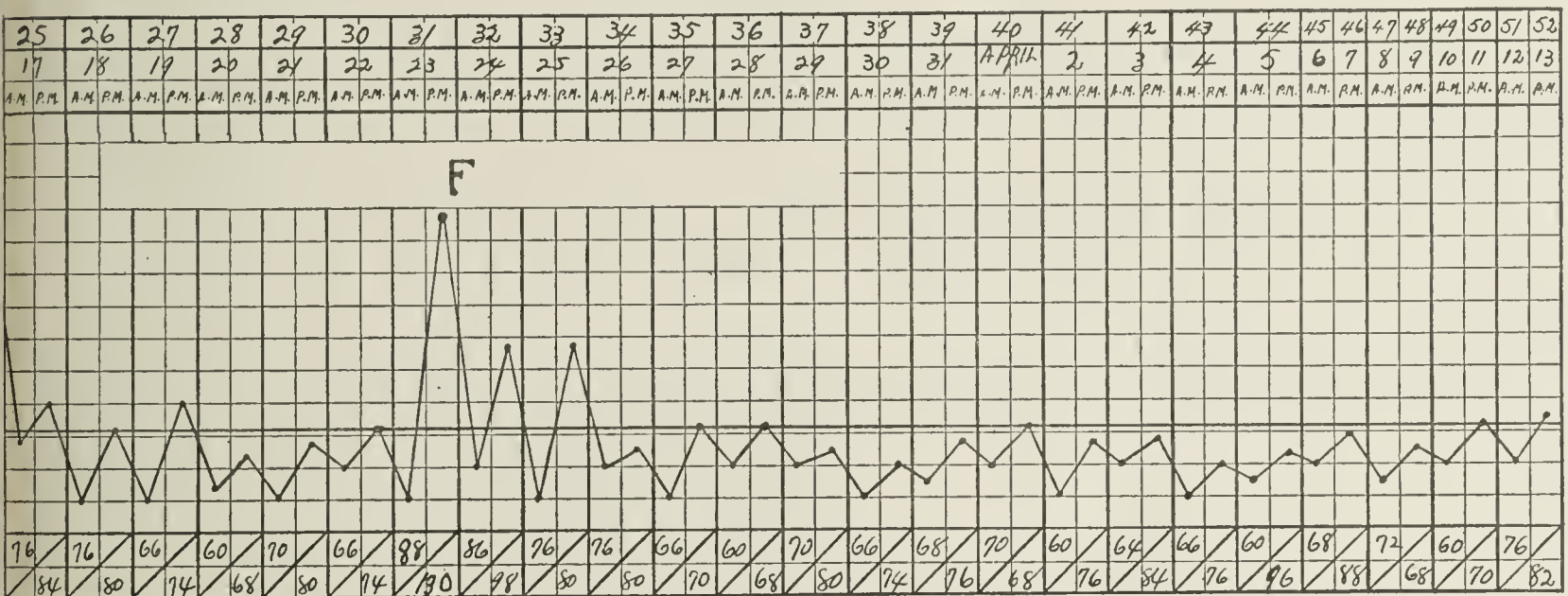
many encapsulated, lanceolate, gram-positive diplococci, but the cultures were sterile. It was thought that there was a focus somewhere in the meninges or lateral ventricles which was draining intermittently and reinfecting the entire meninges, thus accounting for the apparent relapses.

For fear of spreading syphilis to the central nervous system, the autoserum treatment was discontinued, and from March 10 to 13 spinal irrigations were given at from twelve to twenty-four hour intervals with slight improvement, the cell count varying from 5,291 to 880, and the temperature from 101 to 99 F. March 12, blood examination showed 3,100,000 erythrocytes, 65 per cent. hemoglobin and 16,200 leukocytes; urinary findings were still negative, and the spinal cell count was 1,120. A fifth injection of autoserum was given, March 13, and the following day 0.2 gm. of arsphenamin given with the aim of instituting arsphenaminized autoserum; but an immediate chill with a severe reaction caused postponement of this procedure. It was noted, however, that the ensuing thirty-six hour period showed marked improvement, with normal temperature, and the spinal cell count dropped as low as 331. The urine remained negative. The patient then (March 16) had another temperature rise to 101.6 F., and spinal cell count to 2,992.

March 18, blood count showed 3,370,000 erythrocytes, 65 per cent. hemoglobin and 9,200 leukocytes; spinal cell count,

dose of arsphenamin though small, caused quite a severe reaction, but exerted no depressing effect on any of the vital functions, and no increase of albumin or casts in the urine. The jump in the spinal cell count from 7,612 to 24,600 in eight hours following the first intraspinal injection of autoserum was considered a good sign, and was thought to be due to opsonins of the blood being applied in enormous quantities directly to the seat of infection.⁴ Injection of the serum always caused more or less pain in the abdomen and legs, and occasionally slight increase of headache, but no severe or alarming symptoms.

Autoserum treatments begun on the fourteenth day of illness with untreated serum were discontinued after five doses, and arsphenamin was begun on the twenty-second day because of the patient's serious condition requiring it as a means of rendering the autoserum safe for intraspinal injection. These treatments were resumed after the second dose of arsphenamin on the twenty-sixth day of illness in the form of modified Swift-Ellis treatment, thus combining the anti-syphilitic treatment of arsphenamin with the autoserum



250 c.c. in vein; *B*, period of urticaria—severe itching, photophobia, vomiting, headache, and return of deafness after period of relief; *C*, solution; *E*, period of intravenous arsphenamin plus spinal irrigations with physiologic sodium chlorid solution; patient thought to have lateral intraspinal; prompt relief of symptoms; two days after first treatment, he felt better than at any previous time; gradual return to normal,

1,573; and spinal Wassermann reaction positive (+++). The patient's condition was gradually growing worse in spite of intermittent periods of relief, and puncture of the lateral ventricles was seriously considered to institute drainage, but deferred in favor of continued autoserum treatment combined with arsphenamin. He was given 0.4 gm. of arsphenamin, and fifteen minutes afterward 120 c.c. of blood was drawn for use as arsphenaminized autoserum. This was given in 20 c.c. doses at intervals of forty-eight hours, and the patient showed the most marked improvement he had yet had. March 21, he was practically normal, with spinal cell count of 92; but March 23 he had his last relapse, the temperature rising to 102 F. and the spinal cell count to 6,952. March 24, 0.5 gm. of arsphenamin was given, and arsphenaminized autoserum on the two succeeding days. From this time on, the temperature remained normal, the condition gradually improved, and the spinal cell count dropped to 9, April 6, when the patient was sitting up and apparently out of danger.

COMMENT

Spinal irrigations with physiologic sodium chlorid solution were continued at intervals of from twelve to forty-eight hours throughout the course of the disease as a matter of safety to insure drainage.³ The first

treatment for the meningitis, forming a combination of therapy which, in our judgment, resulted in the patient's recovery. Altogether, he received five doses of untreated autoserum, six doses of arsphenamin, and seven doses of arsphenaminized autoserum—three injections after the second dose of arsphenamin, two after the third, one after each of the fifth and sixth doses, and none following the first and fourth doses. He received a total of thirty-seven spinal punctures and irrigations, and was discharged on the fifty-second day of the disease, cured of his meningitis, and blood and spinal fluid Wassermann reactions negative. Dec. 12, 1921, the only sequel to be discovered was partial impairment of hearing; the blood Wassermann reaction was again positive (+ + + +); he had had no treatment since leaving the hospital, felt perfectly well, and refused spinal puncture.

Speculation as to the relative value of the various therapeutic procedures employed during the course of this case can result in no absolute dictum; but a comparison of the second half of the temperature chart with that of the first is rather convincing as to the

3. Farmachidis, C. B.: Gaz. d. osp. **40**:988 (Nov. 13) 1919; abstr. J. A. M. A. **74**:1132 (April 17) 1920.

4. Weaver, A. H., and Tunnickliff, Ruth: *J. Infect. Dis.* **9**: 130, 1911.

promptness and permanence of relief. Whether he developed an immunity to his infection regardless of the arsphenaminized autoserum treatment or by virtue of it cannot be stated with certainty; but the results obtained were sufficient to warrant its recommendation for use by others. Certainly, the arsphenamin directly combated a serious handicap under which the patient was laboring, and indirectly aided his fight against the pneumococcus infection and made the serum safe for intraspinal injection.

TECHNIC

Arsphenamin is given in the usual manner at a temperature of from 100 to 105 F., diluted in 200 c.c. of freshly distilled water. Fifteen minutes after the last of the solution has entered the vein, from 4 to 6 ounces (120 to 175 c.c.) of blood is drawn aseptically and allowed to stand a few hours in the icebox for the serum to separate. This is pipetted off in doses of from 12 to 20 c.c., and sealed. A mixture of more or less blood cells does not injure the serum for intraspinal use. At the time of spinal puncture, the fluid is warmed to body temperature and slowly injected with a Luer syringe after withdrawal of from 30 to 50 c.c. of spinal fluid. Following injection of the serum, the foot of the bed is elevated 12 inches for a period of four hours.

CONCLUSIONS

1. Intraspinal autoserum therapy is a rational procedure in cases of secondary meningitis, because it brings the antibodies of the blood in direct contact with the invading bacteria.

2. It is indicated in any case of prolonged meningitis in which the continued giving of stock serum would endanger from anaphylactic shock, and is safer than desensitization with continued use of antigens made from horse serum.

3. Syphilis is no contraindication for this treatment because, with proper precautions, it can be combined with arsphenamin in the form of modified Swift-Ellis treatment.

1028 Fifth Avenue.

MANAGEMENT OF THE FEMALE URINARY BLADDER AFTER OPERATION AND DURING PREGNANCY

A FURTHER STUDY OF RESIDUAL URINE IN ITS BEARING ON URINARY TRACT DISTURBANCES *

ARTHUR H. CURTIS, M.D.

CHICAGO

The normal bladder is highly resistant to infection. It also appears that those infections which do develop in the properly functioning healthy bladder quickly disappear unless maintained by kidney lesions.

A notable exception to these observations is found in the frequent occurrence of cystitis following pelvic operations. In search for an explanation of this complication, we discovered, eight years ago, that patients who are repeatedly catheterized after operation usually fail to regain immediately the power of complete evacuation. This discovery led to the suspicion that residual urine may be an important factor in the development of postoperative cystitis.

A second exception to the rule that the bladder is resistant to infection and tends to heal quickly is found

in the occurrence of pyelitis during the course of pregnancy and in the puerperium. And here, again, I found that retention of several ounces of residual urine is frequently demonstrable. If a residue of urine after micturition is not evident at the time pus is discovered in the urine, the history usually reveals that it has been present during the earlier months of pregnancy.

As previously pointed out,¹ both in disease and in experimental work it has been found that if virulent bacteria enter the normal bladder, they tend to do no harm.² In view of this evidence of others, combined with corroborative personal experience, it seemed highly probable that the added complication of residual urine is the factor that accounts for many otherwise inexplicable urinary tract infections, notably postoperative infections and those complicating pregnancy. A study of residual urine in its bearing on urinary tract disturbances forms a basis for the present report.

PREVIOUS MANAGEMENT OF THE BLADDER

Previous to 1915, few infections resulted among patients who were not subjected to catheterization after operation, but suffering from distention was often so severe that we decided it was preferable to relieve with the catheter when necessary. The urine was drawn for relief of distress from distention, and catheterization was immediately discontinued on resumption of spontaneous urination. The result was comparative comfort to the patients, with an aftermath of urinary tract infection in many cases; the possibility of pyelitis was a source of anxiety in all catheterized patients.

PRESENT METHOD OF MANAGEMENT OF THE BLADDER

The cardinal principles underlying our present method of care of the bladder are two: (1) Catheterization is avoided if possible; (2) if the catheter has been employed, it is thereafter used once a day until the patient has regained the power of complete evacuation.

Despite our desire to dispense with the catheter, no patient is allowed to suffer from distention.

If the catheter has been required only once or twice, the patient is carefully watched for symptoms of retention or infection (frequency, distress, pyuria). Further treatment may not be indicated.

Whenever it has been necessary to draw the urine repeatedly, a catheter is thereafter passed once each day, immediately after urination, until residual urine disappears. In the performance of this test, a boiled rubber catheter is preferred, the parts are cleansed with weak mercuric chlorid solution, and a few cubic centimeters of $\frac{1}{8}$ per cent. silver nitrate is instilled before withdrawal of the catheter.

Residual urine of less than one ounce is considered normal if free from pus; when pus is present, the test is repeated once daily for two or more days.

Hexamethylenamin is given in an amount just short of that which causes burning or, preferably, in a quantity sufficient to reveal formaldehyd in the urine. Acidity of the urine is maintained with benzoic acid or acid sodium phosphate.

MATERIAL STUDIED

It has been possible to study our present plan of treatment in the management of 1,595 female patients

1. Curtis, A. H.: Stasis of Vesical Urine in Relation to Urinary Tract Infections, J. A. M. A. **66**: 1456 (May 6) 1916.

2. In typhoid fever, with bacilluria in more than 20 per cent., cystitis is rare. Mathers, in a series of twenty-five patients with pneumonia, demonstrated a pneumococcus bacteriuria in twelve; not one yielded clinical evidence of cystitis. Rovsing found that instillation of large quantities of virulent bacteria into the healthy bladder produces no change in the mucous membrane.

* Read before the Chicago Gynecological Society, March 16, 1923.

* From the Pathological Laboratory and Gynecological Service of St. Luke's Hospital.

* Previous work was described by the author in an article entitled "A Study of Bladder Function," Surg., Gynec. & Obst. **29**: 24 (July) 1919.

subjected to important surgical operations. The following have been excluded from consideration: operations of a minor surgical nature; operations involving the kidneys, ureters or vesical mucosa; urinary tract infections present at the time of admission to the hospital; carcinoma cases revealing mechanical interference with urinary tract function, and patients mentally incapacitated, intractable to treatment, or not available for follow-up study.

The catheter was not required in 66 per cent. of the total number of patients; in 11 per cent. it was employed once, in 5 per cent. twice, and in 17 per cent. the urine was drawn at least three times (Table 1).

TABLE 1.—Management of the Bladder After 1,595 Important Abdominal and Pelvic Operations

	Number of Catheterizations			
	None	One	Two	Several
Number of cases.....	1,051	187	88	269
Residual urine.....	8	12	24	173
Urinary tract infection:				
Treatment faulty.....	0	0	0	9
Treatment approved.....	0	0	0	3

Of 1,051 patients not subjected to catheterization for distention, several were tested for residual urine because of unusual frequency of urination or other symptoms suggesting retention. Residual urine was discovered in less than 1 per cent. of this group. None suffered from urinary tract infection.

No infection occurred among 187 patients catheterized but once for distention. Residual urine was detected in 6 per cent., but disappeared very promptly, usually within two days.

Eighty-eight patients, relieved by two catheterizations, showed residual urine thereafter in 27 per cent. Slight infection occurred a few times, but disappeared more or less promptly in all instances.

Patients Subjected to Repeated Catheterization.—Greatest interest centers in 269 patients who were catheterized many times. Residual urine was discovered in 64 per cent. The actual incidence of residual urine was greater than represented by this figure because 10 per cent. of this group were not subjected to the residual urine test.

Return of the power of complete evacuation of the bladder usually required at least four days, and seldom longer than eight days. The amount of residual urine almost always decreased stepwise from day to day. Slight vesical symptoms and moderate numbers of pus cells were commonly encountered for a few days, followed by a return to normal.

Twelve patients failed to progress favorably (Table 2). It is of interest to note that nine of these were not cared for in accordance with our plan of management; residual urine tests were entirely omitted, or were discontinued before the patients acquired the power of complete evacuation. Subsequent care resulted in ultimate recovery of all of these nine.

Three patients, given approved care, reacted unfavorably. One, operated on for relief of cystocele, was catheterized five times for retention. Residual urine thereafter decreased from 4 ounces (120 c. c.) to normal within five days. Much vesical distress led to another residual urine test one week later, with the result that 3 ounces (90 c. c.) were obtained; normal function again returned in three days. There was an associated infection with pyuria, which disappeared after two weeks. A second patient, subjected to vaginal hysterectomy and transposition operation, showed

residual urine for six days subsequent to several catheterizations for retention. Vesical irritation led to another residual test two weeks later, at which time 3 ounces was obtained. Pus remained constantly present, and symptoms of pyelitis developed. Recovery occurred after an interval of many weeks. The third patient, operated on for prolapse and cystocele, gave a history but no evidence of preoperative urinary tract infection. The course in this patient was similar to that in the two preceding: repeated catheterizations, and gradual disappearance of residual urine, followed by evidence of residual urine when subsequently tested because of vesical distress. Many months passed before relief was obtained. It is possible that slight infection still persists.

Should Catheterization be Avoided in all Cases?—Besley³ believes that the catheter should never be resorted to for relief of retained urine. This plan worked well in military service in cases in which there was spinal cord injury; the patients suffered little pain, and serious infection was avoided. Clinical evidence led Besley to assert that kidney function is not disturbed as a result of allowing the bladder to become distended and overflow.

Cumming,⁴ after study of twenty-nine cases in which there was spinal injury, advocated avoidance of catheterization as far as possible. He believes that urine left in the bladder causes little back-pressure injury of the kidney, yet admits a certain amount of permanent renal fibrosis. Of his series of twenty-nine patients, ten had infection of the urinary tract; two were operated on for kidney infection.

TABLE 2.—Detail of All Patients (Twelve) Who Developed Notable Evidence of Urinary Tract Infection After Operation

	Case Number	Catheterizations for Distention	Residual Urine Tests	Duration of Infection
Treatment faulty	101	8	None.....	Two months
	972	11	None.....	Three months
	201	8	None.....	Many weeks
	231	14	None.....	A few weeks
	241	3	None.....	A few weeks
	441	7	None.....	A few weeks
	633	3	None.....	Pyelitis; one month
	128	3	Four; discontinued with residual of 1½ ounces	One month
Treatment approved	641	3	Five; discontinued with residual of 4 ounces	Seen once four months later; vesical irritation; pus cells scattered
	553	5	Sixth test showed no residual; test one week later revealed 3 ounces	Probably pyelitis; fever, much pus, many bacteria; recovery complete in two weeks
	561	23	Sixth test no residual; thirteen days later test showed 3 ounces	Later fever, much pus, many bacteria; prompt permanent recovery
	686	5	Seventh test no residual; many ounces residual when tested after leaving hospital	Preoperative infection? Many months +

We must realize that catheterization of these spinal injury patients, when once begun, must be continued indefinitely; the trouble is not a temporary one with rapid return of normal function such as occurs after pelvic operations. Moreover, distention of the paralyzed bladder causes little distress, and the catheter is therefore not required for physical comfort.

In civil practice we encounter conditions less favorable to this plan. Patients suffer intensely with bladder

3. Besley, F. A.: A Plea for the Noncatheterization of the Urinary Bladder in Cases of Gunshot Wounds of the Spinal Column, J. A. M. A. 69: 638 (Aug. 25) 1917.
4. Cumming, R. E.: Shell Fracture of the Spine and Changes in Kidney and Bladder Function, J. A. M. A. 78: 335 (Feb. 4) 1922.

distention; this is notably true of women after pelvic operations. Also, from the point of view of subsequent distress which may follow vesical distention I am led to mention the case of a college team-mate, without history of venereal disease, who found himself under circumstances that induced him to withhold the urine for a great many hours. Even many years thereafter he suffered great discomfort whenever the bladder became moderately full.

Animal Experiments.—For the purpose of testing the harmfulness of retained urine, the bladders of twenty-two male rabbits were paralyzed by cutting the spinal cord. There resulted retention of urine analogous to that which occurs in soldiers consequent to gunshot injuries of the spine.

Vesical distention developed in all except one rabbit, which died at an early date. Infection was present in twelve of the twenty-two cases. Distention of the ureters was common. Nephritis, clumps of cellular infiltration in both cortex and medulla, and intense congestion with more or less hemorrhage of the kidneys, were frequent. Nine presented marked dilatation of the kidney tubules; of these, six cases revealed extensive destruction of kidney substance.

These experiments on animals indicate that failure to relieve the distended bladder is responsible for back-pressure destruction of kidney tissue, with more or less associated infection. The incidence of infection, it will be noted, is approximately that which occurred in Cumming's series of soldiers. I have little doubt that the "certain amount of renal fibrosis" which Cumming found clinically would have been expressed as "considerable destruction of kidney tissue" had he been given opportunity to make thorough anatomic examinations similar to those I was able to obtain in experimental animals.

PYELITIS OF PREGNANCY

Exclusive of those patients who give history of previous infection, it would appear that a frequent, if not the most frequent, cause of pyelitis of pregnancy is ascending infection from residual vesical urine. Many pyelitis patients give a history of having previously accustomed themselves to resist the demands of nature until they have developed the habit of voiding not more than once during every eight or ten hours. Others mention inability completely to empty the bladder after the onset of pregnancy; evacuation of a generous amount of urine may be followed by passage of several additional ounces a few minutes later. Such difficulty may be present during the early months of pregnancy and then disappear, but more often occurs after the uterus rises out of the pelvis. When pyelitis is fully developed and the damage has already been done, residual urine may have disappeared; but many of these patients continue to yield a considerable residue on passage of the catheter immediately after urination.

Again, it is of interest to note how often cystocele with retention is present in patients with pyelitis of pregnancy. Temporary cystocele may occur in a bladder that functions normally at other times, but succumbs to the added distortion and downward pressure of the enlarged uterus.

Although it may be venturesome to discredit years of experience which attribute pyelitis to pressure of the pregnant uterus on the ureter, it is strange, if this occurs, that fibroids seem never to have similar action. We must remember, also, that the ureter is tough and elastic. Moreover, passage of the ureteral catheter to the kidney reveals no obstruction in these cases. Theoretically,

ascending infection from stagnant vesical urine would appear a more important etiologic factor than pressure on the ureter; this statement is not intended to minimize the possible importance of displacement of the kidney or kinking of the ureter near the kidney pelvis.

LABORATORY STUDY OF URINE

Urine from several hundreds of these patients has been examined in the fresh state, and cultures have been made aerobically and anaerobically.

After plastic operations, one must rely on the clinical symptoms or have recourse to the catheter for positive diagnosis of infection because postoperative discharge invariably mingles with the voided specimens to such an extent that the laboratory study is almost valueless.

Some increase in leukocytes is usual if there has been more than one catheterization. In fact, enough to warrant the diagnosis of pus is not uncommon.

Urine smears from once catheterized patients reveal scattered staphylococci and diphtheroid bacilli, with occasional clumps of small, gram-negative, vaginal bacilli. Cultures correspond.

Bacteriologic study of fresh specimens from repeatedly catheterized patients most often reveals motile bacilli of the colon type. Cultures contain some staphylococci and diphtheroid bacilli, with varying numbers of colonies of bacilli of the colon group roughly proportionate to the number of leukocytes present in the fresh specimen. Anaerobic growth, aside from occasional anaerobic streptococci, is not noteworthy.

Those patients with residual urine give the greatest number of leukocytes and bacteria. Immediately on the disappearance of residual urine, there is a gradual return to normal.

If patients are unable to void at all for many days, it has been noted that leukocytes and bacteria are more numerous in specimens from those catheterized infrequently than in those from patients whose bladders are emptied three times daily.

SUMMARY

A study devoted to postoperative care of the urinary bladder, with especial consideration of the part played by residual urine, has been made throughout the period of convalescence of 1,595 female patients subjected to serious operations.

Use of the catheter has been avoided when possible, but no patient has been allowed to suffer from distention.

Residual urine has been present after the return of spontaneous micturition in more than 64 per cent. of all repeatedly catheterized patients. The most important principle in our treatment of such cases has been the daily passage of a catheter, immediately after urination, until residual urine is no longer present. Only three of those who were catheterized daily until the return of normal function developed urinary tract infection. These three subsequently showed residual urine after they were thought to have returned to normal, and it is believed that lack of treatment during this time accounts for the infection.

Laboratory study of urine from patients subjected to postoperative catheterization reveals that there may be temporary cystitis. This invariably—and usually very promptly—disappears if freedom from residual urine is maintained. Instillation of 1/8 per cent. silver nitrate and administration of urinary antiseptics by mouth are helpful adjuncts in the treatment.

Strict avoidance of the catheter after all operations, despite distress, would perhaps reveal equal freedom from infection; but this plan cannot be followed without much suffering to many patients. Moreover, animal experimentation indicates that if bladders are allowed to distend and overflow, considerable back-pressure destruction of kidney tissue results.

Clinical evidence indicates that residual urine occurs very often in pregnant women. The notable frequency



Destruction of kidney tissue in a rabbit, due to back-pressure of residual urine accumulated in a paralyzed bladder; slightly reduced from a photomicrograph with a magnification of 16 diameters.

with which it is present in those with pyelitis of pregnancy suggests that ascending infection from this source is of considerable importance.

CONCLUSIONS

1. Strict avoidance of the catheter after operation is not advocated. It is objectionable because many patients suffer intense pain from retention of urine, and because animal experimentation reveals that failure to relieve the distended bladder is accompanied by back-pressure destruction of kidney tissue.

2. After operation, patients who do not require catheterization for relief of distention quickly return to normal without urinary tract infection, even though some residual urine is present in more than 1 per cent. of such cases.

3. Patients who suffer from postoperative distention of the urinary bladder may be repeatedly catheterized without fear of infection, provided they are thereafter subjected to a daily test for residual urine until it is no longer present.

4. It is dangerous to cease abruptly the use of the catheter with the advent of spontaneous micturition, because there is usually a period of several days during which some urine is retained. Contamination of this residual urine is the chief cause of postoperative cystitis.

5. Watchfulness for residual urine in all pregnant women who show undue frequency, or who reveal pus in the urine, is an important precaution against pyelitis of pregnancy.

104 South Michigan Avenue

PULMONARY FIBROSIS

REPORT OF CASE *

BRYCE W. FONTAINE, M.D.

MEMPHIS, TENN.

History.—A white woman, aged 52, widow, housewife, complained of blood-spitting, which began fifteen years before, and had continued at intervals of from one week to one month. The quantity of blood had varied from a teaspoonful to a cupful. The family history was unimportant. The father died at 55 of heart disease, the mother at 40 of pneumonia. Twice in early life there had been presumably an iritis of the left eye. The patient had had three children and two miscarriages. The menopause was passed at 48 years of age; the menstrual history before and since that time was entirely normal.

In May, 1918, symptoms simulating a pleurisy developed at the base of the right chest. There was fever and severe pain (the characteristic stitch in the side), made worse on deep breathing. There was neither cough nor expectoration. The physical signs were those of a moderate-sized effusion in the right chest, but no fluid was obtained after several attempts at paracentesis. The pain continued for several weeks. At no time was there cough or expectoration, nor was the patient's general health affected by the illness. Three months later a roentgenogram of the chest showed a consolidation of the base of the right lung (Fig. 1). Following this acute illness, the hemoptysis has continued, but the patient's health has remained fairly good, and she has actually gained some weight. There has been no cough or sputum, and no recurrence of the fever.

Physical Examination.—This patient consulted me for the first time, May 9, 1918, solely for the relief of blood-spitting. Her general appearance was good; she was well developed and well nourished; there was absence of dyspnea, cough and sputum; her weight was 150 pounds (68 kg.); height, 5 feet 4 inches (162.5 cm.); pulse, regular, and 100 to the minute; temperature, 98.8. The appetite was good. The



Fig. 1.—Chest three months after beginning of illness; fibrosis commencing at base of right lung, with left lung clear.

bowels were regular. She was not troubled with nausea, vomiting, gas, heartburn, pain or discomfort after meals. She slept poorly. She often micturated too frequently, but did not have to rise at night.

The apex beat was in its normal position; no friction sound or thrill could be felt over the precordium; the heart did not seem to be enlarged to the left; the heart sounds were clear

* Read before the Southern Interurban Clinical Club, New Orleans, Jan. 12, 1923.

throughout; the blood pressure was: systolic, 180; diastolic, 120. Inspection of the chest showed an almost complete absence of expansion of the right side; there was no enlargement of the superficial veins of the neck, chest or arms; there was no evidence of retraction of the ribs or interspaces; inspection of the vertebral column in the thoracic region showed a compensatory curve toward the right side. There was a total absence of vocal fremitus and resonance over the greater part of the right chest. The right lung was flat to percussion from the clavicle to the base. A few very faint



Fig. 2.—Chest four years after beginning of illness: extension of fibrosis involving entire right lung, with left lung clear.

and distant breath sounds could be heard only above the clavicle; no adventitious sounds were heard. The left lung was absolutely normal to inspection, palpation, percussion and auscultation. Puncture of the right pleural cavity with a large needle, in four different locations, failed to locate any effusion. The abdomen was slightly distended, but soft; no masses could be felt; there were no points of tenderness; the spleen could not be palpated; the skin of the abdomen, front and back, showed no effort at collateral circulation in the form of enlarged veins. The joints were normal. There was no edema of the body or limbs. The throat was normal; the paranasal sinuses were clear; the teeth showed pyorrhea, and caries in three molars; roentgen-ray examination showed abscesses at the roots of these teeth; the superficial lymph glands could not be palpated; the reflexes were active; the pupils were equal in size, regular in shape, and reacted normally to light and accommodation.

Examination of the blood revealed: hemoglobin, 85 (Dare); erythrocytes, 4,240,000; leukocytes, 7,200; differential count: polymorphonuclear neutrophils, 57 per cent.; transitionals, 2 per cent.; lymphocytes, 31 per cent.; large mononuclears, 2 per cent.; eosinophils, 6 per cent.; mast cells, 1 per cent. The Wassermann reaction of the blood serum was negative; the spinal fluid showed a negative Wassermann reaction, a cell count of 3 cells per cubic millimeter, a normal globulin content, and no sugar. The urine had a specific gravity of 1.024, was acid in reaction, showed a faint trace of albumin, no sugar, and microscopically, a few pus cells and an occasional hyaline cast. The stomach contents after a Mayo test meal showed a total acidity of 52, with free

hydrochloric acid of 40; there was no occult blood, and no lactic or other organic acids.

Roentgen-ray examination of the chest (Fig. 2), by means of the fluoroscope and plates, showed the heart and aorta normal, the left lung entirely normal. The right lung, except for its extreme tip above the clavicle, was entirely airless. The consolidation of the lung was especially dense at the base, the process having apparently begun there, and extended upward. The thoracic spine showed a compensatory curve toward the affected side. In the absence of symptoms referable to the gastro-intestinal tract, it was not deemed necessary to make a roentgen-ray study.

COMMENT

The physical signs and the roentgen-ray evidence were in striking contrast to the woman's excellent appearance and physical condition. She came for advice solely on account of the blood-spitting, and aside from slight dyspnea, there was little discomfort. She was emphatic in her statement that she had had no fever or cough, and that she had raised no sputum except at the times of the pulmonary bleeding. The hemoptysis had no regular sequence, nor was it affected by the habits or conduct of the patient.

We have absolute evidence, as shown by the roentgen-ray examination, that this process has been present at least four and one-half years. This fact, considered in connection with the patient's uniformly good health, makes the diagnosis of a primary or secondary malignancy of the lung or pleura extremely doubtful. A review of the literature concerning the duration of life in cancer of the lung reveals some interesting statistics of the estimates made by Osler, Walsh, Lindsay and Lord, whose estimates were from six to eight months, from eight to ten months, from six months to one year, and from six months to two years, respectively. It seems that the time limit would surely rule out the most slowly growing sarcoma or carcinoma, and there would certainly be some evidence of cachexia during this length of time. The almost certain absence of any primary carcinoma in the breast, or gastro-intestinal tract, would exclude the possibility of a metastasis to

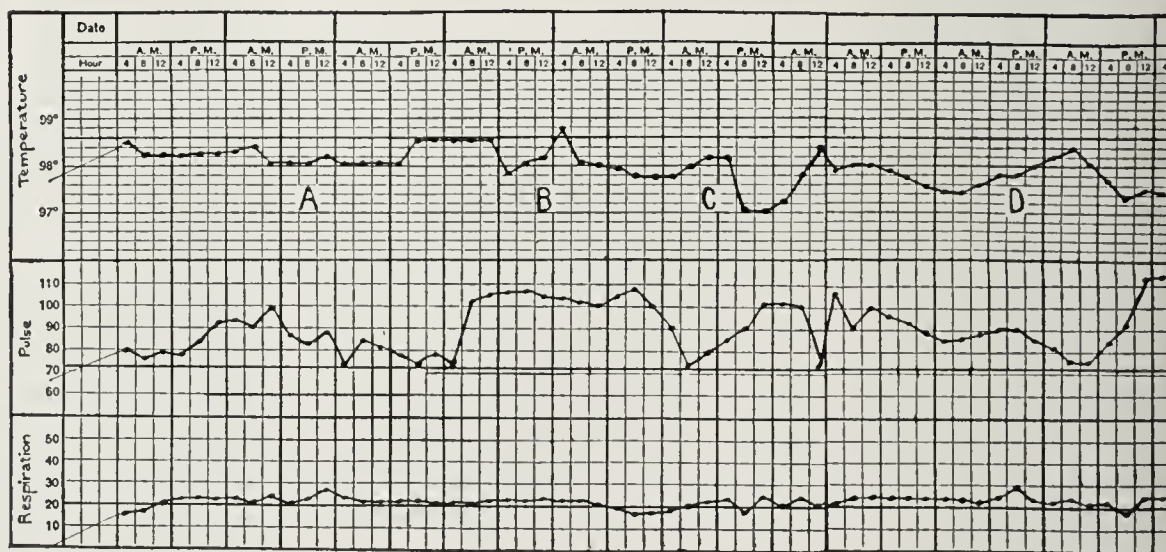


Fig. 3.—Temperature, pulse, and respiration: normal curves during application of tuberculin test: A, 0.1 mg. of old tuberculin; B, 1 mg.; C, 5 mg.; D, 10 mg.

the lung with the development of a secondary carcinoma. Then, too, it would be most unusual for a metastasis to be unilateral; in my experience, in 100 per cent. of the cases it has been bilateral.

If malignancy does play any part in this case, it must be primary. Although it is possible for a primary carcinoma to begin at any point in the lung or pleura, it most often develops at the root of the lung, and finally

involves the whole lung. Usually there is a marked displacement of the heart and mediastinal tissue to the other side; and in from 12 to 14 per cent. of the cases there is an early formation of fluid, in many cases bloody, in the pleural cavity. Dyspnea is always a prominent symptom, and is progressive. Cough, fever and pain occur in most cases. Attention must also be called to the great frequency of enlargement of the superficial lymph glands. Considering the absence of these symptoms, together with the duration of life in cancer of the lung, it is most unlikely that it has anything to do with the cause of the physical signs in this case; hence it is dismissed without further consideration.

At this point reference should be made to benign tumors of the lung, and the possibility of the pathologic condition here described being due to a tumor of this character. Benign tumors of the lung occur with great rarity—cases of fibromas, teratomas and osteomas, and dermoid and hydatid cysts of the lung are reported, but much less frequently than malignant tumors. The chief characteristics of benign tumors are that they occur at the root or apex of the lung, are usually unilateral, are moderate in size, and they have clear and well-defined edges.

The previous history of this patient shows that she had several attacks of iritis, and two miscarriages. These symptoms being suggestive of syphilis, suspicion was immediately directed toward this disease. It is entirely possible for a tertiary syphilis to produce in the lungs pathologic changes and physical signs similar to those here described. These lesions are usually situated in the middle and lower parts of the lung, rarely involving the apex; it is possible for the process to become so extensive as to involve the entire lung. As a rule, both lungs are involved, as in tuberculosis. Early in the course of pulmonary syphilis, moderate-sized bronchiectases occur. The symptoms of pulmonary syphilis so closely resemble those of pulmonary tuberculosis that it is always necessary to be sure that the sputum does not contain tubercle bacilli. Cough, fever and sputum (as voluminous in character as in bronchiectasis) are present. While hemoptysis does occur, it is not so frequent as in tuberculosis. The history of syphilis, signs of the disease elsewhere—in the skin, glands, bones, throat, pupils and reflexes—a positive Wassermann reaction on the blood serum or spinal fluid, and finally (a most important feature in the diagnosis), marked improvement or active cure of the symptoms and physical signs under antisiphilitic treatment—all of these must be considered in making a diagnosis of pulmonary syphilis.

Referring back to the symptoms and physical examination of this patient, we note that there has never been cough, fever or expectoration commonly present in syphilis of the lungs. Despite the absence of these symptoms, or evidence of syphilis elsewhere in this patient, and the repeated negative Wassermann reactions on the blood serum and the spinal fluid, because of the suspicious previous history of iritis, etc., the patient was put on antisiphilitic treatment for a period of four months. During this time, saturated solution of potassium iodid was carried up to 100 drops three times a day, and mercury by inunctions and by mouth were continued several times to salivation.

This intensive treatment had no effect on the physical signs, the symptoms or the roentgen-ray appearance of the chest. Obviously, syphilis could not play a part in this case. The patient herself has always believed that she has pulmonary tuberculosis, because

of the hemorrhages; at the same time, she was not wholly convinced, because she did not cough, expectorate or have fever. During the many years in which hemorrhages have occurred, there has been no loss of flesh, or any other constitutional effects that accompany pulmonary tuberculosis. In view of the very good physical condition of persons with fibroid phthisis, and the fact that cough is not so prominent as in ordinary types of tuberculosis, and that sputum is hard to obtain, every effort was made to collect a specimen for examination. Except for short intervals after the hemorrhages, none was ever obtainable; this was blood-streaked, but ten examinations have been made, and careful search for tubercle bacilli, spirochetes and other commoner organisms has failed to show them.

The physical signs in this case are entirely in keeping with those of fibroid tuberculosis, but it is difficult to believe that such a process could have so long been present without, at some time, manifesting itself in constitutional symptoms or, at least, an elevation of temperature.

On account of the chronicity of the hemoptysis, an opportune time for carrying out the subcutaneous

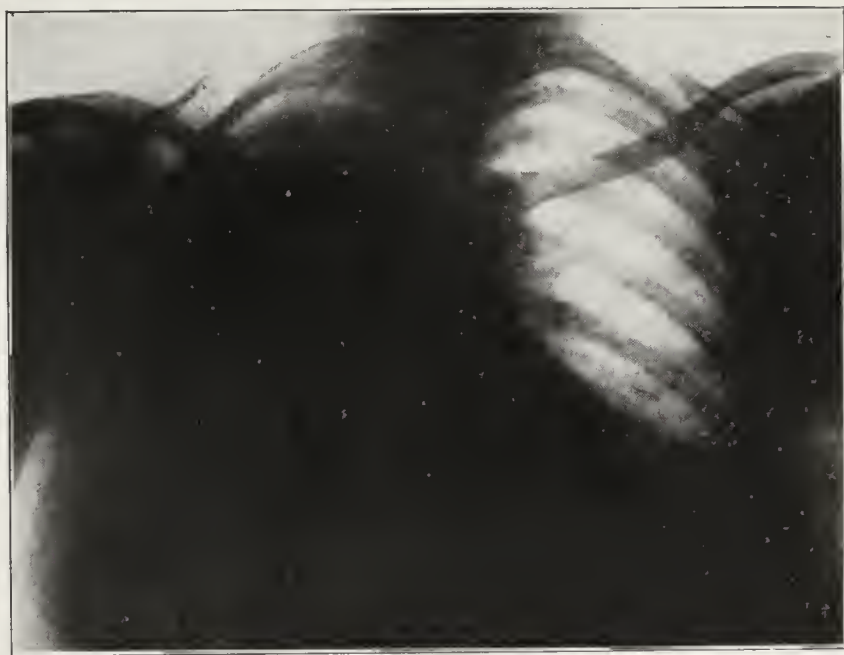


Fig. 4.—Chest after intensive antisiphilitic treatment and roentgen-ray treatment: no change in extensive fibrosis of right lung; left lung clear.

tuberculin test did not present itself until a few weeks ago. One week after a hemorrhage, the patient was put to bed for forty-eight hours; the temperature, the pulse and the respiratory rate were recorded at intervals of three hours; old tuberculin, freshly made up, was injected subcutaneously; in the beginning the dosage was 0.1 mg.; observations of the pulse and temperature were continued with special care after each injection (Fig. 3). The dosage was increased at the proper intervals until the final dose of 10 mg. was given without any sort of reaction, local, focal or constitutional.

If this case were really a fibroid tuberculosis produced by a tubercle bacillus of low virulence, with pathology of slow development, characterized by an unusual production of fibroid tissue, causing an almost pure sclerosis, with considerable thickening of the pleura, it is impossible to explain the negative reaction to 10 mg. of old tuberculin. Ordinarily, it is not necessary to resort to subcutaneous tuberculin tests in chronic cases of pulmonary tuberculosis, and in this case it seems that there should have been a marked reaction with one-half this final dose. The possibility of the condition being tuberculosis, in the face of these facts, is most unlikely.

Diffuse fibrosis, sclerosis or cirrhosis of the lungs developing as a sequel to bronchopneumonia or lobar pneumonia or pleurisy occurs with sufficient frequency to warrant consideration. In this case there was unquestionably a process, beginning most likely in the pleura, preceding the massive fibrosis. We have here some unknown, low-grade infective process which has spread from the pleura to the interstitial tissue, finally involving practically all of the parenchyma of the lung. It is not syphilitic or tuberculous, nor has it any evidences of malignancy.

Because of the peculiar physical signs, the flat note before percussion, the absence of breath-sounds, fremitus and resonance, the process must be quite extensive in the periphery and pleura. The hemoptysis, which is such a prominent symptom, is fully in keeping with the other cases of lung cirrhosis that have been reported.

There are two explanations: There is either an erosion of the blood vessels lining the walls, or traversing the lumen of the pulmonary cavities (brought about by bronchiectases), or there is a rupture of the varices in the bronchial wall. The latter explanation is probably correct, because there is no symptom or physical sign of bronchiectasis.

On account of the failure of medical measures in this case, roentgen-ray treatment according to the new deep therapy, for three hours in all, with a voltage of 200,000, was instituted. One month after treatment, the roentgenogram shows absolutely no change in the appearance of the lung (Fig. 4). However, there has been no recurrence of the bleeding for the last six weeks, and the patient has suffered no ill effects from the treatment. Should the hemorrhages recur, I shall be tempted to try roentgen-ray treatment again.

1109 Central Bank Building.

CHRONIC PURPURIC ERUPTION WITHOUT DEMONSTRABLE BLOOD CHANGES

JOHN H. ARNETT, M.D.
Assistant in Medicine, University Hospital
AND

FRED D. WEIDMAN, M.D.
Director, Laboratory of Dermatological Research, University of Pennsylvania
PHILADELPHIA

Much has been done in recent years to clarify our views regarding that interesting and rather unusual group of conditions formerly known as purpura. Hemophilia, scurvy and other diseases displaying a tendency to hemorrhage have been weeded out of the group; the coagulation phenomena have been the subject of much careful study, and yet purpura remains an ill-defined borderline condition between internal medicine and dermatology, about which considerable confusion still exists. The case here reported represents a rare if not unique disease, but is presented not so much on this account as because it throws some interesting sidelights on purpura as a whole.

REPORT OF CASE

History.—Mrs. K., a schoolteacher, aged 25, of Irish and Scotch ancestry, seen Oct. 30, 1922, complained chiefly of spots on the skin and burning of the lower extremities. There was no history of any similar condition or undue tendency toward bleeding, on either side of the family. The patient had been

a perfectly normal girl until eight years previously, when, for no apparent cause except an unusually cold winter, she noticed some small purplish spots on the skin just above the shoe tops. Gradually, these spots spread, involving almost the entire body. They came out more profusely when the weather was cold or when the patient was excited, and during menstruation, which was scanty. The legs had always been affected more severely than other parts of the body, and in recent years a disagreeable burning sensation had developed in the lower extremities together with a thickening of the skin. "Alpine light treatment" had been administered by her physician, with some benefit. In the course of the exposures, she was burned several times with resultant blisters, which, she says, were of the usual character, and not hemorrhagic. At Christmas dinner in 1917, she ate heartily of turkey and other dishes, following which she became "swollen all over," and a great many fresh spots developed. She had never had any repetition of this attack, nor had she shown any other

symptoms suggestive of allergy except that, when she scratched the skin, a white weltlike streak appeared. She used no drugs, always enjoyed excellent health, and gave no symptoms of any other nervous or organic disease.

Examination.—Except for the skin lesions, which will be described later, the patient appeared to be a normal, robust young woman. The gums were red and slightly spongy, and bled easily, but her dentist stated that this was due to gingivitis. The thyroid was a trifle larger than the average, but there were no evidences of hyperthyroidism present, and the basal metabolism, as determined by Dr. Leon Jonas, was within normal limits. The blood pressure varied on two occasions between 98 and 106 systolic, the diastolic being 76. The venous pressure on the back of the hand as determined by the use of the capsule of Hooker was 10 cm. (water). Examination of the heart and lungs revealed nothing abnormal. No abdominal organs were palpable, though numerous attempts were made to pal-



Fig. 1.—Left lower extremity: The conspicuous markings of the thigh were dark red, and the ones on the leg, brown.

pate the liver and spleen. The reflexes generally were a little exaggerated; otherwise, the neurologic examination was negative. The ophthalmoscope did not reveal any fundus changes. The urine was normal in every respect and did not contain any red cells. On a meat-free diet, the feces gave a negative benzidin reaction for occult blood. Two blood Wassermann tests made at different times were negative. The blood urea nitrogen was 10 mg. per hundred cubic centimeters, and the blood sugar 0.098 per cent. Skin tests of forty-one common proteins, including turkey, were made by Dr. Richard Kern, with negative results. The skin capillaries of the dorsum of the finger adjacent to the cuticle were examined by the Lombard method, without revealing any unusual features.

The red blood cells numbered 4,150,000, with hemoglobin 89 per cent.; white blood cells, 5,400, with neutrophils, 60 per cent.; lymphocytes, 34; large mononuclear cells, 1; transitionals, 2; eosinophils, 2, and basophils, 1 per cent. The blood platelets were estimated on three different occasions, once when the weather was cold, and a fresh crop of spots was

appearing; once while the patient was menstruating, and once at a time when she was relatively free from fresh skin lesions. The counts varied between 286,400 and 257,000. A blood pressure cuff constricting the arm at a pressure slightly below 70 mm. of mercury in five minutes produced twenty-two new skin lesions in an area of 28 sq.cm. Fresh petechiae could also be produced by rubbing the skin of the arm. Forceful rubbing led to an exudation of clear serum. The area thus rubbed remained purplish for two months, and fresh lesions developed here more frequently than before. The bleeding time determined on both the ear and the finger was five minutes. Nothing abnormal was found in regard to the coagulation time, the amount of serum which separated or the character of the clot.

Description of Skin Changes.—The lower extremities were the most severely affected (Fig. 1), the lesions extending well upward over the hips and inguinal regions, and over the upper extremities upward almost to the shoulders. Save for a few scattered, freckle-like macules on the face and abdomen, the other parts of the body were free. Stroking the skin of the back resulted in the production of a red streak, with but the faintest trace of wheal development. Rectal and vaginal examination, by Dr. Charles A. Behney, failed to reveal any lesions, and, with the exception of a minute petechia on the upper lip, the other mucous membranes were free. The freshest lesions consisted of bright, non-elevated, red points not larger than a pinhead. The color could not be discharged by pressure. Examination under the lens showed that many were not merely punctate, but consisted of several minute, red points which were sometimes arranged in more or less wavy lines. This kind of lesion was sometimes isolated at the uppermost margins of the disease area, surrounded by normal skin, and sometimes superimposed on the older process farther down. The further change in such a lesion was evidenced by the freckle-like macules, which were recognized in their purest form in the more recently affected areas, and had coalesced farther down to produce a mottled or diffuse brown discoloration. The skin of the legs was definitely thickened, and there was also a little scaliness here. There was not a semblance of follicular involvement, achromia, atrophy or arrangement in rings or gyrate forms.

Histologic Examination.¹—A fresh, bright red lesion at the uppermost border of the affected area of the arm was excised under local anesthesia, and sectioned and examined. Histologic changes were restricted to the corium, more particularly the subpapillary portions (Fig. 2). They were essentially those of an early acute inflammation, and were restricted to areas around the capillaries and arterioles. The acuteness of the process was evidenced by swelling and hyperplasia of the perivascular fibrous tissue and of the lining endothelial cells of the capillaries, and particularly by a definite infiltration of polymorphonuclears in addition to the lymphoid cells that were to be expected. Fibrin was not associated, nor was there demonstrable edema. Blood vessels were dilated, and some of the capillaries were thrombotic, with destruction of the endothelial walls, i. e., the process amounted to a thrombo-capillaritis obliterans. Extravasations of red blood cells were scarce, and no micro-organisms were demonstrable by special stains (Giemsa, thionin).

COMMENT

From the standpoint of the hematologist, it is interesting to note that a positive tourniquet test for capillary permeability was present in this instance without a reduction of the blood platelets. From these tests alone, capillary disease should have been suspected; for a positive tourniquet test may be taken to indicate diminution of the platelets of the blood or vascular disease, or both. Since the former was absent, vascular disease should be present. That the histologic

examination bore out what was previously predicted from the results of these two simple tests emphasizes the diagnostic importance of the platelet count and the tourniquet test in hemorrhagic conditions.

Another point of interest comes up in regard to the causative agent of the disease. The general well-being of the patient and the normal physical findings indicate the absence of generalized vascular disease; yet histologic examination disclosed definite acute inflammatory changes in the skin. These facts argue for the highly selective action of the causative agent, not unlike that of snake venom and other members of the group of endothelial toxins.

From the standpoint of diagnosis, our case most nearly resembled those described by Weiss,² and diag-

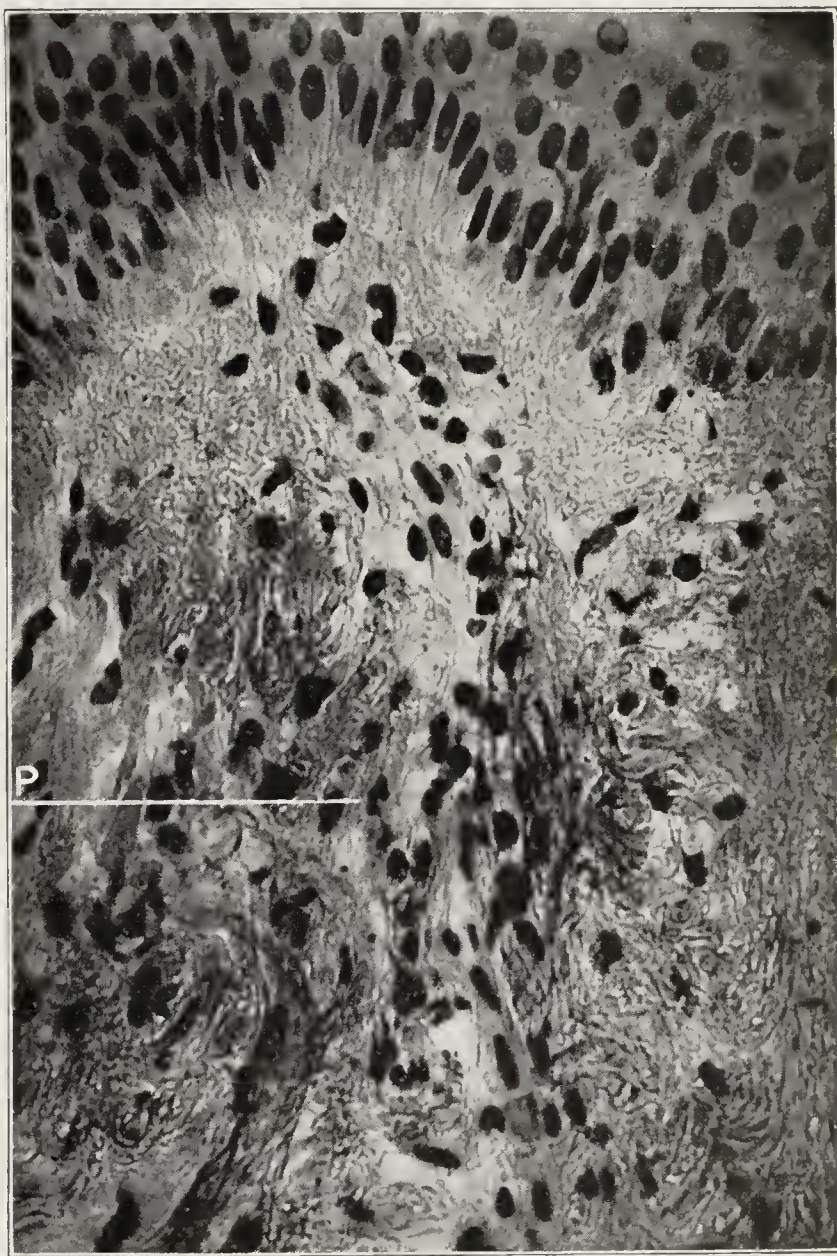


Fig. 2.—Acute telangiitis: Cross-section showing swollen capillary extending upward in one of the papillae, shown at top. The lining endothelial cells are swollen and hyperplastic, and some polymorphonuclears (*P*) are intermixed with the lymphocytes and swollen spindle cells which surround the capillary.

nosed by him as purpura annularis telangiectodes (Majocchi's disease). Ours departed somewhat from Weiss's cases in that the lesions showed no tendency to form into groups or patches, and in that, histologically, no edema within the corium, fragmentation of elastic fibers or thinning of the epidermis was present. Our case diverged even more from Majocchi's original descriptions, for none of the lesions were follicular or annular, nor was achromia present. The lesions did not occur in patches, but diffusely, and produced indura-

1. Histologic sections from this and one of Weiss' cases are filed at the Army Medical Museum, Washington, D. C. Filing diagnosis was: purpura, chronic.

2. Weiss, L.: Purpura Annularis Telangiectodes (Majocchi's Disease), Arch. Dermat. & Syph. 38: 520 (May) 1920.

tion of the skin. Chronic idiopathic simple purpura also has points of resemblance, but permanent skin changes occur rarely in this disease.

If we were to follow the existing terminology, we might designate this condition as purpura telangiitosa, since it is a disease manifesting a purpuric eruption and having an inflammatory process of the capillaries as its chief pathologic finding; but as the subject of purpura is at present by no means free from confusion, the addition of another purpura to the already extensive list seems hardly calculated to clarify the situation. Moreover, in such heterogeneous groups as purpura, the tendency is to remove from the group those diseases which have a known cause or established pathology. Thus scurvy, hemophilia, pernicious anemia, nephritis, leukemia and other diseases attended with purpura are no longer called purpura. It is safe to predict that, as our knowledge of the cause and the pathology of hemorrhagic conditions increases, the double significance of the term purpura, which has heretofore been a source of confusion and a cloak for ignorance, will cease to exist. It is to be hoped that purpura will eventually come to indicate merely a symptom of this or that disease. "Idiopathic platelet deficiency" will very possibly supplant the time-honored but meaningless "purpura hemorrhagica," until, in turn, the cause of the platelet deficiency is discovered, when the "idiopathic" may be likewise dropped. Viewed in this light, our case falls into the group of primary inflammatory vascular diseases with purpura, the cause of the disease being as yet undetermined.

SUMMARY

In the case reported, the principal findings were long-standing cutaneous hemorrhages, a positive tourniquet test for capillary permeability, and a normal platelet count; while histologic sections of the skin showed acute telangiitis. The first three are sufficient to indicate the telangiitis which the latter proved. In the absence of general vascular disease, these changes pointed to the highly selective nature of the causative agent. The suggested diagnosis is: primary telangiitis with purpura.

Natural Selection and Survival of Fittest.—By a study of the age of onset of insanity of parents and offspring in more than 4,000 relatives who are at present or have been in the London asylums, a signal tendency of the offspring of insane parents to develop signs of insanity in adolescence was noted by W. F. Mott (*Brit. M. J.* 1:407 [March 10] 1923). The average age of the parents is about seventeen years more than that of the offspring. This accords with Darwin's law of antedating or anticipation. Those individuals who suffered with dementia in adolescence would have little chance of surviving the struggle for existence among primitive people and savages. Among civilized people insanity leads to segregation, and thus prevents propagation. The regressive atrophy of the testes in males would also interfere with propagation. Again, females predisposed by hereditary tendency break down in adolescence under the stress of normal physiologic conditions, such as pregnancy, parturition, or lactation. These cases of so-called puerperal mania often terminate in dementia, and we find in them a regressive atrophy of the ovaries. Only about 10 per cent. of the primary female dementia patients in asylums are married women, and very few of these have had more than one or two children. It is not for this natural process of preservation from breeding of such unsound members of a stock by bringing the disease on at an earlier age and in an incurable form, racial degeneracy and extinction would be inevitable in a civilization in which altruistic sentiment has interfered with the struggle for existence and survival of the mentally and physically fittest.

ASTHENOPIC REFLEX MANIFESTATIONS BETWEEN THE EYES AND TEETH*

W. W. KAHN, M.D.

DETROIT

Relief of eye strain and its manifestations through refraction is made impossible by diseases of the nose and its sinuses, and of the pharynx and, rarely, by more remote diseased organs. These diseases influence reflexly the functions of the eye. Such sources of malfunction, when unsuspected, keep the oculist uselessly trying for years to cure the asthenopia until, finally, the cause of these reflexes is discovered.

REPORT OF CASES

CASE 1.—Mrs. L. S., aged 44, was seen by me in 1916, because of eye trouble. She presented all the classical symptoms of eye strain: headaches, pain in the eyes, vertigo, car-sickness and asthenopia, as well as anorexia, indigestion and pollakiuria. She urinated every few minutes during the day and about twice during the night. She slept poorly, being frequently disturbed by nightmare. She had "rheumatic pains" all over the body, especially in the digital joints. She sighed and yawned excessively, had palpitation and tinnitus in both ears, and was constantly fatigued.

Glasses lessened the intensity of the symptoms, but did not eliminate them. All the symptoms were aggravated when she tried to use her eyes for close work. After many unsuccessful attempts to improve the glasses, eight months later, I administered atropin instillations for a period of five days. The rerefractive did not reveal any fault in the previous refraction. I sent the patient to a nose and throat specialist, who reported that the nose, throat and sinuses were in very good condition.

It then occurred to me that, as there was nothing else that could cause the eye strain to continue, the teeth might in some way be responsible for the reflex symptoms. There was a long upper bridge anchored to the two upper canines. There were no subjective symptoms in the teeth. Neither tapping nor hot and cold applications caused any pain. Her dentist, to whom I applied for advice, stated that the teeth were in excellent condition. My request to remove the bridge for experimental purpose was flatly refused. I then took her to another dentist who found nothing wrong with the canines. However, to please me, he drilled through the crowns and opened up the root canals. Gas of intolerable odor escaped from the openings. The two canines were removed, and the patient was supplied with a denture. She recovered promptly and completely.

This case occurred in 1916, when roentgen rays were only rarely used by dentists in their daily work. It illustrated the fact that bad teeth not only cause inflammations, ulcerations and other pathologic changes in the eyes, a fact long known and very widely discussed in the ophthalmic literature, but that they may also cause reflex eye strain symptoms without themselves giving any subjective discomfort.

After the recovery of this patient, I took up the case of another patient who had for years been the reminder of my fallibility in refraction.

CASE 2.—Mr. B. B., aged 25 years, whose eyes were refracted not less than ten times during the four years that he was under my care, did not improve. The symptoms varied rapidly, frequently appearing in entirely new combinations. On one of his last visits he said that he had no headaches except after riding 5 or 6 miles on a street car. He suffered pain in the chest, back and knees, especially the right. In order to enjoy a good sleep, he never ate later than five hours before retiring, nor did he take a walk in the evening; otherwise his sleep would be fitful and disturbed by nightmare.

* Read before the Maimonides Medical Society, Detroit, Feb. 6, 1923.

He had no pain during working hours. The appetite, digestion and bowel movements were good except after walking. Walking made him so nervous that after a short walk he was unable to read a line. He consulted a noted surgeon, who had a roentgen-ray examination made and who then referred him to an equally noted diagnostician. He was told that there was "nothing wrong" with him. He then consulted another surgeon, who referred him to an orthopedist. He suspected the presence of flatfoot and recommended arch-supporters, which, however, gave him no relief. An elastic band worn around the right knee caused pain in the foot. Any drug caused a sleepless night. In short, the patient suffered from an outspoken case of neurasthenia. I sent him

do with her if she did not have her teeth attended to. She then saw her dentist, who had a roentgenographic examination made of the teeth. Two of them were found to be abscessed, and were consequently extracted.

The patient recovered immediately and today is in excellent health.

CASE 4.—Mrs. S. Y. H., aged 63, a year and a half before she consulted me, began to suffer from slight frontal headaches. She was entirely unable to endure car riding, had frequent and violent attacks of nausea and vomiting, and suffered from severe tinnitus in both ears. The hearing was good, although the right ear was slightly defective. She suffered also from constipation, increased frequency of mic-



Fig. 1 (Case 4).—Pathologic area associated with the mesiodistal root of the upper left first molar.

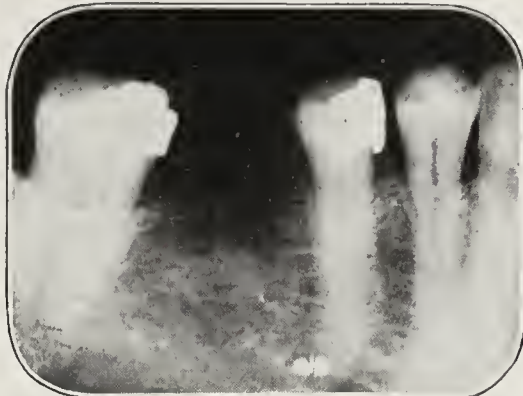


Fig. 2 (Case 4).—Lower right second bicuspid showing almost no attempt at root canal filling and a decided haziness about the root apex.



Fig. 3 (Case 5).—Pathologic areas at the apexes of the roots.

to two other oculists, hoping that they would find an error in my refraction, but he refused to wear the glasses prescribed by them, asserting that they only aggravated his troubles. The nose and throat had been examined carefully, but no pathologic condition was found.

After my experience in Case 1, I asked him about his teeth. His answer was that he had two upper molars, on the right and left, which caused pain after every effort to read. At times this was so severe that he was unable to chew his food. The dentist found apical abscesses at the root of these molars. After extraction of the two teeth, the patient fully recovered from the asthenopic and neurasthenic symptoms.

Then came in comparatively quick succession a number of cases.

turition (once or twice at night), poor sleep and great fatigue. She was examined and treated in two different hospitals, roentgen-ray and refractive examinations being made, but without results. Two diagnosticians diagnosed her case as Ménière's disease. The treatment prescribed for her was liquor potassii arsenitis (Fowler's solution).

To eliminate any ocular influences, I prescribed atropin instillations for one week. The atropin stopped the vertigo, and diminished the tinnitus, but did not improve sleep. I changed the prescription of the bifocal lenses.

Two months later she reported that she no longer suffered from car-sickness, vertigo, nausea, vomiting or tinnitus. Sleep was improved, and she felt strong enough to do a great deal of her house work. She was also able to ride on a street car with perfect comfort.

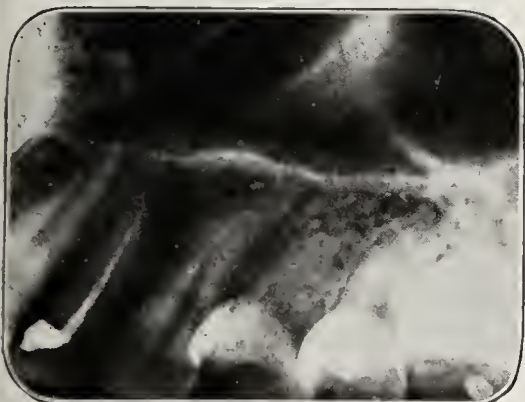


Fig. 4 (Case 6).—Devitalized upper left lateral incisor, containing imperfect root canal filling.

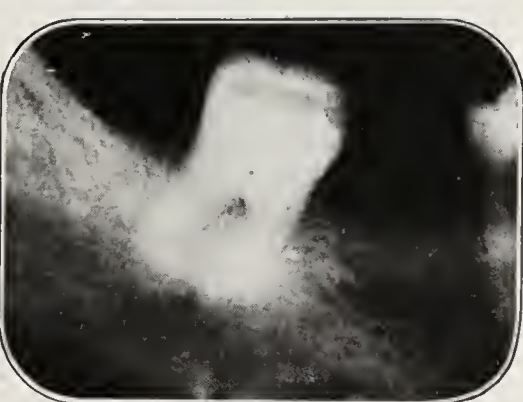


Fig. 5 (Case 7).—Lower right second molar, devitalized and with an imperfect root canal filling and an abscess associated with the mesial root.



Fig. 6 (Case 8).—Extensive destruction of the upper left second molar.

CASE 3.—Mrs. M. K., aged 43, besides asthenopia, complained of violent headaches, severe vertigo, poor sleep and excessive sneezing for five years before she consulted me. I refracted her eyes, and, in the course of time, she recovered entirely, even from the attacks of sneezing.

Later she returned with a various assortment of complaints. I then advised her to have a roentgen-ray examination of the teeth and to have them properly taken care of. She did not heed my advice. Her condition improved and then became worse, causing both herself and me to be rather uncomfortable as a result of her frequent visits to my office. Finally, two and one-half years later, I decided to have nothing to

A month and a half later, she complained of return of the old symptoms. I then prescribed atropin instillations for a week and a half; but they afforded little, if any, relief. Having assured myself that this time her eyes had nothing to do with the trouble, I advised that she consult her dentist concerning her teeth. The dentist reported that he was sure that there was nothing wrong with them. I then took her to a dental diagnostician, who reported thus:

"Mrs. H. was examined to ascertain the possibility of any foci of infection about the teeth. All teeth were tested with a galvanic current to determine their vitality, and all responded positively, with the exception of the upper left first

molar, the upper left central incisor, the lower left second bicuspid and the lower right second bicuspid.

"Roentgenograms were made of these nonvital teeth. The roentgenograms, in my opinion, disclose the following: The upper left central incisor, which is carrying a porcelain crown, shows no pathologic condition. The lower left second bicuspid likewise shows no pathologic condition.

"The upper left first molar (Fig. 1) shows a definite pathologic area associated with the apex of the mesiodistal root.

"The lower right second bicuspid shows practically no attempt made at root canal filling and a decided haziness about the root apex (Fig. 2).

"Conclusions and Recommendations: No interference is recommended with the upper central and lower left second bicuspid.

"The upper left first molar should be extracted; at the time of extraction, a culture might be made. At this time I would not recommend interference with the lower right second bicuspid until results have been observed in the extraction of the molar."

Her upper left molar was extracted and a culture taken. The laboratory reported thus: "The culture shows a few white staphylococci and very few slightly hemolytic streptococci."

As there was only temporary and slight improvement in the symptoms, the lower right second bicuspid was also extracted, a month later. After that the patient recovered rapidly. Today she is in perfect physical health.

CASE 5.—Miss S. F., aged 16 years, came to me for chronic blepharitis and temporal headache, both of seven years' dura-

In spite of this fact, he tried to cure the tooth by treatment, but without result. After the tooth was finally extracted, the patient recovered speedily.

CASE 7.—Mrs. H. F. R., aged 27, presented asthenopic symptoms for near and distant vision, temporal headaches, twitching of lids, constipation, excessive sweating of hands, tremor of hands and legs, numbness of fingers and toes and chronic blepharitis. After refraction she recovered quickly.

Ten weeks later she began to be bothered by photophobia and by the partial return of numbness and giddiness. Three weeks later all the symptoms had returned. A rerefraction gave no new findings. There was no heterophoria.

A roentgenogram was made of the lower right second molar, which was shown to be devitalized, with imperfect root fillings. Associated with the mesial root was an abscess (Fig. 5).

The patient was advised to have the tooth removed; but she decided to have her dentist try local treatment to determine whether it were not possible to save the tooth.

When the pulp chamber was opened and allowed to remain open, the eye trouble stopped, only to return when the pulp chamber was sealed again. After four weeks' treatment the tooth was extracted and all the eye symptoms ceased.

CASE 8.—Mrs. A. W., aged 46 years, came to Detroit every few years to have her eyes refracted. Lately she returned with the usual amount of eye strain symptoms. I put her on atropin instillations. Three days later, she complained that the atropin caused the headaches.



Fig. 7 (Case 8).—Pathologic areas at the apexes of the roots of the upper right first molar.

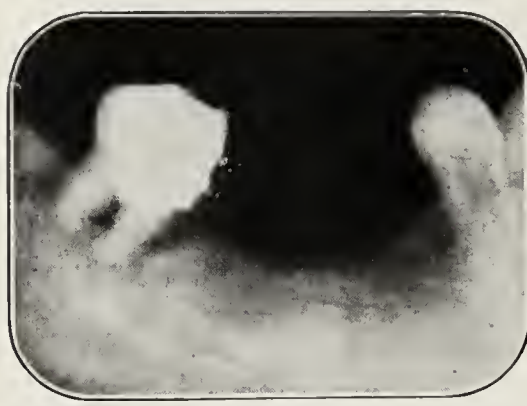


Fig. 8 (Case 8).—Extensive destruction of the supporting structures of the lower right third molar, with beginning absorption of the roots.



Fig. 9 (Case 9).—Impacted second bicuspid with extensive area of pressure necrosis.

tion. She also suffered from severe asthenopia and frequent vertiginous attacks. She wore no glasses. On refraction, she accepted very strong cross-cylinder lenses. She got along fairly well with them and was even able to work as a seamstress.

About a year later, the headaches and asthenopia returned. As instillations of homatropin did not reveal any change in the refraction, I used atropin instillations for some days. The atropin did not relieve the headaches. It also showed that the old glasses were still correct.

I sent her to a dentist, who had a roentgenogram made of her teeth. It showed that the pulp of the lower right first molar had been destroyed by invasions of dental caries. There were also pathologic areas associated with the apexes of the roots (Fig. 3).

After the extraction of the tooth, the patient recovered entirely from the headaches and asthenopia.

CASE 6.—Miss B. K., aged 15 years, had been under my care for five years. A year after the last refraction, she again complained of eye strain symptoms. I rerefracted her eyes after three days' atropinization. Since hardly any change in the glasses was necessary, it was apparent that the eye strain symptoms were not due to the need of new glasses. There were a number of fillings in the teeth. I referred her to her dentist, who had a roentgenogram made of the teeth, which showed that the upper left lateral incisor was devitalized, and contained an imperfect root filling (Fig. 4). The dentist sent the roentgenogram to me with the remark that it revealed "no marked apical disease."

Inspection showed a number of bad and suspicious teeth. All teeth were tested for vitality with a galvanic current; and they responded positively with the exception of the upper right first molar, the upper right second bicuspid (root) and the lower right third molar. Roentgenograms were taken of all the teeth. That of the upper left second molar showed an extensive area of destruction of the alveolar process, undoubtedly resulting from pyorrhea (Fig. 6). The roentgenogram of the upper right second bicuspid showed an area of rarefaction, at the apex. The roentgenogram of the upper right first molar showed that the canals were imperfectly filled, with the usual pathologic areas at the apexes of the roots (Fig. 7). The roentgenogram of the lower right third molar showed extensive destruction of the supporting structures surrounding the tooth. There was a beginning absorption of the roots of the tooth (Fig. 8).

The two molars were extracted, with immediate relief from headaches and the other eye strain symptoms. The refraction showed that there was no necessity for changing the glasses.

CASE 9.—Mr. C. C. H., aged 35, a prominent business man, came to me four years ago because of headaches, asthenopia for near and far vision, vertigo, indigestion, excessive sweating of the hands and body, tremor of the hands and legs, and flushing of both sides of the face, especially the left side, in connection with attacks of giddiness and blurred vision. The flushing of the face annoyed him more than the other symptoms. He also had a goiter.

He wore the glasses that I prescribed for six months and then he underwent an operation for the removal of the goiter.

Although he had no asthenopia and fewer headaches, all the other symptoms, tremor, flushing of the face, vertigo and indigestion, remained unimproved.

Two years later he returned for a reexamination. The rerefractation showed the necessity for hardly any change in his glasses. He returned again in two years. He wore the glasses that I prescribed, but without any benefit as far as his symptoms were concerned. As a matter of fact, he became worse and more nervous as time went on. He consulted a number of good physicians, who told him that he was physically perfect and that all he needed was a "mental rest." He finally broke down completely and went to a sanatorium.

A thorough examination by the sanatorium physicians failed to reveal any ailment. While resting in the sanatorium he felt considerably better, but when he returned to his business, his nervousness and his fatigue reappeared.

As a last resort, I suppose, he bethought himself of his old oculist and came to me with a request to be rerefracted. Since there were only a few asthenopic symptoms and his glasses and eyes felt rather comfortable; and since none of his physicians had found any physical defects, I concluded that there probably was some unsuspected trouble in the alveolar processes.

The patient stated that his teeth did not give him the least trouble and were perfectly sound, which was borne out by examination. Roentgenograms were made of the spaces where teeth had been extracted to rule out the possibility of remaining roots or of impactions. The roentgenogram of the left side of the lower jaw showed a second bicuspid impacted, with an extensive area of pressure necrosis (Fig. 9). The impacted tooth was removed under a general anesthetic. The patient recovered entirely. The flushing of the face disappeared. He is working again under full pressure without any ill results or undue fatigue.

REPORT OF CASES IN WHICH THE EYES AFFECTED THE TEETH

That the nerves which act as conductors in producing eye reflexes due to bad teeth may also act as agents in producing tooth and gum reflexes due to strained eyes was shown by Case 2, as well as by the four subjoined cases:

CASE 10.—Mr. J. Y., aged 26, consulted me in November, 1915, because of asthenopia, nonrefreshing sleep, indigestion and precordial pain. I refracted his eyes and ordered a pair of rather strong compound plus lenses. In a few weeks he returned and reported that whenever he put on his spectacles, they caused pain in the right eye, the pain spreading to the temple and to the teeth on the right side and also numbing the gums. A readjustment of the axis of the cylinder of the right lens speedily cured the toothache and the numbness of the gums.

CASE 11.—Mrs. W. R. D., aged 44, seen in June, 1916, suffered daily headaches most of her life, with shooting pains on the left side of the face and head. The headaches were always accompanied by toothache on the left side. Besides headaches, she had a great many other symptoms of eye strain.

After wearing the glasses prescribed for two months the patient reported only occasional slight headaches without toothache. She had consulted no dentist.

CASE 12.—Dr. L. B. C., aged 25, had suffered for many years from asthenopia due to an undiscovered cause. The refraction of his eyes had been checked so many times and with so much care that I am certain that the cause of the asthenopia was not in the eyes or in his glasses.

During his many years of eye strain, he suffered from almost all known symptoms of that condition. At one time he had toothache whenever his eyes felt bad. His teeth were roentgenographed by responsible men, and no pathologic conditions were found in the alveolar processes or in the teeth.

When the eye strain was relieved, the pain in the right or left upper molars would disappear. When he used his eyes too much, a sensation of numbness traveled down through the bridge of the nose and part of the face to the incisor teeth.

CASE 13.—Miss E. P., aged 19, stenographer, consulted me because of severe headache, asthenopia for close work and blind spells. Glasses relieved her considerably. A year later the symptoms returned. I prescribed atropin instillations for four days. She felt well while under the influence of the cycloplegic; but the new glasses failed to relieve the eye strain caused by close work. As she complained of annoying pain in the gums and teeth, I had her teeth examined by a dentist. No pathologic condition was found. The gums and teeth were in excellent condition.

After I had prescribed an additional pair of plus glasses for close work, she recovered perfectly, suffering no more pain in the gums or teeth.

LITERATURE

The literature of eye reflexes caused by bad teeth is rather meager. The first mention I found of the condition was by Schmidt-Rimpler¹ in 1868, who studied the accommodation of more than 100 toothache sufferers, in seventy-three of whom he found a decided decrease of accommodative ability. He explained it by the heightened intra-ocular pressure due to irritation of the secretory nerve apparatus, producing a condition somewhat analogous to the prodromal state of glaucoma. He also mentions different reflex motor disturbances of the eye caused by teeth.

That muscular spasms of the eye muscles can be caused by irritation of the dental ends of the trigeminus was thoroughly studied in the seventies by Terrier,² Métras,³ Galezowski⁴ and Schmidt-Rimpler.

It is interesting to note that Terrier described a case of deviation of the left eye of some months' standing cured by the extraction of a few carious teeth. He called the attention of his readers to the fact that they were not painful teeth: they had evidently nonvital pulps.

Then came a long silence which was finally broken in 1915 by Arthur D. Black⁵ of Chicago.

In 1916, Fulkerson⁶ reported a half dozen cases in which the symptoms of accommodative asthenopia were present and which were not permanently relieved until abnormal dental conditions had received proper treatment.

In 1918, Zentmayer⁷ quoted Black in full, without further illustrating the occurrence of reflexes. He accepted Black's statements as authoritative.

In 1919, Murray⁸ reported the case of a machinist, aged 50 who had headaches for three weeks preceding the dizziness which brought him to the oculist.

Roentgenograms made of the teeth showed three big abscesses at the apexes and one unerupted immediately beneath the abscesses. Both, unerupted tooth and abscessed teeth, were removed, and the patient's headaches and dizziness were completely and promptly relieved.

In 1920, Benedict⁹ described the case of a woman, aged 22, who had spasms and twitching of the right lid which were relieved by the extraction of an impacted molar. He also described the case of a man,

1. Schmidt-Rimpler, H.: Ueber Akkomodationsbeschränkung bei Zahnleiden, Arch. f. Ophth. **14**: 107, 1868.

2. Terrier: Recueil d'ophth., 1876, pp. 86-89.

3. Métras: Störungen bei Zahnkrankheiten, cited by Nagel: Jahresb. f. Ophth. **4**: 217, 1873; Rapports pathologiques de l'œil et des dents par action réflexe, Thèse de Paris, 1873.

4. Galezowski: Jahresb. f. Ophth. **5**: 262, 1876.

5. Black, A. D.: Ocular Diseases Resulting from Dental Lesions, Ophth. Rec., 1915, pp. 610-622.

6. Fulkerson, C. B.: Roentgenographic Findings of Blind Dental Abscesses Causing Asthenopia, Tr. Am. Acad. Ophth., Oto-Laryngol. Sect., 1916, p. 196.

7. Zentmayer, William: Ocular Lesions the Result of Oral and Pharyngeal Diseases, Am. J. Ophth. **1**: 247 (April) 1918.

8. Murray, G. D.: Spasm of Accommodation with Disturbances of Ocular Movements of Dental Origin, Am. J. Ophth. **2**: 202 (March) 1919.

9. Benedict, W. L.: Value of Dental Examination in Treatment of Ocular Disorders, Am. J. Ophth. **3**: 860-865 (Dec.) 1920.

aged 64, in whom the left external rectus muscle was completely paralyzed. As a Wassermann and neurologic examination proved negative, a number of decayed and fractured teeth were removed. With the extraction of the last teeth the paralysis began to disappear, and entirely disappeared within three weeks.

In 1921, Sumner¹⁰ said, "Infected teeth have usually caused a spasm, and where excessive spasm exists under drops, I inquired into the condition of the teeth."

In 1922, Deichler¹¹ described in detail the case histories and symptoms of two patients presenting muscular involvement of the eyes.

ETIOLOGY

The nerves that are principally involved in these reflexes are the three divisions of the trigeminal nerve, supplying in part the eye and the teeth. This common innervation makes it obvious that the irritation of one of the many branches of the trigeminal nerve may produce the most varied and unexpected reflex symptoms.

As far back as 1873, Métras divided the reflex actions of the eye caused by diseased teeth into three classes: (1) vasomotor disturbances (as nutritional and amaurotic disturbances); (2) sensibility disturbances (as nutritional and asthenopic); (3) motility disturbances (as cramps or paralysis in the extra-ocular, supra-orbital and palpebral muscles).

Black describes two groups of ocular disturbances: (1) "reflex neuroses presenting themselves as sensory, vasomotor or muscular disorders; (2) inflammations of the various tissues of the eye due to infection. The former are practically always due to irritation of a vital pulp of a tooth, although an occasional case may be due to an impacted tooth; the latter are practically always due to an infection involving the peridental membrane, either in the form of an alveolar abscess at the root apex, or a pus pocket along the side of the root."

Black's classification of the reflex neuroses is essentially the same as that of Métras. The only additional feature is his "live pulp theory," by which he tries to explain the pathologic processes bringing about the reflexes. Zentmayer repeats Black's live pulp theory.

Evidently, Black had an extensive experience with dental conditions without an equal opportunity to study eye manifestations, while Zentmayer, with his great knowledge of the eye, probably never took the trouble to study the roentgenograms of the cases he referred to the dentists.

Black took his cue from the common knowledge that toothache is frequently accompanied by reflex eye pain. From this daily experience, he deduced his theory that practically all eye reflexes are caused by irritated live pulps.

My roentgenograms show the fallacy of Black's theory. In no case did I find a live pulp; in all cases there were dead teeth with apical abscesses and diseased alveolar processes. As a matter of fact, the experience of other observers and myself reveals the existence of at least five classes of eye reflex conditions, differing in character according to the nerve fibers or nerve branches involved:

1. Nutritional and vasomotor disturbances reflexly caused by bad teeth, a class that is not dealt with in this paper.

2. Acute pain in the eyes caused by an acute irritation of the sensory fibers of the trigeminus, by an irritated live pulp, sensitive dentin or by an open cavity in the tooth.

3. Spasms or paralysis resulting from affection of the oculomotor apparatus and the supra-orbital and palpebral muscles by dead teeth and alveolar abscesses. The patients suffer no pain except from the ill effects of the incapacitated muscles.

4. Reflex eye strain caused by dead teeth or by alveolar abscesses irritating the nerves of the ciliary muscles, possibly in connection with irritation of the oculomotor nerves. The symptoms of this large class are indistinguishable from the eye strain symptoms from any other cause. The ill effects are those of the eye strain. The diagnosis can be made only by exclusion.

5. Neurasthenia caused by the irritation of the sympathetic ganglion connected with the trigeminus and the eye. In this group there are no eye reflexes except those caused by the neurasthenia. The diagnosis in this class can also be made only by exclusion. The exceptional Case 9 in which neurasthenia was produced by the irritation of the fifth nerve and the sympathetic ganglion by an impacted bicuspid belongs to this group of cases.

There may and, of course, frequently do occur cases in which a combination of the different groups of reflexes are produced by multiple irritation of the different nerve branches and nerve fibers involved in the innervation of the teeth and eyes.

The question whether all abscessed teeth ought to be removed or not has been debated for a great many years and is still debatable; but it is not debatable when headaches, vertigo, asthenopia, general fatigue, nervousness and the complex of neurasthenia incapacitate the patient and keep him continually in ill health, without the certainty being given that the infected teeth can be cured and sterilized. In such cases, there is only one answer to the question, namely, the removal of the focus of infection and restoration of the sufferers to good health in compensation for the loss of bad teeth.

CONCLUSIONS

The conclusions to be deduced from the foregoing study are:

1. The diagnosis can be made only by exclusion.
2. The teeth causing eye reflexes usually do not cause local pain and are, therefore, commonly overlooked as causative factors.
3. Toothache and numbness of the gums may be caused by eye strain as easily as eye strain may be caused by bad teeth.
4. The rationale of these phenomena is given by the common innervation.
5. There are at least four groups of reflexes manifested in the eye, of which only the least important is caused by live pulps and the three important ones by dead teeth and alveolar abscesses.
6. The irritation of the sympathetic nervous system by abnormal teeth may cause neurasthenia and possibly, in susceptible cases, even insanity.
7. The infected apexes and alveolar processes are, as a rule, not curable by local treatment, and extraction is the method of choice.

510 Fine Arts Building.

Is Your Community Fit?—Is your town an industrial center? Are the workers properly housed and fed? Have the working conditions been investigated so as to reduce to a minimum the health hazards of the industries? The prosperity of your community depends largely on maintaining the maximum output of your industries, and this in turn depends largely on the health of the workers.—*Pub. Health Rep.*, April 25, 1919.

10. Sumner, Percy: Subnormal Accommodation, the Result of Focal Infection, *Am. J. Ophth.* 4: 356 (May) 1921.

11. Deichler, L. W.: Involvement of Ocular Muscles Due to Focal Infection of the Teeth, read in Philadelphia, February, 1922.

ACUTE PANCREATITIS IN CHILDREN

REPORT OF CASE WITH CIRRHOSIS OF LIVER

HORACE B. ANDERSON, M.D.

JOHNSTOWN, PA.

If one is to be guided correctly by the accounts of or, rather, the lack of accounts of pancreatitis in the leading textbooks on pediatrics; from personal communications from twelve eminent pediatricians of the United States and from several of our leading pathologists, none of whom admit having ever encountered a case, and from a rather careful survey of the literature, acute pancreatitis in children is a very rare condition. It seems expedient, therefore, that the present case be placed on record.

In 1889, Fitz read his memorable paper on acute pancreatitis before the New York Pathological Society, and classified acute pancreatitis as being either hemorrhagic, suppurative or gangrenous. In recent years, surgeons and pathologists have added a fourth type of acute pancreatitis: the acute nonsuppurative.

These cases of simple nonsuppurative pancreatitis are comparatively mild in nature. The patients recover, and such cases are rarely, if ever, seen at necropsy. It is in this group, no doubt, that the cases of acute pancreatitis belong which develop during the course of or as sequels of scarlet fever, diphtheria, mumps and other acute infections. That a simple acute pancreatitis does occasionally occur during the course of or following the conditions named above can hardly be denied. Goldie¹ reported five such cases in children between the ages of 5 and 9 years. His cases displayed a syndrome in which there were abdominal pain of sudden onset, and usually nausea and vomiting, with swelling and tenderness over the upper abdomen in the region of the pancreas, shortly followed by jaundice and clay-colored stools.

This extract from Sharp's² paper on the relationship and interchangeability of pancreatitis and parotitis is interesting in this connection:

The writer based his remarks on a long-continued severe and widespread epidemic affecting patients aged from 17 months to 35 years. The temperature was never higher than 101 F. or 102.5 F., and the pulse rate was generally comparatively slow. In one family a girl began with a severe parotitis, which cleared up and showed no further sequel. A brother ten days later began with pancreatitis, and passed blood and fat in the stools. The condition was diagnosed as acute pancreatitis. The boy never showed signs of parotitis. A boy of 12, who was exposed to the infection, had great pain in the left hypochondrium and the epigastrium, with vomiting of great quantities of blood, although after the acute symptoms had passed away no tumor could be felt. This was thought to be another case of acute pancreatitis without the usual affection of the parotid.

Pratt³ suggests that many cases giving a history of attacks of pain in the abdomen simulating gallstone colic are, in reality, mild attacks of acute pancreatitis. To substantiate this view, he cites the findings at operation in several cases that gave such a past history. At operation, a well defined pancreatitis was found, but there was no evidence of any disease of the gallbladder or bile ducts. To emphasize further the possible frequency of the simple nonsuppurative type of pancreatitis in children, I insert these lines from Ochsner.⁴

We feel safe in saying that clinical observations point to the possibility that simple inflammation of the pancreas is not rare, occurs often in childhood, and, like chronic nephritis, is now recognized as a long-deferred sequel of scarlet fever in certain cases. Likewise, certain scleroses of the pancreas, first observed in recent years, will no doubt be ascribed to a process inaugurated by earlier infective pancreatitis.

I have been unable to find any reported cases of acute gangrenous or acute suppurative pancreatitis in children. No doubt, other cases have been reported; but the only other case of acute hemorrhagic pancreatitis in a child that I could find was reported by Phélip,⁵ and, briefly, is as follows:

B. C., a girl, aged 7 years, whose hereditary antecedents were negative, was suddenly taken with severe abdominal pains and alimentary vomiting, Aug. 6, 1919, at 11:30 o'clock. The pains were localized to the umbilicus. The vomiting persisted, and gradually became bilious; then there were several brownish vomitings, having the appearance of cooked blood, becoming greenish, August 9. A median, sub-umbilical laparotomy, August 10, disclosed an epigastric mass covered by the omentum. The tumor was situated in the transverse mesocolon, and occupied its thickness up to the point at which it is attached to the wall of the abdomen. The upper and lower surfaces of the transverse mesocolon were covered with yellowish patches. The gastrocolic ligament was incised. The posterior cavity of the omentum also contained yellowish granulations; the tumor extended to the posterior wall of the posterior cavity, forming a large, motionless, subpyloric mass. The transverse colon and the pylorus appeared to be healthy and independent of the mass. The abdomen was closed without drainage. The patient died, August 11. At necropsy, no lesion of peritonitis was found; milky-white patches were noted on the omentum and omental fringes. The epigastric tumor consisted of the very large and hard pancreas; at its surface, the peritoneum was covered with broad whitish patches. On section, the pancreas was enormously hard, and pinkish-white.

Histologic examination revealed (1) fragments of perirenal fat; cytosteatonecrosis; (2) fragments of the pancreas; sclerosed pancreas. Certain lobes showed a marked degeneration of the acini, some of which were reduced to the state of a granular mass; there were all stages of necrosis.

ETIOLOGY OF ACUTE PANCREATITIS

So far as I know, almost all writers on the subject agree that acute pancreatitis is the result of the change of trypsinogen, an inert substance normally found in pancreatic juice, into trypsin, a proteolytic substance, before the pancreatic juice leaves the pancreas. Normally, trypsinogen is not converted into trypsin until it reaches the duodenum, where it is acted on by the enterkinase of the intestine. If trypsinogen then is converted into trypsin before it leaves the pancreas, there is nothing to prevent this active proteolytic substance from causing autodigestion of the pancreatic tissue. The severity of the pancreatitis that results, therefore, depends on the amount of trypsin liberated. Investigators have found many substances which, when introduced into the pancreatic duct, will, under given conditions, convert trypsinogen into trypsin. Among these are bile, gastric juice, duodenal juice, various salts, bacterial toxins and oils. There is little doubt that the bacterial toxin is the chief factor, in most cases. The pathologic condition which in the past has most often been associated with pancreatitis is cholecystitis, with or without gallstones. The frequency with which gallstones have been found in cases of acute pancreatitis, no doubt, has stimulated the view that "gallstones might lead to the production of acute pancreatic necrosis (1)

1. Goldie: *Lancet* 2:1295, 1912.2. Sharp: *Brit. M. J.* 1:808 (April 4) 1908.3. Pratt: *Oxford Medicine* 3:473.4. Ochsner: *Surgical Diagnosis and Treatment* 2:427.5. Phélip, J. A.: Deux cas de pancréatite, *Arch. de méd. d. enf.* 23:357 (June) 1920.

by facilitating the flow of infected bile into the pancreatic duct when they lodge in the diverticulum of Vater, and (2) by allowing entrance of intestinal contents, when they dilate the biliary orifice by their passage." Mann and Giordano's⁶ recent studies on the bile factor in pancreatitis show rather conclusively that gallstones as a mechanical factor could not be expected to play a very important rôle in causing pancreatitis. If we assume that gallstones play a very important part in the etiology of pancreatitis, it is rather difficult to explain the fact that, while gallstones occur more frequently in women, pancreatitis occurs more frequently in men, and, as Deaver and Pfeiffer⁷ have pointed out, 36 per cent. of chronic cases and 12 per cent. of acute cases show no demonstrable lesion of the biliary passages. Diseases of the stomach and duodenum occur more frequently in men than in women. Might not this be another factor to consider?

I believe that the most accepted view and the one that can be most widely applied is that which has been advocated by Maugert, Arnsberger, Deaver, Sweete and others: "The infection which activates the trypsinogen is carried to the pancreas by way of the lymphatics, the primary infection being in the gallbladder, the bile ducts, the liver, the duodenum or the stomach." Bartels and Franke have shown conclusively that there exists an intimate relationship between the lymphatics of the pancreas and the lymphatics of the duodenum, gallbladder and bile ducts. Surely, this theory seems most applicable in the case here reported, which shows no gallstones or any demonstrable lesion of the biliary passages, but does show a duodenitis:

REPORT OF CASE

A white girl, aged 4 years, American, was admitted to the Connemaugh Valley Memorial Hospital, Nov. 26, 1922, at 8:40 p. m., because of pain in the abdomen, vomiting and constipation. The family history was not important. The patient was a full-term, normally delivered child. She had been breast fed six months, and bottle fed four months. She was quite well until about the age of 3 years, when she contracted whooping cough, which affected her for five or six months. She never had mumps, scarlet fever or measles; no one in the neighborhood had had mumps. Friday, November 24, the child ate dinner consisting largely of cabbage, but went to bed Friday night apparently in normal health. Saturday, at 4 a. m., she complained of abdominal pain, and soon began vomiting. The vomitus contained food particles eaten the day before. A physician at 9 a. m. found the child very ill, but without much fever. He prescribed cathartics and something to ease the pain. In the interval between Saturday morning and Sunday evening the child became progressively worse: the abdomen became more distended and rigid, and vomiting continued. She did not have a bowel movement from the onset of the illness to the time that she was brought to the hospital. The patient had one bowel movement, consisting of a dark bluish, semiliquid material, just before she died. The stool was quite large.

The child was small and well nourished. There was an anxious expression on her face; she was restless and cyanotic, with cold extremities. The radial pulse was absent. The apex beat was scarcely audible. The heart was very rapid. The temperature was subnormal. The abdomen was greatly distended and tympanitic. There was very little muscular rigidity. No tumors were felt in the abdomen. There was general tenderness over the abdomen.

The patient died one hour after admission to the hospital. While in the hospital the temperature was subnormal, the pulse very weak and rapid, and respirations accelerated.

Necropsy was performed fourteen hours after death. Over the chest and back there was a light reddish discoloration of the skin; the areas of discoloration were patchy in character. The pupils were equal and dilated. The superficial lymph glands were not palpable. The abdomen was distended and tympanitic. There were no areas of discoloration over the abdomen. When the peritoneum was opened, a quantity of bloody exudate was noted, in the dependent portion of this cavity. The amount of fluid present was, approximately, from 150 to 200 c.c. There were several small, grayish yellow areas of necrosis in the omentum. These grayish yellow flecks were present along the appendices epiploicae of the large intestine, in the mesentery, and in that part of the parietal peritoneum in the neighborhood of the umbilicus. The average size of these grayish yellow flecks was approximately 5 mm. in diameter. The arch of the diaphragm on the right side extended to the fourth interspace, and on the left side to the fifth interspace. The large intestine was considerably distended, the small intestine only moderately distended. Along the superior surface of the transverse colon and adjacent omentum there was a diffuse area of hemorrhage. The greater part of the hemorrhage seemed to be confined to the subserous and retroperitoneal region.

The liver weighed 925 gm., and measured 20 by 14 by 7 cm. The capsule was thickened. The edges were rounded. The organ was light brownish yellow, and considerably paler than normal liver. The organ cut with a pronounced increase in resistance. The liver, in general, resembled a fatty liver, although the consistency was that of a cirrhotic liver. The gallbladder and ducts showed no gross changes. Thin, greenish yellow bile could be freely expressed into the duodenum by moderate pressure on the gallbladder.

The stomach was slightly dilated, mostly from the gas that was present; but there was also some mucus and watery fluid. The mucosa was reddened and slightly congested, but did not appear acutely inflamed.

The mucosa of the duodenum was only moderately congested, but was definitely swollen and edematous. There were numerous small elevations, the size of a pinhead, which grossly appeared to have an excoriated top. Aside from these small excoriations, there was no area which might suggest a duodenal ulcer.

The mucosa of the remainder of the intestinal tract was somewhat edematous and "weepy" in character, but presented nothing to suggest an enteritis. There was considerable redness of the transverse colon on the superior surface. This discoloration was the result of hemorrhage, the distribution of which would lead one to believe that the extravasated blood came not from one large vessel but from many small ones. It was along this area that fat necrosis was most conspicuous. When the omentum was separated from the colon, and the lesser peritoneal sac, which contained only a few cubic centimeters of blood-tinged fluid, was exposed, more hemorrhagic discoloration and fat necrosis were seen.

The pancreas was soft, swollen and edematous. It showed a considerable quantity of subcapsular hemorrhage, and areas of fat necrosis could be seen over the surface. On incision of the pancreas, small, hemorrhagic areas were noted in the substance of the gland; but the greater part of the hemorrhage was confined to the subcapsular region. The pancreas appeared to be very nearly a half larger in size than it should be. The anatomic relationship between the opening of the common bile duct and the pancreatic duct was about the same as exists between the openings of a double barrel shotgun. The boundaries of the ampulla of Vater were ill defined.

Sections of the pancreas showed extensive areas of necrosis in which the acini and the lobules were completely obliterated. Such necrotic areas gradually merged into areas in which the parenchyma had a more normal arrangement; even in such areas, however, the cells lining the acini were swollen and degenerated. Polymorphonuclear and mononuclear leukocytes infiltrated the entire gland tissue. At places, the walls of the blood vessels had undergone necrosis and permitted the escape of blood into the surrounding tissue. The main ducts showed extensive exfoliation of the epithelial lining, and necrosis of the duct walls was frequently noticed. Generalized edema of the pancreas was present.

6. Mann, F. C., Giordano, A. S.: The Bile Factor in Pancreatitis, *Arch. Surg.* 6: 1 (Jan.) 1923.

7. Deaver and Pfeiffer, in Ochsner: *Surgical Diagnosis and Treatment* 2: 427.

The liver showed a well developed cirrhosis in which the capsule was thickened, and the fibrous changes, which were pronounced, were largely limited to the interlobular tissue. Fibroblasts and round cells were present in the interlobular areas. The liver cells showed an abundance of small fat globules when stained by appropriate stains.

The gallbladder was normal.

The duodenum showed areas in which the epithelium was missing; but these areas were scarce. There was a pronounced edema and lymphocytic infiltration of the mucosa and submucosa.

The lymph nodes obtained from about the stomach and the head of the pancreas presented the picture of an acute adenitis.

The pathologic diagnosis was: acute hemorrhagic pancreatitis with fat necrosis; cirrhosis of the liver; acute catarrhal duodenitis; acute perigastric and peripancreatic adenitis; hemoperitoneum.

COMMENT

This case is believed to be unique in that (a) it is a case of acute hemorrhagic pancreatitis in a child; (b) there are no lesions of the gallbladder or biliary passages; (c) there is a well defined cirrhosis of the liver, and (d) there is a well defined acute duodenitis present.

DIETARY CONSIDERATIONS IN INFANTILE ECZEMA*

JESSE R. GERSTLEY, M.D.

CHICAGO

In an eight-year clinical study of that type of infantile eczema involving the cheeks, I have come to the conclusion that the part played by diet is only secondary.

Reflecting every periodic wave of medical thought, observers have ascribed the etiology of eczema to infection, to vagotonia, to constitutional anomaly, and to allergy. During the last decade many pediatricians have followed the teachings of Adelbert Czerny, who offered in explanation an underlying constitutional background—the “exudative diathesis.” This diathesis he believed to be greatly improved by withdrawal of fat from the diet. Hence the great emphasis placed by his followers on the effect of food therapy. Repeated observations, however, impugn the definiteness of this constitutional anomaly; and, again, the effect of fat withdrawal on the eczema is by no means as conclusive as was originally taught.

It was decided that a feasible method of reopening the question would be to follow for a number of months groups of new-born infants, and to record the characteristics of all those developing eczema. After a period of eight years I am by no means convinced of any deep underlying constitutional anomaly. Eczemas developed in the overweight and the underweight, in those with adenopathy and those without, in those with subcutaneous tissue flabby and those with it firm. A characteristic common to the vast majority, namely, blue eyes, blond hair, and skin of very delicate, fine texture in all but the involved parts, easily can be attributed to a simple deficiency of pigment. Even if it were proved definitely that fat withdrawal improves exudative diathesis, the scarcity of cases showing such a syndrome invalidates indiscriminate tampering with the diet.

Diet affects eczema apparently in two ways—but it must be emphasized that this influence is purely secondary: (a) by affecting the nutrition of the whole

child, and (b) by affecting the amount of fluid in the tissues.

(a) No organ in the child's body is more sensitive to nutritional change than the skin. The well-nourished skin resulting from good general nutrition is better equipped than is the poorly nourished to combat pathologic change. Contrary to tradition, a large number of eczema patients are undernourished. Simply by an increase in the diet so as to improve the general nutrition and hence the nutrition of the skin, many severe cases progress to perfect recovery. No local treatment whatsoever is necessary. Increase rather than decrease of food may effect surprising cures.

(b) The influence of diet on body fluids is somewhat more complicated. Various food combinations, such as salt or salt and carbohydrate, cause a shift in the content of body water. Hence, if an eczema tends to be of the moist type, a diet rich in mineral matter and carbohydrate, by calling increased fluid to the tissues, will result in increased oozing of the eczema. A diet low in mineral and carbohydrate, by depleting the tissues of water, will result in a drying and apparent improvement of the eczema. But it must be emphasized that this phenomenon is a purely incidental reaction. It is in no way related to the primary eczema, but is simply an evidence of changing amounts of water in the body tissues.

No greater injustice can be done the little patient than that of failing to recognize the difference between the primary eczema and the secondary manifestations. Believing the oozing to be a feature of the primary eczema, physicians have restricted the diet in one way or another. The resulting improvement in the cheeks, however, does not signify a change in the real eczema, but rather the resulting dryness and pallor are the symptoms of grave malnutrition. As soon as the diet is increased to normal, the whole process recurs. It is probable that the benefits usually attributed to fat withdrawal belong entirely in this category of incidental reactions. Fat plays a part only if restricted to amounts insufficient to permit a gain in weight. The same apparent benefit would follow withdrawal of protein, mineral or carbohydrate—anything causing tissue starvation. Fat in amounts insufficient to cause a gain is harmless. Indeed, in an undernourished child because it improves general nutrition, fat in rather considerable amounts may work a cure.

If one considers weeping as a purely secondary development, a dietetic regimen different from the orthodox underfeeding becomes feasible. Though an increased diet, by making the tissues richer in body fluid, causes the eczema to appear temporarily worse, still a maintenance of this very same diet by improving the nutrition of the skin, eventually will enable it spontaneously to correct the difficulty. In addition, one has a healthy, happy baby. Here lies one of the secrets of the dietetic therapy of eczema. If medical men would be a bit more patient before drawing conclusions, they would learn that in an undernourished child many a diet which makes the eczema temporarily worse, bringing increased redness and weeping, will, if persisted in, cure the very same eczema by improving general nutrition. After the initial weeping, the baby gains in weight; and, with improved nutrition, the skin slowly heals.

Not every case comes under this category. Eczemas certainly appear in overfed, overweight children. Whether improvement following restriction of diet in such cases is due to a fundamental action on the eczema

* From the Northwestern University Medical School and the Michael Reese Sarah Morris Hospital for Children.

and not purely to the secondary influence described above is open to question.

It will be noted that nothing has been written concerning the etiology of primary eczema itself. I believe that this is purely a dermatologic problem. In many cases it can be traced to some type of irritant. Recently, the studies of Shannon, and those of O'Keefe, would ascribe the fundamental basis of the eczema to a hypersensitiveness to certain foods. If these observations remain unchallenged, unquestionably certain cases fall into such a group. Some doubt has been raised, however, by the recent contribution of Stuart.¹ Then, too, the eczema of infants spontaneously healing at the age of 6 months would be an old clinical type of anaphylaxis. I have seen many patients removed from the breast with absolutely no improvement. Grulee has reported the case of an eczematous child who reacted to a certain food with urticaria, proving in this one child, at any rate, that the mechanisms are not identical.

TREATMENT

Very little has been written of prophylactic treatment. Believing in the essentially dermatologic origin of eczema, I have attempted to bring the skin of the predisposed fair-haired, blue-eyed children to the best possible state of nutrition. True, irritants at times bring hyperemia and even papule formation to sensitive cheeks; but the application of a mild protecting salve of any sort—simple cold cream—is sufficient to prevent spreading of the process. If the diet is absolutely unchanged, findings soon disappear. They may reappear again at intervals, but rarely progress to the classical type illustrated in textbooks. If the skin of an infant is maintained in good nutrition from the time of birth, and at the same time protected from irritants, dread eczemas rarely appear.

The active dietetic treatment, from the standpoint of the pediatrician, is that which most rapidly brings the child to the best possible state of nutrition. No one particular diet helps; no one diet harms. The main consideration of the pediatrician is to place the welfare of the whole body above that of an individual organ. If he steadfastly adheres to this principle, local symptoms gradually disappear in proportion to improvement in the general condition. Indications for restriction of diet are only two. In an overfed baby with an oozing eczema, reduction of food intake is of value. In an infant whose eczema has become secondarily infected, a temporary reduction of diet, by depleting the tissues of fluid, dries the cheeks and leaves a field less fertile for bacterial growth. In these cases there is no particular reason for reducing one element of food. Restriction of quantity is all that is necessary.

104 South Michigan Avenue.

1. Stuart, H. C.: The Excretion of Foreign Protein in Human Milk, *Am. J. Dis. Child.* 25: 135 (Feb.) 1923.

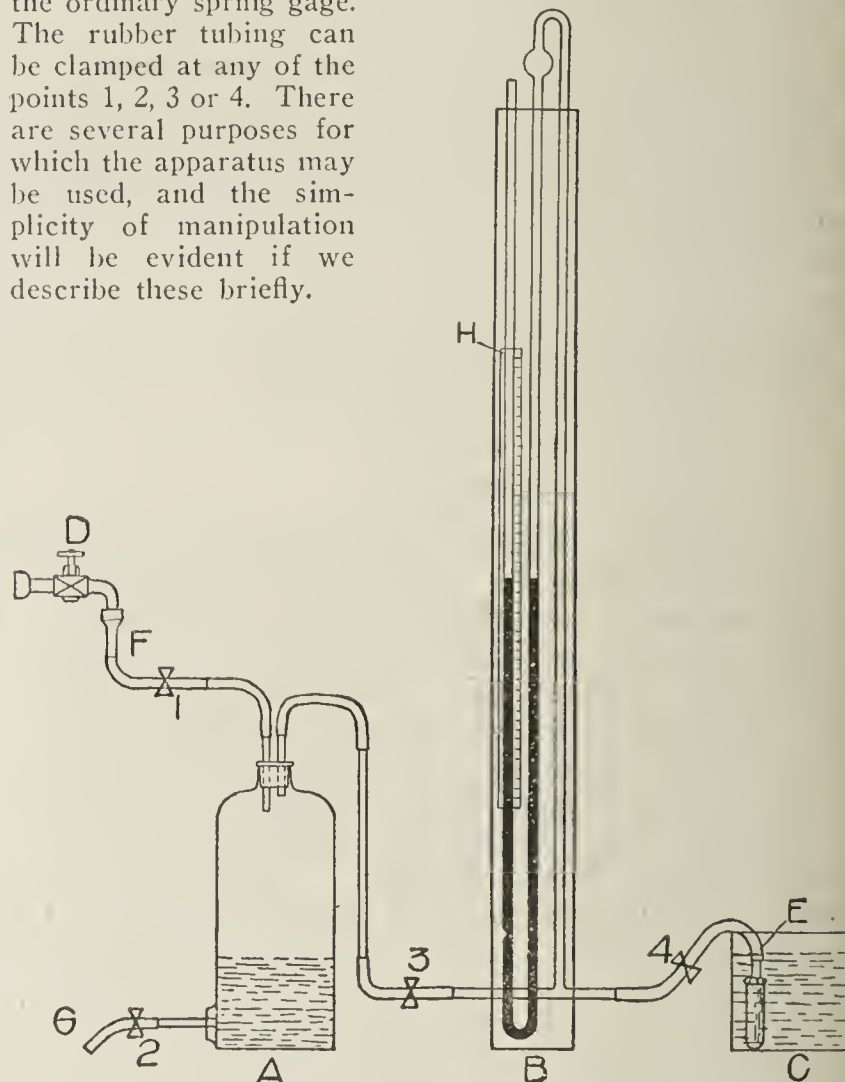
Public Health in Brazil.—Public health work in Brazil really began with the arrival of King John VI of Portugal in 1808, who promptly appointed a chief surgeon, a chief physician and a chief purveyor, charged with the duty of supervising the teaching and practice of medicine and surgery, the operation of hospitals and drug stores, the prevention of epidemic diseases and the sanitary protection of ports. Vaccination was introduced in 1804, and a board was organized in 1811, and reorganized in 1846, to take charge of the matter. A public health chemical laboratory was established in 1812. The first medical school was the surgical college at Bahia, followed in the same year (1808) by the Rio Medical School.

Clinical Notes, Suggestions, and New Instruments

A SIMPLE APPARATUS FOR TESTING AND WASHING FILTER CANDLES*

F. H. KROCK, A.B., AND W. L. HOLMAN, M.D.,
STANFORD UNIVERSITY, CALIF.

The importance of testing filter candles by the air pressure method has been pointed out by Bulloch and Craw¹ and by Ferry.² The apparatus here described was designed to simplify the test, and to give greater control over the manipulations. It consists of a 4-liter aspirator bottle, *A*, and an S-open-end manometer, *B*, as shown in the illustration. The manometer is more accurate, cheaper, and more useful than the ordinary spring gage. The rubber tubing can be clamped at any of the points 1, 2, 3 or 4. There are several purposes for which the apparatus may be used, and the simplicity of manipulation will be evident if we describe these briefly.



Apparatus for testing and washing filter candles.

PURPOSES FOR WHICH APPARATUS MAY BE USED

1. *Testing the initial capillary pressure of a filter candle.* The candle, previously dried for about one hour at 100 C., is attached at *E*, the tubing clamped at 3, and the candle immersed in clean water in an open vessel, *C*. The pressure caused by the water soaking into the pores of the candle and displacing the contained air is recorded on the manometer, *B*, and can be read by moving the scale, *H*. One of our 8 by 1 inch Mandler filter candles gave a reading of 355 mm. of mercury, or about 7 pounds of air pressure per square inch.

2. *Testing the pressure at which a filter candle leaks air.* The candle is first soaked in water for twenty-four hours. It is attached at *G*, the tubing is closed at 4, and water is run into *A* from tap *D* until a pressure of not more than 500 mm. of mercury is recorded. The water from *A* forces out any air confined in the candle. The candle is removed, the pressure is lowered by running the water out at *G*, and

* From the Department of Bacteriology and Experimental Pathology, Stanford University.

1. Bulloch and Craw: On the Transmission of Air and Micro-Organisms Through Berkefeld Filters, *J. Hyg.* 9: 35, 1909.

2. Ferry, N. S.: The Filterability of *Bacillus Bronchisepticus*: With An Argument for a Uniform Method of Filtration, *J. Path. & Bacteriol.* 19: 488, 1915.

the candle is attached at *E*. The tubing is closed at 2, opened at 4, and the pressure slowly increased by filling the bottle *A*. The pressure at which air leakage takes place at the joint, at any point or points, or freely from the entire filter is recorded. After a free flow of air is passing through the filter, the clamp at 2 is slowly released, and the pressure very gradually lowered until air leaking has ceased. The point at which air starts through the filter as the pressure goes up, and that at which it ceases to flow with the lowering pressure, is usually different.

3. *Washing filters from within outward.* It is dangerous to attach a filter candle to the ordinary water faucet, as the pressure has often been found high enough to crack the candle. If the candle is attached at *G*, 4 closed, and the bottle *A* half filled with water, the pressure can be controlled at any desired point, and the candle thoroughly and safely washed.

4. *Testing a filter under a given vacuum.* A water or other filter pump is attached at *F*, and the filter flask or tube at *E*. It is useful to close 4 until the desired vacuum is obtained, and with 1 closed, 4 is opened and thus a steady and known negative pressure can be maintained. The vacuum can be broken slowly by opening 2, and allowing air to bubble through the water. It is unreliable to test filters with a fluctuating pressure.

COMMENT

We advocate this simple apparatus because it answers the purposes for which it was designed, and because it is highly desirable that filter candles should be tested by some standard method so that comparable results may be obtained by all workers.

The term "filter passer," to have any real meaning, must be better defined. A "tested filter candle" means very little unless we know certain facts. Among the facts necessary are: the pressure used; the equality or fluctuating of the pressure; the time the filtration takes; the name of the bacterium used for testing; the age of the culture of the bacterium; the culture medium or the suspending fluid used with content of electrolytes and reaction; any primary manipulation of the material, such as shaking with beads or paper filtration; the pressure under which the filter leaks air, and the treatment of the filter candle between the primary test and the test of the "filter passer."

It is true that this information is seldom given, and yet, we repeat, it is necessary before we can understand the meaning of the terms mentioned.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

CARBON TETRACHLORIDE MEDICINAL.—Carbonei tetrachloridum medicinale.—Tetrachlormethane.— CCl_4 .

Actions and Uses.—Carbon tetrachloride has narcotic and anesthetic properties somewhat similar to those of chloroform. It has recently come into use as a vermifuge in the treatment of hookworm disease. It also removes some intestinal parasites other than the hookworm, such as *Oxyuris vermicularis*, *Ascaris lumbricoides* and *Trichocephalus dispar*, but it is less effective against these worms than some other drugs, such as oil of chenopodium. It is reported that usually about 95 per cent. of the hookworms are removed by the first dose of carbon tetrachloride and that occasionally all are removed. As a vermifuge it appears to be relatively safe, but serious symptoms and even death have been reported, especially in patients addicted to the use of alcohol. The best results are obtained by administration in water or milk or in gelatin capsules on an empty stomach, followed in 3 hours by a purgative dose

of magnesium sulphate. The capsules may be prepared extemporaneously. A mild laxative is generally given to constipated patients on the day previous to treatment. To insure complete removal of the hookworms a test dose of oil of chenopodium, 3 Cc. (45 minims) may be given a week after the treatment with carbon tetrachloride. A second dose of carbon tetrachloride medicinal should not be given within three weeks. Alcohol should not be taken during treatment.

Dosage.—From 2 to 3 Cc. (30 to 45 minims). Children 0.13 Cc. (2 minims) for each year of age up to fifteen years. The dose of 3 Cc. should not be exceeded.

Carbon tetrachloride is a clear, colorless, mobile liquid, having a characteristic, ethereal odor somewhat like that of chloroform; almost tasteless. Carbon tetrachloride is almost insoluble in water and glycérine; miscible with alcohol, chloroform, petroleum benzin and benzene; also soluble in most of the fixed and volatile oils. Specific gravity not less than 1.588 at 25 C. Carbon tetrachloride is volatile at ordinary temperature, but is not inflammable. Medicinal carbon tetrachloride boils at from 76 to 77 C.

Shake 10 Cc. of carbon tetrachloride medicinal with 10 Cc. of water. The aqueous layer should be neutral to litmus paper and should not give an opalescence with silver nitrate solution (*chloride*). Shake 10 Cc. of carbon tetrachloride medicinal with 10 Cc. of water containing a few drops of potassium iodide solution. On standing for five minutes the lower layer should not be colored violet (*free chlorine*). Warm 10 Cc. of carbon tetrachloride medicinal with 10 Cc. of 25 per cent. potassium hydroxide solution. No yellow or brown color should develop (*aldehydes*). Mix 10 Cc. of carbon tetrachloride medicinal with 10 Cc. of sulphuric acid and shake occasionally for 5 minutes. Not more than a barely perceptible color should be present in either layer (*organic impurities*).

Evaporate 25 Cc. of carbon tetrachloride medicinal almost to dryness in a weighed dish on a steam bath. Allow the balance to evaporate spontaneously. The residue, if any, should be odorless. Dry the residue at 100 C. and weigh. The residue should not weigh more than 0.001 Gm. About 5 gm. of carbon tetrachloride medicinal are weighed, placed in a reflux apparatus with 20 Cc. of half-normal alcoholic potassium hydroxide and the mixture gently boiled for 30 minutes. The solution is diluted with 50 Cc. of water and 5 Cc. of 20 per cent. alcoholic potassium hydroxide solution, the mixture warmed on the steam bath until the carbon tetrachloride and alcohol have been removed and 50 Cc. of bromine water are added gradually to the alkaline solution. (An excess of bromine water must be used.) After warming for 15 minutes an excess of hydrochloric acid is added and the solution filtered. An excess of barium chloride solution is then added and the barium sulphate collected, heated and weighed in the usual way. The weight of barium sulphate obtained should correspond to not more than 0.1 per cent. of carbon disulphide.

Carbon Tetrachloride Medicinal-M. C. W.—A brand of Carbon tetrachloride medicinal-N. N. R.

Manufactured by Mallinckrodt Chemical Works, St. Louis. No U. S. patent or trademark.

Carbon Tetrachloride C. P.-P. W. R.—A brand of Carbon tetrachloride medicinal-N. N. R.

Powers-Weightman-Rosengarten Co., Philadelphia, distributor. No U. S. patent or trademark.

BORCHERDT'S MALT EXTRACT (PLAIN).—See N. N. R., 1923, p. 178).

Borcherdt's Malt, Cod Liver Oil and Iron Iodide: Each 100 Cc. contains ferrous iodide 0.88 Gm. (4 grains per fluidounce), cod liver oil, 25 Cc. and Borchardt's malt extract (plain), 75 Cc.

SULPHARSPHENAMINE (See THE JOURNAL, March 31, 1923, p. 919).

Sulpharsphenamine-Squibb.—A brand of sulpharsphenamine-N. N. R.

Manufactured by E. R. Squibb & Sons, New York, under U. S. Patent 1024993 (April 30, 1912; expires, 1929) by license of the Chemical Foundation, Inc.

Sulpharsphenamine-Squibb, 0.1 Gm. Ampules.

Sulpharsphenamine-Squibb, 0.2 Gm. Ampules.

Sulpharsphenamine-Squibb, 0.3 Gm. Ampules.

Sulpharsphenamine-Squibb, 0.4 Gm. Ampules.

Sulpharsphenamine-Squibb, 0.5 Gm. Ampules.

Sulpharsphenamine-Squibb, 0.6 Gm. Ampules.

MODIFIED PNEUMOCOCCUS VACCINE.—A vaccine or "antigen" prepared by digesting a suspension of pneumococci of Types I, II, III and Group 4 at 37 C. until about 95 per cent. of the organisms have become gram-negative and the mixture is relatively nontoxic to guinea-pigs. It is believed that this method yields a vaccine with a greater protective power.

Actions and Uses.—There is some evidence that this vaccine is of value in the treatment of lobar pneumonia. It is not intended for prophylactic use.

Eli Lilly & Company, Indianapolis.

Pneumococcus Antigen-Lilly.—Marketed in 5 cubic centimeter vials, each cubic centimeter containing 20 billion partially autolyzed pneumococci.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - "Medic, Chicago"

Subscription price - - - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, APRIL 21, 1923

THE CAPILLARIES IN HEALTH AND IN DISEASE

The integration of parts into the unit organism is achieved in animals by energy transmitted through the nervous system and by substances transported through the blood; and clarification of the mechanism of these processes must yield notable results. Although the problem of nervous regulation has been vigorously attacked, the sister problem of the control and care of tissues and organs by means of the blood stream has long languished. Circulation of the blood has for its one end the carrying to and from tissues of various dissolved substances, and this exchange can occur only through the capillary bed. In these structures, then, must the essential physiology be sought. Now, 250 years after capillaries were first described, physiologists, notably Krogh,¹ are attacking the problem.

The capillaries were long regarded as passive endothelial filters with no muscle and therefore no independent contractility, being distended or collapsed as the inside pressure (modified by arteriole contractions) became greater or less than that outside. That capillaries do possess the ability to contract is now abundantly proved. The microscope shows that they not only become noticeably smaller when a high internal pressure is cut to 0, but will entirely disappear on electrical stimulation. Conversely, if a small venule is gently stroked with a hair, a capillary bud soon appears, and grows as the stroking is continued in front of it until the dilating capillary finally opens into an arteriole and a current of blood sweeps through. Such independence explains, for example, how the skin may be at once pale (little blood present, owing to contracted capillaries) and hot (rapid flow due to dilated arterioles), and affords the basis for the abnormal capillary shapes seen in renal disorders² and for the many "angioneurotic" skin diseases. Capillary contractility, when firmly established, was explained in terms of endothelial swelling until Krogh and Vimtrup rediscovered on the capillary endo-

thelium, especially near the arterioles, fine branching muscle cells which tend to encircle the tube and are able by contraction to fold the endothelium and obliterate the lumen. These cells, which have been named Rouget cells for their discoverer (1873), bring the further study of the control of capillaries into the same category as other contractile tissues.

The Rouget cells receive fibers from the sympathetic, and are under its motor and tonic control, stimulation of the nerve leading to prompt capillary constriction, and section of it to a fairly permanent dilatation. Dilator influences, to the skin capillaries, at least, seem to travel along fibers in the posterior root, and may be concerned in the well known reflex erythema following painful stimulation of the skin (it is abolished by cocaine or by injury to the nerves or cord of the region). Krogh points out also the significance of this reaction in herpes zoster. Direct mechanical stimulation will produce dilatation if weak and contraction if strong, a local chemical stimulus, as dilute iodine, only dilatation; the effects in each case spreading in proportion to the intensity of stimulus. These reactions are in varying degrees mediated by nerves, which Krogh suggests exist peripherally as a true network. The significance of such observations in the use of counterirritation is apparent at once. Heat and cold produce, respectively, relaxation and contraction of the capillaries as of the arterioles and venules, acting in part through the nerves to them. Ultraviolet light acts directly on the capillaries, and causes a slowly appearing and long persistent dilatation, inducing the well known erythema.

Many substances introduced into the blood stream have marked action on the capillaries. The dilator and paralytic effects, especially on the intestinal capillaries, of histamine and some heavy metal double salts, are well known. Urethane likewise produces extreme dilatation of the capillaries and stasis, without affecting the arterioles, as also do ether and chloroform to a lesser degree. This action accounts for their tendency to bring on shock, by synergizing other capillodilator influences and causing "exemia." The dilator influence of carbon dioxide or other acids is distinctly less than usually believed, and is not sufficient to account for the capillary dilatation in a functioning muscle; but oxygen deficiency, possibly through other metabolites than carbon dioxide, does lead to marked capillary dilatation. Epinephrine causes definite dilatation of certain capillaries, and has no action on many, and, in man, leads to constriction; though electric stimulation of the sympathetic in all these cases causes contraction.

In a beautiful series of experiments, Krogh has adduced evidence that the capillaries are normally kept tonically contracted by a substance present in the blood stream. If the blood flow through a frog's leg is stopped, capillaries of the web slowly dilate in the course of fifteen or twenty minutes from a diameter of 5 microns to one of 20 microns; when flow is again permitted, the capillaries become distinctly contracted

1. Krogh: *The Anatomy and Physiology of Capillaries*, New Haven, Yale University Press, 1922.

2. Nevermann: *Zentralbl. f. Gynäk.* 16: 617, 1922.

in five minutes. This indication of a constrictor agent of hormone nature in the blood stream was further followed by perfusion experiments with defibrinated ox blood controlled with 3 per cent. gum, Ringer solution and ox corpuscles. In the controls, the capillaries began to dilate at once; with the ox serum present, the capillaries remained normal for hours. The active substance could be demonstrated in a dialysate of ox serum, and many of its properties determined. Extirpation of the entire hypophysis caused marked dilatation for weeks of the web capillaries, and a marked instability in response to stimuli; when only the glandular part (anterior lobe in mammals) is removed, this dilatation does not follow. Pituitary extract from the posterior lobe of cows, in dilutions which do not affect arteries at all, causes marked capillary contraction, and, when added to the Ringer perfusion fluids of the experiments mentioned in 1:1,000,000 concentration, was able to maintain the normal capillary tone as well as ox serum. The properties of pituitary extract also closely correspond to those of the dialyzed substance, so that Krogh believes that the pituitary hormone is the substance in blood which maintains capillary tone, and that it is present normally in concentrations of about one part in a hundred million or even less. If a similar control of human capillaries can be shown (and it is well to warn against hasty assumption), the therapeutic value of pituitary extracts in such conditions as shock is manifest. Epinephrin does not have a comparable action.

Krogh next addressed himself to the problem of exchange of substances through the capillary wall, and proved quantitatively that oxygen, carbon dioxide and probably all crystalloids pass through by purely physical processes, as by diffusion, whereas colloids are denied passage through the normal wall, and exert a definite osmotic pressure tending to cause absorption of water from tissue spaces into the lumen. The thinned endothelium of a dilated capillary, however, permits colloids also to pass, so that the entire blood plasma may go from the lumen to surrounding tissues as rapidly as fresh blood is pumped through the arteriole, causing edema of the tissues and leaving the cells packed in the lumen as a solid cast. This is the essential condition in histamin or other types of shock, and the same changes locally may produce wheals and blisters. The capillary pressure in man, as measured directly with a cannula in the capillary lumen and a water manometer, is normally lower than the osmotic pressure because the hydrostatic pressure of the column of venous blood, as in a pendent foot, is kept down by the pumping action of the muscles on the valved veins; in varicose conditions or when muscular action is avoided, the capillary pressure rises above the osmotic pressure, and a resulting edema is easily demonstrated. Such edema fluids are low in protein, while those formed through dilated capillaries are very rich in it.

This new physiology of the capillaries has already explained many cryptic conditions of health and disease, and has opened wide a realm in which further facts are being found. Krogh has indeed justified the statement that he who increases the accuracy of his measurements by one decimal place will open up a new world of human knowledge.

PANCREATIC SECRETION IN MAN

The demonstration of the possibility of a chemical stimulation of the pancreatic gland to secretion, independently of the participation of secretory nerves, is justly regarded as a remarkable modern contribution to the science of physiology. The classic experiments which the London investigators Bayliss and Starling reported twenty years ago showed in a striking way that secretory glands can be excited to activity through influences which reach them by humoral as well as by nervous channels. Through the action of dilute acid on the duodenal mucosa, a substance, secretin, is formed which can accelerate the flow of pancreatic juice even when all nervous connections with the secretory gland are severed. The English physiologists early reached the conclusion that such a mechanism is involved normally in the production of pancreatic secretion, and is responsible for the flow obtained when acids find their way into the small intestine. Normally, this occurs at frequent intervals when the acid contents of the stomach are discharged through the pylorus. This series of reactions has often been pointed out as an example of a mechanism which probably plays an important part in the correlation of the activities of many organs of the body. Starling,¹ indeed, has remarked that in the normal life of the higher animals, which must be considered as a continuous series of reactions to changes in the environment, ending only with death, those reactions which are carried out through the intermediation of the nervous system play such a preponderant part that we have almost forgotten the possibility of other means of coadaptation among the different organs of the body.

Starling has further pointed out that, whereas in the mouth, the reaction, which must be rapid, is entirely nervous, in the stomach there is a mixture of the nervous mechanism with the more primitive chemical mechanism. The nervous secretion preponderates in this viscus. When we come to the pancreas, he adds, the primitive chemical mechanism, namely, the formation of hormones and their circulation through the blood to the reactive tissue, suffices to account for the whole activity of the gland, and it is doubtful whether in this activity the nervous system plays any part whatsoever. Many writers have come to the conclusion, from the striking experiments on secretion and the undoubted promotion of pancreatic flow through the

1. Starling, E. H.: *Recent Advances in the Physiology of Digestion*, Chicago, W. T. Keener & Co., 1906.

presence of acid in the duodenum, that the latter is the usual, if not the exclusive, normal provocative of pancreatic activity during the digestive cycle. In other words, the presence of acid chyme in the intestine sets free secretin in the mucosa; and some of this finds its way into the circulation, and, in turn, makes the pancreas secrete. The consequences of such an arrangement are obvious. If the regulation of pancreatic secretion is largely dependent on the secretin factor, one might naturally assume that vigorous gastric digestion, with the resulting strongly acid chyme, must go far to insure a normal intestinal digestive performance.

So far as man is concerned, the recent studies of McClure² and his associates in Boston may lead to some hesitation in postulating the necessity of an acid factor in the promotion of pancreatic secretion during the digestive cycle. These investigators have studied the character of the duodenal contents withdrawn at frequent intervals through a sound after a variety of types of feeding in man. The reaction of the contents which gave evidence of the content of pancreatic juice through the character and quantity of the enzymes present was frequently measured with accuracy. The findings show that the presence of food in the human intestine in some way stimulated the activity of the external secretory function of the pancreas. They indicate that the principal factor in producing this stimulation was the absorption of the products of digestion rather than the acidity of the gastric chyme. Furthermore, in achylia gastrica and pernicious anemia no abnormalities in the activity of the external secretory function of the pancreas were demonstrable, as measured by the enzyme concentration of duodenal contents. These findings suggest that the presence of hydrochloric acid is not necessary in order to stimulate normal pancreatic secretory activity.

If these observations are substantiated, it must become clear that decrease or absence of typical pancreatic enzymes in the intestine need not be due to a lack of acid charged with initiating the production of secretin. Consequently, it seems likely that the estimation of the enzymatic activities of the duodenal contents may furnish a fairly satisfactory index of the external secretory functions of the pancreas. McClure and Jones have, in fact, found it to be much depressed in chronic pancreatitis. In their clinical studies, it was observed that acute pancreatic necrosis, cancer of the head of the pancreas, and lesions obstructing the pancreatic duct were accompanied by marked abnormalities in enzymatic activities of the duodenal contents. Obstructive lesions caused great diminution, while acute necrosis usually caused dissociation in enzymatic activities.

Other "by-products" of the Boston investigation are not without interest to the student of gastro-enterology. They showed that lipolytic activity of the duodenal contents was always, while proteolytic and amylolytic activities were almost always, greater after the ingestion of olive oil than after the ingestion of protein or carbohydrate food. From this it is inferred that olive oil was a more powerful stimulant to the activity of the external secretory function of the pancreas than were the other types of food. Water was a less potent stimulant of external pancreatic secretion than were food substances. After the appearance of food substances in the duodenum, there was a latent period before the flow of enzymes and bile began. The time coincident of the onset of the flow of bile and pancreatic juice suggests a common stimulant. This is in harmony with other current evidence. The fact that the fasting duodenal contents contained both enzymes and bile pigments need no longer surprise us. For the stomach, the existence of a more or less continuous secretion is now widely admitted. In the case of the human pancreas, also, Luckhardt, Stangl and Koch³ of Chicago have demonstrated a continuous secretion amounting to 7 or 8 c.c. an hour, the total daily output mounting to nearly 900 c.c. At the height of digestion, this potent organ can produce in one hour an amount of pancreatic juice equivalent to its own weight.

ROCKY MOUNTAIN SPOTTED FEVER

The submarine emerges from the water, attacks and disappears; in the same way, spotted fever attacks from its base in the Rocky Mountains. It will no doubt appear as usual with the warm days of spring, attack man until the hot days of July, and then withdraw for a season. Such has been its history for many years. Mountain Indians attributed the danger of trips to certain valleys to evil spirits, and early settlers associated the disease with the melting snows.

Spotted fever probably existed in the Bitter Root Valley at least seventy-five years ago. While information concerning two cases in 1873 is probably authentic, the first written account⁴ of the disease appeared in 1896. In 1902, McCullough⁵ published the first account of the deadly type, citing ninety-two cases with a mortality of 75 per cent. In the same year, the Montana State Board of Health engaged Wilson and Chowning to conduct an investigation. In 1903, the federal government began an almost continuous series of investigations, extending to the present.

Until the brilliant work of Ricketts, Rocky Mountain spotted fever remained a mystery. Its origin was obscure. It was usually fatal in certain comparatively

2. McClure, C. W., and Wetmore, A. S.: Studies in Pancreatic Function: Enzyme Concentration of Duodenal Contents After the Ingestion of Pure Foodstuffs and Food Mixtures by Normal Men, *Boston M. & S. J.* **187**: 882 (Dec. 14) 1922. McClure, C. W., and Jones, C. M.: Studies in Pancreatic Function: The Enzyme Concentration of Duodenal Contents in Pathological Conditions Involving the Pancreas, Liver and Stomach, *ibid.*, **187**: 909 (Dec. 21) 1922.

3. Luckhardt, A. B.; Stangl, F., and Koch, F. C.: Preliminary Report on the Daily Amount, Physical Properties and Rate of Secretion of Human Pancreatic Juice, *Am. J. Physiol.* **63**: 397 (Feb.) 1923.

4. Wood, W. W.: Spotted Fever as Reported from Idaho, Report of the Surgeon General of the Army to the Secretary of War, 1896.

5. McCullough, G. T.: Spotted Fever, *M. Sentinel* **10**: 7, 1902.

small areas, seldom fatal in others, and completely absent in closely adjacent regions. Ricketts⁶ went to Montana in April, 1906, and promptly demonstrated that a wood tick (*Dermacentor venustus*) transmits the disease. He also proved that infective ticks exist in nature, and that the virus is transmitted by heredity to succeeding generations of ticks.

The tick concerned in the natural transmission of spotted fever exists in parts of Washington, Oregon, California, Idaho, Nevada, Utah, Montana, Wyoming, Colorado and New Mexico, in which states, except New Mexico, cases of spotted fever have undoubtedly originated.⁷ Its distribution is therefore that of its carrier. It is not possible to determine with available records whether or not the disease is spreading over larger areas in these states. However, it appeared in 1915 in eastern Montana, where the disease certainly would have been recognized had it existed prior to that time. The total number of cases that occur annually cannot be accurately stated. Bishopp regarded 700 as a conservative estimate. The mortality rate varies greatly. In the Bitter Root Valley, it is probably greater than 70 per cent.; outside the Bitter Root Valley, it varies from 7.15 to 13 per cent.

The possibility of a widespread extension of the disease, or of a large epidemic, is remote, although several species of ticks, some of which occur over large areas in the eastern and southern portions of the United States, are capable of transmitting the disease. A hopeful feature is that only one species of tick in the Bitter Root Valley attacks man, and its attachment for hours is necessary to infect. Ricketts, in one instance, secured infection in one and three-fourths hours, but from ten to twenty hours' feeding was usually required. Most ticks that attach themselves to human beings are doubtless removed before infection occurs. Spencer and Parker⁸ recently collected from the vegetation near Hamilton, Mont., more than 100 lots of ticks, many of which were taken from areas known to be infected, and inoculated the contents of from fifteen to twenty-five ticks from each lot into guinea-pigs, without spotted fever resulting once. When similar experiments were performed with ticks collected from a mountain goat, the disease was transmitted. These experiments have been repeated many times, indicating that before unfed infected ticks, that have hibernated, become infective, the virus must be reactivated by fresh mammalian blood. It is not known what change in the virus occurs as a result of the ingestion of blood, but its apparent necessity explains in part the comparatively small number of human cases of spotted fever.

Therapy, heretofore, has accomplished nothing in curing this disease. Ricketts and Gomez, however, using serum from guinea-pigs that had recovered, were able to prevent infection in normal guinea-pigs when the serum was administered shortly after infection. They were not able to increase the potency of this serum to be useful in human cases. Noguchi⁹ has prepared a potent serum in the rabbit; 0.1 c.c. is sufficient to prevent infection in a guinea-pig weighing 500 gm. inoculated with one minimal lethal dose of virus. The serum is easily produced, and will probably remain active a year or longer at refrigerator temperature. In view of the comparative susceptibility of man and the guinea-pig, Noguchi recommends the early intravenous injection of about 0.2 c.c. of the serum per kilogram of body weight in every suspected human infection.

It has not been possible to rid the mountains of ticks, but to make their bites harmless may become simple.

Current Comment

THE CONTROL OF TRACHOMA

Among the diseases that have come particularly into public notice within the last generation is included the contagious malady of the eyelids known as trachoma. Although this menace to the integrity of sight is an admittedly serious one, it is still known to many practitioners and more localities only as a name associated with the problems of preventable blindness. Attention has been focused on trachoma most prominently from the standpoint of public health by the consideration that is given to its possible occurrence in immigrants. Aliens have long been examined carefully at the seaboard ports for evidences of the infection; but trachoma is far more prevalent in the United States than is ordinarily supposed. It has been described for a number of inland localities cut off from frequent contact with the rest of the country; and the surprising incidence of the disease among American Indians has long been recognized by experts, so that it can scarcely be regarded as something characteristic of persons of foreign birth, although sometimes described as such. Ten years ago, surveys made in Minnesota, for example, had revealed a heavy trachoma infection among certain Indian bands in the state, and more or less widely scattered foci of infection among certain elements of the white population; this constituted a distinct menace to the visual health of the state. In one of these investigations, which may serve as an illustration of the work undertaken, only seventy-seven cases of trachoma were found on examination of 49,305 white persons (a ratio of 1:640) in comparison with 533 cases observed among 3,542 Indians (a ratio of 1:7). In another survey, in which eighteen counties of Minnesota were visited, only nine cases of active trachoma were found among more than 35,000

6. Ricketts, H. T.: The Transmission of Rocky Mountain Spotted Fever by the Bite of the Wood Tick, *J. A. M. A.* **47**:358 (Aug. 4) 1906; The Role of the Wood Tick in Rocky Mountain Spotted Fever, and the Susceptibility of Local Animals to This Disease, *J. A. M. A.* **49**:24 (July 6) 1907.

7. Wolbach, S. B.: *J. M. Res.* **41**:1 (Nov.) 1919.

8. Spencer, R. R., and Parker, R. R.: *Pub. Health Rep.* **38**:333 (Feb. 23) 1923.

9. Noguchi, Hideyo: Immunity Studies of Rocky Mountain Spotted Fever: Usefulness of Immune Serum in Suppressing an Impending Infection, *J. Exper. Med.* **37**:383 (March) 1923.

schoolchildren examined. A recent reinvestigation of conditions in the same state by government experts¹ confirms an earlier opinion that there is no unusual trachoma problem in Minnesota outside certain fairly well-defined districts. There is continued indication, nevertheless, that certain heavily infected Indian reservations are a threatening source of danger to the public health of the state. This is evidenced by the increased number of cases of trachoma observed in the course of the survey among the Indians attending the public schools contiguous to Indian reservations. Without attempting to magnify the growing rather than decreasing menace, the surgeons of the U. S. Public Health Service urge the importance of enforcing measures necessary for the control of trachoma among that portion of the Indian population of the state remaining under government guardianship; otherwise, owing to improved facilities for intercommunication, the elimination from the nonreservation population will be greatly complicated, if not impossible. Now that governmental guardianship of the Indian is largely relinquished in this country, public health authorities need all the more to bear in mind those hygienic problems that relate so preeminently to our native race.

ANTIVIVISECTIONIST SCIENCE

To the few physicians who troubled to hear the addresses of Dr. (save the mark) Walter R. Hadwen, when he lectured on antivivisection in this country, no comment is necessary as to his complete disqualification to speak on any scientific medical subject. For the vast majority who, of course, did not trouble to listen to the maunderings of this ancient spokesman for the antivivisection cause, the following quotation from the *Starry Cross*, published under the auspices of the American Antivivisection Society, will accurately define his knowledge. He was asked:

"What do you advise for one who has germs in the lungs—consumption? Please give some points on this question from one present who is worried about the dread disease."
Answer: "The germs—the tubercle bacilli—you have in your lungs are there for the purpose of splitting up the solid tuberculous matter in order to get rid of it. These germs are never found in the primary stages of the disease. They are not found in 50 per cent. of the ultimate states of the disease. They are found during the process of splitting up, and they are the best friends you can possible have. Don't you worry yourself one bit about getting rid of them. It is like people who drink this pasteurized milk which is certified to contain only a limited number of germs—you need not worry, drink your milk cold, and the more germs there are in it the better it will be for you. As to the question of tuberculosis, practically everybody suffers more or less from it at some time in their lives. I have seen the most extreme cases of tuberculosis, where they have vomited quarts of blood, where they have vomited quarts of sputum, and then have got well and had children afterwards. Never give up a case of tuberculosis, and don't worry yourself about germs."

This reply is typically Hadwennian. It would be funny if the subject were not so tragically serious. It was Goethe who said: "Nothing is more dangerous than active ignorance."

1. Clark, Talliaferro: The Trachoma Problem in the State of Minnesota, Pub. Health Rep. 38: 383 (March 2) 1923.

Association News

THE SAN FRANCISCO SESSION
Hotels for the Annual Session

The following list of hotels with locations and prices is furnished by the Local Committee of Arrangements. Several hotels, as shown by the star, are already booked to capacity. All hotels are conveniently located except those in Oakland and Berkeley, which are about an hour from the Civic Auditorium.
The California Committee will be able to house all guests comfortably. In order that the most agreeable arrangements may be made, it is requested that from now on Fellows write directly to California Headquarters, 806 Balboa Building, for hotel reservations. Please give the date of expected arrival in all applications.
The lower prices quoted below refer to one person. The higher are for one to two persons in a room. Some hotels charge the same for one or two persons. All rooms have baths. Please make reservations early.

Leading Hotels of San Francisco (All European Plan)—
Location and Rates

Name and Address	All Rooms with Bath	
Alcazar, 326 O'Farrell.....	\$	\$ 3.00
Alexander, 352 Geary St.....	2.50	— 4.00
Ambassador, Mason and Eddy.....	2.50	— 4.00
Antlers, 245 Powell St.....	3.50	— 5.50
Argonaut, 44 Fourth St.....	2.00	— 3.50
Baldwin, 321 Grant Ave.....		3.00
Bellevue, Geary and Taylor Sts.....	3.50	— 5.00
Beresford, 635 Sutter St.....	2.50	— 5.00
Cadillac, 380 Eddy St.....	2.00	— 2.50
Cartwright, 524 Sutter St.....	2.50	— 4.00
Cecil (American plan), 545 Post St.....	8.00	— 12.00
*Chancellor, 433 Powell St.....	2.50	— 4.00
Clark, 217 Eddy St.....	2.50	— 3.50
*Clift, Geary and Taylor Sts.....		8.00
Colonial, 650 Bush St.....	4.00	— 5.00
Columbia, 411 O'Farrell St.....	2.00	— 2.50
Court, 205 Bush St.....	3.00	— 4.00
Dalt, 34 Turk St.....	2.50	— 3.50
*Fairmont, California and Mason Sts.....	7.00	— 10.00
Federal, 1087 Market St.....	2.50	— 3.50
Fielding, 386 Geary St.....	2.50	— 3.50
Garfield, 354 O'Farrell St.....	2.00	— 3.50
Garland, 505 O'Farrell St.....	2.00	— 3.00
Grand, 57 Taylor St.....	2.00	— 3.00
Herald, Eddy and Jones Sts.....	2.00	— 3.50
Herbert's (men only), 151 Powell St.....	2.00	— 3.00
Kensington, 580 Geary St.....	2.00	— 3.00
Keystone, 54 Fourth St.....	2.50	— 3.50
King George, 334 Mason St.....	2.50	— 5.00
Lankershim, 55 Fifth St.....		3.50
Larne, 210 Ellis St.....	3.00	— 4.50
Manx, Powell and O'Farrell Sts.....	4.00	— 5.00
Maryland, 490 Geary St.....	2.00	— 3.50
Mentone, 387 Ellis St.....	2.50	— 3.00
Normandie, 1499 Sutter St.....	1.75	— 3.50
Paisley, 432 Geary St.....	2.00	— 3.00
*Palace, Market and Montgomery Sts.....	8.00	— 10.00
*Plaza, Post and Stockton Sts.....	5.00	— 6.00
*Ramona, 174 Ellis St.....	2.50	— 3.50
*Regent, 562 Sutter St.....	2.00	— 3.50
Richelieu, Geary and Van Ness Ave.....		5.00
Robins, 711 Post St.....	2.00	— 2.50
Somerton, 440 Geary St.....	2.00	— 4.00
Spaulding, 240 O'Farrell St.....	2.50	— 5.00
Stanford, 250 Kearny St.....	1.00	— 2.00
State, 16 Turk St.....	1.50	— 2.00
*St. Francis, Union Square.....	4.00	— 10.00
*Stewart, 353 Geary St.....	3.50	— 7.00
Stratford, Powell and Geary Sts.....		6.00
Sutter, Sutter and Kearny Sts.....		4.00
Travelers, 255 O'Farrell St.....	2.00	— 3.50
Terminal, 60 Market St.....	2.50	— 4.00
Turpin, 17 Powell St.....	3.00	— 3.50
Victoria, Bush and Stockton Sts.....	2.50	— 4.00
Washington, Grant and Bush Sts.....	2.50	— 4.00
Wellington, 610 Geary St.....	2.50	— 4.00
*Whitcomb, Market and Civic Center.....	4.00	— 8.00
Wiltshire, 340 Stockton St.....	3.00	— 4.50
Worth, 641 Post St.....	2.00	— 2.50
Hotel Oakland, Oakland, Calif.....	3.00	— 10.00
Hotel Claremont, Berkeley, Calif.....	3.00	— 5.00
Hotel Whitecotton, Berkeley, Calif.....	3.00	— 5.00

* Booked to capacity.

Alumni and Fraternity Dinners and Entertainments

Dr. Thomas H. Kelly is chairman of the Subcommittee on Alumni and Fraternity Entertainments of the Local Committee of Arrangements at San Francisco. This committee is very anxious to cooperate in any way possible with fraternities and alumni organizations in providing whatever entertainment they desire. Dr. Kelly and the members of his committee will be glad to suggest possible entertainments in San Francisco, and cooperate in bringing them about or making local arrangements required by the organizations.

Officers of those organizations interested should write or telegraph Dr. Kelly at headquarters offices, 806 Balboa Building, San Francisco.

PRELIMINARY REPORT OF THE COMMITTEE ON DISTRICTING

INTRODUCTORY NOTE

The Committee on Districting the United States, appointed at the last annual session of the House of Delegates, publishes the following preliminary report at this time in order that the questions involved may be considered by all bodies and individuals interested, and that delegates may ascertain the views of their state societies before the next annual session.

It should be borne in mind that the report embodies the opinion of the committee at the present time, and that this opinion may be modified or entirely changed by further information that may be received before the report is submitted.

The committee requests all interested in the question, whether official or individual members of any of the societies involved, to express their views freely, on any or all of the points at issue, and to make further suggestions that may occur to them.

All communications should be addressed to:

ROCK SLEYSER, M.D.,
Wauwatosa, Wis.

Preliminary Report of the Committee

To the Members of the House of Delegates of the American Medical Association:

At the last annual session, the President appointed your special committee to consider the division of our membership into several districts. The appointment was authorized by the House of Delegates following its recommendation by the Reference Committee on Reports of Officers, in response to the following suggestion contained in the address of the President, Dr. Work, to the House of Delegates:

You will recall that the districting of the United States for the allocation of trustees has been twice before you. To the segregating of the United States into groups, in the interests of the Association and its members, I am wholly committed. Within recent years several medical societies have been organized designated by valleys, numbers of states or other distinguishing and limiting titles. The very formation of such medical associations is evidence of their necessity to physicians of localities and to their medical progress.

Different sections of the United States have local disease problems requiring special discussion; of little interest to physicians of the United States as a whole, and, too, physicians need wider personal contact than is now possible from the annual meetings of the American Medical Association or its special societies.

The long travel and time necessary for most of our membership to attend the annual meetings of the Association are prohibitive, and its great membership would otherwise make a general assembly impossible.

I am convinced that in the interests of our membership the United States should be divided into several districts, as you may determine, and that each district, in addition to electing a trustee of the Association, should regard itself as an active section of it.

The officers and organization of these subdivisions should, of course, be governed by uniformity, precisely as state societies now are. They could meet in midwinter for discussion of their local problems, together with suggestions and policies to be recommended to the American Medical Association at its annual meeting.

The parent association could do the necessary printing and advertising, so that the expenses of organization usually incurred would be thus avoided. This is a time of decentralization rather than concentration of initiating officials; of expanding units rather than carrying dependencies and helpless in themselves. I continue to believe that each section should nominate to the House of Delegates its choice for a president-elect, such nomination to be suggestive, and not obligating.

The suggestion of districting the country is not a new one, and before taking up the results of the present study of the question, it will be fitting and illuminating to give a brief summary of previous opinions and reports on the subjects.

The Committee on Reorganization of the American Medical Association many years ago considered the advisability of creating semi-national branches or districts of the Association, about five in number, the annual meeting of these districts to be at a time decided on by the individual district but not within three months of the meeting of the American Medical Association.

This committee considered that the various small independent districts, like some of the tristate societies, were in general a detriment to medical organization. It also expressed the opinion that the formation of several districts might be desirable, if it could be arranged without conflicting with the work of the state associations.

The committee considered the plan worthy of future consideration, but not practicable at that time.

A Committee on Branch Associations recommended to the House of Delegates at the Atlantic City Session in 1904 that "permission be given for the creation of seven branches, at the discretion of the governing authorities of the state associations composing them, so arranged as to cover the entire country."

With this report, a form of constitution and by-laws for such branches was submitted which provided that "membership in the branch association shall be voluntary . . . but that no one shall be eligible who is not a member in good standing of his own county and state associations."

The committee further recommended that branches hold meetings in the fall, in conjunction with the annual meeting of one of the component state associations.

This report was referred to the Committee on Miscellaneous Business, which committee suggested some minor changes in names of the proposed districts, and in the plan of organization, and recommended the adoption of the report.

This report of the Committee on Miscellaneous Business was referred back to the Committee on Branch Associations with directions to report further at the next meeting.

In 1907, at the Atlantic City Session, the Committee on Branch Associations submitted its second report, which differed in no essential point from that previously presented.

This report was referred to the Committee on Reports of Officers, which recommended "that the report on branch associations be referred to the state association by the General Secretary, with an urgent request for an expression of their views, to be presented to this Association at the next annual meeting." This recommendation was adopted by the House of Delegates.

The Report on Branch Associations at the Chicago session in 1908 gave the results of bringing the matter to the attention of the state associations. All of the state secretaries were asked to bring the matter before the annual meetings of their associations, and to report the action of their state associations.

The result was: acknowledgement of receipt of letter by thirty-four state secretaries; two associations voted in favor of plan, seven against it, and twenty-five took no action.

From this time, 1908, till 1920, the question appears to have been given no attention.

In 1920, following a suggestion made by the Speaker, Dr. Work, the Committee on Reports of Officers stated that "his suggestion that it might be advisable to reduce the number of trustees to seven or five members and subdivide the United States into trustee districts, is worthy of serious consideration," and recommended "serious consideration by the House at the next annual session, and that the matter be at once referred to the Judicial Council, in order that it may report a concrete proposition at the next session."

This recommendation was adopted, and the Judicial Council was requested to report a concrete proposition or plan for reducing the number of trustees from nine to seven, and to subdivide the United States into seven Trustee Districts.

At the Boston Session in 1921, the Judicial Council presented such a plan, with the statement that it was "not as a recommendation from the Judicial Council, but in response to the action taken by the House of Delegates requesting the Judicial Council to submit a plan which will effect the change provided the House deem it advisable to do so."

This report of the Judicial Council was referred to the Committee on Constitution and By-Laws.

This committee reported that it "was not prepared to offer any definite recommendations on that part of the Judicial Council dealing with the change in number of the Board of Trustees and the formation of seven trustee districts. Your committee believes, however, that there is much to be said in favor of the plan and that it should receive careful consideration, throughout the year and at next year's session of the House."

The committee recommended "that this be referred back to the Judicial Council" which should be directed to "report back on the subject to the next House."

This brings the subject of districting down to the date of Dr. Work's recommendation of last year, quoted at the beginning of this report.

The only positive and definite statement that your committee has been able to extract from the history of the project of districting the United States is that of Dr. Work, made last year at St. Louis: "To the segregating of the United States into groups in the interests of the Association and its members, I am wholly committed."

The rest is a history of lack of definite opinions, postponement, indecision and passing the question back and forth from one committee to another.

The question has been once or more times before the Committees on Organization; on Branch Associations; on Miscellaneous Business; on Reports of Officers, and on Amendments to the Constitution and By-Laws, and before the Judicial Council and the state associations.

In 1908, two states were in favor of districting, seven against it; the rest noncommittal.

Some of the recommendations of the various committees which have considered it can easily be summarized in their own words as follows:

The plan "is worthy of future consideration."

We recommend that the committee "report further at the next meeting."

The plan "is worthy of serious consideration."

We recommend "serious consideration at the next annual session."

We recommend that the Committee "report a concrete proposition at its next annual session."

We are "not prepared to offer any definite recommendation."

The committee "believes there is much to be said in favor of the plan, and that it should receive careful consideration at the next annual session."

With this history before us, your committee has attempted to secure as wide expression of opinion on the question as possible, in the hope that it might break the precedent of indecision.

Your committee has endeavored to secure opinion on the plan from every state in the Union. The matter was brought up for discussion at the annual meeting of the state secretaries held in Chicago last November, and again at the conference of section secretaries and the Council on Scientific Assembly. In addition to this, letters have been addressed to the secretaries of all state medical societies and to other physicians in various parts of the United States who have shown an interest and familiarity with organization matters.

It develops that there is much misunderstanding regarding Dr. Work's proposal, and some division of opinion regarding it. Though the majority of the correspondence has indicated a disinclination to accept a proposal for the creation of new medical societies, the most active opposition seems to come from the South, and at an informal conference of presidents and secretaries of the state associations comprising the territory of the Southern Medical Association in conjunction with state health officers of the same states, the following resolutions were adopted after discussion of the subject:

WHEREAS, It has been suggested by Dr. Hubert Work, the recently retiring President of the American Medical Association, that the territory comprising the said American Medical Association be divided into districts composed of appropriately grouped state medical associations, and that regional medical societies be organized to cover, with the definite object of discussing such scientific problems as they may choose and which may be of regional importance of electing trustees of the American Medical Association and making recommendations for suitable material for President-Elect of the American Medical Association, and

WHEREAS, The matter is to be discussed by the conference of state secretaries to be held in Chicago, November 17 and 18, and

WHEREAS, It is believed that the formation of such regional societies in the manner recommended and for the purpose stated would be of no advantage to the Southern states; rather, it is believed that such procedure would be detrimental not only to the Southern states but to organized medicine in general, therefore be it

Resolved, That the presidents and secretaries of state medical associations, and the public health officials of the sixteen Southern states comprising the territory of the Southern Medical Association as at present organized, go on record as opposing such project, and be it further

Resolved, That copies of these resolutions be forwarded to the committee of the American Medical Association appointed to consider and report upon the proposal, and a copy referred to the conference of state secretaries above referred to and to other sectional medical organizations throughout the United States for the information of all concerned.

The correspondence brings out a variety of reasoning for and against the plan. Among the reasons advanced for the proposition may be mentioned the following:

1. The plan would allow of a more representative selection of trustees, providing such district associations elect or nominate a trustee.
2. It would allow of a closer union of the profession.
3. Many physicians who cannot afford to attend meetings of the A. M. A. held at a great distance could attend sectional meetings.
4. It would multiply opportunities to read papers.
5. It should bring present independent organizations into the general scheme of organization of the A. M. A.

Among reasons advanced against the plan we find the following:

1. It would detract from the A. M. A. meetings.
2. There is a danger in the plan of intensifying sectional feeling.
3. It would certainly detract from meetings of the various state medical societies.
4. We are at present overburdened with medical societies and physicians are unable to attend the meetings now held.
5. It would possibly encourage political manipulation.
6. It would incur the antagonism of present district societies.
7. All our efforts should be directed to the betterment of present societies and not the creation of new ones.
8. It would create too many new problems.
9. It might create rivalry among the states, the smaller ones in the group being overshadowed.
10. There are no common problems by virtue of regional location.
11. There would be a danger of its affecting the scientific assembly of both the state medical societies and the A. M. A.

SUMMARY

From the preceding account of the history and present expressions in regard to the different plans which have been proposed for the formation of district associations, it is perfectly evident that there has been and still is almost no definite opinion as to what object the formation of districts would fulfil, and there has been brought forward no concrete plan for the formation of districts.

In the review of the suggestions and projects three objectives are apparent:

1. Districting for the purpose of election of trustees, one trustee to be elected from each district. For this purpose not more than nine districts would be possible, for there seems to be no difference of opinion in regard to the wisdom of keeping the membership of the Board of Trustees within that number.
2. Districting for the purpose of business and administrative purposes, with the view that such district organizations would supplement the work both of the American Medical Association and of the state associations.
3. Districting for the purpose of scientific and clinical meetings.

DISCUSSION OF THE DIFFERENT PURPOSES OF PROPOSED DISTRICTING

If districting is to be done for the purpose of the election of trustees, it will be necessary to combine as far as possible geographic distribution of the several states with the numerical distribution of the American Medical Association membership.

This perhaps might be done satisfactorily for the election of trustees alone. Such districts would be entirely impossible in most parts of the country for business and administrative purposes, because of the large and widely scattered areas which would of necessity be included in some of the districts, and because of the widely different problems which would be presented by various parts of the same district.

The committee is of the opinion, which it believes is the opinion of the large majority of members of the Association, that the business and administrative problems can be better handled by the existing organization than by the proposed district associations.

Districts formed for the election of trustees would be still less possible for scientific and clinical meetings than for business and administrative purposes.

For satisfactory clinical and scientific district meetings, the area covered by a district must be small enough to permit of comparatively easy access to centers at which meetings might be held.

The committee believes that there is the feeling of a need for district scientific and clinical meetings in some parts of the country, as is shown by the existence of flourishing independent district organizations and by projects for the formation of similar organizations in other parts of the country.

The committee believes that some of the independent district associations now existing are well fulfilling the functions that a district association of the American Medical Association might be expected to fulfil. It also believes that

any attempt immediately to form district associations of the American Medical Association in these localities at the present time would meet strong opposition, and would be inadvisable.

As the purposes and aims of the independent district associations are largely the same as those of the American Medical Association it seems possible that it might be of advantage to both to unite or become closely affiliated.

RECOMMENDATIONS

1. The committee makes no recommendation in regard to districting for the purpose of election of trustees for two reasons:

First, because it feels that the districting for this purpose cannot at present be successfully combined with the other proposed purposes for district formation, but must be considered as a separate problem.

Second, because the Board of Trustees is to present a report on this problem which will bring the question in all its phases to the attention of the House of Delegates.

2. The committee recommends that the project for districting for business and administrative purposes be abandoned as impracticable, believing that energy directed in this direction can be expended to more advantage through perfecting the functioning of the existing parent and component organizations.

3. The committee recommends that no attempt be made to organize districts for scientific and clinical meetings, believing that for success, the feeling of need of such organizations, and the initiation of their formation, should come from the localities concerned.

The committee further recommends that the Board of Trustees take steps to ascertain from the existing district organizations whether it would not be possible and profitable to all concerned to become more closely affiliated.

The aims and membership of the American Medical Association and of the district associations now existing are practically the same, and there should be no conflicting interests. If it should appear that both organizations could be benefited by affiliation, there should be no difficulty in making mutually satisfactory arrangements.

4. We also recommend that the Board of Trustees take similar means to get in touch with the organizers of new district associations.

The committee feels that, if districting seems advisable, it is likely to succeed best by gradual development along these lines, without limitation of number or size of districts.

L. H. McKINNIE, Chairman,

JOHN E. LANE,

ROCK SLEYSER,

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 1080)

WEDNESDAY, MARCH 7—MORNING

DR. VICTOR C. VAUGHAN, Chairman, Council on Health
and Public Instruction, in the Chair

ORGANIZATION OF THE PUBLIC FOR COOPERATION WITH THE MED- ICAL PROFESSION

Hygeia: A Journal of Individual and Community Health

DR. VICTOR C. VAUGHAN, Chicago, presented a brief statement of the scope and purpose of this journal.

The Medical Profession and the Laity

FROM THE STANDPOINT OF THE EDUCATOR

WILLIAM B. OWEN, President, National Education Association, Chicago: A joint committee on health problems in education was appointed about a decade ago made up of representatives of the American Medical Association and the National Education Association. It has published a number of fundamental and simple documents on health problems in the schools which have been distributed to the extent of hundreds of thousands, and they have been used by school people everywhere. Last year, after six years of cooperation in the publication of these documents on health, it seemed important that we should undertake a

new project in education, making an attempt to put the committee's work on a new basis. We said to ourselves that the school people are now going to be very much interested in the problem of health. A few years ago a committee of the National Education Association had to deal with a number of fundamental aids we should attempt to achieve in secondary education, and public health was the first. A document called "Cardinal Principles in Secondary Education" was published by the United States Bureau of Education.

The development of the high school in America is of enormous import, and the speed with which it is developing almost takes one's breath away. About five years ago Chicago had 11,000 high school students, while today it has 50,000. We have had 8,000 new high school students added in one year. The growth in building and the cost of the whole plant are attracting the attention of the public; this means that opportunities for education in regard to health are very rapidly increasing. Ten years ago, and for a period of sixty years, the National Education Association had a membership of only 10,000 or 12,000. At present it has a membership of 120,000, and judging from its rapid growth, we shall soon have a membership of from 300,000 to 500,000. Two carefully organized committees have taken up the whole question of teaching, including the organization, the administration, and the methods of conducting our public schools. Last year our joint committee with the American Medical Association formulated a health program for the public schools from the kindergarten up through the high school. There is a great deal of medical knowledge and general scientific knowledge that is not in possession of the people in our schools. This committee, when it makes out its program, will be in a position to tell the people in the schools not only that it has been tested only by the best people in the medical and scientific professions, so far as facts or principles are concerned, but also that it has been subjected to the critique of competent people who know schools and children.

Dr. Thomas Wood, the chairman of the committee, has consulted with members of your profession and of ours. We have also a number of subordinate committees dealing with such things as physiology and nutrition, and the different aspects of health control. Dr. Wood has also been put in charge of child hygiene. We shall try in the schools to establish definite habits of health, with a checking system of some form to find out whether people really do what they are taught to do, and we shall not attempt to teach them at all what we cannot teach them to do.

FROM THE STANDPOINT OF THE HEALTH OFFICER

DR. W. S. RANKIN, Raleigh, N. C.: The health officer occupies a strategic position for observing the relation of the public and the profession. He stands midway between the two. If he has a normal binocular vision, he will observe the interests of the public and the profession as a single object. The health officer sees a field of unsupplied medical needs which is from three to five times as large as that which is supplied. He sees 2,750,000 women confined annually in the United States, and 750,000, or 30 per cent., of them, without medical attendance. He sees them inadequately attended during their puerperium, receiving on an average three or four visits whereas they should have ten or twelve, and as a result he sees unnumbered abortions, miscarriages, premature labors and other complications of pregnancy, and accidents of delivery with injuries and infections, with retarded and abnormal lying-in periods. In short, he sees countless women impaired for the functioning of motherhood, and for the efficient discharge of those domestic duties on which is dependent, to a large extent, the health of the infant and that of the family. From damaged motherhood how short the step to impaired infancy! The health officer sees, as a result of the neglect of motherhood, a large percentage of the 1,500,000 cases of diarrhea and enteritis which annually affect our 5,000,000 infant population; he sees early childhood with 700,000 cases annually of the common communicable diseases; he sees, closely related to impaired motherhood, and abnormal and diseased infancy, the great problem of malnutrition, involving, according to the lowest estimate,

2,000,000 or, according to the highest estimate, 4,000,000 public school children in this country. He sees the common defects of childhood, for which, according to Emerson, malnutrition is 80 per cent. responsible. The common defects involve 1,000,000 public school children who suffer from diseased tonsils and adenoids, 4,000,000 who have visual defects, and 15,000,000 who need dental treatment, all of them retarded and retarding the school machinery of this country.

The health officer observes 2,000,000 fresh cases of venereal disease occurring annually in adolescence, added to the tremendous carry-over of old cases and complications from previous years. He finds that these diseases and their complications are not receiving one-fifth the treatment they should have. Finally, he understands that when medicine has gained control, to a reasonably adequate degree, over the pathologic phases of life, then it will be time for the profession to begin to consider the yet larger opportunity for service—the opportunity that relates itself, not to the small percentage of the population that is obviously diseased, but to the larger percentage that is apparently well. To make the unfit fit is a worthy task, but to make the fit fitter is a larger and a higher achievement. The dentist, the pediatrician and the industrial hygienist are already pioneering in this new and larger field of medicine, the field of health promotion as contrasted with that of disease prevention.

The health officer sees a great opportunity in reducing the enormous existing surplus of disease, and he sees an even greater opportunity in the possibilities of health promotion. The solution of this great problem of disease and health calls for two things: (1) scientific knowledge and (2) social action. The medical profession is long on the one and short on the other.

The National Committee on Public Policy should nominate to the President of the Association the members of the Council on Health and Public Instruction, which the President in turn should nominate to the House of Delegates. The Council on Health and Public Instruction should be adequately provided in budget and personnel to assume the active executive work of the National Committee on Public Policy.

FROM THE STANDPOINT OF THE BOARD OF TRUSTEES OF THE AMERICAN MEDICAL ASSOCIATION

DR. FRANK BILLINGS, Chicago: Organized medicine has done much to improve the relations of the medical profession to the public by the elevation of professional standards. There is no other profession which, of its own initiative, has attempted to benefit the public by elevating its own standards of education and practice as has the American Medical Association through its Council on Medical Education and Hospitals. Since the medical profession has lifted itself by its own boot straps to its present standard of medical education, we can trust the profession to correct the errors in medical teaching and improve it still more. The Council on Medical Education and Hospitals has lately considered also the professional advancement of graduate or postgraduate instruction. More will be done in this regard.

The American Medical Association is still further improving the status of the profession through the Council on Pharmacy and Chemistry by the investigation it has made of proprietary medicines, nostrums of various kinds, the advice it has given and the information it has furnished to the members of the medical profession, and the influence it has had on the Congress of the United States in the promotion and final adoption of the pure food bill—a matter of enormous benefit not only to the profession but also to the public.

As to health activities, through the Council on Health and Public Instruction the American Medical Association has undertaken a policy of cooperation with existing institutions. You have heard from President Owen of our relationship to their committees, particularly the committee of which Dr. Wood is chairman, regarding the survey and attempts made to improve the rural schools and rural school children, the federations of teachers of schools to improve the health conditions, etc.

At one time the Council on Health and Public Instruction had charge of federal legislation in the various states, the purpose being to prevent or arouse moral sense against the passage of laws which were inimical to the best interests of

the public. I need only to call your attention to two bills to prevent animal experimentation which the so-called antivivisectionists have brought before Congress and various state legislatures, and through a subcommittee of the Council on Health and Public Instruction, of which Dr. Cannon is chairman, much work has been done to educate, not only the medical profession, but also the public, as to the perniciousness of these bills which, if passed, will prevent animal experimentation. We have established at headquarters a medicolegal and legislative bureau, with a director in charge, for the purpose of preventing the passage of such objectionable bills.

Few states have the proper kind of medical practice acts. Some of them are antiquated and do not meet the needs of modern conditions. Attempts were made to formulate medical practice acts that were not uniform in character in the various states with the hope that they would be enacted. This was attempted about fifteen years ago, but because of incomplete organization was not realized. There is hope now, with Dr. Woodward as director of this bureau, that something may be brought about by cooperation with the various legislative committees of the constituent state organizations. The main principle of such action would be that we should demand and make the legislators believe that all who take the responsibility of the care of the sick and injured should have the same educational requirements.

Dr. Vaughan has told you about *Hygeia*, a journal which will go to the public and members of the medical profession in the attempt to educate the public along scientific lines. It is going to be far reaching and helpful because through this medium we ought to make the members of the public acquainted with the causes and means of prevention of disease and rational methods of treatment.

Through the Council on Health and Public Instruction, the House of Delegates has approved taking up periodic health examinations, and a blank form has been prepared with the hope that societies will establish the opportunity for the people to go to them and through groups of physicians have periodic health examinations made, not gratuitously, excepting for the poor, as persons who are able to pay should pay for the fee charged.

Relation of Organized Women to the Medical Profession

DR. LENNA L. MEANES, Des Moines, Iowa: University women, women from our crowded industrial centers, women from the rural districts, professional women, all reacted to the reproach carried in the recent revelations of America's low health status and, with practically one accord, started to remove the cause. They have been at work since about 1910, when the measuring and weighing of babies began and revealed the possibilities of developing, in spite of inherited tendencies, of family traits, of environment, etc., a tremendously stronger physical life for the children of America. Impetus was gained practically every year. The disgrace of our high infant mortality and the leveling blow of the results of the war draft examination have struck women keenly, for every individual woman knows that the responsibility of the health of her family largely rests on her. Nothing can get so quick a response from a normal woman as an intimation that a member of her family is below par physically because of remediable defects. She feels that she has been found asleep at the switch of her particular station, and loses no time in assembling wits and joining forces with others to redeem herself and the trust which she feels is particularly hers. This keen incentive has brought about the insistent demand these women are making of us as a medical profession today. The encouraging feature is that the demand is for intelligent cooperation backed by an enormous machinery which can render cooperation effective.

The representative women's clubs and leagues have a combined membership of ten million, in round numbers. Out of these clubs three have health committees with activities which always include some phase of child welfare, of adult health and of general community betterment along the lines of sanitation, protection from contagion, housing, etc. The General Federation of Women's Clubs, with a membership of 2,000,000, and the Women's Christian Temperance Union, with a membership of 650,000, have state and local committees working

under the national committee. The Council of Jewish Women, with a membership of 48,000, has sectional chairmen working under the national chairman in 204 cities of the United States. In addition to these three, the National Board of the Young Women's Christian Association has a bureau of social education, with subsidiary activities in local associations throughout the United States. These usually include a physician, a director of physical education and a well equipped gymnasium. The remaining leading organizations ally themselves with any constructive health work as they are appealed to, or as the demand arises from existing conditions.

If the organized women of America could speak with one voice to you today, they would say: "We are here, ready for cooperation with you for health." Now and then in the past some of these organizations may have presented programs which left us rather vague as to the aims to be accomplished. But those times are over. The present is recording a different story for them, particularly in regard to their health activities. Already they are working directly with other agencies, such as the National Playground Association, federal and state boards of health, home demonstration agents, and each of the volunteer health organizations.

The women are watching keenly our attitude on the side of constructive health building. If we are to have health, we must have the concerted organized medical profession, state and federal health agencies, national and state volunteer agencies, on the one side to furnish authoritative background, advice and machinery, while on the other are the women's organizations for creating public opinion, distributing educational propaganda, establishing contacts, etc. We shall also have to take into consideration in that relationship what we can do, what we are willing to do with regard to the emphasis placed on the positive phase of health in the programs these women are studying all over the country. The immediate concrete demand from them is for health examinations. That demand is bound to increase, as these programs develop, and to become more exacting in what that examination comprises. They are already able to detect the general difference between a good medical and a good health examination. They are also becoming aware that the physicians giving these examinations must have an adequate understanding of fundamental health habits, of the necessary factors that go to make up the proper home and working conditions, of the value of recreation, and of the necessity of community interests to round out one's well-being. The door of a new opportunity is opened to the medical profession. Already there are a few in many communities who can and do give good health examinations. Others must join the procession. We know perfectly well that one good pediatrician in a community forces others of the same line to do better work. People seek the best in the medical profession as in everything else. What is true of specialists in other lines will be true of those excelling in health examinations: they will serve to increase both number and quality of other physicians in the community.

Report of American Social Hygiene Association on Medical Researches in Venereal Diseases

DR. R. V. HOFFMAN, South Bend, Ind.: Medical research, cooperatively conducted, constitutes what may be regarded as the most widespread, intensive undertaking ever attempted by American medical institutions for improving the treatment of the sick. Certain of these researches have attained their maximum development, through their natural outgrowth. Some assistance and cooperation from without would aid others to extend their earlier investigations, along lines which had opened up promising leads. Congress failed to make appropriations for the completion of these researches, presumably owing to its postwar economic retrenchment policy. Recognizing the future worth of the more promising of those researches, the American Social Hygiene Association agreed to set aside jointly with the government a small sum of money to be used in "an attempt to evaluate the results developed from the scientific researches on venereal disease problems which are now being carried on in this country." It was inadvisable for the association to launch

its program until after the close of the interdepartmental board's administration, June 30, 1922, as duplication of activities might have resulted otherwise. The field program of the association embraces the following activities: (1) visits to clinics and laboratories in which medical researches in the venereal diseases are being carried on, for the purpose of securing information as to results achieved; (2) development of an interlaboratory and clinic information service covering new and important facts that are relevant; (3) stimulation of new researches; (4) encouragement of clinical tests for the evaluation of laboratory discoveries, and (5) establishment of a more permanent scientific research program. Two representatives of the association are now engaged in visiting twenty-five research institutions. In addition to the researches begun under grants from the government, other prominent independently conducted venereal disease investigations are being studied. The reports of these surveys are to be presented to the association's advisory committee for medical research on the venereal diseases, for its consideration and recommendation.

DISCUSSION

DR. A. C. ABBOTT, Philadelphia: Never before have I seen the obligation of the medical profession to the question of public health more clearly indicated than has been indicated in the symposium this morning. Never before have I seen a more suggestive symposium on the subject than the one outlined in this program. Never before have I seen the chance for the medical profession assuming leadership more clearly than I saw it this morning. The president of the National Education Association has outlined a program of instruction, beginning with children in the lowest grade school and following along graded instruction in health up to the time they leave the high schools or normal schools, and I am glad to see that instruction is now going to be carried into the academic institutions for all freshmen in attendance at these institutions. Does any one for a moment think that this generation, when it comes on the scene, will not demand leadership of some kind, organization of some kind in this matter that comes so close to daily life, comfort and happiness? Ten million intelligent women in this country are waiting for some one to tell them what to do. If the medical profession does not embrace that opportunity, the layman is going to do it. The intelligent layman is taking great interest in this matter.

DR. WALTER B. CANNON, Boston: I have been impressed by the importance of one part of the name of this journal—"a journal of individual and community health." We have emphasized community health, and we have not emphasized as much as we might the question of individual health. After all, to a very large extent the question of community health comes down to a question of individual health. A professor in Harvard University, some years ago, thought it would be a good scheme if he had his own cow, a clean barn, sterile stools, sterile aprons, and various other arrangements so that his children might have pure milk. One of his children came in one day and asked the question: "Say, father, why is it just before Jim begins to milk he spits on his hands?" All sorts of provisions can be made, but if the individual is not well acquainted with the method he is using, he cannot give us what we are expecting to get. That is what we are confronted with in this work for community health. We have to educate the individual in order to promote the welfare of the community. I believe the publication of this journal is going to result in a greatly increased intelligence among our schoolchildren and among the women of the country so far as individual health is concerned. We have been training men for generations to take care of sick people. We like to do the things we have been trained to do. We prepare our students to take care of the sick, and to recognize sickness when it has developed, but we have not been training them to take care of the well and to see that the well keep well. As a medical profession we realize that a very large proportion of the population are not in first class condition; it is the duty of the medical profession to see that they are, and this program of positive health is one which the medical profession has to recognize and to help bring about. We

have not trained our students to see the first signs of disease. We teach students about cases in hospitals that are well developed, but they have not an opportunity to see the beginnings of disease. They have not been trained at all in the slight defects which make people below par. I want to commend to the whole profession the attitude which has been taken by the Women's Foundation of Health.

DR. HAVEN EMERSON, New York: We have prepared a form for the periodic health examination of adults as elaborated by various groups in New York and elsewhere, and they are following admirably the bulletin recently issued by the Surgeon-General of the Army. The conflict in this project, as with all other projects, has been that we were dealing with people variously educated. There is a want of balance between what the leaders think is the limit of possibility of physical examinations and the rank and file who say we have gone away beyond the practical possibilities. We have prepared a form of questions for the average housewife, the father of the family, and the worker of adult years. The questions include certain matters that are criticized as being social in their implication, but they were intentionally put in since it is important to know whether persons are happy in their work, whether they are well occupied, and whether they have reasonably congenial homes. These questions are as important as a knowledge of their bodily functions.

The proposed physical examination has been boiled down to what we believe is the minimum, at the same time keeping faith with the patient, because if we are going to allow ourselves as physicians to make as incomplete examinations as patients will stand for, we are not going to bring credit to the project or to the profession. The physical examination we propose is one which we believe any physician ought to be able to make with his own special senses without the aid of group diagnosticians or elaborate technical roentgen-ray aids or laboratory service. The form has been submitted to the committee and to the secretaries of state medical societies. They have made constructive suggestions for improvement, and within the next two weeks the final text will be in the hands of the members of the American Medical Association. It is hoped that this will focus attention on the proposition Dr. Rankin has put before you. If each county and state medical society believe in making such periodic examinations of all people with whom they come in contact as an annual job, we shall have to put into practice the principles which we have expressed here today, and I trust this will add to the respect of the laity for the capacity of physicians to make examinations of people in health, and when they have made these examinations know what advice to give them on such simple matters as lack of sleep, insufficient bowel movements, lack of relationship of rest and recreation to work. If physicians do not know how to give that advice when they make an examination, the laity will lose interest in it very shortly.

DR. MILTON BOARD, Louisville, Ky.: Venereal disease control rests on a tripod: education, treatment, law enforcement. Of the three, the most effective and most important is law enforcement. When we had a war in this country and military camps, we got somewhere. When the war was over and the camps were abolished, the records show that law enforcement was abated, and society has suffered in consequence. The seed sown during the war has not brought forth the fruit it might have done, owing to the fact that no organized arm of the government took up the work in an effective military manner as during the war. What is the result? I deny the right of existence of a commercial prostitute anywhere. We should go back to where we left off during the war, and educate our state boards of health along the line of rigid, unrelenting law enforcement.

JOSEPH F. SILER, M.D., Washington, D. C.: Although our work is confined to a restricted class of the population, the problems we have to meet are similar to those that have to be solved in civil practice. We in the army are trying to do something along the line of preventive medicine to advance the steps we are trying to take. One hundred years ago, the death rate in the army was between 20 and 30 per thousand per annum. Today it ranges around 5 per thousand per

annum. This reduction in mortality has been accomplished by education and by improved methods of prevention referred to by Dr. Vaughan. Typhoid fever is practically nonexistent in the army today. The same is true of smallpox. After a war, normal conditions are disturbed and it takes years for them to return to normal. The venereal disease rate rose enormously during the Civil War and the Spanish-American War, and it took fifteen years to put it back on a prewar basis, or to normal. Since the war we have endeavored to place the responsibility for venereal disease very largely on the company commanders, so that our venereal disease rate now is 65 per thousand per annum instead of 150 per thousand per annum three years ago. In preventive medicine we have for many years resorted to education by lectures, practical demonstrations, etc., and this instruction is carried throughout the life of the officers. At West Point, definite hours of instruction are laid down for it. The same education applies to medical officers in our own medical training schools. About two years ago, the Surgeon-General directed me to emphasize the importance of periodic examinations so far as officers are concerned. Tests of physical efficiency were undertaken largely for the purpose of determining whether an officer was fit to perform his duties. These tests were preceded and followed by physical examinations.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

"M.D.," Instead of "Dr."—At meetings of the Placer, Riverside, and other county medical societies, resolutions were recently passed recommending to the state medical society that the letters, "M.D.," instead of the title "Dr.," be used on all their literature, cards, and signs, in order to distinguish between cultists and regular doctors of medicine.

Hospitals Accredited by the American Medical Association.—The French Hospital, and the Franklin Hospital, San Francisco, and the Fabiolo Hospital, Oakland, have been placed on the list of hospitals giving acceptable instruction to interns, by the Council on Medical Education and Hospitals of the American Medical Association.

DISTRICT OF COLUMBIA

Personal.—Dr. Walter W. King, surgeon, U. S. Public Health Service, Washington, has been directed to proceed to Hull, England, to attend the Congress of the Royal Sanitary Institute, July 30.—Dr. William J. French, Washington, has been chosen director of the first demonstration of the child health committee under the Commonwealth Fund appropriation, to be held in Fargo, N. D.

ILLINOIS

Venereal Disease and Divorce.—The Mason bill, which makes it possible for either husband or wife to obtain a divorce if the other is infected with venereal disease, was passed by the state senate, April 11, by a vote of 29 to 11.

Physician Sentenced.—According to reports, Dr. John Gore Massie, Belleville, was sentenced to serve from one to ten years in the Southern Illinois Penitentiary at Chester, April 5, for operating a confidence game in oil stock. Judge Crow denied Dr. Massie's motion for a new trial.

Physicians' Licenses to Be Revoked.—Hearings began April 13, before the medical committee of the department of registration and education, for the revocation of all physicians' and pharmacists' licenses illegally issued under the term of W. H. H. Miller, former director of the department. Miller was convicted, January 28, of selling physicians' and pharmacists' licenses, raising examination grades, and selling questions in advance of state examinations. It is believed that more than 100 physicians and druggists in Illinois will lose their licenses.

Radical Public Health Bills.—Three bills that would radically affect public health service in Illinois were introduced, March 8, in the lower branch of the general assembly. House Bill No. 306 requires a health official to cause an impartial investigation by a reputable sanitary engineer to be made of persons and places to be quarantined, the approval of the physician in charge being procured before the quarantine order is issued. House Bill No. 307 provides that any one professionally educated to be a physician shall be ineligible to be a health officer in the state or any of its political subdivisions. House Bill No. 308 provides that the quarantine regulations applicable to persons afflicted with smallpox shall apply to persons vaccinated against that disease. The three bills were referred to the committee on judiciary, given a hearing and reported back to the house with recommendation that they do not pass.

Chicago

Practitioner Sentenced.—Juan Frederick Derrick, colored, found guilty of practicing medicine without a license by Judge O'Connell, was sentenced to the house of correction for ten months and fined \$100, it is reported.

Book Store Features Public Health Book Week.—A. C. McClurg and Company, Chicago, has announced the featuring of books on health for the public during the week April 23-28. Special days have been set apart for books about babies, children, diet, and books for schools. *Hygeia*, the journal of individual and community health, published by the American Medical Association, will be especially represented.

Control of Midwives Proposed.—At a meeting of the Chicago Women's Club and the Illinois Society for the Prevention of Blindness, April 2, a committee was appointed to propose an amendment to the new state medical practice act that would require all midwives to have at least one year of high school training; from six months to a year of special training in midwifery; registration at the city health department, and submission to inspection of their work at any time by the health department. Drs. Frank Cary, J. B. DeLee, Lena K. Sadler and Effa V. Davis comprise the committee.

INDIANA

Indian "Doctor" Fined.—It is reported that Frank DeKay, Kendallville, known as the Indian "doctor," pleaded guilty to practicing medicine without a license, March 17, and was fined \$25 and costs.

Reception for Dr. Edenharter.—The Indianapolis Medical Society at its regular meeting, May 1, will give a reception to Dr. George F. Edenharter, Indianapolis, in honor of the completion of his thirtieth year as superintendent of the Central Indiana Hospital for the Insane.

Medical Society Wins Against Family Contract Practice.—As a result of representations made by the Tippecanoe County Medical Society, the Fraternal Order of Eagles has agreed to discontinue the services of a fraternal physician and to discontinue contract practice for the members of the order on Jan. 1, 1924. The medical society will recommend to the hospitals of the community that pending the discontinuance of such services and of contract practice the present fraternal physician be allowed such hospital privileges as are extended to members of the society.

LOUISIANA

Dr. Pothier to Latin America.—Dr. Oliver L. Pothier, New Orleans, has gone to Colombia, South America, for the Rockefeller Foundation to study an epidemic of fever which has recently appeared in Bucaramanga. Dr. Pothier is professor of pathology and bacteriology at Loyola Post-Graduate School of Medicine, New Orleans.

Dairymen Oppose Tuberculin Test.—According to a report from the superintendent of public health, open warfare is being waged between the New Orleans Board of Health and the Dairymen's Association. Many owners of large herds have refused to submit their cows for tuberculin testing, in defiance of the published order of the board. Fourteen dairies who submitted to the test were found to have fifty-three reactors and thirteen suspicious cases out of 346 cows tested.

Chaulmoogra Trees to Be Grown in Louisiana.—According to a statement by Major O. E. Denney, U. S. Public Health Service, in charge of the leper colony at Carville, large quantities of chaulmoogra (*Taraktogenos kurzii* King)

trees will be planted in Louisiana in order to supply the world with chaulmoogra oil for the treatment of leprosy. Planting will be started this spring. Five patients have been paroled from Carville, as apparently cured, during the last year, following chaulmoogra oil treatment.

MICHIGAN

Wayne County Fights Chiropractors.—A telegram was sent by the Wayne County Medical Society to each member of the lower house of the legislature, April 2, asking him to vote against House Bill No. 77, which would license chiropractors and recognize chiropractic as a profession. The members of the society also decided to send out 3,000 postal cards asking friends to exert their influence against the bill.

MINNESOTA

Donation for Cancer Institute.—The sum of \$250,000 has been donated to the University of Minnesota College of Medicine, Minneapolis, by Mrs. George C. Christian to establish a cancer institute.

MISSOURI

Physician's License Revoked.—The license of Dr. Leon Hurwitz, Joplin, was revoked for fifteen years by the state board of health, April 6. It is reported that he was charged with performing a criminal operation on a 17-year-old girl.

Dairy Licenses Revoked.—The board of public service, St. Louis, has revoked the license of thirteen dairies and denied a license to eleven others for failure to comply with the city ordinance requiring pasteurization of all milk. The attorney for the dairy men announced that he would test the validity of the ordinance by appealing to the courts.

Additional Physicians for Eleemosynary Institutions.—A bill was passed by the legislature authorizing the board of control to appoint a larger number of assistant physicians for the eleemosynary institutions than was allowed under the statutes. The new law has been signed by the governor. It provides for assistant physicians as follows: State Hospital No. 1, Fulton, five assistant physicians; State Hospital No. 2, St. Joseph, six; State Hospital No. 3, Nevada, five; State Hospital No. 4, Farmington, three; Colony for the Feeble-minded, Marshall, two; State Sanatorium for Tuberculosis, Mount Vernon, two. The salaries remain the same, \$1,800 a year.

NEW HAMPSHIRE

State Medical Meeting.—The annual meeting of the New Hampshire Medical Society, at Concord, has been changed from May 23-24 to May 22-23, it is announced by Dr. D. E. Sullivan, secretary of the society.

NEW YORK

Prenatal Consultations.—The division of maternity, infancy and child hygiene of the state department of health is arranging for a series of prenatal consultations in several cities in the northern part of the state to instruct prospective mothers how to care for their health. No patients under the care of physicians will be accepted without the physician's consent. The first consultation, to which all physicians are invited, will be held at Malone, May 1.

Academy of Sciences Announces Prize.—It has been announced by the academy that a prize of \$250 will be offered at the annual meeting in December by Mr. A. C. Morrison, fellow of the academy, to be known as the A. C. Morrison Prize for 1923. The conditions are: 1. Membership in good standing of the New York Academy of Sciences or one of the affiliated societies. 2. Submitting of papers on or prior to November 13. The prize is offered for the most acceptable paper embodying the results of original research not previously published in a field of science covered by the academy or an affiliated society.

Amendments to Public Health Legislation.—There is a bill before the Senate to amend the public health law in relation to the qualification of midwives. It provides that all midwives must have an education equivalent to that qualifying a pupil to enter the second year in high school; it is also provided that in case of persons of foreign birth who have extended experience or in otherwise exceptional circumstances this requirement may be waived by the state commissioner of health.—Another bill before the legislature would abolish the state hospital development commission.

—A bill has been presented to amend the state income tax so as to exempt from the tax all expenses during the taxable year for medical, surgical or dental service.—The Assembly Codes Committee voted unanimously to kill the Cotillo-Leininger antivivisection bills.

New York City

Memorial Meeting.—The medical board of Mount Sinai Hospital will hold a memorial meeting, April 23, in appreciation of the work of the late Dr. Arpad G. Gerster.

Harvey Society Lecture.—Dr. Karel Frederick Wenckebach, professor of medicine, University of Vienna, will deliver the last Harvey Society Lecture of the 1922-1923 series at the New York Academy of Medicine, April 28, on the subject of "The Rhythms of the Heart."

Drive for Palestine Fund.—Dr. Chaim Weizmann was the guest of honor at a dinner given at the Park Palace on April 14 under the auspices of the Palestine Foundation Fund. This event opened the sectional drive for Harlem's quota of the \$2,000,000 to be raised in this city.

Large Quantity of Morphin Seized.—Twelve hundred pounds of morphin, said to be the largest illicit consignment received in this country, was seized, April 6, in the New York Central Railroad yards, by the customs officials and railroad police. The drug, said to have a value of more than \$1,000,000, was marked as a consignment of lamps for Montreal, Canada, and was landed from a Holland-America line ship.

Governor Wants Law to Curb Narcotics.—Governor Smith, April 11, asked the legislature for a statute, following in general the Harrison Narcotic Law, to curb the narcotic drug evil in New York. A bill carrying out the governor's plan was introduced. It would nullify the statute of privileged communication between a physician and a drug addict, and require all New York City physicians to report the name and address of drug addicts to the health department. In other parts of the state, this information would be filed by physicians with the state hospital commission once a month.

Personal.—Dr. Sigismund S. Goldwater, director of Mount Sinai Hospital, will represent the American Hospital Association at the celebration of the eight hundredth anniversary of St. Bartholomews' Hospital, London, and will also address the annual meeting of the British Hospitals Association at Sheffield, May 31-June 1.—Dr. Charles Wilson-Prevost, New York, has been appointed physician to the American Hospital in Paris.—Dr. Charles H. Young has been appointed superintendent of the Hospital of the Good Shepherd, Syracuse.

Citizens' Committee Calls Veteran Hospital Unfit.—In a report to Secretary Mellon, the Citizens' Committee takes issue with the findings of the White Committee on United States Veterans' Hospital No. 81, in the Bronx and proposes the abandonment of the institution for neuropsychiatric treatment. The report proposes the erection in Greater New York of a new institution for the care of veterans suffering from mental diseases and the utilization of the present building for general medical and surgical cases. The Citizens' Committee contends that Hospital No. 81 is not fireproof in the modern sense of the term, and suggests important changes and additions to bring the hospital up to the standard of ordinary hospitalization.

Outpatient Clinics Organize Section on Medicine.—The Associated Outpatient Clinics of the City of New York recently reorganized its Section on Medicine at a meeting held at the New York Academy of Medicine. Dr. Alexander Lambert presided at the meeting and fifty-one institutions maintaining medical clinics were represented. The section proposes to deal with such questions as the closer relation between medical service and the outpatient department, and in and out record systems, the difficulties between general medicine and the specialties, the improvement of laboratory service and the securing of adequate medical social service. The officers elected were: chairman, Dr. Leander H. Shearer; vice chairman, Dr. P. D. Barr; executive secretary, Dr. Michael M. Davis, Jr.

NORTH CAROLINA

John McTyeire Flowers' Lectures.—On account of illness, Dr. W. W. Keen, emeritus professor of surgery at the Jefferson Medical College, Philadelphia, was unable to deliver the Flowers' lectures at Trinity College, Durham, April 10, 11 and 12, as scheduled. These lectures have been postponed until May 2, 3 and 4, when Dr. Keen will lecture on the subjects noted in THE JOURNAL, March 31, p. 931.

OHIO

Fellowship for Hospital Interns.—At a meeting of trustees of the Toledo Hospital, April 11, a fellowship for interns was founded, and the time which they serve extended to two years. A bonus of \$1,000 will be given for further study, either in the United States or Europe, to the intern who does the best scientific work for the hospital and writes the best thesis at the completion of his first year. This award will be made by the executive committee of the medical staff.

Poor Teeth and Working Permits.—Following medical examination of 4,500 public schoolchildren of Cleveland who applied for working permits, the teeth of practically all the children were found in poor condition. The Chamber of Commerce has appointed a committee on mouth hygiene to report dental needs among schoolchildren and to suggest a remedy for existing conditions. Cleveland has eight dental clinics taking care of about 19 per cent. of the first grade children. It is hoped eventually to have one dental clinic for every four schools.

OKLAHOMA

Physician Sentenced for Life.—Dr. Alonza B. C. Davis, Oklahoma City, charged with performing an illegal operation on a woman, who died, February 12, according to reports, was found guilty of murder and sentenced to life imprisonment, April 1.

Personal.—Dr. William B. Smith, Fairland, has been appointed health officer of Ottawa County to succeed Dr. J. T. Wharton, resigned.—Dr. Joseph J. Hardy, Poteau, has been appointed county superintendent of health of LeFlore County.—Dr. Lewis M. Lett, Dustin, and Dr. Daniel Y. McCary, Holdenville, were elected president and secretary, respectively, of the Hughes County Medical Society at the annual meeting.

OREGON

Physician Pardoned.—According to reports, Dr. Andre A. Ausplund of Portland, who was convicted in 1915 of causing the death of a young woman on whom he performed an illegal operation and sentenced to serve from one to fifteen years in prison, has been granted a pardon. Dr. Ausplund began his sentence in the state prison, March 15, 1921.

PENNSYLVANIA

Mellon Lecture.—Dr. David Marine of the Montefiore Hospital, New York, will deliver the eighth Mellon lecture, entitled "The Importance of Our Knowledge of Thyroid Physiology in the Control of Thyroid Diseases," before an open meeting of the Society for Biological Research of the University of Pittsburgh Medical School, May 10.

Philadelphia

Laryngologic Society Elects Officers.—At the annual meeting of the Philadelphia Laryngological Society, Dr. George W. Mackenzie was elected president; Dr. William A. Hitschler, vice president; Dr. Arthur J. Wagers, treasurer, and Dr. Henry A. Laessle, secretary.

SOUTH DAKOTA

Hospital News.—The Kiwanis Club, of Redfield, has assumed the management of the local hospital owned and operated by Dr. Floyd M. Baldwin since 1917. Various other organizations in the city have pledged their support.

TENNESSEE

Medical Society Reorganized.—The Bristol Medical Society, which has been inactive for many years, was reorganized at a meeting held, April 2, with Dr. Nathan H. Reeve as president and Dr. Harry W. Bachman, secretary. A dinner was recently given in honor of Dr. Reeve to celebrate his seventy-fifth birthday and his fiftieth year of practice.

VIRGINIA

Chemical Laboratory to Be Established.—The Wise County Board of Supervisors has appropriated \$2,000 to augment an equal sum from the Rockefeller Foundation and the state of Virginia for establishing a branch chemical laboratory in Norton.

WYOMING

State Health Officer Resigns.—Dr. Albert B. Tonkin, Cheyenne, state health officer, has resigned, and will resume practice at Riverton. Dr. Tonkin's successor has not yet been appointed.

PHILIPPINE ISLANDS

Public Health News.—Reorganization of the health service of the Philippine Islands is expected soon; according to proposed plans the director of health will have the rank of brigadier general.—Plans are under way for the amalgamation of the activities of the Philippine Health Service and the public welfare commission under the secretary of public instruction. The public welfare commission is at present under the jurisdiction of the Department of the Interior.

Personal.—Dr. Emilius C. Dudley, Chicago, gave a series of illustrated lectures before the faculty and student body of the University of the Philippines during the month of January in Manila. While in that city, Dr. Dudley held the rank of visiting professor of gynecology at the university.—Dr. Victorio Magno y Gomez, health officer for Malasiqui and San Carlos, was seriously injured, recently, when the automobile in which was driving, overturned.—Prof. T. H. Pardo de Tavera of the University of the Philippines has been appointed director of the Philippine Library and Museum.

CANADA

Personal.—Dr. A. A. Anderson, Savannah La-Mar, has been appointed district medical officer of Frankfield, Jamaica.—Dr. William T. B. Mitchell, assistant superintendent of Westminster Hospital and lecturer on mental hygiene in the faculty of public health, Western University, London, Ont., has been appointed chief psychiatrist for the Dominion Soldiers' Civil Reestablishment, at Ottawa.—Dr. George Armstrong, who recently resigned his position as professor of surgery and clinical surgery at McGill University Faculty of Medicine, Montreal, will retain his position as surgeon-in-chief of the Royal Victoria Hospital.—McGill University, Montreal, has conferred the honorary degree of doctor of laws on Sir William Taylor, regius professor of surgery, University of Dublin; Sir Berkeley Moynihan, and Sir Robert Jones.

GENERAL

American Association of Pathologists and Bacteriologists.—At the annual meeting of the association in Boston, March 30-31, the following officers were elected for the ensuing year: president, Dr. Theobald Smith, Princeton, N. J.; vice president, Dr. James Ewing, New York; treasurer, Dr. Frank B. Mallory, Boston, and secretary, Dr. Howard T. Karsner, Cleveland.

International Health Conference.—Seventy-two nations will send their leading educators and child health authorities to the International Health Education Conference, to be held at Oakland, Calif., June 28-July 6, under the auspices of the American Child Health Association. In addition to 1,000 invitations sent abroad, 2,000 will be dispatched to leading educators, nutrition experts, ministers of health and biologists in this country.

Memorial Hospital in Paris.—The new building of the American Hospital of Paris now being erected at Neuilly, to be known as "The American Memorial Hospital, 1914-1918," will be dedicated to the memory of the American dead in the World War. The building has been donated by Mrs. Robert Bacon, as a memorial to her husband, late ambassador to France. The cornerstone of the building will be laid in June.

Fund for Research.—The American Pharmaceutical Association has available a sum amounting to \$400 which will be expended after Oct. 1, 1923, for the encouragement of research. Investigators desiring financial aid in their work should communicate before June 1 with H. V. Arny, chairman of the research committee, 115 West Sixty-Eighth Street, New York, giving their record and the particular line of work for which the grant is desired.

International Association of Medical Museums.—The American and Canadian Section of the International Association of Medical Museums held its sixteenth annual meeting in Boston, March 29. Dr. Frank B. Mallory, Boston, was elected president; Dr. Howard T. Karsner, Cleveland, first vice president; Dr. Harold E. Robertson, Rochester, Minn., second vice president; Major James F. Coupal, Washington, D. C., third vice president, and Dr. Maude E. S. Abbott, McGill University, Montreal, Canada, secretary-treasurer.

Tri-State Medical Association's Trip.—More than 300 physicians of the Tri-State District Medical Association (Iowa, Illinois, Wisconsin and Minnesota) left, April, 15 for Cleveland, where under the direction of Dr. George W. Crile and Dr. Charles F. Hoover of Western Reserve University,

they will hold a clinic. Harvard University, Boston, will be the next stop on the clinic trip, then New Haven, Philadelphia, Baltimore and New York. A stop of several days in Washington, D. C., will complete the trip.

Liquor Ruling Overruled.—Judge McKenzie Moss, Assistant Secretary of the Treasury, announced this week that persons arriving in New York from abroad would not be permitted to bring a quart of intoxicating liquor ashore for medicinal purposes. The decision of Judge Moss overruled a recent ruling made by the collector of the Port of New York. It was pointed out by the Assistant Secretary of the Treasury that the regulation of September, 1919, permitting the importation of a small quantity of liquors and tobacco, had been amended, liquor being omitted.

Dr. William H. Welch Receives the Gold Headed Cane.—In 1919, the American Association of Pathologists and Bacteriologists presented to Dr. Harold C. Ernst, Boston, a gold headed cane, a token of appreciation of his services to the association and to medicine. Before his death, in 1922, Dr. Ernst conceived the idea of using the cane as a sign of approval of the work of those who represent the best traditions in medicine. The council of the association will, therefore, confer custodianship of this token from time to time, such custodianship to last throughout the recipient's lifetime. It was unanimously voted this year to confer the custody of the cane on Dr. William H. Welch of Baltimore, who has accepted the honor. Dr. Welch will prepare a manuscript on his experiences in medicine, to maintain the historical significance of the cane.

Wynn Mountain.—By recent decision of the United States Geographic Board, honor was paid to the late Dr. Frank B. Wynn in giving his name to a peak in Glacier National Park, the Interior Department has announced. Wynn Mountain stands at the mouth of Canyon Creek, up which one of the most popular trails from the Many Glacier region runs to Cracker Lake. Dr. Wynn, who lost his life in an accident while climbing Mount Siyeh in 1922, was a resident of Indianapolis, Ind., a physician, scientist, man of letters, poet, and one of America's great lovers of mountain climbing. In behalf of the Nature Study Club of Indiana, of which he was president, and with the consent of the Department of the Interior, he undertook several years ago to chart routes of ascent to the peaks in Glacier National Park. This work was to cover a period of years, and the findings were to be published for the guidance of visitors to the park. It was while engaged on this mission that Dr. Wynn lost his life.

Society News.—The annual meeting of the Southwestern Virginia Medical Association will be held in Christiansburg, Va., May 17-18.—The Association of Southern Railway Surgeons will hold its annual session in Charleston, S. C., May 22-24.—The American Association of Anesthetists and the Pacific Coast Association of Anesthetists will hold a joint meeting in San Francisco, June 22-26.—The Pacific Northwest Medical Association will meet in Seattle, June 19-21, under the presidency of Dr. Earl Else, Portland, Ore.—The first annual meeting of the Western Society for the Study of Hay Fever, Asthma and Allergic Diseases will be held in San Francisco, June 25, under the presidency of Dr. Grant Selfridge, San Francisco.—The Hospital Association of Pennsylvania will hold its annual convention at the Hotel Adelphia, Philadelphia, April 26-27.—The fortieth annual meeting of the American Climatological and Clinical Association will be held at Niagara Falls, Canada, May 23-25, under the presidency of Dr. Charles W. Richardson, Washington, D. C.—The American Association of Immunologists held its annual convention in Boston, March 29, under the presidency of Dr. George W. McCoy.

LATIN AMERICA

Personal.—Dr. Miguel Jiménez López of Bogotá has been appointed chief of the state department, the *ministerio ejecutivo nacional*. The members of the Club Médico of Bogotá tendered him a banquet to celebrate his appointment and in appreciation of the fact that a physician had been chosen for the position.—The *Repertorio* of Bogotá mentions the return to that city of Dr. Tulio Forero Villaveces after a long absence in the United States and Europe.—Dr. Garfield de Almeida was the guest at a banquet recently given in honor of his appointment to the charge of the Hospital S. Francisco de Assis at Rio de Janeiro. The *Revista Medico-Cirurgica do Brazil* devotes a recent number to listing his numerous works published in the *Revista* and elsewhere. He was sent on a special mission to other countries early in

his career to study the system of public hospitals and charities, in the Latin countries in particular.—Dr. A. Gavião Gonzaga has been placed in charge of the flying squadron sent by the national public health service to Ceará in northern Brazil to help fight the epidemic of yellow fever now prevailing there. Dr. S. Barroso is in charge of the work in the Bahia district.

FOREIGN

The Physician's Income Tax.—The *Medizinische Klinik* reproduces some of the article with this title published in THE JOURNAL, Feb. 17, 1923, saying that the provisions of the tax and the deductions are about the same as in Germany. The only feature commented on as remarkable in the United States tax is that the office rent and maintenance are not deductible if the office is in the physician's own house or building.

Home for the Medical Societies of Copenhagen.—The physicians of Copenhagen have organized a stock company, which has purchased a building for a *Domus Medica*. It is planned to have the building reserved exclusively for the Copenhagen Medical Society on its weekly meeting day, but at other times it is to serve as a medical club, with possibly hotel arrangements. The Danish Medical Association is to contribute 5 crowns annually per member toward the maintenance of the building.

Osler Memorial Fund.—At the final meeting of the Oxford Osler Memorial Fund it was announced that £2,000 (approximately \$10,000) had been received to date. It has been decided to place a bronze plaque in the university museum; to award a memorial medal every five years to a graduate of the University of Oxford who has made some distinguished contribution to medical science, and to form an Osler fund to assist teachers of the medical faculty to travel in the interest of medical research.

Endemic Goiter in Tasmania.—The annual report of the Department of Public Health of Tasmania for the year 1921-1922 contains the results of an investigation of goiter, which is endemic in many parts of Tasmania. The 644 cases reported throw considerable light on the subject. It was found the disease prevails along certain river valleys, and especially in the southern half of the island. Goiter in females were found to be eight times as numerous as in males. Of 2,581 schoolchildren examined, from 5 to 8 per cent. had simple parenchymatous goiter.

Teaching Schoolgirls the Care of Infants.—The *Presse médicale* of March 10 congratulates the country on the realization of the long cherished ideal to have the girls in school given systematic training in puericulture. The minister of public instruction and the minister of hygiene have issued a formal circular addressed to the prefects of France urging them to plan for imitating the work that has been under way for some time in eight public schools at Paris and in the province. The schoolgirls are taken one morning a week to an infant welfare station and are given practical object lessons. Credit is given the children for work in this line; it is done outside the regular class hours.

Deaths in Other Countries

Sir William Thorburn, emeritus professor of clinical medicine, University of Manchester; former Hunterian professor at the Royal College of Surgeons; in London, March 18, aged 61.—**Dr. G. C. Purvis**, government bacteriologist; at Grahamston, South Africa, of heart disease.—**Dr. John Irving**, surgeon to the Huddersfield Infirmary, England, March 9, aged 73.—**Dr. H. N. Eccles**, formerly roentgenologist with the British Army in India; at Hove, England.—**Dr. E. W. McQuaid**, lieutenant, Irish National Army; demonstrator of anatomy at the Royal College of Surgeons of Ireland; shot and killed by Republican regulars in Mayo, February 22, while attending the wounded.—**Dr. Antonio Dizon y Natividad**, at San Juan de Dios, January 17, of typhoid fever; aged 28.—**Dr. K. O. Olander**, an alienist of Stockholm, aged 50, physician in chief of the Katarina Hospital and of the municipal hospital for the insane. He was shot on the street by a former patient.—**Dr. Carlos Calleja**, professor of histology and anatomy at the University of Barcelona.—**Dr. Alfred Chatin** of Uriage, a dermatologist and syphilologist of note, victim of an accident during athletic exercise.—**Dr. Giol del Valle**, formerly professor of clinical medicine at the University of Madrid, stabbed himself in his grief over the recent death of his son.—**Dr. B. Morales Arjona**, professor emeritus of obstetrics and gynecology at the University of Valladolid.

Government Services

Veterans' Bureau News

The Federal Board of Hospitalization has authorized the Veterans' Bureau to take over the American Legion Memorial Hospital at Kerrville, Texas, under lease, June 1; to purchase the Hahnemann Hospital at Portland, Ore., for a maximum price of \$175,000, and to reject all bids for the proposed hospital at Livermore, Calif.

The hospital at Kerrville, Texas, cost the state and the American Legion \$1,800,000, and eventually will care for 480 patients. Plans are being made under which patients who are being treated in the temporary institution at Houston will be transferred to Kerrville.

The owners of the Hahnemann Hospital at Portland, Ore., are asking \$300,000 for that property. The government holds a lease until 1925, and pays an annual rental of \$25,000. In view of the amount which has been expended by the government for its enlargement and equipment, the board expressed the belief that \$175,000 was a reasonable price and authorized its purchase at that figure if funds are available.

The Hospitalization Board has arranged to consolidate all Veterans' Bureau supplies in three large depots. One, for the Atlantic section, will be at Perryville, Md., where the bureau now maintains a supply station. Chicago will be the supply depot for the central section, as the bureau now has in that city a large fireproof building. A site for the Pacific coast section has not been chosen. The two supply stations at Long Island City, N. Y., and Chillicothe, Ohio, will be closed as soon as possible.

Dr. Harvey Cushing to Receive Medal

A citation for the award of a Distinguished Service Medal to Dr. Harvey Cushing of Boston has been approved by Secretary of War Weeks. The citation refers to Dr. Cushing as senior consultant of surgery of the American Expeditionary Forces and in direct charge of treatment of gunshot wounds of the First Army Hospital during the Meuse-Argonne offensive, and says: "He performed conspicuous and distinguished services to the government" and "His individual efforts in that capacity saved the lives of many severely wounded soldiers." The time of the award of the medal to Dr. Cushing has not been set.

Additions to Navy Medical Corps

The Surgeon General of the Navy announced this week that the following have been examined and have qualified for appointment as assistant surgeons with the rank of lieutenant (junior grade) in the Medical Corps of the Navy: Drs. Asa G. Churchill, St. Paul; William R. Manlove, Jr., Nashville, Tenn., and Frederick G. Merrill, Jr., Boston.

Changes in Navy Medical Corps

Capt. Ammen Farenholt, who has been directed to assume duty as medical officer of the twelfth naval district at San Francisco, will serve until the arrival of Rear Admiral George H. Barber, previously assigned to that station. Rear Admiral Barber will be relieved of command of the naval hospital, Canacao, P. I., in September. Commander Charles N. Fiske has been ordered to duty at Mare Island, and assigned to the *Nevada*. He will relieve Commander W. A. Angwin, who will go as executive to the naval hospital, San Diego, Calif. Commander F. E. Porter, from the naval training station, Great Lakes, Ill., will succeed Commander Fiske as executive of the Mare Island hospital.

Physicians Needed

Physicians are being sought to fill vacancies in the U. S. Veterans' Bureau and the U. S. Public Health Service at salaries ranging from \$2,400 to \$5,500 in the Fourth Civil Service District. In all positions in which the salary does not exceed \$2,500 a year, a bonus of \$20 a month will be paid.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 28, 1923.

Sir James Dewar

Sir James Dewar, F.R.S., known all over the world for his liquefaction of what used to be called the permanent gases, died recently. Born at Kincardine-on-Forth in 1842, he studied at Edinburgh University, where he was a pupil of, and later assistant to, Lord Playfair, professor of chemistry. In 1875, at the age of 33, he was appointed Jacksonian professor of natural experimental philosophy at Cambridge, and two years later he became Fullerian professor of chemistry at the Royal Institution. He held both posts until his death. His popular Friday evening lectures at the Royal Institution attracted not only the ordinary public but also scientific men, of whom one said they were sure to see Dewar do something which "no one else would have thought of doing." It was there that he carried out his researches on the liquefaction of gases and the properties of matter approaching the absolute zero, which have rendered him famous. Attracted by the work of Caillete and Pictet in that sphere, he showed the former's apparatus for the first time in this country, in 1878. In 1884, he obtained oxygen in the liquid state and then turned his attention to the more difficult problem of liquefying hydrogen. A condition of success was the discovery of a means of preventing the influx of heat into the cooled gases, and this he found in his vacuum bulbs. The principle on which they depend was afterward applied in the now familiar vacuum flask.

In 1886, he exhibited oxygen in the solid state, and by 1891 he proved that liquid oxygen and liquid ozone are attracted by the magnet. He obtained a degree of cold sufficient to liquefy hydrogen by utilizing an observation made by Lord Kelvin and Joule that a gas forced under pressure through a porous plug falls in temperature owing to internal work being done by its molecules. But the carrying out of this principle required extraordinary constructive ingenuity. Pressures of tons to the square inch had to be provided for, and an accuracy of fitting far beyond that of ordinary engineering, allowance being made at the same time for the contraction of material cooled nearly 300 degrees C. below normal temperatures. The finished machine, of which a duplicate was sent to the St. Louis exposition, weighed 2 tons and contained thousands of yards of pipe. With this apparatus, he succeeded in collecting liquid hydrogen in an open vessel in 1898, and in the following year obtained the element in the solid state, thus completing the conquest of all the gases known to Faraday. Helium then remained the only known gas that resisted liquefaction. Dewar did much work on the problem, and was able to forecast the methods by which it could be solved; but ill health and other circumstances prevented him from completing the work, and it was Onnes of Leyden who succeeded. Employed as refrigerating agents, liquid air and liquid hydrogen constitute a potent weapon of physical research, making possible the study of substances under entirely novel conditions as to temperature.

Besides many determinations of the physical constants themselves, Dewar's researches included electrical conductivity, thermo-electric powers, magnetic properties, and dielectric constants of metals and other substances at low temperatures, the effects of extreme cold on phosphorescence, chemical and photographic action, the strength of materials, color and the life of seeds and bacteria. On the discovery of

radium, he collaborated with Curie in investigating its behavior at low temperatures, and reached the remarkable conclusion that its power of emitting heat is unimpaired, if not intensified, by extreme cold. He was one of the first to measure directly the rate of production of radium from helium. In the early years of the war, studies on the diffusion of gases led him to examine soap and other films of great tenuity. In investigations that he was conducting up to a few weeks before his death, he produced large soap films and bubbles which lasted for months, the secret of their longevity lying in their being blown with perfectly pure air and pure materials. Honors were showered on him from all over the world, including the first award of the Hodgkin gold medal of the Smithsonian Institution in 1899. He married in 1871. He had no children.

The Memorial to Osler

A final meeting of the subscribers to the Oxford Osler Memorial Fund was held at the University Museum, Sir Herbert Warren, president of Magdalen College, chairman of the executive committee, presiding. The chairman explained that the memorial was only one of several, the United States and Canada, in which Sir William had spent a large part of his life, having decided to establish memorials of their own. It was announced that the fund now amounted to \$10,000. The following proposals were submitted on behalf of the executive committee: (1) the purchase of a bronze plaque of Sir William Osler, measuring 32 by 22 inches, a copy of that of Vernon of Paris, made for the Medical Faculty of Maryland, to be hung in the University Museum; (2) the establishment of a fund for the foundation of an Osler Memorial Medal in bronze, to be awarded every five years to a graduate of the University of Oxford who has made some distinguished contribution to medical science, learning or practice (this medal might be a reduced replica of the portrait plaque); (3) the remainder of the sum, together with any sums hereinafter added, to be called the "Osler Traveling Fund," for the propagation or acquisition of medical knowledge or for medical research, to be invested and the interest utilized to assist teachers of the Medical Faculty to travel for the purposes stated. It is estimated that the capital sum remaining for this purpose will be about £1,700 (about \$8,000).

Sir Archibald Garrod, Osler's successor at Oxford, in introducing these proposals, stated that they had the entire approval of Lady Osler, as well as of other friends. They were unanimously adopted.

Cosmetics and Cancer

At the Institute of Hygiene, Sir George Lenthal Cheatele, a surgeon well known for his investigations on cancer, deprecated the use of soap, face powders, coloring matter, creams, bath salts and in fact everything that is scented, as conducive to cancer by irritation of the skin. He considered powders and soaps as especially dangerous, since they made their way into the glands of the skin and then set up trouble which might end in cancer. There was a great opportunity for some inventor who could discover a substitute for soap, for though personal cleanliness was essential, the perpetual application of soap should be discouraged. The smoke of cigarets he considered harmful to the skin, advising the use of long holders.

Sir William Thorburn

British surgery, the surgery of the spine in particular, has lost much by the death at the age of 61 of Sir William Thorburn, K.B.E., C.B., C.M.G., F.R.C.S., emeritus professor of clinical surgery at the University of Manchester. In 1886, he was appointed assistant surgeon to the Royal Infirmary, Manchester. Here he quickly made a reputation for the treat-

ment of injuries of the spine, accidents of frequent occurrence in the great manufacturing cities. The subject had previously received little attention except in connection with railway accidents. In 1890, Thorburn gained the Jacksonian prize at the Royal College of Surgeons for a masterly essay on "The Nature and Treatment of Injuries to the Spinal Column and the Consequences Arising Therefrom." Four years later, as Hunterian professor of pathology and surgery, he delivered at the College a course of lectures on these injuries. He chose the same subject for his Bradshaw lecture in December, 1922, when he summed up somewhat despondingly his experience of nearly half a century. Like many of the profession, he suffered severely by the war, losing his three sons. Broken in health and spirits, he retired from active work in Manchester. He had hardly settled to a life of leisure in London when the death of his wife further saddened him. He struggled bravely to continue his work, but he gradually lost strength.

PARIS

(From Our Regular Correspondent)

March 23, 1923.

In Opposition to Favoritism

A recent government decree provides that the minister of public instruction may grant a special dispensation exempting from examinations, or from parts of examinations, students who served in the army or navy for six consecutive years, and who were wounded, or decorated with the Legion of Honor, or who received the distinguished service medal or the *croix de guerre avec palmes*. This decree has raised a storm of protest. The assembly of the professors of the law faculty of the University of Paris has declared by a unanimous vote that the decree is incontestably illegal; for university titles and degrees can be granted only to persons who have earned them by passing the regular examinations and competitive tests. The Association corporative des étudiants en médecine (association of medical students) publishes likewise a protest against what it calls an abuse of power "which cannot fail to discourage industrious students and to discredit physicians in the eyes of the public."

A Pasteur Tag Day

The government, desirous of encouraging all movements connected with the commemoration of Pasteur and deeming it advantageous to offer all the elements of the population an opportunity to participate, has authorized a tag day in honor of Pasteur. It will not be the sole purpose of this manifestation to exalt the memory of one of the most eminent French scientists. Of equal importance will be the endeavor to awaken public opinion in support of a widespread movement in favor of the development of scientific laboratories and the improvement of the various material resources placed at the disposal of our men of science for the carrying out of their researches. A circular letter expressing this idea has been sent to the prefects by the minister of the interior. May 27 has been chosen for the tag day. The proceeds will be used for the benefit of scientific laboratories.

Privileges of the Physician with Respect to Choice of Treatment

The chief physician of an antituberculosis dispensary, who was relieved of his post by a decision of the administrative council, brought suit for damages against the council. The court, in judging of the action taken against the physician, held that the council was justified in its conduct by reason of the fact that the physician had failed to comply with the demand made on him by the administrative council not to

use any other pharmacologic specialty than the one the council had specially designated, and to refrain from prescribing any similar product not authorized by the *Oeuvre de la tuberculose humaine* (antituberculosis society). The court upheld the right of the administrative council to require the exclusive use of a given medicament, adding, in explanation, that, while it was true that in hospitals physicians who were the heads of services are entirely independent in the matter of the choice of treatment to be given patients, in dispensaries where the patients are all suffering from the same affection—tuberculosis—a different rule applies, and an identical medication may be required.

However, the Paris Court of Appeals reversed the decision of the lower court, summing up the matter of privilege in this pronouncement:

Under no circumstances can the contention be upheld that a physician is under obligations to prescribe identically the same treatment for all the patients of a dispensary by reason of the fact that they are all tuberculous. Any attempt to take away from the practice of medicine all considerations of a personal and individual nature is opposed to the most firmly established principles of science. It contravenes the rights and obligations of the physician, to whom the acquisition of a medical diploma accords perfect liberty in the matter of prescriptions. Furthermore, it is the duty of a physician to institute such treatment as his professional knowledge dictates. This liberty is, in fact, the basis of his responsibility, and the practice of medicine cannot be conceived of without it.

Definition of the Illegal Practice of Medicine

The conception of the Court of Cassation (the supreme court of France) in regard to what constitutes the illegal practice of medicine has recently undergone a complete change. A man by the name of Béziat, a self-styled healer, with the aid of occult powers, who was prosecuted for the illegal practice of medicine, was acquitted by the correctional court of Villefranche-en-Rouergue on the ground that the healer believed that by passing his hands over the site of the affection he could communicate to the patient a peculiar external force (THE JOURNAL, April 15, 1922, p. 1141). The case was brought before the Toulouse Court of Appeals, and the healer was again acquitted, but the Court of Cassation has recently annulled the decree, basing its decision on the contention that the mere fact of taking part in the treatment of patients by any procedure whatsoever constitutes a violation of the law for any one who is not a doctor of medicine. This decision is especially interesting in view of the fact that, about fifteen years ago, the Court of Cassation ruled that for an "empiric," whatever the nature of the affection might be, merely to place his hand on the seat of pain, while addressing, at the same time, a mental invocation to a spirit, whose intervention he believed himself able to call forth, does not constitute an example of illegal practice of medicine. Such acts were not regarded as punishable, provided the "empiric" did not administer any remedy, write any prescription or give any therapeutic directions to patients.

The Landouzy Museum

M. Paul Strauss, minister of public health, presided recently at the ceremonies held in dedication of the Landouzy Museum. This museum, which is devoted to physiotherapy and especially to the study of mineral waters, was founded with the documents and books specially bequeathed for this purpose by the dean of the faculty, now deceased.

A Portrait of Hippolyte Larrey

M. Balland, formerly chief pharmacist of the army, has presented to the Institute of France, for its gallery of celebrities, an excellent portrait of Hippolyte Larrey, by Isabey. Baron Hippolyte Larrey, former member of the Academy of Sciences and of the Academy of Medicine; former professor of surgical pathology in Val-de-Grâce, where his statue stands; later, medical inspector of the army and consulting

surgeon to Emperor Napoleon III, was the son of Baron Dominique Larrey, the eminent army surgeon during the First Empire.

Commemoration of Pasteur in Uruguay

M. Saavedra, chargé d'affaires of Uruguay in France, recently presented to Dr. Roux, the director of the Pasteur Institute, a large bronze plaque sent by the National Council of Hygiene in Montevideo and destined to be hung in the crypt of the Institute in evidence of gratitude and in honor of the memory of Pasteur.

BUCHAREST

(From Our Regular Correspondent)

March 5, 1923.

Exanthematous Typhus in Roumania

The lay press has created some stir over an epidemic of exanthematous typhus in the eastern part of Roumania, adjacent to Russia. Sporadic cases occurred in Jassy, Craiova, Cluj, Arad, and Oradea-Mare; but, as the result of really energetic, precautionary measures, the spread of the disease was successfully prevented. The cases that did occur were all fatal. The incidence of the disease has been attributed to the influx of Ukrainians, Armenians and Jewish refugees from Russia. In the last fourteen days no fresh case was reported, notwithstanding which the lay papers have gone so far as to propose the expulsion of these immigrants. This harsh measure not only is inhuman but is unnecessary; the importance of the epidemic has been exaggerated, and now no immigrants can enter the country without having first been isolated for fourteen days; they are then kept under observation for a further period of seven days.

Reorganization of the Military Medical Service

For the great army that Roumania must maintain, because of the continuous unrest in neighboring countries, the number of army physicians must be increased; the present number is quite inadequate. In view of the fact that the size of the country, the population and the number of recruits have trebled, though the number of physicians is less than in prewar times, the minister of war has presented a bill to add 150. A project has also been presented to increase the proportion of officers of superior rank as well as the total number of physicians. The conditions from which the army surgical corps has suffered since the termination of the war is shown by the increasing number of resignations and requests for early retirement, as well as by a continuous diminution in the number of candidates for the special schools of Jassy. The acuteness of this crisis is shown by the fact that, in 1922, forty-seven military physicians resigned, and there were only thirty-eight nominations. This year a competitive examination at Jassy for thirty-six vacancies for students, who obligate themselves, after graduation, to serve six years in the army in exchange for free medical education with maintenance during the course, brought together only twenty-seven candidates. It is evident that an increase in the number of military physicians must be supplemented by better opportunities for promotion and better pay.

Food Adulterations

The government laboratory has issued a report for the year ending December 31, which contains some interesting information. With regard to the so-called "temperance" drinks, it may be noted that beverages of a nonalcoholic character are frequently sold as cider (here called lemonade, or apple juice) or sparkling lemonade, "nonalcoholic," or "not dutiable"; the state chemist says that these are mixtures of real lemon, apple or grape juice with solutions of sugar,

and that they contain less than 2 per cent. of proof spirit. But, he adds: many samples of so-called nonalcoholic grape juice are entirely free from the juice of grapes, and are simply solutions of sugar that have been aerated, flavored and colored. The percentage of alcohol contained was determined in 210 samples of liquors. In 182, the alcohol exceeded the legal limit. "Liqueur candies" are apparently not such innocent sweetmeats as their name might imply. Of twenty-five samples tested, six contained proof spirit ranging from 5 to 8 per cent., and in one case the amount was 15 per cent. In order to ensure that only genuine tea shall come into the country, all consignments are examined at the port of entry, and doubtful samples are sent to the state laboratory. Of the total number of samples submitted, eighty-four, representing 9,210 kg., were condemned as containing sand or other foreign matter, and 2,418 kg. were reported unfit for human consumption. It is stated, however, that there was no evidence in any case of intentional adulteration, and that the quantity rejected, though large, is quite insignificant in relation to the total amount of tea imported. The report also contains interesting information as to the use of preservatives in food products. Boric acid, salicylic acid and hydrogen peroxid were found in several samples of cream and butter. The total number of samples examined in the course of last year was 29,416, an increase of 2,318 on those of 1919. Such activity is ample proof of the care that is taken to insure the purity of the food and drink consumed in the country.

BELGIUM

(From Our Regular Correspondent)

Feb. 23, 1923.

Playgrounds

The Belgian Red Cross has appointed a committee, of which Mlle. Goblet d'Alviella is chairman, with a view to establishing regulations with respect to the organization and management of playgrounds for persons of all ages. Within a short time, not only the children but also the adults of every commune will enjoy the advantages of properly organized playgrounds, which may be regarded as just as necessary as dispensaries, hospitals and other modern agencies of social hygiene and public health.

The Belgian Pediatric Society

The Association internationale de pédiatrie was to have met in Brussels in 1915. As the course of events prevented the holding of this meeting, the Association des pédiatres de langue française has taken the place of the former society. The new organization, which was founded in France and includes in its membership pediatricians of all countries except the central empires, held its last meeting at Paris, in July, 1922. It has been decided to hold the next assembly at Brussels, in September, 1923, under the chairmanship of Dr. Pechère, Dr. Delcourt serving as secretary. The questions on the program are: pneumococcus infections in childhood; diagnosis and treatment of intestinal obstruction, and treatment of abnormal children.

At the Paris meeting, after an address by M. Pechère in which he discussed the merits of the former Société belge de pédiatrie, it was unanimously decided to reorganize this society with Dr. Pechère as president and Dr. Delcourt as general secretary. Its membership will comprise physicians and surgeons who specialize in the diseases of children, orthopedists, physicians who specialize in the treatment of abnormal children, and all those who cooperate in or are interested in the campaign for the betterment of health conditions among children in general. The assembly also decided on the publication of articles in a bulletin, which will probably be included in the journal *La pathologie infantile*, which

will, in that case, be altered and enlarged. This question will be definitely settled later.

Artificial Heliotherapy

The various lamps producing ultraviolet rays give results in no wise comparable with the effects secured with Finsen light. The marvelous results obtained with Finsen light in the treatment of lupus are well known. However, until recently there was too high a percentage of rebellious cases (about 30 per cent.) in which the treatment was not effective, but of late the Danish school has succeeded in raising the percentage of lupus cures to 96 per cent., owing to the combination of the local treatment by light and the general treatment by the arc light. M. François also demonstrated to the Société belge de physiothérapie the results of natural heliotherapy. But in the Scandinavian countries, and with us as well, the number of days on which natural heliotherapy can be used is much restricted, and it would seem that the arc light is an excellent substitute. In Denmark, moreover, several surgeons have been using this method in place of natural heliotherapy, and are well pleased with the results. The author demonstrated the organization of the treatment in his institute at Antwerp. The excellent results secured by exposure to the arc light is shown by the extraordinary increase in the percentage of cures among lupus patients. What promises to be especially effective is a combination of natural and artificial heliotherapy. On the cloudy days when natural heliotherapy cannot be applied, artificial heliotherapy can be substituted, which permits a continuation of the treatment and obviates the fear of losing ground once gained.

Industrial Diseases

The medical service of the department of industry and labor has been making, for some time, a special study of the subject of industrial diseases, but the problem is of so vast a scope that, in order to reach a proper solution of the question, all the data that can be collected in the different factories must be brought together. It is with this in view that Dr. de Laet has lately presented to the Société de médecine légale a well documented report on this problem of pressing interest, which affects the whole economic and industrial life of the nation. He lays stress on certain factors that must be considered in Belgium in connection with industrial diseases. After discussing succinctly the tenor of the British Workmen's Compensation Act, according to which, since 1906, compensation for industrial diseases has been regulated, and outlining the principal features of the French law of 1919, the general purport of which is the same, he pointed out that the basis of these laws is the establishment of the list of presumptions of origin. On the more or less complete condition of these lists depends the degree of efficacy of these laws. One cannot understand the pathology of industrial diseases without studying it from the ground up, with all the necessary helps, and unless one examines thoroughly into all new, suspected and light cases. In order that these conditions may be realized, three things are needed: (1) The creation, in the sense of strict specialization, of a school of "factory medicine," in which special training can be given by our medical colleges as an accessory to the course in legal medicine, as has been frequently proposed; (2) the establishment of a number of clinics to which sick and injured workmen may be admitted and which are equipped with all the means of exploration necessary. These clinics would study, at the same time, the therapeutics especially applicable to the pathology of industry, and (3) legislation creating these organizations, regulating their function and management, and establishing, along with the list of presumptions of origin, the mode of determining compensations for sufferers from industrial diseases.

BERLIN

(From Our Regular Correspondent)

March 10, 1923.

Statistics of Venereal Disease, 1910-1921

From the statistical material published by the Allgemeine Ortskrankenkasse (health insurance society), Berlin, 1917, Löwenstein has figured out the absolute number of venereal patients, has classified them according to sex and disease, has considered them relatively, taking into account erroneous and obscure diagnoses, and, in computing the final results, has made statistical comparisons in order to determine what allowances are required for so-called double counts in annual and quarterly reports. For purposes of comparison, he takes statistics of the health insurance societies of Magdeburg and Frankfort-on-the-Main and of the association of health insurance physicians of Berlin; records of prostitutes in Stuttgart and Berlin; statistics of the German empire for 1919, the Landesversicherungsanstalt Hannover, and the navies of many states; also the results of prophylaxis in the American navy, all of which taken together give a fairly accurate survey of the period 1910 to 1921. On the basis of his computations, the writer has reached the following results: No statistics on the incidence of venereal diseases can, at present, be regarded as accurate and generally utilizable. The space of a year should be adopted as the basis for all statistical enumerations. In any enumeration, double counts or repetitions must be taken into consideration; otherwise, they constitute a serious source of error. This study estimates this source of error for 1917 at 17.9 per cent., an equivalent of 1,000,000 venereal patients above the actual incidence. It is, however, true that comparatively few of those insured in the health insurance societies consult a physician for a venereal disease more than once during the year, which furnishes proof of the indolence of the masses, and, at the same time, gives an explanation for the enormous spread of venereal diseases. Uncertain and tentative diagnoses have a great bearing upon statistical computations, and should be taken carefully into account; otherwise, the results will be distorted. Previous to 1917, venereal disease was on the decrease, but from 1917 to 1919 there was an increase. Since 1919 there has been little change either way. Among women there has been a marked increase, but here as well a distinction must be made between the absolute number involved and the relative increase. The age group 20-30 is the one most affected. From Löwenstein's study it becomes evident that it is not permissible to apply local statistics to whole provinces, and much less to the whole empire. Even locally, it is out of place to assume that essentially the same conditions obtain in a given three months that were found to exist in a previous quarter. The morbidity statistics of various navies prove that the institution of prophylactic measures among the crews of vessels is feasible and practicable, provided discreet instruction in prophylaxis is given.

Accidents Among Workmen in Public Utilities

According to a government survey of workmen in gas and electric plants and in water works, the health conditions among workmen tending furnaces and retorts are largely dependent on the mode of manufacture used in retorts and furnaces, which in the older plants were constructed much differently from the modern makes. In the latter the filling and the emptying are done by machinery. The physical labor involved is thus materially decreased, and fewer workmen are required to do the work. Whereas formerly the hours of work in the gas plants were often very long, now the Berlin gas plants require only six hours work a day of their furnace workers, with the exception of Saturday and Sunday, when eight hours are demanded. From the records of health insurance societies of manufacturing plants in the city

of Berlin, it appears that the incidence of sickness among workmen in gas plants, which in 1913 was 45.4 per cent. less than that of other members of the health insurance societies, in 1920 was 74.7 per cent. higher than that of other members. The usual explanation given for this is the fact that now the workmen in gas plants draw full pay during periods of sickness, and receive in addition the sick benefits from the health insurance societies, so that sickness means virtually an increase in income. Among the causes of illness, accidents, catarrhal affections of the respiratory passages and rheumatic affections play a big part.

Cataract in Glass Blowers

At the request of the medical inspector of factories, Wirth examined 158 glass-blowers of a large bottle-making plant. In the 40-60 age group he found 32.4 per cent., and in the 60 plus age group, 73.3 per cent., with signs of cataract. These figures are somewhat higher than those reported by other investigators, which is due to the fact that the examination was made with the pupil dilated. The posterior cortical cataract, which was found by English investigators in 50 per cent. of the glass-blowers affected with cataract, Wirth observed in only 25 per cent. It was noted that, in the glass works, protective panes of blue or gray glass covered all the work openings, but on examination of these panes it was found that they allowed the passage of all light rays, the blue panes almost without change, the gray panes merely with decreased intensity.

Effect of Cancer on the Appearance of the Hair

Professor Schridde, anatomist at the Dortmund institute for research on occupational accidents and diseases, has been making a systematic study of the peculiar appearance of the hair in patients with cancer of the stomach, a phenomenon to which clinicians have occasionally called attention. He found as a regular manifestation in such patients that a portion of the head hair or the hair of the bearded region presents a deep black shade; on inspecting the individual hairs he found that they were not glossy, like normal black hair, but completely lusterless. These so-called cancer hairs are, furthermore, harder and stiffer than ordinary hair; they are also coarser. If such a hair is laid on a white sheet of paper, it looks like a heavy stroke made with deep black drawing ink. The phenomenon is especially observable in the region of the temples, occasionally also in the eyebrows, but is not noticeable in the hair on the body that is not exposed to the daylight. This black pigmentation was conspicuously absent only in persons with red hair, which is possibly due to the fact that red hair is something of a pathologic type. A peculiar pigmentation of the skin of the face and hands is often associated with this change in the hair. At postmortem examinations, Schridde can always tell from the pigmentation of the hair and skin of a subject whether or not cancer is present.

Marriages

HAROLD STANLEY SUMERLIN, Lieutenant, M. C., U. S. Navy, Coronado, Calif., to Miss Mary Cushing Parr of Pasadena, March 8.

LESLIE ALLEN WILSON, Cameron, Mo., to Miss Frances Bumsted of River Forest, Ill., in March.

WILLIAM H. GEISTWEIT, JR., Denver, to Miss Gertrude Pearson of Chicago, recently.

CHARLES D. HARRINGTON to Mrs. Abbie M. Cargill, both of Minneapolis, in March.

WILLIAM NEILL, JR., to Miss Alice Lawrason Buckler, both of Baltimore, April 7.

HARRY H. EAST, Portland, Ore., to Miss Lottie Morrison of Omaha, March 10.

Deaths

Lawrence Bruce Robertson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1909; assistant professor of pathology and demonstrator in clinical surgery at his alma mater; served with the Canadian Army Medical Corps, in France; aged 37; died, February 24, at the Wellesley Hospital, of influenza and pneumonia.

Romuald Samuel Santoire, Brooklyn; Montreal School of Medicine and Surgery, Montreal, Que., Canada, 1869; Victoria University Faculty of Medicine, Kingston, Ont., 1869; member of the Brooklyn Pathological Society; Civil War veteran; formerly on the staff of St. Mary's Hospital; aged 78; died, March 27, of arteriosclerosis and pneumonia.

William H. H. Githens, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1866; member of the College of Physicians and Surgeons of Philadelphia; formerly president of the Obstetrical Society of Philadelphia; also a pharmacist; aged 82; died, March 24, following a long illness.

James Kivette Stockard, Greensboro, N. C.; University of Nashville Medical Department, Nashville, Tenn., 1894; served in the Spanish-American War and with the American Expeditionary Forces in France during the World War; aged 65; died, March 23, of cerebral hemorrhage.

Edgar B. Grier ♂ Elizabeth, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1883; formerly president of the board of education; on the staff of the Elizabeth General Hospital and Dispensary; aged 65; died suddenly, April 2, of heart disease.

Harry Roswell Farris ♂ Oxford, Me.; University of Vermont College of Medicine, Burlington, 1899; served in the M. C., U. S. Army, during the World War, with the rank of lieutenant-colonel; formerly city health officer; aged 49; died, March 23, of erysipelas.

Thomas Conant, Boston; Medical School of Harvard University, Boston, 1868; for twenty-one years a member of the school board and for more than half a century a practitioner in Gloucester, Mass.; Civil War veteran; aged 81; died, March 24, of senility.

Luther Pope Eberhardt, Elberton, Ga.; College of Physicians and Surgeons, Baltimore, 1892; member of the Medical Association of Georgia, and for many years secretary of the county medical society; aged 53; died, March 25, of chronic nephritis and pericarditis.

Frank W. Somers, Cleveland; Cleveland Medical College, 1892; formerly professor of materia medica at the Cleveland Homeopathic Medical College; at one time on the staff of the Cleveland City Hospital; aged 60; died recently, of carcinoma of the prostate.

Edwin Ruthven Meng, St. Louis; Missouri Medical College, St. Louis, 1876; member of the Missouri State Medical Association; formerly emeritus professor of pediatrics at Barnes Medical College, St. Louis; aged 74; died, March 26, of cerebral hemorrhage.

Francis Laban Town ♂ colonel, U. S. Army, retired; Lancaster, N. H.; Dartmouth Medical School, Hanover, 1860; member of the State Medical Association of Texas; aged 86; died recently, at San Antonio, Texas, of cerebral hemorrhage.

Miles Bronson Titterington ♂ St. Louis; St. Louis College of Physicians and Surgeons, 1896; member of the American Roentgen-Ray Society and the Radiological Society of North America; aged 53; died, March 26, following an appendectomy.

Frank Walden Wright, New Haven, Conn.; Bellevue Hospital Medical College, New York, 1880; member of the Connecticut State Medical Society; for thirty-four years city health officer of New Haven; aged 68; died suddenly, April 1.

George Washington Ford, Magnolia, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1889; member of the Kentucky State Medical Association; aged 65; died recently, of pneumonia.

Shirley Edward Cox, Nashville, Tenn.; Vanderbilt University Medical Department, Nashville, 1891; formerly member of the city council and for eight years county health officer; aged 57; died, March 25, of heart disease.

Michael Valentine Halter ♂ West Park, Ohio; Cleveland College of Physicians and Surgeons, Medical Department

Ohio Wesleyan University, Cleveland, 1904; ordained a Catholic priest in 1915; aged 50; died, March 30.

Arthur Pedro Perry ☉ Boston; Medical School of Harvard University, Boston, 1886; member of the New England Society of Dermatology and Syphilis; formerly on the staff of the Faulkner Hospital; aged 65; died, April 1.

Harry Vane Bailey, Pekin, Ill.; University of Nashville Medical Department, Nashville, Tenn., 1888; member of the Illinois State Medical Society; president of the Tazewell County Medical Society; aged 62; died, April 10.

Samuel S. Caruthers, Nashville, Tenn.; Meharry Medical College, 1902; professor of dermatology since 1904, and secretary of the faculty, at his alma mater; died, January 22, as the result of an automobile accident.

Frank D. Lydick, Paris, Ill.; University of Michigan Medical School, Ann Arbor, 1890; formerly president of the board of education, and of the board of health; aged 63; died suddenly, April 1, of angina pectoris.

Jonas Hobart Vaughan, Marshfield, Mass.; University of Vermont College of Medicine, Burlington, 1880; founder of the Whidden Memorial Hospital, Everett; aged 69; died, March 20, of chronic nephritis.

William John Galvin, Oswego, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1917; served in the M. C., U. S. Army, during the World War; aged 34; was drowned at sea, April 7.

Charles H. Rigg, Middletown, Mo.; American Medical College, St. Louis, 1878; St. Louis College of Physicians and Surgeons, St. Louis, 1888; aged 72; died, March 28, of cerebral hemorrhage.

Jacob Travers Krause, New York; Albany (N. Y.) Medical College, 1908; member of the Medical Society of the State of New York; aged 38; died, March 23, of peritonitis, following an operation.

Charles Pliny Smith, Watertown, S. D.; College of Physicians and Surgeons, Keokuk, Iowa, 1875; formerly on the staff of the Asbury Hospital, Minneapolis; aged 79; died in March, of senility.

Burrell Lue Arrington, Memphis, Tenn.; University of West Tennessee College of Medicine and Surgery, Memphis, 1913; aged 42; died, March 24, at Colorado Springs, Colo., of tuberculosis.

R. W. Maintz, Linn, Kan.; Missouri Medical College, St. Louis, 1889; member of the Kansas Medical Society; formerly a member of the state legislature; aged 59; died, April 2, of paralysis.

John Milton Williams, Orkney, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1907; aged 47; was shot and killed, February 22.

Samuel George White, Hodgeville, Sask., Canada; McGill University Faculty of Medicine, Montreal, Que., 1903; formerly a practitioner in North Dakota; aged 41; died recently.

Samuel Mitchell ☉ Hornell, N. Y.; New York University Medical College, New York, 1879; on the staff of St. James' Mercy Hospital; aged 67; died, March 25, of heart disease.

George Miller Luckey, Vinton, Iowa; Rush Medical College, Chicago, 1901; member of the Iowa State Medical Society; aged 48; died, April 3, of cerebral hemorrhage.

William R. Greeson, Conway, Ark.; Vanderbilt University Medical Department, Nashville, Tenn., 1882; member of the Arkansas Medical Society; aged 73; died, March 28.

Eda Bergquest Selders, Chicago; National Medical University, Chicago, 1899; member of the Illinois State Medical Society; aged 58; died, April 5, of chronic nephritis.

Albert Kidder Page, Boston; Medical School of Harvard University, Boston, 1893; member of the Massachusetts Medical Society; aged 60; died, April 3, of pneumonia.

Ulysses Alvora Wright ☉ Coatesville, Ind.; Northwestern University Medical School, Chicago, 1897; aged 57; died, March 4, of uremia, following bronchopneumonia.

Henry Shipman Drayton ☉ Jersey City, N. J.; Eclectic Medical College of the City of New York, New York, 1877; also a lawyer; aged 82; died, April 8, of senility.

William McHarrie, Seattle; Chicago Homeopathic Medical College, Chicago, 1895; aged 56; died, March 27, at the Minor Hospital, while undergoing an operation.

Augustus Emil Kosby, Yuba City, Calif.; University of California Medical School, San Francisco, 1875; also a druggist; aged 76; died, March 28, of pneumonia.

Emerson E. Snow, Batavia, N. Y.; Jefferson Medical College of Philadelphia, 1874; formerly a medical missionary in Central Africa; aged 72; died recently.

Kate Lindsay ☉ Boulder, Colo.; University of Michigan Medical School, Ann Arbor, 1876; on the staff of the Boulder Sanitarium; died, March 31, of senility.

William Barnaboo Tucker, Linden, Tenn.; University of Tennessee College of Medicine, Memphis, 1886; aged 70; died, March 27, of pneumonia and influenza.

Newton N. Brumback, Colorado Springs, Colo.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1883; aged 69; died, March 21.

Frank Allen Shemwell, Paducah, Ky.; University of Nashville Medical Department, Nashville, Tenn., 1885; aged 75; died, March 31, of pneumonia.

Antonio Fernando y Arriola, Cabanatuan, Nueva Ecija, P. I.; University of St. Thomas Medical Department, Manila, 1894; aged 57; died recently.

Wade Ben Willey, Dallas, Texas; Medical Department of Drake University, Des Moines, Iowa, 1898; aged 60; died, March 21, of acute bronchitis.

Mitchell M. King, Brevard, N. C.; Georgia Eclectic Medical College, Atlanta, 1881; aged 71; died suddenly, March 11, of heart disease.

John Andrew Horn, Burfordville, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1869; aged 89; died, March 20, of senility.

C. W. Taylor, Stokesdale, N. C. (licensed, years of practice); aged 75; died, March 11, of chronic nephritis and mitral regurgitation.

Robert Henry Cartmell, Jackson, Tenn.; Bellevue Hospital Medical College, New York, 1881; aged 66; died, March 27, of heart disease.

Charles Mallory Chambliss ☉ Thornton, Wash.; Kansas City (Mo.) Medical College, 1883; aged 70; died, March 29, of heart disease.

William Frederick Jernigan, Port Arthur, Texas; Physio-Medical Institute, Cincinnati, 1881; aged 65; died, March 19, of endocarditis.

F. H. Bostock, Palisade, Neb. (licensed, years of practice); Civil War veteran; also a druggist; aged 102; died, March 17, of senility.

Calvin Charles Dibert, Bedford, Pa.; Columbus (Ohio) Medical College, 1884; aged 62; died, March 28, following a long illness.

David Lucas, Enfield, N. C.; Baltimore University School of Medicine, Baltimore, 1884; aged 77; died, January 11, of pneumonia.

Herbert L. Reed, Waupaca, Wis.; Hahnemann Medical College and Hospital, Chicago, 1880; died, March 27, of pneumonia.

Frederick Becker, Clermont, Iowa; Homeopathic Medical College of Missouri, St. Louis, 1875; aged 85; died, April 1, of senility.

Evans R. Whitley, Commerce, Texas; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1905; aged 53; died, March 26.

George Wilmer Yourtee, Burkittsville, Md.; University of Maryland School of Medicine, Baltimore, 1902; aged 45; died, April 1.

Benjamin Pyle, Kalamazoo, Mich.; University of Michigan Medical School, Ann Arbor, 1883; aged 64; died, March 30.

Thomas P. Shanahan, Chicago; Rush Medical College, Chicago, 1877; aged 71; died, April 8, of arteriosclerosis.

William W. Arnold ☉ Colorado Springs, Colo. (licensed, Colorado, 1886); aged 79; died, March 30, of influenza.

James A. Lingenfelter, Loudonville, Ohio; Pulte Medical College, Cincinnati, 1885; aged 73; died, March 27.

James E. Poore, Sacramento, Calif.; Jenner Medical College, Chicago, 1898; aged 68; died, January 21.

Isaac Abrahams ☉ Chicago; Chicago Hospital College of Medicine, 1918; aged 38; died, April 9.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

GLYCO-PEPTO MILK NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.
W. A. PUCKNER, Secretary.

Glyco-Pepto Milk is a sour milk said to contain *Bacillus bulgaricus*, *Streptococcus lacticus* and *Glycobacter peptolyticus*. It is marketed by the Glyco-Pepto Manufacturing Co., Inc., Long Island City, N. Y., with the claim that its

The Great Importance Of Perfect Health

Untold thousands of persons in and about New York, are never really sick and never really well.

These same persons do not know the great importance of perfect health in its relation to success, happiness and solid comfort in life.

Other untold thousands are suffering from various forms of serious and chronic sickness, 95% of which cases are attributable to faulty digestion.

A most effective remedy known to science in the treatment of indigestion, constipation, auto-intoxication, malnutrition and all other kindred complaints is

Delicious

Glyco-Pepto Milk

The Great Health Food Drink

Any physician familiar with bacteriology will readily explain to you the great scientific principle upon which this cultured milk is made.

If you are suffering from any ill due to faulty digestion, however serious and chronic, you owe it to yourself to make a practice of drinking a couple of bottles of Glyco-Pepto Milk every day.

Glyco-Pepto Milk is predigested and easily assimilated by the most delicate stomach. It is the only cultured milk that works effectively throughout the entire intestinal tract and the only one whose lactic acid is kept down to normal.

Sold only in clear, transparent bottles at most good fountains and at many lunch counters, restaurants, hotels and clubs.

"The Secret of Health and Beauty," a little booklet of great value, will be sent to you free, for the asking.

Glyco-Pepto Manufacturing Co.
Telephone: Astoria 1558 624 Jackson Ave., Long Island City

A typical newspaper advertisement of "Glyco-Pepto Milk."

administration supplemented with a potato diet, through the presence of *Glycobacter peptolyticus*, permits the implantation of the Bulgarian bacillus in the lower intestine and thus brings about an almost complete disappearance of phenols and indol from the urine.

Glycobacter peptolyticus has some amylolytic action; in flask cultures, in the course of fourteen days, about 40 per cent. of the starch is converted into sugar. It has been claimed that the administration of this organism in man produces a similar effect. There is no evidence, however, to show how great the amylolytic action would be in a few hours either in a flask or in the intestines. The claim that *Glycobacter peptolyticus* converts the starch into sugar and thus permits the implantation of *Bacillus bulgaricus* in the large intestine rests on very indirect evidence, and is open to question.

The experimental work used as a basis is that of Metchnikoff and Wollman, published in 1912. In their publication these authors devote only a little more than one page of text to the work with *Glycobacter peptolyticus* in rats and

in man. They state that the administration of this organism caused the phenols and indoxyl to disappear from the urine in some rats; in others the effect was less complete but, nevertheless, marked; in rare cases the effect was nil; further, that the most marked effect was observed with four persons who took potatoes with *Glycobacter*. The tabulated results obtained with rats and man are by no means so conclusive as the authors, in their optimism, believe. In two instances in which marked diminution is given, typographic errors are involved. The claims for the combination of *Glycobacter peptolyticus* with *Bacillus bulgaricus* are based on a single experiment of these authors with eleven rats. This experiment is of little value, since in the fifty-three days preceding the administration of mixed culture the phenols dropped from 0.037 to 0.011, and the indoxyl from 0.086 to 0.006 gm. per liter of urine. The subsequent drop on treatment with the mixed bacteria for five days, of phenol to 0.005 and of indoxyl to nondeterminable amounts may have been a continuation of the decline due to the diet. Yet the authors, although they noticed the marked decrease due to the diet, concluded that it was only after the administration of the bacteria that the almost complete disappearance of the phenols and indoxyl was obtained. Although ten years have elapsed since the preceding results of Metchnikoff and Wollman were published, the Glyco-Pepto Manufacturing Company has submitted no confirmatory evidence.

According to the manufacturers of Glyco-Pepto Milk, the therapeutic indications for this product are:

"As a disinfectant to the digestive tube and regulator of the stools."

"In enteritis, infant diarrhea, and chronic disturbances of the gastrointestinal tract."

"In ulcerations of the stomach, in cutaneous diseases due to digestive troubles."

"After surgical interventions of the digestive tube, after accouchements, in tuberculosis, anaemia and general debility."

These claims appear to be based on the testimonials of Swiss physicians, who refer to the usefulness of the product as "agreeable food," "exquisite in flavor," "easily taken," etc. The preparation may be a pleasing beverage and light food, but there is no acceptable evidence for the many therapeutic claims that are made.

The Council declares Glyco-Pepto Milk inadmissible to New and Nonofficial Remedies.

Correspondence

COOPERATION BETWEEN HOSPITALS AND GENERAL PRACTITIONERS

To the Editor:—Recent comment on the relation of the hospital to the physician has interested me as a student of clinical administration, and I wonder whether a further excursion into the realm of medical idealism is not warranted by modern hospital practice. The growth of the "closed" general hospital has brought a regrettable estrangement between the private practitioner and the hospital. The reason is not far to seek. Opportunities for the stimulation of the scientific spirit are more numerous in hospital than in private practice. Cases in logical series are more readily observed and studied in the hospital. Necessary bedside visits have no financial aspect, and are continuous. The patient is removed from the diverting influences of friends and relatives, whose changeable tactics are the bane of the practitioner. The hospital has a better organization for study, with diagnostic, therapeutic, nursing and technical facilities close at hand. Perhaps this difference in opportunities is a clue to the reason for the existence of what might be considered a class problem in the profession.

The family physician constitutes the backbone of medical practice, as regards the poorer members of the community. The earlier stages of disease are seen by the practitioner, who refers his patient to the hospital if the condition requires

surgical intervention or is progressive and not subject to control with the limited facilities of the home. Poverty alone may be the cause, but more often it is a confession by the physician that he is unable to contribute further to the solution of his clinical problem. This is as it should be. Fairness to the patient demands that the physician obtain for him the counsel of men who work in a more favorable environment, who are better trained, and whose judgment is more mature. But when the practitioner refers his patient to the hospital, how much effort is made by those who are to help in the solution of the problem to learn from him what came before in the clinical course? Is it not reasonable to expect that the physician will know more about the previous history than, for example, a sick child's mother? To ignore the physician is to ignore an opportunity to get at the beginnings of disease. According to Sir James Mackenzie, "Medicine will make but halting progress while whole fields essential to the progress of medicine will remain unexplored, until the general practitioner takes his place as an investigator. . . . He has opportunities which no other worker possesses."

The practitioner is a neglected factor in the proper handling of the case by hospital authorities. Thoughtful physicians will bear witness to the disappointment of the family physician at the lack of cooperation by hospitals. He feels that he is always belittled for failing to make the diagnosis, despite his known limitations. The code of medical ethics seems to cover only the relations of individual physicians to one another and to the patient; it should be interpreted broadly to include the relations between the hospital and the practitioner. The movement, lately begun, to combine the hospital with its dispensary for making a continuous study of the patient might be broadened to include the outside practitioner.

In the absence of proper cooperation between these two classes in the medical profession, a situation arises which bodes no good for medical practice. A vicious circle is soon established. The practitioner, disregarded, misses the necessary stimulus to better effort, and is blamed for his unprogressive attitude toward those who depend on him for relief. Under such tutelage he is regarded as a weak brother, through no fault which his more fortunate confrères are unable to correct. In this respect, medical science confers its benefits on one class alone, and does not include those whom it is most intended to benefit. We are apt to forget that medical progress is a cooperative undertaking. The practitioner has seldom been encouraged to overcome a natural, and it might be more correct to say natural, tendency to inertia. The fault is not altogether his.

When a patient is referred by a physician to the hospital, it should be obligatory for the hospital (1) to inform him of the disposition of his patient; (2) to ascertain from him his version of the previous history; (3) to invite him to the wards for the purpose of acquainting him with the hospital findings; (4) to notify him of operation or necropsy, and (5) to notify him when his patient has been discharged. Progressive hospitals are now fulfilling most of these obligations, and have organized conferences, lectures and clinical demonstrations for the purpose of keeping the practitioner in touch with the more recent advances in medical science; but for the greater part the practitioner's story and opinion are still disregarded. The benefits that will accrue to the hospital as well as to the practitioner when the latter is not only permitted but encouraged to have his say as to the earlier stages of disease must be obvious.

The good will of the practitioner is no small asset to any hospital. With closer cooperation, the hospital may expect cases that have been better prepared, studied and recorded by the practitioner before admission. A policy of this sort would put the physician on his mettle, knowing, as he would,

the scientific standards of the hospital that welcomes his story and opinion. It would point the way to better medicine, by improving the practitioner's methods of handling his patients and by giving him an opportunity to see the other type of medical practice in which the clinical picture is relatively clearer and more orderly. Hospitals have been known to overlook crucial signs, symptoms and laboratory findings in cases in which the family physician could have helped out. Without his statement, have we the right to regard the record of our case as complete?

My point is that in justice to the patient we should listen to the physician who saw him in the earlier stages of his disease; and, in justice to the physician, this courtesy should be reciprocated. It will spell better medicine when all clinical agencies cooperate to the limit. This must not be interpreted as a plea for the "open" hospital, in which outside physicians are free to treat and to assume full responsibility for cases. The training and experience of hospital staffs should be made freely available to the outsider, if the fundamental obligation of the hospital to teach medicine is to be fulfilled. May I hazard a guess that such a step in hospital policy will break down the spirit of distrust abroad in the world of private medical practice with regard to progressive hospital and dispensary ideas?

Broadly speaking, the conditions under which both the practitioner and the hospital undertake to be of service to the community should not alter their scientific responsibilities toward each other and toward the patient, and for the sake of the next sufferer in line it is our duty to make the clinical biography of the patient complete in every possible detail.

E. M. BLUESTONE, M.D., New York.

SIMPLEST METHOD OF BLOOD TRANSFUSION IN THE NEW-BORN

To the Editor:—In a recent article (Blood Transfusion by the Citrate Method in Hemorrhages of the New-Born, THE JOURNAL, March 10, 1923, p. 678), Falls recommends exposure of the jugular vein for the intravenous administration of the blood.

In an editorial on intraperitoneal blood transfusion (THE JOURNAL, March 31, 1923, p. 921), it is stated that Siperstein's method of intraperitoneal blood transfusion "will demand careful consideration in pediatric practice."

In a paper entitled "Blood Transfusion (Citrate Method) in Hemophilia Neonatorum" (*Am. J. Obst.* 77:933 [June] 1918), I reported five cases in which blood transfusion was given to new-born infants, from 2 to 6 days old. In these cases the median cephalic vein was used. This vein is of fairly good size, even in the new-born. As stated in my paper, in using this method "it is unnecessary to expose the jugular vein or introduce the cannula into the longitudinal sinus." Since 1918 I have used this approach in a considerable number of cases, and I have never failed to administer the blood by this route.

Thus, there is no reason to inject the blood intraperitoneally, a method which is certainly not devoid of danger, especially in the new-born infant.

RICHARD LEWISOHN, M.D., New York.

Eugenic Sterilization.—The matter of segregating, sterilizing, or otherwise rendering nonproductive the degenerate human strains in America is, in accordance with the spirit of our institutions, fundamentally a matter for each state to decide for itself. There is, however, a specialized field in which the federal government must cooperate with the several states, if the human breeding stock in our population is to be purged of its defective parenthood.—H. H. Laughlin, *Social Hygiene* 6:530 (Oct.) 1920.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF SYPHILIS

To the Editor:—1. Are the accepted ideas on the treatment of syphilis so uncertain as to admit that: (a) "Salvarsan should not be given as a routine treatment of syphilis because it does not cure; mercury does" (DeCosta's Surgery). (b) "Combined intravenous treatment with arsenic and mercury is to be at once commended. Studies of a great number of cases have shown the advisability of combined treatment" (Manual of Military Urology for the American Expeditionary Forces). (c) "Mercury in any form administered in any manner whatsoever has no direct lethal effect on the spirochetes. . . . We prefer not to use arsenic until mercury has had sufficient time to be eliminated from the system. Mercury and arsenic are antagonistic in their action and should not be used together" (*Northwest Medicine*, March, 1923). 2. Is there any ground for the belief that a four plus Wassermann reaction simply means a good resisting power and shows a better prognosis than a negative Wassermann reaction in a known syphilitic?

C. E. EATON, M.D., Seattle.

ANSWER.—These questions raise some of the most pertinent points in antisyphilitic therapy; some are unsettled, and difficult to settle.

1. (a) The view that arsphenamin should not be given as a routine treatment for syphilis because it does not cure, while mercury does, is not the generally accepted opinion. The general view is that neither certainly cures in cases in which the disease has existed long enough to become well established as a systemic disease, that is, after the first few weeks of the chancre. But they both tend to cure, and both are valuable in treatment.

(b) That treatment with arsphenamin and mercury should be started as soon as the patient is seen is the view held by most syphilologists. When chancres are seen that are unmistakable, as shown by the demonstration of *Spirochæta pallida*, it is the general opinion that these cases should be vigorously treated, and that there is a good chance of aborting the disease at this time. If early cases are not seen until the Wassermann reaction has become positive, there is a difference of opinion as to how treatment should be carried out. There are thoughtful syphilologists of large experience who believe that these early cases are better treated by mercury alone until the patient has had an opportunity to develop all of the immunity that he is capable of. Everything indicates that mercury does not interfere with his doing this, and that arsphenamin does. After the patient has had time to establish whatever resistance he is capable of, say three months after the Wassermann reaction has become positive, the same syphilologists would then treat with mercury and arsphenamin.

(c) The view that mercury has no lethal effect on the spirochete represents the radical position, and is probably not correct. That mercury and arsenic are antagonistic in their effect on spirochetes, we know no reason for believing. The only objection to administering arsphenamin and mercury together is the extra load that is thrown on the kidneys.

2. There might possibly be some ground for the belief that in early syphilis, when the patient is establishing his immunity, a four plus Wassermann reaction would be an evidence that this was going on in a favorable way. In later syphilis we can see no ground for this opinion. The Wassermann reaction is not a specific antibody-antigen reaction, and it is not, therefore, an index of the patient's production of antibodies. The commonly accepted view is that a definitely positive Wassermann reaction means the presence somewhere in the body of active syphilis.

It should be remembered that the advantages of the new treatment of syphilis, in which arsphenamin plays so large a part, are still being studied. The trend of the last few years has been in the direction of placing more reliance on mercury and using arsphenamin secondarily in the treatment of syphilis. It is possible that in the next generation the routine treatment of syphilis will be entirely rewritten.

NEPHRITIN—NEW AND NONOFFICIAL REMEDIES— THE PROPAGANDA FOR REFORM

To the Editor:—1. Can the Council on Pharmacy and Chemistry inform me whether there is any actual merit in the use of "Nephritin" (Reed and Carnrick) for the treatment of the nephritides? If so, in what does the merit lie? 2. Does the Council publish from time to time an alphabetically arranged list of these various trade-named remedies, setting forth the opinion of the Council as to the claims made? There are so many of these remedies (a few of which probably possess merit and warrant our use) that it certainly would be a blessing to be able to refer to the Council's pronouncement upon them. The situation is this: some agent comes in today making big claims for this or that trade-named article. It may be that THE JOURNAL has discussed this particular article some months back. I may not have seen this, or, if I had, have forgotten it. If we could refer to a compilation put out by the Council arranged alphabetically, we could more intelligently select the remedies we wish to use and could make short work of the bombastic claims of some of these agents.

JOHN A. DARROW, M.D., Erie, Pa.

ANSWER.—1. Nephritin was reported on by the Council on Pharmacy and Chemistry in 1907 ("Reed and Carnrick's Methods," THE JOURNAL, Oct. 5, 1907, p. 1198). The following is a summary of this report: The advertising claims for Nephritin are based on the theory that certain granules in the renal cells, called "grains of segregation" and claimed to have been observed microscopically, carry on the secretion of urinary constituents and that a deficiency of them is the cause of nephritis. While Renaut, who formulated the theory, recommended as a cure for nephritis the maceration of fresh kidneys in physiologic sodium chlorid solution, Reed and Carnrick urged objection to the maceration and explained that nephritin represents all the action of the maceration but is fifty times as potent. Nephritin is stated to be "the grains of segregation from the cortex of the pig's kidney, the renal connective tissue being eliminated." It appeared impossible that the microscopic structures claimed to be present in nephritin could be isolated as such from the connective tissues, and, on inquiry by the Council, no information on this point was to be had. Further, the firm presented no evidence for the claimed action of nephritin or for the claim that it was fifty times stronger than the maceration.

2. New and Nonofficial Remedies, 1923, lists and describes the medicinal preparations which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association, Jan. 1, 1923. This book contains, as addenda, references to proprietary and unofficial articles not described in N. N. R. In the addenda are given references to all published reports of the Council on products which have been examined and found inadmissible to New and Nonofficial Remedies. This book will be sent postpaid for \$1.50. The Propaganda for Reform, Vols. 1 and 2, contains all the important reports of the Council on Pharmacy and Chemistry on proprietary remedies offered to the medical profession of the United States. In addition to the reports of the Council, the "Propaganda" contains the more important reports of the American Medical Association Chemical Laboratory on the analyses of proprietary medicines and articles published by THE JOURNAL on proprietary products and on proprietary medicines in general. Volume 1 of the "Propaganda" contains the matter which was published up to and including 1916. Volume 2 contains the material which was published covering the period from January, 1917, to April, 1922, inclusive. Volume 1 will be sent postpaid for \$1, and Volume 2 for \$2.

Better Milk, Better Health.—If the people of a community are well nourished they will be stronger and better able to fight off disease. Bringing about the observance of laws of sound nutrition should be one of the chief functions at the basis of public health administration. We must, therefore, have a clean, wholesome food supply to begin with. The consumption of more milk per capita is a starting point, for milk is our ideal food. But we must have safe milk before we can recommend its increased consumption. A city will not obtain a safe milk supply until steps are taken to systematize its control. This requires adequate funds, better milk laws, improved organization, and common sense administration.—L. C. Bulmer, *Nation's Health* 5:131 (March) 1923.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.

GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.

IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MASSACHUSETTS: Boston, May 8-10. Sec., Dr. Charles E. Prior, State House, Boston.

MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

California June and July Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the oral and written examination held at San Francisco, June 26, and at Los Angeles, July 11-13, 1922. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 168 candidates who took the physicians' and surgeons' examination, 131, including 11 osteopaths, passed, and 37, including 19 osteopaths, failed. One hundred and six candidates were licensed by reciprocity, and 10 candidates received osteopathic licenses by reciprocity. Eight candidates were licensed on government credentials. Of the 29 candidates who took the drugless practitioners' examination, 14 passed and 15 failed. Of the 14 candidates who took the examination to practice midwifery, 10 passed and 4 failed. Three candidates received drugless certificates by reciprocity. One candidate received a license to practice chiropody by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists (1922)	78.6, 79, 80.3, 80.3, 81.6, 84.5, 84.7, 85.1, 85.5, 85.9, 85.9, 86.4, 86.8, 87, 87, 87, 87.3, 91.2, 92.1		
College of Physicians and Surgeons, Los Angeles (1922)	78.3, 78.9, 79.3, 79.5, 79.8, 80.5, 80.8, 81.1, 82.4, 83.4, 83.8, 89.1		
College of Physicians and Surgeons, San Francisco... (1922)			77.1
Stanford University (1922)	75, 77.8, 80.4, 81.4, 81.5, 82.4, 84, 84.4, 84.8, 85.1, 85.4, 85.5, 85.8, 86.9, 87.3, 87.6, 88.1, 88.6, 89.6, 90.4, 93		
University of California (1922)	75, 75.8, 76.1, 78.9, 79, 79.3, 79.9, 81.4, 82, 82.4, 82.5, 82.6, 83.1, 83.8, 83.9, 84.2, 84.5, 84.8, 85.3, 85.4, 85.8, 85.8, 85.8, 85.8, 86.1, 86.3, 86.4, 87.1, 87.2, 87.2, 87.4, 87.5, 87.6, 88, 88.8, 89.1, 89.4, 89.4, 89.6, 89.9		
Yale University		(1921)	83.9
Rush Medical College (1917)	89.5, (1921) 83.1, 88.9, 91, (1922) 81, 81.6, 82.5, 84.3, 86.2		
University of Illinois	(1922) 81.3, 84.6, 84.8, 87.2		
Johns Hopkins University	(1921)		84.4
St. Louis University School of Medicine	(1922)		80.3
Washington University	(1922) 85.5, 87.9		
Eclectic Medical College	(1922)		79.3
University of Cincinnati	(1922)		85.6
University of Oregon	(1920)		83
University of Pennsylvania	(1921)		81.5
Woman's Medical College of Pennsylvania	(1921)		78.9
University of Texas	(1921)		83.3
Queen's University, Ontario	(1920)		78.5
University of Vienna, Austria	(1901)*		92.8
University of Tübingen, Germany	(1920)*		81.5
Osteopaths	75, 75, 77, 77, 77.2, 77.9, 79, 83.2, 83.8, 85.2, 86.5		

FAILED

College of Physicians and Surgeons, Los Angeles (1918)	72.2, (1920) 54.4, (1922) 71.2	
Stanford University	(1920)	71.7
Chicago College of Medicine and Surgery	(1914)	63.4
Hahnemann Medical College and Hospital, Chicago	(1892)	65
Rush Medical College	(1892)	65
Loyola University	(1910)	62.5
College of Physicians and Surgeons, Keokuk	(1890)	55
Grand Rapids Medical College	(1903)	19
Kansas City Homeopathic Medical College	(1900)	52
Marion-Sims College of Medicine	(1899)	53
St. Louis College of Physicians and Surgeons	(1888)	†
St. Louis University School of Medicine	(1921)	71.4
Jefferson Medical College	(1891)	71
University of Pennsylvania	(1878)	64
Western Pennsylvania Medical College	(1892)	50
Undergraduate		69.6
Osteopaths	55.2, 57.7, 61.2, 68.3, 68.5, 68.5, 68.5, 70.2, 70.5, 71.1, 71.3, 71.3, 71.5, 72.5, 72.5, 73, 73.2, 73.3, 73.5	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles	(1921)		Wisconsin
George Washington University	(1905)		Montana
American College of Medicine and Surgery	(1904)		Illinois
Bennett College of Eclectic Medicine and Surgery	(1888)		Illinois
Bennett Medical College	(1909) Illinois, (1913) Washington, (1914) West Virginia		
Chicago College of Medicine and Surgery	(1908), (1915)		Illinois
Chicago Homeopathic Medical College	(1889)		Iowa
College of Physicians & Surgeons, Chicago	(1901)		
Iowa, (1902) Minnesota, (1907) Illinois			
Loyola University	(1917, 2)		Illinois
Northwestern University	(1909), (1910)		Illinois
Northwestern Univ. Woman's Medical School	(1893)		Indiana
Rush Medical College	(1889) Arizona, (1897), (1902), (1903, 2) Illinois, (1903) Indiana, (1911) Iowa, (1913) Illinois, (1914) Arizona		
University of Illinois	(1913) Texas, (1916)		Illinois
Central College of P. & S., Indianapolis	(1897)		Indiana
Indiana University	(1909)		S. Dakota
College of P. & S., Keokuk	(1890) Oregon, (1897)		Oklahoma
Keokuk Medical College	(1898)		Iowa
State Univ. of Iowa College of Medicine	(1906)		Montana
State Univ. of Iowa Coll. of Homeo. Medicine	(1910)		Oregon
Kansas Medical College, Topeka	(1902), (1912)		Kansas
University of Kansas	(1920)		Kansas
Kentucky School of Medicine	(1907)		Virginia
Louisville Medical College	(1896)		Missouri
University of Louisville Medical Department	(1915)		Arizona
Bowdoin Medical School	(1915)		Maine
Medical School of Maine	(1899)		Maine
Baltimore Medical College	(1903)		Washington
College of Physicians and Surgeons, Baltimore	(1910)		Montana
Johns Hopkins University	(1911)		Maryland
Maryland Medical College	(1904) West Virginia, (1909)		Illinois
Boston University	(1892)		Dist. Colum.
Detroit College of Medicine and Surgery	(1920)		Michigan
University of Michigan Medical School	(1900) Montana, (1902), (1904), (1915) Michigan		
Univ. of Mich. Homeo. Medical School	(1913)		Michigan
University of Minnesota	(1901) North Dakota, (1907)		Washington
Barnes Medical College	(1904)		Missouri
Ensworth Medical College	(1903)		Missouri
Kansas City Medical College	(1905)		Kansas
Missouri Medical College	(1886) Minnesota, (1896) Missouri, (1898) Iowa		
National University of Arts and Sciences	(1912), (1914)		Missouri
St. Louis College of Physicians and Surgeons	(1904), (1919)		Missouri
St. Louis University School of Medicine	(1904)		Illinois
University Medical College of Kansas City	(1906)		Missouri
Creighton University	(1902) Iowa, (1905), (1910), (1917)		Nebraska
University of Nebraska	(1912)		Nebraska
Dartmouth Medical School	(1912)		Mass.
Albany Medical College	(1909)		New York
Bellevue Hospital Medical College	(1887)		Montana
Columbia University	(1916) Kansas, (1919) Alaska,		New York
Cornell University	(1900)		New York
Fordham University	(1917)		New York
Long Island College Hospital	(1905), (1907)		New York
Univ. and Bellevue Hospital Medical College	(1904)		New York
Woman's Medical College of the New York Infirmary for Women and Children	(1897) New York		
Cleveland Pulte Medical College	(1912)		Ohio
Medical College of Ohio	(1886)		Ohio
Jefferson Medical College	(1888) Colorado, (1897), (1911) Utah, (1913) Pennsylvania		
Medico-Chirurgical College of Philadelphia	(1905)		Penna.
University of Pennsylvania	(1891)		Penna.
Woman's Medical College of Pennsylvania	(1908)		New Jersey
Medical College of the State of South Carolina	(1904)		S. Carolina
University of Tennessee	(1914)		Oklahoma
Vanderbilt University	(1916) New York, (1917)		Tennessee
University of Vermont	(1884)		New York
University of Virginia	(1896)		S. Carolina
Milwaukee Medical College	(1900)		Wisconsin
University of Lille, France	(1887)*		Michigan
Aichi Prefecture Special Medical School, Japan	(1908)*		Nevada
Kyoto Imperial University, Japan	(1910)*		Colorado
Osteopaths: Colorado (1), Connecticut (1), Iowa (1), Kansas (1), Michigan (1), Minnesota (1), Missouri (2), Nebraska (1), Wisconsin (1)			

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Chicago College of Medicine and Surgery	(1913)		U. S. Army
Tulane University	(1914)		U. S. Army
Harvard University	(1902) U. S. Navy	(1916)	U. S. Army
University of Michigan Medical School	(1903)		U. S. Army
Kansas City Medical College	(1898)		U. S. Army
Jefferson Medical College	(1901) U. S. Army, (1908)		U. S. Navy
* Graduation not verified.			
† No grade given.			

Arkansas November Examination

Dr. C. E. Laws, secretary, Arkansas Eclectic Board of Medical Examiners, reports the written examination held at Little Rock, Nov. 14, 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgia College of Eclectic Medicine and Surgery	(1909)		86.5
Kansas City College of Medicine and Surgery	(1921)		92.3
FAILED			
Kansas City College of Medicine and Surgery	(1922)		67.6

Book Notices

A MANUAL OF CLINICAL LABORATORY METHODS. By Clyde Lottridge Cummer, Ph.B., M.D., Associate Professor of Clinical Pathology, School of Medicine, Western Reserve University. Cloth. Price, \$5.50. Pp. 484, with 144 illustrations. Philadelphia: Lea & Febiger, 1922.

In offering this manual for the use of students and practitioners, the author states that the object is to present clinical laboratory methods in concise and accessible form. While devoted largely to a description of methods, the underlying principles, the indications for performing tests and the significance of the results are outlined. Accordingly, the plan adopted in most chapters has been to present (1) an outline of routine examinations; (2) a description of the simpler qualitative methods that are frequently employed; (3) a description of quantitative methods or those of intricate technic, and (4) a discussion of findings in various morbid conditions. When several methods are given, usually the preferred one is indicated. The book deals with the examination of the blood, the urine, the gastric and duodenal contents, the feces, the sputum and the body fluids and exudates, and outlines the various bacteriologic methods; an appendix describes the preparation of normal solutions and various stains, the equipment for laboratories, and the preparation of autogenous vaccines; it gives various tables, and includes a fairly complete bibliography of the larger works on clinical diagnosis, as well as of many of the more recent monographs dealing with special phases of the work. The subject-matter of the book has been well selected; the discussions are clear, concise and easily followed; the methods given for the various tests are the well established and accepted ones, and the author's recommendations as to the best test for any specific purpose are well considered. The many illustrations are adequate and satisfactory. While not as extensive and complete in scope as some of the other works on this subject, this book covers the field in a satisfactory manner, and should find wide use by practitioners and students as well as by teachers who wish to have a clear-cut and concise presentation of the subject for the routine work of their laboratories.

CLINICAL LABORATORY METHODS. By Russell Landram Haden, M.A., M.D., Associate Professor of Medicine, University of Kansas School of Medicine. Cloth. Price, \$3.75. Pp. 294, with 74 illustrations. St. Louis: C. V. Mosby Company, 1923.

This book describes "a series of procedures which have been thoroughly tried out and found to give accurate results." The interpretation of results is not attempted. It is most complete and most useful on the chemical side. The chapter on serologic technic includes the Wassermann test, the agglutination test of typhoid bacilli, the typing of pneumococci, blood tests for transfusion, and that is all. Nothing whatever is said of meningococci, of true complement fixation, of cutaneous reactions, of the Shick test; the Jansky iso-agglutinative grouping is not mentioned; the Widal reaction is defined erroneously as "a procedure by which the agglutinating power of a serum against any organism may be tested." The chapter on histologic technic is very brief, but includes more than a page on the staining of mitochondria, and the question arises, How often is the clinical laboratory called on to examine for mitochondria?

DIE FRIEDMANN-METHODE. Kritische beleuchtet unter Berücksichtigung der gesamten Friedmann-Literatur. Referat erstattet im Auftrag des staatlichen Ausschusses zur Prüfung des Friedmannschen Heil- und Schutzmittels gegen Tuberkulose. Von Sanitätsrat Dr. Victor Bock, Facharzt für Lungenkrankheiten in Berlin. Mit einem Vorwort von Geh. Rat Prof. Dr. F. Jessen-Davos. Paper. Pp. 157. Leipsic: S. Hirzel, 1922.

Those who witnessed the Friedmann fiasco here in 1910 will be surprised to learn that "through the Friedmann method the antituberculosis problem in its fundamentals has been solved," provided cases are submitted to its beneficent action early enough. Bock would frankly subject all early cases to the treatment, and would not be averse to vaccinating entire populations by way of prophylaxis. In accord with Jessen of Davos, who contributes a foreword to the book, he considers it the most active immunizing material at our command

today. Its cheapness, which Bock stresses as one of its great advantages, will be vigorously contested, to be sure, by various disappointed sufferers on this side of the Atlantic; nor will there be universal agreement with the statement that "almost all authors who have made extended trial of the material recognize its brilliant therapeutic action, and only occasionally is its inactivity recorded." A good many dissenting votes have been cast, in Germany as well as here. Granting that the increasing literature on the Friedmann treatment warrants its being taken seriously, the fact remains that proof has not yet been forthcoming that injection of a bacillus, having in common with the tubercle bacillus little more than a tinctorial property and a qualitatively somewhat similar antigenic value in complement fixation tests, stimulates resistance to the invasion of the tubercle bacillus. The bulk of scientific, experimental evidence indicates that for immunity real infection with the bacillus is necessary. This the turtle bacillus does not achieve. The fundamental failure in statistical evidence, such as is here presented, is the lack of realization that 90 per cent. of all human tubercle infection becomes quiescent, or nearly so, without treatment. Patients who do well on the Friedmann treatment will improve in the same proportion without it, if proper hygienic measures are employed. At least Bock cites no control observations to prove the opposite. Many typographic errors occur in the text.

A HANDBOOK OF AURAL SURGERY FOR STUDENTS AND PRACTITIONERS. By William Wilson, M.D., B.Sc., Surgeon to St. John's Hospital for the Ear, Manchester. Cloth. Price, 15 shillings. Pp. 336, with 100 illustrations. Manchester: Sherratt & Hughes, 1922.

The surgical anatomy of the ear is treated with considerable detail, and is accompanied by many excellent sketches, diagrammatic and otherwise, illustrating the important facts. Next is a discussion of the physiology of the ear with a fairly complete discussion of the functional tests. More is told in this regard than is usually found in the large textbooks on otology. Various diseases, beginning with those of the skin of the external auditory meatus, and continuing with those of the various inflammatory affections of the external ear and then those of the middle and internal ear, are taken up. Considerable space and discussion are given to cholesteatoma and to the intracranial complications of inflammatory ear conditions. Malingering, deaf mutism, and toxic effects of drugs on the ear, together with artificial aids to hearing, are discussed in the last chapter. As an appendix, the author cites the essentials of a number of cases illustrating unusual instances of aural suppuration. These are interesting and informative. Of considerable assistance in finding the essential facts is the presence at the sides of each page of notes in bold type emphasizing the important points made in the respective paragraphs. Altogether, one may say that this book, though small, is a veritable compendium of information to those who have not the time or the occasion to consult the large works on otology.

THE ORIGIN AND EVOLUTION OF THE HUMAN DENTITION. By William K. Gregory, Ph.D., Associate Professor of Vertebrate Palaeontology, Columbia University. Cloth. Price, \$6.50. Pp. 548, with 353 illustrations. Baltimore: Williams & Wilkins Company, 1922.

The purpose of this book is to give a brief and concise review of the origin and evolution of the human dentition from the point of view of paleontology. Dr. Gregory follows the development of the teeth from their far-off beginning in the fishes, through their amphibian and reptilian descendants to the mammals. He shows, as Osborn has, that the supremacy of the mammals and their rapid domination in evolution was due to the fact that they possessed a tooth, derived from their reptilian ancestor, "that was capable of adaptive evolution." Dr. Gregory shows in a most interesting way the relation of the development of the denture to our knowledge of the evolution of the anthropoid apes and the ancestor of man. The arrangement of the material and the excellence and number of the illustrations greatly facilitate the study, to one not already well acquainted in the field. The work will be a classic, for it deals broadly and fundamentally with the subject, and is of the most scholarly and scientific character. The book has not only important practical value to every student of dentistry and orthodontia, but is of the

keenest interest to every student of evolution. Dr. Gregory has generously arranged that the proceeds from the sale of the book shall go to the endowment fund of the *Journal of Dental Research*.

THE BACTERIOPHAGE: ITS RÔLE IN IMMUNITY. By F. d'Herelle, Pasteur Institute. Authorized Translation by George H. Smith, Ph.D., Assistant Professor of Bacteriology and Pathology, Yale University School of Medicine. Cloth. Price, \$4. Pp. 287, with 14 illustrations. Baltimore: Williams & Wilkins Company, 1922.

One of the most interesting discoveries in bacteriology during recent years is the "bacteriophage phenomenon," or the bacteria-dissolving power possessed by Berkefeld filtrates from the stools of dysentery and typhoid convalescents and from other sources. Although antedated by Twort's work, d'Herelle's publications first drew general attention to the phenomenon, and the zeal with which the latter worker has pursued the subject has made it peculiarly his own. His book on the bacteriophage, which appeared in October, 1921, has now been translated into English, and will undoubtedly stimulate American bacteriologists to further work in this field. The author maintains his view, enunciated in his first publication in 1917, that the lytic element obtained by him from dysentery stools is an ultramicroscopic living organism parasitic on bacteria. Since this view has not been generally accepted, the prevailing opinion regarding the bacteriophage as a bacteriolytic enzyme, it is of value to have in a readily accessible form the imposing volume of careful and ingenious experimentation on which d'Herelle bases his belief. The translation is clear and readable. "Diastase" is used as synonymous with "enzyme," and there are a few other Gallicisms; but, on the whole, the work of the translator is exceptionally well done. The book is well printed.

SYPHILIS OF THE INNOCENT. A Study of the Social Effects of Syphilis on the Family and the Community, with 152 Illustrative Cases. By Harry C. Solomon, B.S., M.D., Chief of Therapeutic Research, Boston Psychopathic Hospital, and Maida Herman Solomon, A.B., B.S., Research Social Worker, Boston Psychopathic Hospital. Cloth. Pp. 239. Washington: United States Interdepartmental Social Hygiene Board, 1922.

The term "innocent," as here used, applies to infections of a mate or offspring and to accidental extragenital inoculations. The work is based on the investigation of 555 families at the Boston Psychopathic Hospital, supplemented with an excellent selection of facts and figures from the literature. It is evidently designed for the use of persons interested in public welfare, and is written in language that will be intelligible to the public at large. The material is analyzed in a strikingly fair and impartial manner, with a welcome absence of exaggeration and sensationalism. This calm array of the facts in coldly scientific tabulations, with the brief exposition of illustrative cases, is far more impressive and educational than a more dramatic presentation. The issues are nowhere forced, and the authors cannot be accused of either undue pessimism or unfounded optimism. The deadly menace to innocent bystanders stands out in glaring relief, and the book should do much to further the cause of prevention and adequate treatment for which it was written. For the physician and student, it is full of useful suggestions and statistics of eminently practical kind. The material is well arranged, with copious and well chosen heads, and there is a good index.

ECTODERMOSIS NEUROTROPES POLIOMYELITIS ENCEPHALITE HERPÈS. Étude Clinique, Épidémiologique, Histo-Pathologique et Expérimentale. Par C. Levaditi. Préface de E. Roux. Paper. Price, 24 francs. Pp. 269, with illustrations. Paris: Masson et Cie, 1922.

This is a monograph by one of the best known workers of the Pasteur Institute, whose name is familiar to laboratory workers on account of his discovery of a staining method for *Spirochaeta pallida*. The book sets forth clearly the epidemiologic, immunologic, bacteriologic, histologic and clinical differences and similarities between a group of diseases caused by a filtrable virus; namely, poliomyelitis, epidemic encephalitis, rabies and herpes. The author relates the experiments and sets forth the arguments on which are based his theory that ordinary herpes febrile (not herpes zoster) and encephalitis are caused by the same virus, the degree of virulence of which determines whether the victim is to suffer from the minor or the major ailment.

Medical Economics and Miscellany

IDAHO OSTEOPATHS MAY NOT PRACTICE SURGERY

The supreme court of Idaho, in the *State of Idaho v. Sawyer*, March 31, affirms a judgment holding the defendant, a licensed osteopath, guilty of practicing medicine and surgery, in that he made an incision into the abdomen of a human being and removed the appendix.

The New Standard Dictionary, said the court, defines osteopathy as follows:

A system of treating disease without drugs, propounded by Dr. A. T. Still, 1874. It is based on the belief that disease is caused by some part of the human mechanism being out of proper adjustment, as in the case of misplaced bone, cartilage, or ligament, adhesions or contractions of muscle, etc., resulting in unnatural pressure on or obstruction to nerve, blood or lymph. Osteopathy . . . seeks to adjust correctly the misplaced parts by manipulation . . .

And Adjudged Words and Phrases defines osteopathy as:

A method of treating diseases of the human body without the use of drugs, by means of manipulations applied to various nerve centers—chiefly those along the spine—with a view to inducing free circulation of the blood and lymph, and an equal distribution of the nerve forces. Special attention is given to the readjustment of any bones, muscles and ligaments not in the normal position.

The court concludes, therefore, that osteopathy is a system of treating diseases of the human body without drugs and by means of manipulation, and that "manipulation" certainly does not cover and include the practice of surgery in any form. The supreme court sustained a ruling of the trial court refusing to receive evidence on behalf of the osteopathic defendant to show that the standard and accredited colleges of osteopathy include medicine and surgery as part of their curriculums, that the science or practice of osteopathy contemplates and comprehends the practice of medicine and surgery, and that the colleges of osteopathy use the same textbooks on the practice of medicine and surgery that are used in the best recognized medical schools, and devote as much time to the subject as is consumed in the best "allopathic" colleges. The purpose of the proposed testimony, said the supreme court, was to show that graduates of recognized and accredited colleges of osteopathy now possess the requisite knowledge and skill to engage in the practice of medicine and surgery, but the only question before the court was whether the defendant possessed the statutory qualifications, and the evidence was therefore irrelevant.

CHIROPRACTOR LIABLE FOR CARE, SKILL AND KNOWLEDGE IN DIAGNOSIS

Chiropractic quibbling may not avail a chiropractor in Wisconsin, who through negligence, ignorance or unskillfulness fails to diagnose the disease from which his patient is suffering, according to a decision of the supreme court of Wisconsin, April 3, in the case of *Kuschler v. Volgmann*; and in diagnosing a case, a chiropractor must exercise the care and skill that is usually exercised by a recognized school of the medical profession. The fact that chiropractors abstain from the use of words like "diagnosis," "treatment" or "disease," said the court, is immaterial. What they hold themselves out to do and what they do is to treat disease, and the substitution of words like "analysis," "palpation" and "adjustment" does not change the nature of their act.

The plaintiff, suffering from nausea, nervousness and headache following a head injury, applied to the defendant, a chiropractor, in September, 1918, for relief and cure. The chiropractor, believing that the nervousness and headache were due to a derangement of the stomach, treated him accordingly. Treatment proved unavailing, and the chiropractor advised the plaintiff, in May, 1919, to go West, in the hope of relief. The plaintiff did so, but the headaches and dizziness, from which he continually suffered, became more severe, and finally he became at times blind. Sept. 10, 1919, the plaintiff presented himself for treatment at a hos-

pital in Chicago, and there his malady was immediately diagnosed as a brain tumor. An operation was done simply to relieve the intracranial pressure, for because of the long time the tumor had been allowed to grow, it was impossible to remove it.

The chiropractic defendant was charged with responsibility because of alleged negligence and want of understanding and skill. He demurred to the declaration, on the ground that one who treats the sick and injured is entitled to be judged according to the principles and methods employed by the school or sect to which he belongs, and he claimed that he had treated the plaintiff according to the methods used by chiropractors. The demurrer was sustained in the lower court. On appeal, the supreme court of Wisconsin said that had the complaint been grounded on neglect or unskilfulness in treatment only, the action of the trial court would have been correct. The complaint alleged, however, neglect or unskilfulness in diagnosis. While the duty of diagnosis is ordinarily assumed and performed by licensed physicians, it may be assumed by others, and the defendant having assumed to perform that duty was bound to exercise the care and skill in so doing that is usually exercised by a recognized school of the medical profession. The supreme court, therefore, overruled the demurrer and remanded the case to the trial court for further proceedings.

THE LIGHTING OF POST OFFICES

At the request of the Postmaster General, a survey on the lighting of post offices was made in the fall, winter and spring of 1921-1922 by the U. S. Public Health Service, to determine whether the prevailing illumination in post offices is sufficient for efficient performance of the work and the welfare of the employees, and what the intensity and type of illumination for post office work in general should be. An old and a comparatively new post office were selected for intensive study. Brief surveys were made also of a few other post offices; 4,786 persons were employed in the offices where the principal survey was made and where the working conditions were believed to be representative of post offices in generally below the state codes of lighting requirements, and eye specialist, who was assisted by a physicist, illuminating engineers, and other scientific assistants.

The illumination in the post offices studied was found to be low in intensity and unsatisfactory in quality. Glare was prominent, shadows numerous, and lights improperly spaced and improperly located. The actual mean illumination was generally below the state codes of lighting requirements, and generally lower than the mean illumination furnished employees doing similar work in private industries. It was concluded that the installation of proper illumination would result in a large pecuniary saving, and would conserve the eyesight of employees.

Among other things recommended, there should be installed, in the general workrooms and offices, systems of totally enclosing units of the diffusing or light-directing type, having a general intensity when first installed of 10 foot-candles everywhere on a horizontal working plane 45 inches above the floor. All local lighting should be done away with. The eyes of post office employees should be examined once a year, and any defects should be recorded. In work requiring fine eye discrimination, such as that in the directory division, only persons with normal eyesight, at least in one eye, with or without corrective lenses, should be employed.

In 1921, the total cost of illumination in a post office whose intensity was 3.6 foot-candles was \$32,921. To have increased the light in this post office to 8 foot-candles would have cost, for the year, \$72,490, an increase of about \$39,500. But it was found that the better illumination would have increased the speed at which employees did their work at least 4.4 per cent. The pay of employees for that part of 1921 during which artificial light was used amounted to about \$3,373,000, on which a saving of 4.4 per cent. would have been \$148,400. Deducting from this saving of \$148,400 the increased cost of \$39,500 gives a net saving of \$109,000 for this post office alone, or more than twice the increased cost of illumination.

Medicolegal

Dying Declarations in Prosecution for Attempting to Cause Miscarriage

(*State v. Bricker (N. J.), 118 Atl. R. 747*)

The Supreme Court of New Jersey, in affirming a judgment of conviction of the defendant of having attempted to cause the miscarriage of a pregnant woman, in consequence whereof she died, holds that when an indictment charges a defendant with such statutory misdemeanor, the dying declarations of the woman are legal evidence on trial of the case. The court says that in this case two statements were offered in evidence as dying declarations. Both were made by the woman while in bed in a hospital, suffering from septic peritonitis. Both were made when all about her thought that she was dying, although she was conscious and mentally alert. The first declaration was made thirty-four hours before death, and immediately before making it, she said that she was conscious of approaching death, and knew that she had "no chance of recovery." The second declaration was in writing, gathering up in narrative form the oral statements. It was read to her, and assented to and signed by her with a cross, three hours before death. In it, she said, "I am approaching death within a few hours and without any hope of recovery whatever." It is held that the trial judge was justified in finding that both declarations were made under a sense of impending death, and in admitting them in evidence. It is the state of mind and the sense of impending death at the time of making the declaration, and not the fact of quick succession of death after the declaration, that makes a dying declaration admissible in evidence.

Judgment Against One of Two Physicians Not Justified

(*Drew v. Cregar et al (N. J.), 118 Atl. R. 844*)

The Court of Errors and Appeals of New Jersey says that, in this action brought by the plaintiff as an administrator, the defendants were physicians called by him to attend his wife in childbirth. At the time of her confinement, Dr. Cregar was ill, and the other defendant, Dr. Pratt, was the physician actually in attendance. In the course of treatment, Dr. Pratt had to deal with an adherent placenta, which the jury may have found was due to the fact that the husband, shortly before the confinement of his wife, was affected with gonorrhea. The jury found in favor of Dr. Pratt, and against Dr. Cregar; and when the trial judge asked whether the finding was such that the negligence on which the verdict was based was that for which Dr. Cregar himself was responsible, in which Dr. Pratt did not participate, the foreman answered, "Yes." The finding therefore was that Dr. Cregar was not liable on the theory of responsibility for Dr. Pratt's negligence. The question, then, was whether the case was such that Dr. Cregar could be held for negligence, since the jury had negatived the liability of Dr. Pratt, so that Dr. Cregar could not be held on the theory of respondeat superior (let the superior answer).

The judge had charged that, if the jury was satisfied that it was Dr. Cregar's duty to advise the physician to whom he had turned over the case of the condition that existed: that the husband had gonorrhea and that there was a possibility of infection from it; and that if the jury was satisfied that this condition had a direct bearing on the woman's death, the jury might determine whether that was negligence on the part of Dr. Cregar as a physician, and whether he had exercised that care which a physician should in these circumstances. That warranted the jury in finding a verdict in favor of Dr. Pratt, and against Dr. Cregar alone. Without regard to whether the judge was otherwise warranted in charging on that point as he did, the court is of the opinion that under the pleadings he was not. The complaint was against both physicians, and averred that Dr. Cregar delegated Dr. Pratt as his agent to attend the plaintiff's wife and to deliver her of the child; that it was the duty of Dr. Cregar, by his agent and servant, Dr. Pratt, to carefully,

skilfully and in a proper manner treat and attend the plaintiff's wife and deliver the child; that the defendants did not remove the placenta within a proper time and in a skilful and proper manner, and that the body of the plaintiff's wife became infected thereby, her death following. Clearly, the complaint did not aver negligence on the part of Dr. Cregar alone and apart from Dr. Pratt; nor did it aver the negligence on which the trial court allowed the jury to find against Dr. Cregar for failure to perform his duty in advising Dr. Pratt of the condition that existed and the fact that the husband had gonorrhea. For very obvious reasons, the husband was not likely to desire the case to be tried on the theory that he was responsible for his wife's death; but Dr. Cregar was entitled to be apprised of the ground on which he was to be held, and entitled to have the issue tried limited to the issue made by the pleadings—the issue he was alone bound to defend. The jury, as the case was tried, held him liable on a ground outside the scope of the case.

Because, under the circumstances, it was erroneous to charge that the plaintiff might recover of Dr. Cregar for his own negligence, and acquit Dr. Pratt, the judgment rendered against Dr. Cregar is reversed.

Waiver of Privilege in Personal Injury Case

(*Kraus v. Sobel* (N. Y.), 196 N. Y. Supp. 845)

The Supreme Court of New York, Appellate Division, First Department, says that, in this action to recover damages for personal injuries, the plaintiff furnished a detailed description of his injuries in a bill of particulars; testified fully concerning his injuries and, so far as he was able, the treatment he had received; produced a roentgenogram taken at the hospital, and also called as an expert a physician who had made a physical examination of him and who testified very fully as to the condition in which he found the plaintiff. Thus, the plaintiff himself gave to the public the full details of his case. Subsequently, the defendant called the physician attached to the hospital to which the plaintiff was taken; but when the physician was interrogated concerning the case, the trial court sustained an objection on the ground that the physician could not disclose any information which he acquired in a professional capacity. Such a ruling was in line with earlier decisions; but the Court of Appeals in *Capron v. Douglass*, 193 N. Y. 11, 17, 85 N. E. 827, altered the rule of the earlier cases, and held that, when the plaintiff testifies to his injuries and their results, and it appears that he has been treated by a physician in regard to them, the physician may then be called by the defendant and examined as to any information acquired by him in the course of such consultation or treatment. When, therefore, "the patient tenders to the jury the issue as to his physical condition, it must in fairness and justice be held that he has himself waived the obligation of secrecy which would otherwise exist" (*Herthier v. Johns*, 233 N. Y. 370, 135 N. E. 603). It was therefore error to exclude the physician's testimony, and the judgment recovered by the plaintiff is reversed and a new trial ordered.

Cancer in Throat Attributed to Injury to Hand

(*Vanderslice v. Young et al.* (N. Y.), 197 N. Y. Supp. 9)

The Supreme Court of New York, Appellate Division, Third Department, was divided, three members to two, in deciding this appeal from an award made under the workmen's compensation law to Mrs. Vanderslice for the death of her husband. According to the dissenting opinion, the decedent had been employed opening oysters, and in the use of a knife therefor had developed a callous on the palm of one hand, on which there appeared a blister. The blister was about a week in developing, and broke, November 9, when the hand started to swell. He was attended by a physician who found an infection so deep that he went half-way through the hand in establishing drainage. The physician attended the man four times, as a result of which the drainage was lessened so much that he felt the patient could take care of himself. The man went back to work, December 11, but his hand remained very sore and weak. In

March, he told a second physician that a red streak ran up his arm from his wrist to his armpit. His widow swore that she saw that streak. In May, this second physician found a small lump at the side of the man's neck, and the glands began to swell. July 26, the physician operated on the man's neck and evacuated 4 ounces of pus. An examination of the throat revealed a cancerous condition of the glands, a small cancer at the base of the tongue and another on the tonsil. Thereafter, the condition of the patient became worse; he had a succession of hemorrhages, and died, August 29. That physician and another one who treated the patient in his last illness connected the injury to the hand with the man's death; and the industrial commission found as a fact that, as the result of the irritation and inflammation caused by the infection produced by the injury, a cancer developed in the glands and spread to the tongue and tonsil; that death was the result of a hemorrhage caused by the cancer, but the proximate cause of death was the injury received, November 10. The decision of the court is stated in these few words: "Award affirmed on the ground that the proof made an issue of fact as to the cause of death, and the findings of the state industrial board on that issue in favor of claimant are conclusive; with costs in favor of the state industrial board."

Society Proceedings

COMING MEETINGS

- American Association for Thoracic Surgery, Chicago, May 28-29. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
- American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
- American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.
- American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
- American Gastro-Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
- American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
- American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otolological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
- American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
- American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
- American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
- American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
- Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Georgia Medical Association of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
- Hawaii Medical Society of, Honolulu, April 28-30. Dr. W. K. Chang, Honolulu, Secretary.
- Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
- Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
- Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
- Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
- Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore, Secretary.
- Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
- Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
- Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
- Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
- Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
- West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

February, 1923, 5, No. 2

- *Tumors of Breast. J. F. Erdmann, New York.—p. 116.
- *Cervix a Focal Point of Infection. G. K. Dickinson, Jersey City, N. J.—p. 124.
- Radium in Treatment of Uterine Hemorrhage of Nonmalignant Type. E. A. Weiss, Pittsburgh.—p. 128.
- Present Status of Surgery in Treatment of Fibromyoma of Uterus. S. E. Tracy, Philadelphia.—p. 135.
- Pathologic Reaction of Tissue Extract (Cytost) Liberated in Pregnancy. F. B. Turck, New York.—p. 139.
- *Does Menstruation Influence Blood Concentration? M. Tyler and F. P. Underhill, New Haven, Conn.—p. 155.
- *Spontaneous Rupture of Body of Uterus During Pregnancy. H. F. Kane, Washington, D. C.—p. 158.
- Cause of Tubal Pregnancy and Tubal Twinning. L. B. Arey, Chicago.—p. 163.
- Case of Labor Complicated by Ovarian Cyst and Smallpox; Operation; Spontaneous Delivery; Recovery. R. A. Bartholomew, Atlanta, Ga.—p. 168.
- Service of Obstetric Clinic to Community. A. H. Morse, New Haven, Conn.—p. 170.
- Management of Placenta in Abdominal Pregnancy; Case Report. W. A. Jewett, Brooklyn.—p. 176.
- An Anal Shield. J. P. Greenhill, Chicago.—p. 182.
- *Benzin and Iodin vs. Soap and Water Scrub in Preparation of Parturient Women for Delivery. F. C. Irving, Boston.—p. 184.

Tumors of Breast.—Erdmann emphasizes his belief that a growth in the remaining breast is as likely to be of primary origin as that in the breast first removed. At the present day it is not possible to state what is the influence of the roentgen ray and of radium, either as a preoperative or postoperative aid, but in view of many apparent reductions in size, etc., previous to operation in cases considered non-operable, the use of the roentgen ray and of radium should be encouraged. Even in view of some of the glowing reports regarding nonrecurrence, postoperative treatment should be substituted for preoperative treatment, until some definite proof of its help or inefficiency has been established; too few years have passed for positive results to be shown. Further, in the presence of late metastases, the powerful currents of the present day should be given a thorough test to prove or disprove the efficiency of this method of treatment. The most thorough and painstaking wide removal, with remote glandular and fascial dissections, will tend more and more to increase the percentage of cures and extension of life. The radical operation is attended with so low a mortality as to promote a greater desire on the part of the consulting physician to demand operation.

Cervix a Focal Point of Infection.—Dickinson points out that those physicians who have made an intensive study of their patients for focal infection, who have removed teeth, tonsils, appendix, gallbladder and colon, have occasionally given relief by attention to the cervix. He cites an instance of what was a very evident case of such focal infection. Not realizing that there was any relation between the cervix and the patient's miserable condition, no particular study was made of the endometrium. The cervix was not hyperplastic; there was no laceration; the mucosa was not exuberant, nor of abnormal appearance; in short, there was no endocervicitis as ordinarily recognized. The stirring up of a local condition by curettage led to an active absorption and exacerbation of symptoms. Eventually this curettage led to complete recovery.

Does Menstruation Influence Blood Concentration?—Tyler and Underhill assert that present methods of hemoglobin estimation fail to show a constant variation in the hemoglobin which is characteristic of any one phase of the menstrual cycle. During some periods the hemoglobin rises slightly while during others it falls. The change cannot be related to any symptom, such as headache, with which a rise in hemoglobin has been associated by some authors. The fact that there is no change in hemoglobin content and there-

for in blood concentration during menstruation is in accord with present knowledge of the physiology of this function.

Spontaneous Rupture of Body of Uterus During Pregnancy.—In the case reported by Kane the probable explanation of the rupture was that a mild infection followed a curettage done two years previously and resulted in chronic metritis. When six months pregnant, the patient took a motor trip of several hours. Afterward she experienced a sudden sharp pain in the right lower quadrant of the abdomen. She felt no fetal movements after this occurrence. She went into a state of shock. An intra-abdominal tumor reached to the umbilicus but could not be well mapped out on account of rigidity and tenderness. No fetal heart sounds or fetal movements could be found. On account of the site of the initial pain and maximum tenderness, the vomiting and the history of attacks of appendicitis, a diagnosis was made of appendiceal abscess with a dead fetus. A laparotomy was performed two and one-half hours after the patient was first seen. The abdominal cavity was full of blood and clots. The uterus was torn from the fundus to just above the internal os in the midline of the posterior wall. About one half of the placenta and 3 inches of cord extruded through the rent and the head of the fetus was just within the opening.

Benzin and Iodin Versus Soap and Water.—Fifty patients were prepared by the benzin and iodine method of Kankford and another series of fifty, alternating with them, were treated by the usual soap and water, bichlorid and alcohol technic described by Irving. Cultures were taken in all cases both before and after delivery and examined bacteriologically. Twenty-one of the patients prepared by the benzin and iodine method showed no growth before or after delivery as compared with twenty-two of those treated with the soap and water, bichlorid and alcohol technic. Consequently, both methods were equally ineffective in procuring an absolutely sterile field.

American Review of Tuberculosis, Baltimore

February, 1923, 6, No. 12

- Relapse in Pulmonary Tuberculosis. J. J. Waring, Denver.—p. 1057.
- *Lymphocyte Index in Tuberculosis. G. B. Webb, G. B. Gilbert and J. A. Newman, Colorado Springs, Colo.—p. 1073.
- Occurrence of Hemoptysis, Pleurisy, Râles, Tubercle Bacilli and Roentgen-Ray Findings in 1,000 Consecutive Cases Admitted to Trudeau Sanatorium. F. H. Heise and L. Brown, Trudeau, N. Y.—p. 1078.
- *Intracutaneous Reaction of Tuberculous Persons to Glycerin Bouillon and Tuberculin. F. H. Heise and L. Brown, Trudeau.—p. 1084.
- *Attempt to Differentiate Human and Bovine Tubercle Bacilli by Means of Anaphylactic Reaction. H. J. Corper and S. Simon, Denver.—p. 1087.
- Experimental Study on Behavior of Extravasated Blood in Lungs. H. J. Corper, O. S. Kretschmer and M. B. Lurie, Denver.—p. 1100.
- *Lack of Acid-Fastness of Tubercle Bacilli in Tissue Preserved in Liquor Formaldehyd. A. C. Starry and M. Goldberg, Denver.—p. 1114.
- Heliotherapy for Tuberculosis at Hohenlychen (Berlin). W. Winterberg, San Francisco.—p. 1119.

Lymphocyte Index in Tuberculosis.—The findings made by Webb, Gilbert and Newman, in an examination of 2,000 successive counts on about 400 patients, seem to indicate that the lymphocytes, and not the endothelial leukocytes, are the important factors in measuring resistance to tuberculosis in human beings.

Intracutaneous Reaction of Tuberculous Persons to Glycerin Bouillon and Tuberculin.—Intracutaneous tests were made by Heise and Brown with tuberculin and glycerin bouillon to determine to what extent, if any, the inflammatory reaction to tuberculin in the skin was due to the glycerin bouillon content of the tuberculin. Two of twelve tuberculous guinea-pigs gave a positive reaction to 0.1 c.c. of 5 per cent. O. T. (old tuberculin). This shows that at times glycerin bouillon does give a positive skin reaction when given at the same time as tuberculin in some tuberculous guinea-pigs. In adult human beings approximately 5 per cent. of 443 persons reacted to glycerin bouillon. About one-fifth of these can be attributed to error. This leaves 4 per cent. who reacted to glycerin bouillon and tuberculin; weakening, to this extent, the value of the tuberculin skin test as a specific test. On the other hand, a hypersensitive patient may react to glycerin bouillon during a reaction produced by tuberculin.

Attempt to Differentiate Human and Bovine Tubercle Bacilli by Means of Anaphylactic Reaction.—The results

obtained by Corper and Simon indicate that the reaction of tuberculous guinea-pigs (infected by subcutaneous injection) to a second (intraperitoneal) injection of from 0.001 to 1.0 gm. living tubercle bacilli, given from twenty-two to twenty-nine days after the primary (infecting) injection, did not produce symptoms which were not obtained by similar intraperitoneal injection of tubercle bacilli in normal animals, or which were not obtained with large amounts (0.5 gm.) of living *Staphylococcus aureus* injected intraperitoneally into (non-sensitized) normal guinea-pigs. In no case was a typical acute anaphylactic reaction noted, such as is characteristic of the phenomenon when soluble proteins are used. In the larger doses (1.0 gm.), living tubercle bacilli given intraperitoneally were found to be profoundly toxic, producing an acute and early death of the animal. A correlation was noted between the toxicity of living tubercle bacilli injected intraperitoneally into tuberculous guinea-pigs at the time of injection. There was noted no difference in this respect between guinea-pigs infected with one strain and given the subsequent intraperitoneal injection with the same strain of bacilli, human or bovine, or any other one of the five strains tested. The virulence of the strain used for the second injection also played no part in this. Dead human (avirulent and virulent) and bovine (virulent) tubercle bacilli, injected into guinea-pigs subcutaneously, in amounts of from 1 to 100 mg., do not act as antigens for the anaphylactic reaction to a second injection of living or dead human (Gluckson) tubercle bacilli, injected intraperitoneally in amounts of from 0.1 to 1 gm. twenty-five days later, even though distinct local tubercles produced by the dead bacilli exist at the time of the second injection. Likewise, a second intraperitoneal injection of full strength old tuberculin, in amounts of from 2 to 5 c.c., produces no appreciable general anaphylactic reaction in guinea-pigs given a primary subcutaneous injection of dead human or bovine tubercle bacilli twenty-five days previously. However, guinea-pigs given an intraperitoneal injection of old tuberculin, in amounts of from 1 to 5 c.c. twenty-five days prior to a second intraperitoneal injection of from 2 to 5 c.c. of tuberculin, died within one to two days after the second injection, although definite acute anaphylactic symptoms were not seen, the intraperitoneal injection of this amount of tuberculin acting in itself as a distinct peritoneal irritant.

Lack of Acid-Fastness of Tubercle Bacilli in Tissues Preserved in Liquor Formaldehydi.—Starry and Goldberg found that tuberculous tissues preserved in solution of formaldehyd are not suitable for staining the tubercle bacilli contained therein by means of carbolfuchsin, unless the formaldehyd has been completely removed, preferably by chemical means, and the penetration of reagents aided by complete removal of the paraffin from the section before staining. Ammonia water has proved satisfactory for removing the formaldehyd from the fixed tissues. A method, based on these studies, is given in detail for staining tubercle bacilli in formaldehyd-fixed tissues which seems to reveal the bacilli more diffusely and more intensely stained than in tissues fixed in alcohol or mercuric chlorid. Lysis of human or bovine tubercle bacilli in vitro, free or in tissues, discernible by staining methods, still remains to be satisfactorily demonstrated.

Boston Medical and Surgical Journal

March 22, 1923, 188, No. 12

Symptoms and Treatment of Central Vascular Syphilis. W. P. Anderson, New York.—p. 377.

*Myeloma of Vertebrae. R. B. Osgood, Boston.—p. 380.

*Myositis Ossificans Traumatica. D. Carleton, Springfield, Mass.—p. 387.
Intestinal Obstruction by Gallstones. C. R. Abbott, Clinton, Mass., and E. L. Hunt, Worcester, Mass.—p. 390.

*Chronic Arterio-Mesenteric Obstruction of Duodenum. H. C. Tinkham, Burlington, Vt.—p. 397.

Myeloma of Vertebrae.—Osgood points out that multiple myeloma may so closely simulate tuberculous caries of the spine that even surgeons seeing many cases of the latter, more common, disease may fail to recognize the more malignant condition. Neither the history nor physical examination in the early stages is characteristic of the process. The absence of Bence-Jones protein in the urine does not exclude it. In doubtful cases roentgenograms of the skull, the pelvis,

and the long bones may reveal the nature of the disease, even when those of the vertebrae are inconclusive. No treatment has thus far surely influenced the course of this fatal multiple tumor growth. Radium and high voltage roentgen rays are, therefore, worthy of trial. The symptoms arising from myeloma of the spine are lessened and may be held in abeyance temporarily by recumbency and immobilization. If the disease is not too extensive at the seat of spontaneous fractures, the fragments may unite if completely fixed.

Myositis Ossificans Traumatica.—Carleton favors the belief that the chief etiologic factor in the production of the disease is a latent diathesis in the individual that is excited into action by violent traumatism.

Chronic Arterio-mesenteric Obstruction.—Fourteen cases of this condition have come to Tinkham's notice during the past three years; eleven were recognized only when operating for other chronic diseases of the abdominal or pelvic viscera; two were suspected before operation, and one was demonstrated by the roentgen ray. This case complicated a cancer of the stomach, the stomach being held high up by adhesions. Posterior gastro-enterostomy was done in three cases, and duodenojejunostomy in two cases. The other patients, except one, have improved following operations for appendicitis, cholecystitis or disease of the female pelvic viscera, supplemented by medical treatment and special exercises. There has been no mortality following operations. Tinkham concludes that chronic arterio-mesenteric obstruction of the duodenum is not a rare condition. It is more than probable that it is present in every case of enteroptosis. It is a frequent complication of chronic disease of the abdominal viscera. It may be an important factor in acute dilatation of the stomach. It probably is a factor in cases of chronic dilatation of the stomach where disease of the pylorus is absent. In analyzing symptoms of disease of the abdominal viscera which are referred to the epigastrium, chronic obstruction of the third portion of the duodenum should be considered. This is especially important if enteroptosis is present. Medical treatment to improve the general health, together with special exercises to improve the tone of the abdominal muscles, will improve this condition in the majority of cases. Operation is indicated only when the condition does not improve with medical treatment. Duodenojejunostomy seems to be the logical operation.

Journal of Biological Chemistry, Baltimore

February, 1923, 55, No. 2

Conphaseolin. A New Globulin from Navy Bean, *Phaseolus Vulgaris*. H. C. Waterman, C. O. Johns and D. B. Jones, Washington, D. C.—p. 93.

Rate of Urea Excretion. V. The Effect of Changes in Blood Urea Concentration on Rate of Urea Excretion. T. Addis and D. R. Drury, San Francisco.—p. 105.

Id. VI. Effect of Very High Blood Urea Concentrations on Rate of Urea Excretion. D. R. Drury, San Francisco.—p. 113.

*Supplementary Protein Value of Peanut Flour. W. H. Eddy and R. S. Eckman, New York.—p. 119.

Accurate Method of Determining Small Amounts of Ethyl Ether in Air, Blood and Other Fluids, Together with a Determination of Coefficient of Distribution of Ether Between Air and Blood at Various Temperatures. H. W. Haggard, New Haven, Conn.—p. 131.

Protein Efficiency of Combinations of Cornmeal and Certain Other Feedstuffs, Notably Rice Bran. L. A. Maynard, F. M. Fronda and T. C. Chen, Ithaca, N. Y.—p. 145.

Inorganic Phosphorus of Serum and Plasma of Ninety-One Normal Adults as Determined by Bell and Doisy Method. E. Tolstoi, Clifton Springs, New York.—p. 157.

Effect of Eck's Fistula on Pancreatic Diabetes in Dogs. B. M. Hendrix and J. E. Sweet, Philadelphia.—p. 161.

*Selective Action of Kidney as Regards the Excretion of Inorganic Salts. W. Denis, New Orleans.—p. 171.

*Inorganic Constituents of Blood Serum in Nephritis. W. Denis and S. Hobson, New Orleans.—p. 183.

Hydrolysis of Amides in Animal Body. Comparative Stability of Surface Active Homologs in Relation to Mechanism of Enzyme Action. C. H. Fiske, Boston.—p. 191.

Epiglucosamine. P. A. Levene and G. M. Meyer, New York.—p. 221.

*Hydrogen Ion Concentration of Blood in Carcinoma. I. From Colorimeter Determination of Blood Dialysate. W. H. Chambers, St. Louis.—p. 229.

*Id. II. From Carbon Dioxid-Bicarbonate Ratio. W. H. Chambers and R. E. Kleinschmidt, St. Louis.—p. 257.

Carbohydrate Metabolism. I. Some Comparisons of Blood Sugar Concentrations in Venous Blood and in Finger Blood. G. L. Foster, Berkeley, Calif.—p. 291.

*Id. II. Interpretation of Blood Sugar Phenomena Following Ingestion of Glucose. G. L. Foster, Berkeley, Calif.—p. 303.

*Immediate Effect of Heavy Exercise (Stair-Running) on Same Phases of Circulation and Respiration in Normal Individuals. I. Oxygen and Carbon Dioxid Content of Blood Drawn from Cubital Vein Before and After Exercise. C. Lundsgaard and E. Möller, Copenhagen, Denmark.—p. 315.

Supplementary Protein Value of Peanut Flour.—When the protein supplementing power of peanut flour is compared with that of muscle protein by feeding rations so constituted as to contain only about 10 per cent. of protein, from 6 to 7 per cent. of this protein being contributed by wheat flour and the rest by peanut flour or meat residue, respectively, and when these rations are further supplemented with 3 per cent. of butter fat, 4 per cent. salts, and brought to nearly equal caloric value per gram, Eddy and Eckman assert that the peanut flour proves slightly superior to the meat as a growth producer and markedly superior for promoting reproduction.

Selective Action of Kidney as Regards Excretion of Inorganic Salts.—Experiments made by Denis on dogs and rabbits to which magnesium sulphate, sodium sulphate, magnesium chlorid, sodium chlorid, and sodium phosphate were administered by the intestine and by intravenous injection, and the subsequent excretion of these salts followed by means of blood analysis, indicate a selective retention on the part of the kidney for the sulphate ion which in one case was found to accumulate in the serum to a value of 3,200 per cent. of its initial concentration.

Inorganic Constituents of Blood Serum in Nephritis.—A study made by Denis and Hobson of the inorganic constituents of the blood serum in twenty-two cases of nephritis and cardiorenal disease showed a marked increase over normal of the sodium and chlorin in only four cases; the inorganic phosphate fraction was increased in ten cases; while the inorganic sulphates were determined in only seventeen cases, eleven of which showed increased values. Magnesium and potassium remained more or less constant, while calcium was found to be decreased in five cases.

Hydrogen Ion Concentration of Blood in Carcinoma.—The hydrogen ion concentration of the dialysate from the venous blood of forty-five cases of carcinoma studied by Chambers, averaged p_H 7.45 at 20 C. This is distinctly more alkaline than that of the normal subjects which averaged p_H 7.31. The pathologic cases other than carcinoma gave slightly more alkaline results than the normals, averaging p_H 7.36 at 20 C. No association of anemia with this increase in alkalinity in the venous blood dialysate in cancer was established. In general, the degree of alkalinity corresponded to the size and extent of the tumor growth. Small tumors without metastases showed little or no increase above the normal zone.

Hydrogen Ion Concentration of Blood in Carcinoma from Carbon Dioxid-Bicarbonate Ratio.—The carbon dioxid content and the carbon dioxid tension were determined in the venous blood from normal individuals, from patients with carcinoma, and from miscellaneous pathologic cases other than carcinoma. The venous carbon dioxid tensions were read from the carbon dioxid absorption curves which were plotted at the venous oxygen tension, or from those plotted from fully oxygenated blood with a correction for venous oxygen unsaturation. The hydrogen ion concentration of the blood was calculated from the carbon dioxid bicarbonate ratio. The average reaction of twelve determinations on normal bloods was p_H 7.29, of eight determinations on diseases other than carcinoma it was p_H 7.33, and of twenty-three determinations on carcinoma patients it was p_H 7.34. It is concluded that these results furnish no evidence of an actual decrease in hydrogen ion concentration of the blood in carcinoma which can be related primarily to the cancer. The alkalosis of the dialysate in carcinoma cases compared to normal blood is explained by Donnan's theory as being due to an increase in nondiffusible anions in the plasma.

Blood Sugar After Ingestion of Glucose.—Curves of blood sugar concentration after the ingestion of glucose and of galactose are contrasted by Foster. After the ingestion of galactose the curve rises continuously for nearly three hours and reaches much higher levels than the glucose curve which, as is well known, rises sharply for only a short time (usually

less than one-half hour) and then rapidly falls to normal or below. It is concluded that the chief factor in preventing excessive hyperglycemia after the ingestion of glucose is glycogen formation and that the mechanism concerned in glycogen synthesis is stimulated to greater activity by the hyperglycemia which ensues after the ingestion of glucose. Such a conclusion is essentially the same as the one previously expressed by McLean and de Wesselow. It appears to be further strengthened by experiments with repeated doses of glucose wherein it was found that a second dose of glucose taken soon after the hyperglycemia had subsided had little or no effect on the concentration of sugar in the blood. This fact Foster interprets as meaning that the first dose of glucose stimulates the glycogenic mechanism to such activity that the organism is then able to deal with any amount of glucose without becoming hyperglycemic. Evidence is adduced to support the theory that the frequently observed periods of hypoglycemia following the ingestion of glucose are due to an "overactivity" of the glycogen-forming mechanism.

Immediate Effect of Stair Running on Circulation and Respiration in Normal Persons.—The oxygen and carbon dioxid contents of blood from a cubital vein were determined by Lundsgaard and Möller in a series of normal persons at rest and within one minute after heavy exercise. The exercise consisted of running up and down a flight of stairs five times. The muscles of the arms were not used. In sixteen subjects the oxygen of the venous blood showed a decrease far outside the variations found during rest. In one subject, the figures for the oxygen content during rest and after exercise showed no difference. The carbon dioxid content showed only small variations. In some instances a decrease, in others a small increase was found. Different possible explanations of these observations are discussed briefly as an introduction to additional investigations.

Journal of Comparative Psychology, Baltimore

February, 1923, 3, No. 1

- Experiment Testing Ability of Cat to Make Delayed Response and to Maintain Given Response Toward a Varying Stimulus. E. A. Cowan, Wichita, Kan.—p. 1.
Weight Discrimination as Measure of Technical Skill in Piano Playing. O. Ortmann.—p. 11.
Audition in Reptiles. R. Kuroda, Niigata, Japan.—p. 27.
Effects of Cigar and Cigaret Smoking on Certain Psychologic and Physiologic Functions. R. L. Bates, Baltimore.—p. 37.
Reactions of Alligator Mississippiensis. A. M. Reese, Morgantown, W. Va.—p. 51.
Reactions of Animals to Changes in Physical Environment. I. Animal and Earthquake. H. von Hentig, Munich.—p. 61.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

February, 1923, 21, No. 1

- *Pharmacology of Cadmium and Zinc with Particular Reference to Emesis. E. W. Schwartz and C. L. Alsberg, Washington, D. C.—p. 1.
*Carbon Monoxid Content of Tobacco Smoke and Its Absorption on Inhalation. J. P. Baumberger, San Francisco.—p. 23.
*Nicotin Content of Tobacco Smoke. J. P. Baumberger, San Francisco.—p. 35.
Amount of Smoke Produced from Tobacco and Its Absorption in Smoking as Determined by Electrical Precipitation. J. P. Baumberger, San Francisco.—p. 47.
Chronic Intoxication by Small Quantities of Cadmium Chlorid in Diet. C. O. Johns, A. J. Finks and C. L. Alsberg, Washington, D. C.—p. 59.
Action of Furfural. H. McGuigan, Chicago.—p. 65.

Pharmacology of Cadmium and Zinc.—Schwartz and Alsberg state that in the case of animals that vomit, such as cats, the chief effect of the oral administration of cadmium and zinc salts is emesis, which is dependent on the concentration in which these substances are present in the gastric contents. This local effect varies with the character of the food, being more powerful when the metals are administered in diets of liquids than when administered in those of raw hashed, lean meat. The consumption of an average-sized meal of raw hashed meat containing from 350 to 400 parts per million of cadmium or 3,000 parts per million of zinc is almost always followed by emesis. Cadmium calculated as the metal is eight to nine times more effective as an emetic than zinc.

Carbon Monoxid Content of Tobacco Smoke and Its Absorption on Inhalation.—The method used by Baumberger was the oxidation of carbon monoxid to carbon dioxid by iodine pentoxid as described by Weisman, the liberated iodine being determined. His studies showed that the amount of carbon monoxid produced in smoking is increased by strong suction. Cigaretts yield an average of 8.3 c.c. carbon monoxid per gram tobacco smoked, i. e., 0.97 per cent., carbon monoxid by weight. In inhaling tobacco smoke about 61 per cent. of the carbon monoxid is absorbed. Theoretically, a maximum saturation with carbon monoxid of 22 per cent. of the hemoglobin of a smoker may occur. This degree of saturation cannot be withstood over an hour without disagreeable symptoms. Baumberger thinks that it is extremely unlikely that the carbon monoxid of tobacco smoke is injurious to any but the most inveterate inhalers.

Nicotin Content of Tobacco Smoke.—The nicotin content of tobacco smoke was determined by Baumberger by Chapin's method, with the modifications of Rasmussen without pyridine interference. The average nicotin content of the smoke in per cent. weight of tobacco was found to be 0.573 per cent. for cigarette. Of the nicotin in the tobacco from 14 to 33 per cent. appears in the smoke puffed. The maximum amount of nicotin retained in the body is calculated as 36 mg. per hour in inhaling and 27.5 mg. per hour in puffing. This dose of nicotin Baumberger thinks would require a high tolerance on the part of the subject in order to escape disagreeable symptoms, and would account for the illness of the novice as a result of smoking. In most cases, however, a large per cent. of this nicotin is expectorated before being absorbed, therefore, the usual dose of nicotin may be very much less than the amount calculated above.

Journal of Radiology, Omaha

February, 1923, 4, No. 2

Sinus Disease and Lung Infections. K. Dunham and J. H. Skavlem, Cincinnati.—p. 37.

Can Medical and Dental Professions Agree on Any Standardized Treatment of Focus of Infection? B. C. Darling, New York.—p. 39.

Radium in Sarcoma. W. H. B. Aikins, Toronto.—p. 44.

Bone Tumors: Sarcoma, Periosteal Group, Sclerosing Type, Osteogenic, Methods of Diagnosis and Treatment. J. C. Bloodgood, Baltimore.—p. 46.

Roentgen-Rays and Roentgen-Ray Apparatus: An Elementary Course. J. K. Robertson, Kingston, Canada.—p. 51.

Journal of Urology, Baltimore

February, 1923, 9, No. 2

*Acquired Stricture of Male Ureter. R. H. Herbst and A. Thompson, Chicago.—p. 91.

*Conservative Renal Surgery Associated with Ureteral Stricture Work. G. L. Hunner, Baltimore.—p. 97.

*Accidental Bilateral Occlusion of Ureters. L. Herman, Philadelphia.—p. 151.

Two Cases of Kinks of Ureter. J. D. Barney, Boston.—p. 181.

Acquired Stricture of Male Ureter.—Herbst and Thompson emphasize that early relief of obstruction caused by stricture of the ureter is essential to preserve the function of the kidney. In the early inflammatory type in which the condition in the ureter is merely a reflection of the infection in the seminal vesicle, treatment directed to the infected vesicle and prostate will sometimes be followed by subsidence of the occlusion in the ureter. The renal symptoms may entirely disappear following routine massage, vasotomy or vesiculotomy. In the indurated type gradual dilatation with ureteral bougies is indicated. The hard fibrous type which fails to respond to dilatation and which is limited to the mural portion of the ureter may be cut by introducing a hook-shaped knife into the lumen and incising the involved area by the withdrawal of the knife. Strictures extending beyond the mural part of the ureter and which do not respond to dilatation should be excised and the end of the ureter reimplanted into the bladder. In strictures of long standing complicated by far advanced hydronephrosis or pyonephrosis, nephrectomy may be indicated.

Conservative Renal Surgery Associated with Ureteral Stricture.—Hunner is of the opinion that the recognition of ureteral stricture as one of the most common of all intra-abdominal or intrapelvic lesions will probably bear its chief

fruit in the field of conservation by doing away with a vast number of abdominal and pelvic operations now being performed annually in the effort to relieve the symptoms, often vague and indefinite, associated with some form of this condition. Such recognition will also save much misguided medical effort. Examples are those patients, who, after years of general and special medical treatment for apparent migraine or other forms of sick headaches, have been relieved promptly by the restoration of free kidney drainage through the dilatation of ureteral strictures. Other patients suffering from chronic gastro-intestinal symptoms, such as nausea, vomiting, gas formation, diarrheal attacks, pressure on the rectum, and mucous colitis, who have failed to respond to medical and surgical treatment, have responded, some promptly, some after months of patient effort, but only after ureteral stricture has been found to be the basis of their symptoms and proper treatment was instituted. The orthopedist sees certain cases of apparent lumbosacral or sacro-iliac disease, of apparent hip joint dysfunction, or of apparent sciatica, in which all his efforts at relief are fruitless. In some of these cases the symptoms are due to ureteral stricture and relief is obtained after suitable treatment. The gynecologist is daily dealing with vague indefinite backaches, bearing down sensations in the pelvis, ovarian neuralgia, and pains through the hips. He should be particularly alert for stricture if these symptoms are accompanied by bladder disturbances, especially if they are of the intermittent focal infection type. The records of many of Hunner's ureteral stricture cases, involving a history of from one to nine abdominal operations in the effort to relieve the patient, but with the original symptoms still standing out prominently, and then relieved after dilatation of the strictures, he thinks is sufficient evidence that the general surgeon can well afford to keep ureteral stricture in mind in his daily diagnostic routine.

Accidental Bilateral Occlusion of Ureters.—Herman cites a case in which both ureters were ligated accidentally during the performance of a hysterectomy. This was a difficult operation on account of extremely dense and widespread adhesions, so that the uterus was amputated higher than usual (subtotal hysterectomy). The immediate postoperative course was uneventful, except for the fact that no urine was voided; and after ten hours it was determined by catheter that the bladder was empty. Further catheterizations were equally nonproductive, and forty-eight hours after operation, a second operation was performed on the findings of a cystoscopy and a ureteroscopy which disclosed that each ureter was obstructed to catheters at a point 2 inches from the bladder. The ureters had been ligated, apparently, in attempts either to control bleeding from the ovarian artery, to control bleeding from an ascending branch of the uterine artery, or from accidental ligation of the latter in the effort to close the opening in the broad ligament. One ligature was removed from the left ureter and two from the right. The patient made a complete recovery. The literature is reviewed.

Missouri State Medical Association Journal, St. Louis

March, 1923, 20, No. 3

*Use of Chicken Blood in Treatment of Pneumonias in Children. H. C. Berger and J. G. Montgomery, Kansas City.—p. 81.

Factors of Safety in Operation for Cataract. J. Green, Jr., St. Louis.—p. 83.

*Metastatic Infarcts of Liver. E. C. Robichaux, Excelsior Springs.—p. 88.

Surgical Treatment of Carcinoma of Lower Lip. W. E. Leighton, St. Louis.—p. 90.

Control of Diphtheria in Missouri. P. G. Hurford, St. Louis.—p. 95.

Abscess of Brain. W. Nelson, St. Louis.—p. 97.

Possible Risk in Manipulation of Diseased Stomach. G. B. Lemmon, Springfield.—p. 100.

*Intussusception with Left-Sided Mass. E. D. Twyman, Kansas City.—p. 100.

Transfusion of Chicken Blood in Treatment of Pneumonias in Children.—Having learned that chickens have a high immunity to the pneumococcus, and finding on experimentation that chicken blood could be given to laboratory animals in large amounts, intramuscularly or intradermally, with very little, if any, reaction and no apparently objectionable results, Berger and Montgomery transfused whole chicken's blood into children, ill with pneumonia. As much blood as possible

is withdrawn from the jugular vein and it is then injected into the patient as rapidly as possible, intramuscularly or intradermally, with constant massage. Absorption is rapid and there is no reaction. This process is repeated, using new chickens, until the desired amount of blood is injected, from 300 to 500 c.c. The cases in which the chicken blood was given showed a variation from those in which no injection was made in temperature, pulse, respiration, general condition, roentgen-ray and physical findings. The general condition of these patients reflected the greatest improvement. The extremely ill, highly toxic, cyanotic child was in a few hours transformed into a child that did not seem to be severely ill. The temperature and pulse might remain high, but the child was unembarrassed and free from dyspnea.

Metastatic Infarcts of Liver.—Robichaux records the case of a man, aged 40, who for two months had suffered from lumbago and sciatica. Two years before he had been operated on radically for carcinoma of the right testicle. Under treatment the patient improved for nearly two weeks. Suddenly his abdomen became bloated and there was unlocalized pain in the lower abdomen. His condition rapidly became worse and suggested a ruptured appendix or an infected gallbladder. Fever, pain and leukocytosis were accompanied by a sudden increase in the size of the liver, and nodules were palpable on its anterior surface. Within a week all these symptoms abated and then, within twenty-four hours, grew worse again. Involuntary evacuation occurred, slightly tinged with blood, the only stool of this character. Decided pains in the limbs, particularly the left, with edema of that leg, preceded death by a few hours. The necropsy disclosed a metastatic carcinoma of the liver. Special mention is made of the accuracy with which the daily white blood counts corresponded with the physical condition of the patient.

Extreme Case of Intussusception.—Twyman cites an extreme case of intussusception of the ileum into the cecum, cecum into the ascending colon, ascending colon into the transverse colon, transverse colon into the descending colon. The mass occupied the left hypochondriac region, extended downward, and was easily palpable before the operation. The patient was only 1 year old. Recovery followed operative reduction. There was a complete cecum mobile condition, even the ascending colon having a mesentery.

New York State Journal of Medicine

March, 1923, 23, No. 3

Recent Progress in Communicable Diseases of Childhood. C. Herrman, New York.—p. 93.

*Clinical Studies in Functional Disturbances. II. Recognition and Treatment of Hypothyroidism. J. A. P. Millet and B. D. Bowen, Buffalo.—p. 94.

*Value of Cystoscopic Examination in Hematuria. A. M. Crance, Geneva.—p. 104.

Life History of Double Uterus. J. O. Polak, Brooklyn.—p. 107.

Treatment of Certain Conditions of Cervix Uteri. G. Gibson, Brooklyn.—p. 109.

Nitrous Oxid-Oxygen. Its Value as General Anesthetic in Genito-Urinary Surgery. J. J. Buettner, Syracuse.—p. 112.

Treatment of Cutaneous Anthrax; Prophylaxis. J. C. Regan, Brooklyn.—p. 113.

Is the Present Trend in Nursing Education Giving Us Satisfactory Nurses? T. Wright, Buffalo.—p. 118.

Recognition and Treatment of Hypothyroidism.—A study is presented by Millet and Bowen of eighteen cases showing either (a) myxedema, (b) clinical hypothyroidism, or (c) certain symptoms suggestive of hypothyroidism, together with a decreased basal metabolic rate and clinical improvement under thyroid therapy. The thesis is put forward that it is very difficult to classify cases falling in this third group, and to distinguish the true hypothyroid case from the case with a decreased basal metabolic rate for which hypothyroidism is not primarily responsible. Some observations are recorded as to the behavior of patients in these three groups under the different forms of thyroid therapy. It is the authors' belief that the most satisfactory type of thyroid therapy is the intravenous administration of thyroxin, controlled, where possible, by repeated estimations of the basal metabolic rate: that, further, both thyroxin and desiccated thyroid are uncertainly absorbed when taken by mouth, although either will, in most instances, bring about the desired therapeutic effect;

and, finally, that for general oral administration a good preparation of desiccated thyroid is as good as, or better than thyroxin.

Value of Cystoscopic Examination in Hematuria.—Hematuria is a warning signal of pathology in the genito-urinary tract. Inasmuch as the mildest case of bleeding may prove to be one with a most serious lesion, Crance says, it is essential that practically all of these patients be examined by the methods which modern urology offers.

Ohio State Medical Journal, Columbus

March, 1923, 19, No. 3

Brain Injuries Without Skull Fractures. D. H. Morgan, Akron.—p. 157.

Abdominal Drainage. E. J. McCormick, Toledo.—p. 163.

Blood Chemistry in the Diagnosis, Prognosis and Treatment of Nephritis. C. S. Mundy, Toledo.—p. 167.

*Secondary (Acquired) Megacolon. Report of Case. R. R. Rogers, Warren.—p. 172.

Early Activation of Muscles in Infantile Paralysis. H. O. Feiss, Cleveland.—p. 177.

Pellagra. L. de M. Blocker, Cincinnati.—p. 180.

Relation of Laboratory to Health Department and to Community. R. G. Perkins, Cleveland.—p. 183.

Are State Hospitals Preferable to State Asylums? H. S. MacAyeal, Akron.—p. 187.

Use of Morphin in Obstetrics. F. Hendrickson and A. R. Vonderahe, Cincinnati.—p. 189.

Secondary Megacolon.—Rogers' patient was a full term infant weighing 9 pounds, and apparently normal in every way except for the condition of the anus. When he was about twenty-four hours old the mother noted that his bowels did not move, and on investigation she found that the baby's anus seemed to be closed. The family physician discovered an anal opening which was just large enough to admit a small steel probe. He dilated this opening with the tip of an infant syringe. This operation produced some bleeding, but was followed by the passage of considerable meconium. After this the baby began having small flat stools. The movements were accompanied by a great deal of grunting and straining, and frequently abdominal massage was necessary to accomplish them. The child was breast fed and gained weight regularly, but for the first month its bowels were moved only with considerable difficulty. The movements were soft, semiformal and small, but even this type of fecal matter caused a great deal of straining and pain and the use of suppositories and enemata was painful and caused hemorrhage. At 9 months cereal feedings were begun, and shortly thereafter small amounts of bread and butter, baked potato, carrots and prunes were added to the diet. Immediately the trouble with the bowels became greatly aggravated. The stools occurred less and less frequently, were formed when they did occur, and were accomplished only by great straining and by screams of pain. By the use of abdominal massage and castor oil a stool was obtained about every third day until the child was a year old, but had frequent vomiting attacks and at times the vomitus had a fecal odor. With less frequent stools the baby's abdomen became more distended. The anal region was bisected by a thick, fibrous raphe which was continuous with the raphe of the scrotum. It was impossible to stretch this raphe enough to insert even the little finger into the rectum. The raphe was divided and removed and as good a sphincter as possible was constructed. The patient made a good recovery but the intestinal condition became worse. Roentgen-ray examination showed a dilated sigmoid. Operation disclosed an early Hirschsprung's disease or megacolon. The enlargement started immediately above the internal sphincter, and the diameter of the intestine was that of a small orange. This tapered up throughout the length of the colon to the hepatic flexure.

Philippine Journal of Science, Manila

February, 1923, 22, No. 2

*Natural Immunity to Infection and Resistance to Disease, as Exhibited by the Oriental, with Special Reference to Siamese. R. W. Mendel-son, Bangkok, Siam.—p. 115.

*Metabolism in China. B. E. Read and S. Y. Wang, Peking, China.—p. 127.

New Genus and Species of Fly Reared from Hoof of Carabao. J. M. Aldrich, Washington, D. C.—p. 141.

- Foot Maggot, *Booponus Intonsus* Aldrich; New Myiasis Producing Fly. H. E. Woodworth and J. B. Ashcraft, Manila.—p. 143.
New Philippine *Stenocranus* (Delphacide, Homoptera). F. Muir, Honolulu.—p. 157.
Genus *Myndus* in Malay Islands (Homoptera). F. Muir, Honolulu.—p. 161.
Two Collections of Fulgoroidea from Sumatra. F. Muir, Honolulu.—p. 171.
Lycopodiaceae Borneenses. W. Herter, Berlin, Germany.—p. 179.
Merrillosphaera Africana at Manila. W. R. Shaw, Manila.—p. 185.

Resistance of Siamese to Disease.—Mendelson states that specific immunity to typhoid infection can be demonstrated in 15.5 per cent. of the Siamese people. This is in the nature of a racial immunity, acquired as the result of using, for many generations, an infected water and food supply. Although resistance to certain diseases, such as cholera and plague, cannot be demonstrated by specific blood reactions, it is present in the form of a marked resistance to germ infections as a whole, that is, "general infection immunity." The nervous system of orientals is much more resistant to the effects of germ infection than is the nervous system of occidentals. The natural immunity to infection and resistance to disease, as exhibited by the oriental, is of real value to the health officer working in the East under present conditions.

Metabolism of Chinese.—Analysis of the chemical constituents of urines excreted by various classes of Chinese people taking different diets has yielded results which Read and Wang believe makes it necessary for clinicians working in the Orient to adjust their analytic standards accordingly.

Tennessee State Medical Association Journal, Nashville

February, 1923, 15, No. 10

- Council of State Medical Associations. O. West, Chicago.—p. 433.
Treatment of Glaucoma. E. C. Ellett, Memphis.—p. 437.
Head Injuries. T. G. Pollard, Nashville.—p. 442.
Economic Aspect of Salpingitis Based on Two Hundred and Fifty-Seven Cases. J. M. Maury, Memphis.—p. 443.
Endoscopy. H. Wood, Nashville.—p. 446.
Incidence of Tabes Dorsalis. C. C. Turner, Memphis.—p. 453.
Dendritic Keratitis. J. B. Stanford, Memphis.—p. 455.
Treatment of Auricular Fibrillation. N. S. Stern, Memphis.—p. 457.

Virginia Medical Monthly, Richmond

March, 1923, 49, No. 12

- Importance of Early Diagnosis of Acute Abdominal Pain. J. D. Rogers, Washington, D. C.—p. 693.
Pediatric Practicalities. S. Wilson, Lynchburg.—p. 696.
Use of Dry Milk in Infant Feeding. W. B. McIlwaine, Petersburg.—p. 700.
*Exanthem Occurring in Infants, with Unusual Symptomatology. C. E. Conrad, Harrisonburg.—p. 705.
Balancing the Ration in Severe Diabetes. A. G. Brown, Jr., Richmond.—p. 706.
Value of Basal Metabolism Studies in Thyroid Disease. J. H. Smith, Richmond.—p. 708.
Delayed Union in Noninfected Wounds Above Umbilicus. A. S. Brinkley, Richmond.—p. 711.
Kidney Abscess and Pyonephrosis. Review of Cases. J. H. Neff, University.—p. 715.
Prostatectomy, with Special Reference to Perineal Route. J. S. Horsley, Richmond.—p. 718.
Prostatectomy. R. C. Bryan, Richmond.—p. 721.
*Multiple Myeloma; Report of Case. J. L. Rawls, Norfolk.—p. 723.
Unusual Case of Mastoiditis. Operation and Recovery. T. E. Hughes, Richmond.—p. 726.
Electrocardiography in Diagnosis of Cardiac Conditions. F. C. Rinker, Norfolk.—p. 727.
Papillary Cystadenoma of Ovary. J. W. Gibbon, Charlotte, N. C.—p. 729.
Time and Mortality in Appendicitis. J. E. Rawls, Suffolk.—p. 734.

Exanthem Occurring in Infants, with Unusual Symptomatology.—Conrad has seen two cases of a disease in infants, with high fever (104 F.), loss of appetite and fretfulness, but without physical signs. From twelve to twenty-four hours after the fever subsides there appears a macular and maculopapular eruption. After the febrile stage, the infant is comfortable and happy, and does not appear to be sick during the period of the rash. With this there is a leukopenia, with lymphocytosis. This condition has been termed by Zahorsky "roseola infantum." Veeder and Hempleman suggested the term "exanthem subitum."

Multiple Myeloma: Report of Case.—In Rawl's case only one bone, the femur, showed evidence of myeloma at the time of death.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

February, 1923, 27, No. 9

- Radiation of True Pelvis with Help of Drainage Tubes. F. Daels.—p. 257.
Pulmonary Vessels and Lymphatics. W. Overend.—p. 268.
Radiography in Its Relation to Miners' Phthisis on Witwatersrand. W. Steuart.—p. 277.

China Medical Journal, Shanghai

February, 1923, 37, No. 2

- Dysentery in Shanghai. C. N. Davis.—p. 107.
Mechanism of Regulation of H-Ion Concentration of Blood. E. W. H. Cruickshank.—p. 116.
*Spindle Cell Sarcoma of Neck; Congenital Papilloma of Buttock. A. I. Ludlow.—p. 145.
Bronchial Spirochetosis. L. S. Huizenga.—p. 153.
*Tartar Emetic in Schistosomiasis Japonica. W. E. Libby.—p. 158.

Congenital Papilloma of Buttock.—The papilloma of the buttock in Ludlow's case measured 40 cm. in length, 35 cm. in breadth, and was elevated from 4 to 12 cm. above the surrounding surface. It weighed 3,000 gm.

Tartar Emetic in Schistosomiasis Japonica.—Eight cases of *Schistosomiasis japonica* infestation are reported by Libby in which tartar emetic was used. One patient died on the fourteenth day after having received a total of 12½ grains (0.85 gm.) of the drug. Libby regards it as a case of poisoning from the cumulative effects of the tartar emetic. Clinically, the picture was one of uremic toxemia on which was superimposed jaundice.

Glasgow Medical Journal

February, 1923, 99, No. 2

- Present-Day Treatment of Fractures. J. W. Dowden and others.—p. 81.

Indian Journal of Medical Research, Calcutta

January, 1923, 10, No. 3

- Ligaturing of One Renal-Portal Vein in Living Frog (Gurwitsch). W. N. F. Woodland.—p. 595.
Bacteriologic and Laboratory Technic. W. F. Harvey.—p. 613.
*Diagnosis of Hookworm Infection. K. S. Mhaskar.—p. 665.
Salivary Glands and Sucking Apparatus of *Cimex Rotundatus*. J. W. Cornwall.—p. 687.
*Tubercle Bacilli in Culture; Properties of an Endolipase. R. Row.—p. 692.
Structure and Development of Female Genital Organs and Hypopygium of Mosquito. S. R. Christophers.—p. 698.
Herpetomonas Ctenocephali, Fantham; Life History and Reactions to Different Environments. H. E. Shortt.—p. 721.
Increase of Dose as Method of Making Use of Old Vaccine. W. F. Harvey and K. R. K. Iyengar.—p. 739.
Some Indian Species of Genus *Phlebotomus*. Part I. *Phlebotomus Annandalei*. J. A. Sinton.—p. 742.
*Smallpox Vaccination in Java. W. F. Harvey and S. R. Christophers.—p. 754.
Malaria Research and Preventive Measures Against Malaria in Federated Malay States and in Dutch East Indies. S. R. Christophers and W. F. Harvey.—p. 759.
Revision of Culicine Mosquitoes of India. Part I. P. J. Barraud.—p. 772.
Transmission of Plague by Fleas of Genus *Xenopsylla*. L. F. Hirst.—p. 789.
Correlation Between Humidity and Intensity of Hookworm Infection in Southern India. K. S. Mhaskar.—p. 821.
Pseudotracheal Teeth in "Eye-Fly" (*Siphunculina Funicola*, De Meijere). R. S. White.—p. 825.
Descriptive Terminology of Male Genital Character of Mosquitoes. S. R. Christophers and P. J. Barraud.—p. 827.
Iron Hematoxylin Staining. H. E. Shortt.—p. 836.
Reduction of Amino-Acids Into Simpler Natural Bases (Amines) by Bacillus Dysenteriae (Shiga). H. W. Acton, R. N. Chopra and T. C. Boyd.—p. 837.
Fallacy in Use of Benian's "Relief" Stain Associated with Growth of Micro-Organisms in Two Per Cent. Aqueous Solution of Congo Red. R. H. Malonc.—p. 847.
*Results of Some Experiments in Treatment of Malaria with Alkalis Combined with Quinin. J. A. Sinton.—p. 850.
Lathyrism. A. Howard, J. L. Simonsen and L. A. P. Anderson.—p. 857.

Diagnosis of Hookworm Infection.—Mhaskar asserts that diagnosis based on the presence of hookworm ova in the stools is definite. The method is simple, rapid and practicable, and the results obtained are highly accurate.

Tubercle Bacillus Endolipase.—The object of Row's study was to ascertain if, in a mass of tubercle bacilli grown on solid mediums rich in fatty material, any fat splitting ferment could be demonstrated, what changes would be produced in the tubercle bacillus itself, which, as is well known, is not appreciably altered by contact with all sorts of reagents, fat solvents and even age. It appears that this resistant property, which is also demonstrable by the character of acid fastness, is the more marked in oldish cultures when the fatty or waxy material of the tubercle bacilli becomes more differentiated and complex. This, Row believes, is the reason why it has been possible to demonstrate tubercle bacilli in the lesions found and described in some of the Egyptian mummies.

Smallpox Vaccination in Java.—Harvey and Christophers are convinced that Nijland of Java, operating in a tropical climate, has been able to surmount the difficulties attendant on vaccine lymph production under high temperature conditions. The yields which he has been able to obtain from buffaloes render the production of lymph in sufficient quantity and at low cost an easy matter. The principle underlying Nijland's method is that no vaccinifer shall be inoculated with lymph derived from the same species of animal. Under these conditions degeneration does not take place. Three species of vaccinifers are used, the rabbit, to provide lymph for inoculation of the cow-calf, and the cow-calf, to provide stock lymph for inoculation of buffaloes. The buffaloes thus provide the lymph which is used by the vaccinators in the field. This lymph can be issued by ordinary post, can be sent far afield, and without loss of potency. It is diluted at the time of use by the vaccinator and this diluted lymph preserves its potency for two or three days.

Treatment of Malaria with Alkali Combined with Quinin.—A few years ago Cowie and Calhoun, and later Abrami and Senevet, advanced the theory that the malarial paroxysm was of the nature of an "anaphylactoid" phenomenon, from the similarity of the paroxysm to that seen in "protein shock." On this hypothesis and because of many other factors of similarity between these two phenomena, it seemed to Sinton that if the symptoms of the latter are influenced by the intravenous injection of alkali, that those of the former might also be so influenced. Two patients with benign tertian malaria were treated in this way with beneficial effects on the symptoms and in one case morphologic changes in the parasites occurred rather resembling those produced by quinin treatment. The mixtures used were as follows: A: sodium bicarbonate, 60 grains; sodium citrate, 40 grains; water, 1 ounce. Q: quinin sulphate, 10 grains; dilute sulphuric acid, 10 minims; magnesium sulphate, 60 grains; water, 1 ounce. In future it is proposed to use citric instead of sulphuric acid, as the former is a much weaker acid and the citrates formed become carbonates on absorption into the blood. All patients were given 1 ounce of magnesium sulphate before the commencement of treatment. In the morning they were given 1 ounce of A at 7:30 a. m., repeated at 9:30 and 11 a. m. About fifteen minutes after this last dose 1 ounce of Q was given. At 6 p. m. 1 ounce of A was given, followed by 1 ounce of Q. For the next three days 1 ounce of A was given thrice daily (7:30 a. m., 11:30 a. m. and 6 p. m.), followed in each case by 1 ounce of Q. This completed the treatment.

Irish Journal of Medical Science, Dublin

February, 1923, 5, No. 12

Some Renal Efficiency Tests. G. E. Nesbitt.—p. 533.

*Case of Large Cervical Myoma. B. Solomons.—p. 543.

Congenital Cardiac Anomaly. Abnormal Opening Between Aorta and Pulmonary Artery. T. G. Moorhead and E. C. Smith.—p. 545.

Case of Precocious Sexual Development. W. G. Harvey.—p. 550.

Large Cervical Myoma.—Solomons removed a fibromyoma springing from the anterior cervical wall which weighed 15 ounces. Microscopically it was a simple fibromyoma with hyaline degeneration. The cervix revealed an unhealed discharging wound.

Congenital Cardiac Anomaly.—In the case reported by Moorhead and Smith an abnormal opening existed just above the sigmoid valves, establishing a communication between the anterior wall of the aorta and the pulmonary artery at this point. The patient, a man, aged 48, was suffering from

symptoms of advanced cardiac failure. He became easily tired and short of breath. The heart was considerably enlarged, the impulse extending into the sixth space, about an inch outside the nipple. The impulse was fairly forcible, and there was no thrill. On auscultation a double murmur exactly resembling that of aortic regurgitation was audible, the only special point noted being that it could only be heard to the left of the sternum. The systolic portion of this murmur was conducted upward to the root of the neck, and the diastolic portion down to the cardiac apex. In addition, a mitral systolic murmur, conducted into the axilla, was clearly audible. The pulse, 76 per minute, was of a typical collapsing character. The blood pressure was 160/40. No Duroziez sign was detected nor was capillary pulsation noted. The Wassermann test was negative. The patient died five weeks after admission to hospital. The necropsy report is given.

Precocious Sexual Development.—Harvey reports the case of a girl, aged 2½ years, who had a history of regular menstrual periods for nine months. She was a small, thin child, of apparently normal mental development for her age, but having well developed breasts, a tense and swollen abdomen, a coarse growth of dark hair on the pubes, and external genitalia of a markedly adult type. The abdominal swelling was due to a large tumor in the left side involving the kidney and suprarenal, and extending across the abdomen. The child died five weeks after Harvey first saw her. She did not seem to have pain, and her only symptom was a persistent craving for fluid. The thymus was practically nonexistent, and the left ovary was cystic, while the right kidney showed hypertrophy. Other organs appeared to be normal. The tumor was a very cellular and vascular sarcoma.

Indian Medical Gazette, Calcutta

February, 1923, 58, No. 2

*Two Family Outbreaks of Epidemic Dropsy Type of Beriberi. J. W. D. Megaw and R. N. Banerji.—p. 49.

Season of Onset of Kala-Azar. T. C. McCombie Young.—p. 52.

Filariasis. S. K. Roy.—p. 56.

First Six Months' Work of Radium Institute at Ranch. T. C. Vaughan.—p. 58.

Scheme of Medical Inspection of Scholars in Secondary Schools. A. Hamid.—p. 62.

Merits of Ayurvedic System of Medicine. A. Roy.—p. 66.

Expulsive Hemorrhage After Cataract Extraction. S. K. Ganguly.—p. 70.

Rate of Growth of Vesical Calculi. R. F. A. Macgregor.—p. 71.

Treatment of Chronic Gonorrhea. A. P. Pillay.—p. 71.

Two Family Outbreaks of Epidemic Dropsy Type of Beriberi.—The twelve cases reported by Megaw and Banerji occurred in a highly cultured and well to do Bengali family consisting of thirteen members belonging to three generations; the ages varied from 8 to 80. The first cases began to occur early in November, 1919, and by the beginning of January, 1920, twelve members of the family had been affected to a greater or less extent, the victims being attacked one by one at varying intervals. The most striking manifestations of the disease were: gastro-intestinal symptoms which occurred in ten out of twelve. There was diarrhoea in eight and dysentery in one. There was tenderness in the epigastric region, in three cases followed by considerable vomiting. There was slight nausea or vomiting in seven others. There was swelling of the feet and legs of varying severity and duration in all the cases. Fever of an irregular type occurred in eight cases. The temperature was seldom higher than 101 F. and in the milder cases the fever was slight and of brief duration. A systolic bruit, best heard over the pulmonary area was detected in ten of the cases, and in four of these there were definite signs of dilatation of the heart accompanied by dyspnea. There was reduplication of the pulmonary second sound in two cases. The knee jerks were exaggerated in ten cases, and were entirely lost in two cases. There was tenderness of the calf muscles in three cases: in one of these it was very pronounced and this case ended fatally. In one case the gait was like that of locomotor ataxy. A striking feature of the disease was a tendency to hemorrhages of which the following were noted: (a) Petechial skin hemorrhages in three; (b) bleeding piles in two; (c) epistaxis in four; (d) hematemeses in three; (e) hemoptysis in three; (f) hemorrhagic retinitis in four.

Annales de Médecine, Paris

January, 1923, 13, No. 1

*Bulbar Hemisindrome. Marinesco and Draganesco.—p. 1.

*Amino-Acids in Blood. J. Desqueyroux.—p. 20.

*Infection of Adults with Tuberculosis. Cain and Hillemand.—p. 39.
Cerebrospinal Regions for Injections. H. C. Salomon.—p. 57.

*Psychic Factor in Motor Function of Stomach. Daniélopou and Carniol.—p. 63.

*Acidity of Urine and Albuminuria. A. Hanns.—p. 71.

Bulbar Hemisindrome.—Marinesco and Draganesco report the clinical and anatomic findings in a case of thrombosis of the right vertebral artery, which had caused softening of the middle layer of the medulla oblongata. They discuss the literature on Avellis' syndrome (paralysis of one vocal cord and half of the soft palate with hemiplegia of the other side) and especially on the question of the cardiac nucleus of the pneumogastric nerve.

Amino-Acids in Blood.—Desqueyroux determined the amount of amino-acids and other nitrogen compounds in the blood of forty patients and three healthy subjects. In the latter he found between 4.9 and 6.1 mg. in 100 c.c. of blood three hours after a light breakfast. This level is rarely lower in disease, but is elevated more frequently (up to 9.37 mg.). The higher amounts were found in diabetes, azotemic nephritis, insufficiency of the heart and pneumonia. The figures were irregular with pathologic conditions in the liver.

Primary Infection of Adult with Tuberculosis.—Cain and Hillemand report a case of tuberculosis which can be considered as an infection acquired in adult age. They give the pathologic characteristics of these cases, and a short review especially on the fulminating tuberculosis of natives in the colonies, not protected by previous infections.

Psychic Factor in Motility of Stomach.—Daniélopou and Carniol demonstrated in 1922 that the psychic influence is distinct not only in the secreting function of the stomach but also in its motor functioning. The stomach started to contract about five minutes after another person ate a small meal in the presence of the subject tested. The contractions were less in a patient with atony of the stomach; they started later, and stopped earlier after the end of the visual meal. Intravenous injections of physostigmin sulphate (0.5 mg.) caused at first an inhibition, later an exaggeration of the contractions. Intravenous injection of 0.05 to 0.1 mg. of atropin sulphate increased the contractions, which stopped after another injection of 0.25 to 0.5 mg. After an injection of 0.5 mg. of atropin sulphate the stomach did not react even to a strong insufflation.

Acidity of Urine and Albuminuria.—Hanns reports two cases of nephritis with a distinct parallelism between the concentration of albumin and the acidity of the urine. This relation is merely accidental and due to the fact, that both the concentration of albumin and the acidity of the urine depend on the amount of urine excreted.

Archives Franco-Belges de Chirurgie, Brussels

January, 1923, 26, No. 1

*Transfusion of Blood. A. Hustin.—p. 1.

*Grafts of Bones Kept in Alcohol. L. Christophe.—p. 13.

*Osteosynthesis for Recent Fracture. A. Lambotte.—p. 57.

*Injections of Hemolyzed Own Blood. M. Descarpentries.—p. 63.

Experimental Rickets. R. Simon and E. Allenbach.—p. 70.

Malformation of Acetabulum. Van Neck.—p. 80.

Immediate Paraplegia After Albee Inlay Graft. J. Moreau.—p. 85.

Osteitis of Spine Probably of Typhoid Origin. G. Lemoine.—p. 88.

Transfusion of Blood.—Hustin uses a glass cannula shaped like an ampule, 3 cm. long, with two arms for the rubber tubes. The citrate solution thus blends with the blood as it emerges from the vein, and the mixture passes on through the other tube to the receptacle below. He warns that whatever the strength of the citrate solution it must be isotonic, and the most harmless method of insuring this is to add glucose solution to bring it to the required isotonic figure. The transfused blood is liable to induce anaphylaxis as a foreign protein. This cannot be foreseen by tests for hemolysis and agglutination, but it can be warded off by a preliminary injection according to Besredka's method.

Bone Grafting and Bone Regeneration.—Christophe restored clinically normal function to the knee of a soldier after the

patella had been shattered by a war wound. Four months later a patella from another soldier was implanted, and the functional results were perfect. The foreign patella had been kept in alcohol for three days. Experimental research with grafts kept in alcohol are described, and further clinical experiences. All justify the assumption that a bone placed at once in alcohol, and used soon, offers ideal material for grafts. It can be fitted exactly to the defect, and allows exercise of the parts at once, thus averting atrophy of muscles. The dead bone is not resorbed so rapidly as living bone, but otherwise the chemical process is identical: Either the graft is tolerated and heals in place, or it is resorbed and new bone formed from its elements and the precipitated preosseous gel.

Interval Before Osteosynthesis for Recent Fractures.—Lambotte advises waiting for one or two weeks or longer after fracture of a long bone. Healing is retarded a little, but the ultimate outcome is far better. In his hundreds of cases of fracture of both bones in the leg, healing was complete within a month in cases thus treated. By waiting a week or two the periosteum becomes thick and congested, and bears handling as the plate or metal band is applied. Of course if a sharp fragment of bone threatens gangrene or a nerve is injured, the intervention must be hastened.

Injections of Laked Own Blood.—Descarpentries has a very favorable impression of the effect of reinjecting subcutaneously the patient's own blood in surgical cases, phlegmons, etc. He draws 10 c.c. of blood for the purpose. It seemed to bring a turn for the better in torpid cases, prevent postoperative complications, localize suppuration, and promote healing.

Archives des Maladies de l'App. Digestif, Paris

1923, 13, No. 1

*Diffuse Angiomas of Rectum. R. Bensaude and E. Antoine.—p. 1.

*Pyloric Cancer in a Syphilitic. F. Curtis and H. Surmont.—p. 24.

*Reactions in Echinococcus Disease. Cottin and M. Saloz.—p. 44.

*Blood in Stomach and Feces. L. Meunier.—p. 60.

Diffuse Cavernous Angiomas of Rectum.—Bensaude and Antoine report two cases of this rare disease. One of them was very favorably influenced by an artificial anus in the transverse colon; the other died without operation.

Pyloric Cancer in a Syphilitic.—Curtis and Surmont describe a case of adenocarcinoma of the pylorus in a syphilitic. Antisyphilitic treatment improved the condition of the patient for a short time and the operation came too late. No syphilitic changes in the stomach were found at the necropsy.

Biologic Reactions in Echinococcus Disease.—Cottin and Saloz publish one case of carcinoma of the liver in an individual in good general condition. The precipitin reaction and Weinberg's reaction for echinococcus were positive. On the other hand, these reactions were negative in a case of echinococcus cyst of the liver. There was no eosinophilia in the latter case.

Distinction Between Fresh and Digested Blood in Stomach and Feces.—Meunier uses extraction by water for hemoglobin, and extraction by a weak solution of ammonia for hematin, and makes the phenolphthalein test for peroxydases with the extracts. Fresh blood is soluble in water, while the hematin from digested blood needs ammonia to dissolve it.

Archives des Maladies du Cœur, Paris

January, 1923, 16, No. 1

*Antagonism between Epinephrin and Cinchona. A. Clerc and C. Pezzi.—p. 1.

*Situs Inversus with Congenital Heart Block. P. Meyer.—p. 16.

Pathologic Significance of Abnormally Shaped Leukocytes. J. Sabrazès.—p. 41.

Antagonism Between Epinephrin and the Alkaloids of Cinchona.—Clerc and Pezzi extended their former studies on the antagonism between epinephrin and quinin on quinidin, cinchonin and cinchonidin in which they found a similar action to quinin: They all paralyze the bulbar center of the pneumogastric nerve, while epinephrin excites it. The acceleration of the heart action caused by small amounts of

these drugs is due to excitation of the accelerators, not to paralysis of the pneumogastric, which requires larger doses.

Situs Inversus with Malformation of the Heart and Congenital Heart Block.—Meyer publishes a case of complete situs inversus with stenosis of the pulmonary valve and an opening in the interventricular septum (clinical diagnosis). Electrocardiographic tracings of the complete block, which was present, are reproduced.

Archives de Médecine des Enfants, Paris

January, 1923, 26, No. 1

- *Vaccination Against Diphtheria. P. Rohmer.—p. 1.
- Training of Speech in Children with Cleft Palate. L. and C. Ruppe.—p. 19.
- *Infantile Paralysis from Pain. J. Comby.—p. 36.
- Present Status of Banti's Disease in Children. J. Comby.—p. 39.

Antidiphtheria Vaccination.—Rohmer reports the history and technic of Behring's method, and speaks favorably about Schick's test except for the difficulties in distinguishing between true and pseudoreactions, and its lack of differentiation of individual sensibility, especially in small children. The future task is to determine the necessary minimum dosage, as well as the number of injections, which would give the desired results.

Paralysis in Infants Due to Pain.—The paralysis of one upper extremity of Comby's 12 month old patient, was due to a subluxation of the head of the radius.

Bulletin Médical, Paris

Feb. 24, 1923, 37, No. 9

- *Diagnosis of Pott's Disease. C. Roederer.—p. 229.
- *Orthopedic Treatment of Pott's Disease. Nové-Josserand.—p. 236.
- Surgical Treatment of Pott's Disease. Delchef.—p. 241.

Pott's Disease.—These two numbers of the *Bulletin* are devoted to tuberculosis of the spine. Roederer says that what we call the beginning is in reality not the actual onset; when symptoms attract attention to the lesion it is already well established. The clinical picture and the course differ materially in children and adults, and in individuals in each group. It may simulate any and every spinal cord affection and lesion of the spine, and the majority of chronic affections of the viscera. "With a large abscess almost anywhere in an adult, the origin of which is not clear, examine the spine." He had two patients in his charge recently whose Pott's disease had been mistaken by others for a perirenal abscess and an operation had been performed. The pain is persistent or returns always at the same spot; it is relieved by reclining and aggravated by walking, by jarring, and by the effort of sitting up. It is generally bilateral, and spreads downward as a rule. In a child, scoliosis should not be considered until after vertebral caries has been definitely excluded. In dubious cases, by having the child lie flat on its stomach for several hours the contracture with Pott's disease usually subsides, and with it the tendency to scoliosis. Children with incipient scoliosis, taking gymnastic treatment, should be reexamined every month as if they were being seen for the first time. He has seen several children with nonrigid tuberculous caries who were being given gymnastic treatment from a blunder in diagnosis; in one such case the course of the Pott's disease proved exceptionally severe. Every child that limps, that tires from standing, should be suspected of tuberculous caries, even when the disquieting phenomena have apparently subsided. The general health, recent tuberculosis-breeding diseases, the family antecedents, and the glands in axillae, neck and groin should be taken into account.

Orthopedic Treatment of Pott's Disease.—Nové-Josserand insists on the wisdom of beginning treatment in every case of tuberculous osteitis of the spine as if it were of the gravest type, enforcing bed rest. By the end of two or three months we can assume a mild form of the disease if the general condition keeps good, if the pain has yielded to the rest, the spine keeps flexible, the reclining patient can sit up without help, and radioecopy shows no serious lesions. In these conditions we can allow the adolescent or adult patient to be up and about with a plaster jacket, under attentive surveillance. With growing children, bed rest is indispensable. The

younger the child, the greater the need for relieving the spine from weight bearing, and the longer the bed rest must be enforced. After recovery, strict supervision is necessary. At least a year of bed rest is required. Then very gradually certain movements are allowed while still reclining, then creeping exercises, watching to see that they do no harm.

March 3, 1923, 37, No. 10

- *Diagnosis of Pott's Disease in Adults. J. A. Barré.—p. 255.
- *Congenital Scoliosis Versus Pott's Disease. A. Mouchet.—p. 256.
- Pott's Disease in the Army. Duguet.—p. 256.
- Radiologic Diagnosis of Incipient Pott's Disease. Mahar.—p. 258.
- Idem. Colanéri.—p. 260.
- *Lesions Simulating Pott's Disease. M. Bufnoir.—p. 262.

Early Diagnosis of Pott's Disease in Adults.—Barré calls attention to the pyramidal symptoms (Babinski sign, exaggerated tendon reflexes) which he has found accompanying pains ascribed at first to sciatica or intercostal or other neuralgia, but which proved to be the earliest manifestations of insidious tuberculous osteitis of the spine. The roentgen-ray findings and the dissociation of albumin and cells in the spinal fluid offer confirmatory evidence of Pott's disease, even in a comparatively early stage. Also tenderness over the spinal nerve roots corresponding to neuralgia in remote regions.

Congenital Scoliosis Versus Pott's Disease.—Mouchet relates that a missing half of one vertebra is liable to induce a small hump in the spine, but it is not tender, not reducible and not strictly median, and there is rotation of the adjoining vertebrae. When the hump is larger, median, tender, and there is no rotation and the spine is rigid, tuberculous osteitis should be suspected, even in young infants.

Lesions Simulating Pott's Disease.—Bufnoir reports five cases of infectious processes in the intervertebral disks and prevertebral ligament which improved under heliotherapy. There were kyphosis and pains in a certain segment of the spine; the intensity of the paroxysmal pains and the irregularity of the course, the intermissions and exacerbations, differentiated the affection from Pott's disease. A plaster jacket is scarcely needed for this chronic vertebral arthritis; bed rest does not reduce the pain. In his cases, heliotherapy and spa treatment proved effectual.

Journal de Chirurgie, Paris

January, 1923, 21, No. 1

- *Polycystic Disease of Liver. Costantini and Dubouché.—p. 1.
- *Removal of Submaxillary Glands. P. Truffert.—p. 26.

Polycystic Disease of the Liver.—Costantini and Dubouché devote six pages to the tabulated details of 47 cases of cysts in the liver; 5 were treated by puncture alone, with only one recovery; 13 were treated by incision and drainage or the lips of the cyst were sutured to the skin. There were only three deaths in this group. In 11 cases the unilocular cyst was treated by complete resection of the cyst, with recovery of all but one much debilitated patient. In 6 cases a polycystic mass in the liver was removed by a wedge resection, with recovery of 5 patients. In 5 other cases of polycystic disease of the liver all the patients recovered but 2 who had in addition polycystic disease of the kidneys. Two other patients were treated by exploratory laparotomy alone, and both died; a third recovered after the cyst had been sutured to the duodenum. In the total 47 cases the kidneys were diseased in 5. The fluctuation in a bile cyst differentiates it from a hydatid cyst. Puncture is dangerous. Removal of the entire pocket is the only treatment to avoid recurrence and insure rapid healing. When the walls of the cyst cannot be detached, the edges must be sutured to the skin after resecting as much as possible. Diffuse polycystic disease of the liver seems beyond the resources of surgery, but it may be possible to open some of the larger cysts that cause the most discomfort.

Removal of Submaxillary Glands.—Five large illustrations show the various steps of an operation which allows the complete removal of the submaxillary and lymphatic glands, thus clearing out the entire submaxillary space. This operation is required even when the tumor in the tongue or throat has been treated with radium or roentgen rays, as these have no action on the adenopathy.

Journal d'Urologie, Paris

January, 1923, 14, No. 1

*Postoperative Pelvic Cellulitis. Legueu and Rochet.—p. 1.

*Anorectal Gonorrhea. Lévy-Weissmann.—p. 13.

*Cystic Lymphosarcoma of the Scrotum. Oudard.—p. 33.

Local Suppuration After Operations on the Bladder.—Legueu and Rochet comment on the defective mechanical conditions for drainage after suprapubic incision. There is liable to be infiltration of urine back of the pubis and insidious abscess formation. They have had three instances of this in more than a thousand suprapubic prostatectomies. Treatment consists in introducing a drainage tube through the perineum, as they describe in detail. This usually saves the situation even when the perivesical or pelvic cellulitis is far advanced. The suppuration may make itself manifest far from the bladder, but no treatment is effectual that does not provide ample gravity drainage for the original focus in the bladder or bed of the prostate.

Gonococcus Infection of Anus and Rectum.—Weissmann remarks that rectal gonorrhea often runs an insidious course and escapes detection, but it usually entails the same kind of lesions as in gonorrheal urethritis, and is equally liable to become chronic. Aside from microscopic discovery of the gonococcus, there are no pathognomonic signs, but rectoscopy aids in the diagnosis by exclusion. The patient should not be allowed to become constipated; it is better to keep the stools soft and frequent, with castor oil or petrolatum. He warns against cleansing enemas, as they are liable to spread infection upward. For the same reason, the two-way nozzle should not be introduced deep into the rectum. A weak solution of potassium permanganate, as hot as can be borne, should be used for the irrigation once or twice a day. Delbet supplements this by injecting 200 gm. of bismuth suspension, to be retained, as a dressing for the walls. A speculum with large openings allows examination, and cauterization with 10 per cent. nitrate of all ulcerations; the speculum *grillagé* is better for this purpose than the rectoscope. In absolutely rebellious cases it may be necessary to divert the feces by an artificial anus or to resect a segment of the rectum. In conclusion he mentions Carnot's recent case in which rebellious bleeding polypous vegetations subsided after daily irrigation of the rectum with boiled water followed by injection above the vegetations of a gelose mucilage with 20 per cent. magnesium chlorid.

Lymphosarcoma of the Scrotum.—Oudard's patient was a young man who had had for two years a tumor of the scrotum. It proved to be a lymphosarcoma, and rapidly recurred after resection. Under four exposures to roentgen rays the recurrence subsided completely within three months. The malignant tumor had developed in the tissues of ectodermal origin, apart from the vaginalis and cord.

Lyon Chirurgical

September-October, 1922, 19, No. 5

*Ileus from Congenital Malformations. E. Dahl-Iversen.—p. 497. Conc'n No. 6, p. 685.

*Rupture of Bladder. L. Plisson.—p. 535.

*Nerve Grafting. A. Policard and R. Leriche.—p. 544.

*Neuromas in Pathology of Limbs and Viscera. R. Leriche.—p. 550.

Ileus as Consequence of Congenital Malformation of the Intestines.—Dahl-Iversen reviews the experiences in Denmark with ileus from congenital stenosis or atresia of the bowel, a total of thirty-six cases, including 12 never before published. Children are usually 4 or 7 months old before invagination is liable to occur. With congenital stenosis of the pylorus there is no bile in the vomit, and it is never fecaloid. The disturbances occur later, not until the second or fourth week of life, while congenital ileus becomes manifest the second or third day as a rule. He knows of only three cases on record in which the infants developed normally after an operation to correct the abnormal conditions in the bowel. His personal experience comprises one instance of recovery after operative treatment of congenital ileus from this cause in the new-born. In a certain proportion of the cases the congenital malformation does not cause disturbance until late in life. There may be vague symptoms of dyspepsia, with occasional acute exacerbations evidently due to a ten-

dency to volvulus. This may correct itself spontaneously again and again, until finally it becomes irremediable without an operation. The mechanism is the same as in the new-born. Radioscopy may prove misleading unless the conditions are studied from various angles, allowing intervals between the examinations. In one case the eighth plate, of the ten made, was the only one that revealed the true condition. In conclusion the long clinical history is related of a man aged 58 who had had a habit of vomiting bile every morning since childhood, with occasional acute attacks of pains and jaundice which were interpreted as gallstone colic with chronic enteritis; but necropsy explained the symptoms by transient obstruction of the bowel from kinking of the movable duodenum, or recurring partial volvulus, a consequence of the common mesentery.

Traumatic Rupture of Both Bladder and Urethra.—Plisson relates that the contusion had dislocated the pubes and torn the neck of the bladder and the lining of the urethra. The rupture of the urethra was overlooked at the first operation; this should have been sutured first, and the bladder merely drained. If neither laceration can be sutured, then diversion of the urine through the perineum, supplemented by suprapubic drainage, is the proper procedure. He reconstructed the urethra over a long drainage tube, about the caliber of a No. 18 catheter, the upper end extending from the opening into the bladder. The tube was pulled back and forth every day, and the gap left by resection of the cicatricial fibrous block soon healed and clinically normal conditions were restored.

Fate of Transplanted Nerves.—Policard and Leriche describe the findings in a leg amputated more than two years after a grafting operation on the sciatic nerve with a nerve from a calf. The nerve elements had grown into the implant from below, but the upper end was blocked with fibrous tissue.

Cicatricial Neuromas.—Leriche suggests the possibility that cicatricial neuromas of the minute branches of nerves may have some share in the pathology of the limbs and viscera. Just as such neuromas may be responsible for serious disturbance in amputation stumps, so they may entail internal disturbances. He urges research in this line.

November-December, 1922, 19, No. 6

*Cancer of the Breast. L. Tixier.—p. 673.

*Phlebitis of Longitudinal Sinus. A. Rivière and R. Bertoin.—p. 679.

Cancer of the Breast.—Tixier reports 38 per cent. apparently cured of 211 patients with cancer of the breast given operative treatment between 1902 and 1914; fifty-seven are still living after more than six years. Fully 45 per cent. succumbed to recurrence during the first two years after the operation. He makes the extirpation as early and as extensive as possible.

Thrombophlebitis of the Head.—The protracted fatal obliterating process in the woman aged 32 was remarkable for the involvement of nearly all the venous sinuses of the head and the internal jugular veins. The woman died nearly six months after the first symptoms. A mastoid operation had been done on each side in turn.

Médecine, Paris

January, 1923, 4, No. 4

Ophthalmology in 1922. A. Cantonnet.—p. 243.

*Senile Cataract. Lagrange.—p. 247.

Progressive Decrease of Trachoma in Montpellier. H. Truc.—p. 253.

*Writing for the Blind Which Can be Read by the Seeing.—p. 254.

*Furuncle of the Face and Orbital Thrombophlebitis. Gallemaerts.—p. 255.

*Enucleation in Panophthalmia. Rollet and Bussy.—p. 259.

*Surgical Treatment of Entropion. A. Cange.—p. 261.

Ophthalmic Migraine. F. Terrien.—p. 265.

*Palpation in Ophthalmology. H. Frenkel.—p. 267.

*Ocular Accidents in Spinal Anesthesia. A. Monthus.—p. 273.

*Ocular Syndrome of Botulism. De Saint-Martin.—p. 274.

*Ocular Autoserotherapy. P. Jeandelize and P. Bretagne.—p. 278.

Otorhinolaryngology in 1922. L. Baldenweck.—p. 282.

*Cure of Pseudo-Adenoids. Trétrop.—p. 289.

*Labyrinth Deafness Due to Arteriosclerosis. E. Escat.—p. 290.

*Latent Mastoiditis. L. Reverchon.—p. 296.

*Solitary Polyps of Nasal Fossa. H. Caboche.—p. 301.

*Abscess of Nasal Septum. G. Canuyt.—p. 307.

*Modern Treatment of Hay-Fever. M. Jacod.—p. 308.

*Migraine Following Sinus Disease. G. Dutheil de Lamothe.—p. 314.

*Cough of Rhinopharyngeal Origin. A. Bloch.—p. 318.

Method of Choice in Treatment of Senile Cataract.—Lagrange has had excellent results with waiting till the cataract is really mature—although not overripe. He makes an intracapsular extraction, tears off part of the capsule, performs an iridectomy, and uses a conjunctival flap, with prophylactic vaccines and antipneumococcus serum as adjuvants. He does not believe that his results would be better if he used the method advocated by Barraquer (aspiration of the lens). The greater acuity of vision claimed by the followers of this method is hardly appreciated by the patients, who are quite satisfied with 5/10 vision. The dangers and possible accidents of the method of vacuum extraction in the capsule must not be underestimated.

Writing for the Blind with Usual Characters.—Dr. Cantonnet and Canon Nouet propose a new method of printing for the blind. Points in relief are kept, but instead of Braille's figures, the points are arranged in the shape of ordinary letters. The system has been accepted by the French authorities interested in ameliorating the condition of the blind, as was chronicled in the News department recently.

Furuncle of the Face and Orbital Thrombophlebitis.—Gallemaerts describes the dangers of thrombophlebitis progressing from the branches of the facial vein through the superior ophthalmic to the sinus cavernosus. Therefore every furuncle of the face should be treated early and radically by the galvanocautery.

Enucleation in Panophthalmia.—Rollet and Bussy consider enucleation by far the best method in panophthalmia. It is surprisingly benign. All the accidents are just as possible with excochleation.

Surgical Treatment of Entropion.—Cange considers Panas' operation as the only one which should be used by practitioners.

Palpation in Ophthalmology.—Frenkel finds that the practitioner does not use palpation sufficiently and systematically in diseases of the eye. If the patient gives the impression of being sleepy (false ptosis), think of trachoma, which is found by turning back the upper lid. The subtarsal groove is a favored seat for small foreign bodies. Larger bodies can be found after rolling the lid around an object (after local anesthesia). Palpation of the lacrimal sac should become a reflex action of the physician. Every unilateral conjunctivitis, which lasts for more than fourteen days, is a dacryocystitis, as well as every conjunctivitis of the new-born, which lasts a month without attacking the cornea. Dacryocystitis is the fourth causal agent of blindness, especially in working people in whom it leads to ulcers with hypopyon. One finds in every ophthalmologic clinic glaucomatous patients who lost their sight because the physician had omitted to test the tension of the eye.

Ocular Accidents in Spinal Anesthesia.—Monthus deals with paresis of the abducens (rarely trochlearis) which occurs sometimes after spinal anesthesia made correctly. The paralysis usually disappears quickly, but it may sometimes persist.

Ocular Syndrome of Botulism.—De Saint-Martin mentions the usual ocular signs of botulism (more or less complete external and internal ophthalmoplegia), which should at once lead to the diagnosis, especially when connected with other ocular signs. He found in eight cases retinal congestion, amblyopia, and a very narrow field of vision.

Ocular Autoserotherapy.—Bretagne recommends Rohmer's method which consists in several injections of 1 c.c. of the exudate obtained from a blister. The injections may be repeated after forty-eight hours, and they are given alternately under the upper and lower conjunctiva of the bulbus. The indications for it are ulcers of the cornea, especially with hypopyon, postoperative infections, contraction of iris in rheumatic and gonorrheal iritis, and gonorrheal conjunctivitis. Other methods of treatment should also be used.

Cure of Pseudo-Adenoids.—Trétrop deals with "pseudo-adenoids." These unfortunate patients are curetted and resected repeatedly for a supposed hypertrophy of adenoids which does not exist. The insufficient permeability is due in

these cases to a malformation of the maxillary bones. The incisor teeth are driven forward or backward. The treatment consists in an apparatus which spreads the two sides apart. In children under 10 years, good results are obtained in about six months. The most favorable age is 5 years.

Labyrinth Deafness Due to Arteriosclerosis.—Escat has pointed out that the labyrinth has its "intermittent claudication." Most cases of Menière's syndrome and of chronic labyrinth deafness appearing after the age of 40 are due to local arteriosclerotic disturbances. The only treatment is that of arteriosclerosis.

Latent Mastoiditis.—Reverchon finds it paradoxical to deal with symptoms of a latent affection. Yet we should think of latent mastoiditis if healing does not make rapid progress after paracentesis of the tympanic membrane, and especially when the pus comes at intervals. Schileau pointed out also a particular psychic condition of these patients: they do not feel well, have a vague feeling of heaviness in the head, slight insomnia, no appetite, and incapacity for work. The disease is dangerous if not treated, and therefore a suspicion warrants surgical exploration.

Solitary Polyps of Nasal Fossa and Latent Sinusitis.—Caboche states that a solitary polyp of the middle fossa is a probable sign of an affection of the sinus, even if the meatus appears clean. It recurs if the sinusitis remains untreated. Yet the patients are usually satisfied with the immediate effect of the removal of the polyp.

Abscess of Nasal Septum.—Canuyt emphasizes that the diagnosis and incision should be made early, because the affection destroys the cartilage and causes severe deformity.

Modern Treatment of Hay-Fever.—Jacod reviews the pollen theory and the results of specific treatment.

Migraine Following Nonsuppurative Affections of the Sinus.—Dutheillet de Lamotte traces a number of supposed migraines to affections of the sinuses. Sphenoidal affections cause an occipital headache, while the posterior ethmoidal produce a diffuse pain.

Cough of Rhinopharyngeal Origin.—Bloch emphasizes the rhinopharyngeal causes of coughing. This "pseudotuberculosis" is due to adenoids, rhinitis or nasal malformations.

Nourrisson, Paris

January, 1923, 11, No. 1

*Breast Milk as Factor in Eczema in Infants. A. B. Marfan and Turquetty.—p. 1.

*Lab-Ferment in the Fetus. G. de Toni and M. Montavani.—p. 10.

*Diphtheria in Infants. M. Chevalley.—p. 33.

American Methods of Milk Modification. R. Caruette.—p. 46.

Eczema in Infants.—Marfan and Turquetty observed a wet-nurse whose milk caused eczema in three nurslings. The milk contained from 4.1 to 7.8 per cent. of fat. When the fat content returned to the normal proportion, the child she was suckling at the time remained healthy.

Lab-Ferment in the Fetus.—De Toni and Montavani found lab-ferment in the stomach of human fetuses as early as between the third and fourth month of development. In certain fetuses the lab-ferment was lacking or its action was minimal even in farther advanced development. In most of the cases its action seemed to be comparatively specific against human milk.

Diphtheria in Newly Born and Other Infants.—Chevalley calls attention to the possibility of diphtheria when an infant has rhinitis or ulcerating cutaneous lesions at the navel or behind the ear. Such affections are comparatively harmless. The rhinitis of inherited syphilis seems to be a favorite point of attack for the diphtheria bacillus. Inoculation of animals seems to be the only means to exclude pseudo-diphtheria bacilli.

Presse Médicale, Paris

Jan. 17, 1923, 31, No. 5

Pasteur and General Biology. C. Delezenne.—p. 45.

*Diathermy in Affections of Gallbladder. J. J. Rouzaud and J. Aimard.—p. 47.

*Insufficiency of the Hip Joints. J. Gourdon.—p. 48.

Pancreatic Hormone and Diabetes. P. Pagniez.—p. 50.

Diathermy in Affections of the Gallbladder.—Rouzaud and Aimard had further good results in the majority of 200 more cases treated by diathermy. It is the method of choice in subacute cholecystitis without or with formation of gallstones.

Insufficient Hip Joints.—Gourdon points out that congenital deformities of hip joints are comparatively frequent. In children and even old persons, they are the cause of disturbances, which resemble coxitis. Early fatigue in walking and attacks of pain, especially if the weight of the body increases (pregnancy) or if the profession requires much walking, are the usual signs. Rest and daily exercises with forced abduction of the thighs lead to formation of a better acetabulum, and give excellent results in children in a few months.

Schweizerische medizinische Wochenschrift, Basel

Jan. 25, 1923, 53, No. 4

- *Migraine. A. Schlesinger.—p. 77.
- Climate of Switzerland. H. Hunziker.—p. 81.
- *Urohemolytic Coefficient in Malignant Tumors. C. Bortolotti.—p. 83.
- Treatment of Deformities of Lips. P. Cattani.—p. 85.
- Macroscopic Anatomy of Heart. P. Schweizer and M. Ujiié.—p. 89.
- Cont'd.
- Morbid Conditions in the Feet. F. Brandenburg.—p. 91.

Migraine.—Schlesinger uses pills of iron and calcium glycerophosphate and a laxative tea in the treatment. He calls the attack a "depurative crisis."

Urine-Hemolysis Coefficient in Malignant Tumors.—Bortolotti found that Amati's urohemolytic coefficient is of no value for the diagnosis of malignant tumors.

Pediatrics, Naples

Jan. 15, 1923, 31, No. 2

- *Antimony Intolerance in Leishmaniasis. I. Nasso and M. Mallardi.—p. 57.
- *Histology of the Liver in Infancy. A. F. Canelli.—p. 68.
- Universal Hydrops of Fetus. R. Pollitzer.—p. 80.
- Turriccephalia. Giuseppe Foresti.—p. 90.

Antimony Resistance of Parasites and Intolerance of Patients in Treatment of Leishmaniasis.—Nasso and Mallardi found sometimes a primary or secondary resistance of the parasites against the antimony tartrate used in treatment. The secondary resistance may be due to too small doses or to irregular intervals in treatment. Some patients cannot stand larger doses. In all of these cases the treatment has to be adapted to the conditions. For resistant parasites, the doses have to be large (5 to 7 cg.) and the pauses longer in order to insure the elimination of the drug. With secondary resistance combined with intolerance of the patient, the treatment must be arrested for several weeks and started again with smaller doses. In primary intolerance, small doses have to be used every two or three days. With these methods no child needs to die from leishmaniasis.

Histology of the Liver in Infancy.—Canelli has found in the liver and other organs a fibrillar system around the vessels which has an elective affinity for ammoniacal silver salts. It develops in the second half of the first year of extra-uterine life. This system shows a different reaction in disease.

Chirurgia degli Organi di Movimento, Bologna

January, 1923, 7, No. 1

- *Anomalies in Shape of Fifth Lumbar Vertebra. G. Benassi.—p. 1.
- *Diagnosis of Pott's Disease in the Elderly. M. Salaghi.—p. 57.
- *Juvenile Arthritis Deformans. De Raffele.—p. 65.
- *Voluntary Control with Amputation Stump. G. D'Agata.—p. 104.

Malformation of Fifth Lumbar Vertebra.—In concluding a long study of the true and false sacralization of this vertebra, Benassi remarks that the more numerous our methods of investigation the greater the probable error from inaccurate or misconstrued findings.

Tuberculosis of the Spine in the Elderly.—Salaghi's experience testifies that Pott's disease is very liable to escape discovery when it develops at an advanced age. The persistent pains in the lumbar region or above are usually ascribed to rheumatism or gout. He describes a case in a woman, aged 70, who was relieved of pain by a plaster cast. As a rule there is no deformity of the spine in these elderly cases.

Juvenile Arthritis Deformans.—De Raffele gives nine photomicrographs from two typical cases in girls, aged 11 and 14. Tuberculin tests were negative. In one case improvement was realized under general and physical measures, and for three years the clinical cure seemed complete. Then the symptoms returned and the lesion was resected, with an apparently complete and permanent cure.

Cineplastic Amputation.—The forearm of the young woman had been amputated on account of a tuberculous process. The stump was slit up to utilize the muscular energy as the arm is twisted back and forth. The results have exceeded anticipations. Putti calls this the "forceps method" as the forked end of the stump grasps articles like the jaws of forceps. The muscular force is sufficient to move the fingers of an artificial hand in many such cases. The article is illustrated.

Archivos Latino-Amer. de Pediatría, Buenos Aires

January, 1923, 17, No. 1

- *Anemia in Infants. M. Acuña and A. Casaubón.—p. 1.
- *Orbital Abscess. J. de Salterain and J. C. Munyo.—p. 22.
- Tuberculosis of the Conjunctiva. J. de Salterain.—p. 26.
- Pneumonia in Two Infants. W. Piaggio Garzón.—p. 32.
- *Hydatid Cysts in the Lungs. E. Portu Pereyra.—p. 38.
- *Jaundice from Fright. J. Rosenberg.—p. 48.
- Pyelitis in Infant. Recovery after Autogenous Vaccine Treatment. V. Zerbino.—p. 53.
- Chronic Eczema. Recovery After Vaccine Treatment. Piriz Aréchaga.—p. 59.

Anemia in Infants.—Acuña and Casaubón describe the clinical aspect of anemias of the chlorotic type, of the grave type with splenomegaly, and the pernicious hypoplastic or aplastic type, reporting examples of each. Inherited syphilis and an over-long exclusively or predominantly milk diet—even of breast milk—are the most frequent causes of anemia in infants. The region should always be considered and an inquiry made in regard to endemic malaria, hookworm and leishmaniasis. Whatever the measures addressed to the causal agent, the food should be varied and rich in iron, with organotherapy, arsenic, iron, hygiene, and transfusion of blood in the grave cases. Transitional forms are frequent. Roentgen-ray exposures of the enlarged spleen in a personal case failed to modify the size of the spleen. The leukocytes dropped to 4,500, but the normoblasts declined likewise, hence they consider roentgenotherapy a two-edged weapon to be wielded cautiously. They give a list of foods, rich in iron: peas with 6.6 mg.; apples, 13.2 mg.; beef, 16.6 mg.; egg yolk, 17.1 mg., and spinach, 35.9 mg. in 100 gm. of dried substance.

Maxillary Sinusitis and Abscess in the Orbit.—The girl aged 8 had complained for a week of swelling of the cheek and eyelids, and two carious teeth were extracted on the assumption of sinusitis in the antrum of Highmore. A phlegmon in the orbit was recognized five days later, was evacuated at once by an incision in the mucosa of the gum and lip at the canine fossa, and the periosteum was scraped up to the phlegmon. The Caldwell Luc technic was then applied and a drainage tube left in the site of the phlegmon. Recovery was uneventful and vision was not impaired. The prompt and radical intervention had warded off danger. This should be the rule at the slightest suspicion of extension to the orbit of a process in the maxillary sinus. The pneumococcus was found in the pus in this case, a vaccine was used, and the mouth was disinfected with 1 per cent. phenol solution.

Hydatid Cyst of the Lung.—In only one of the seven cases described in children between 11 and 14 was it necessary to call in the surgeon. In six cases the cyst evacuated its contents through a bronchus, and the symptoms subsided. The interval between the vomica and complete recovery ranged from twenty days to two months. One of the children had been sent to a sanatorium for the tuberculous; the hydatid cyst was not recognized until the vomica, and the child contracted tuberculosis from the environment. In the operative case there was a second hydatid cyst in the liver.

Jaundice from Emotional Stress.—The girl aged 9 had barely escaped being run over, but was apparently uninjured. The next day there was intense jaundice, and slight fever, with clay-colored stools, while the urine was dark. The liver and spleen were enlarged, but conditions gradually

returned to clinically normal in eleven days, except that the jaundice was still perceptible to a slight extent. Rosenberg states that he knows of only twelve cases on record of jaundice from a fright, and believes that this is the first instance to be published in Latin America.

Revista Médica del Uruguay, Montevideo

January, 1923, 26, No. 1

- *Bullet in Pericardium. P. Barcia and J. Montes Paraja.—p. 1.
- *Pseudotuberculous Paralysis of Deltoids. S. García Pinto.—p. 4.
- *Multiple Tardy Bone Lesions from Inherited Syphilis. Alice Armand Ugón.—p. 9.
- *Thrombophlebitis of Lateral Sinus. J. C. Munyo.—p. 14.
- *Syphilitic Necrosis of Skull. Aquiles di Lorenzo.—p. 19.
- *Primary Syphilis Refractory to Arsenicals. J. May.—p. 26.

Bullet in Pericardium.—The man now aged 42 has had no appreciable disturbances from the pistol bullet in his heart for twenty-two years. It seems to be lodged in the anterior wall of the left auricle.

Thrombophlebitis of Lateral Sinus.—Munyo's success in the three cases reported should encourage operative treatment of all cases of the kind diagnosed before irreparable lesions have occurred. One of the cases is described in detail. The girl aged 14 had had a low-grade recurring otitis from infancy. The jugular vein was ligated low down before the tough thrombus was extracted from the lateral sinus. The wall of the sinus was rinsed with surgical solution of chlorinated sodium, and the incision was tamponed.

Syphilitic Necrosis of the Skull.—The woman died at the age of 40 from the effects of cranial osteitis of ten years standing. The syphilitic nature of the lesions had not been suspected until too late.

Syphilis Refractory to Arsenicals.—May describes secondary lesions in a man notwithstanding vigorous neoarsphenamin treatment soon after infection; the Wassermann test was negative. He cites a number of other cases in which treatment with arsenicals failed to prevent return of secondary lesions.

Beiträge zur klinischen Chirurgie, Tübingen

1923, 128, No. 1

- *Pathology of Secretion of Bile. Gundermann.—p. 1.
- *Salt Content of Bile. L. Kröck.—p. 18.
- *Endocrine Factor in Electric Excitability. O. Specht.—p. 25.
- *Regional Anesthesia for Abdominal Operations. F. v. d. Hütten.—p. 54.
- *Comparison of Salt and Sugar Solutions. E. Düttmann.—p. 68.
- *Perineal Ectopia of Testes. Gundermann.—p. 75.
- *The Kidneys with Hypertrophied Prostate. G. Düttmann.—p. 79.
- *Mesenteric Arterioduodenal Occlusion. A. Braun.—p. 103.
- *Primary Phlegmons of the Intestine. A. Braun.—p. 142.
- *Operative Treatment of Gamma in the Liver. E. Monse.—p. 148.
- *Amputation Stumps in the Young. W. Vermeil.—p. 159.
- *Traumatic Injury of Semilunar Bone. E. Saupé.—p. 187.
- *Protection of the Parathyroids. F. de Quervain.—p. 197.
- *Bile Peritonitis without Perforation. H. Burekhardt.—p. 209.

Pathology of Secretion of Bile.—For two years Gundermann has made a practice of collecting the bile after operations on the common duct. The patients were kept in bed, and the changes in the bile secretion were studied for eight days. In nine of the thirteen cases the bile thus collected averaged about 250 c.c. a day; in two others the average was 500 c.c., and one patient excreted more bile than urine. The amount was more than the intake of fluid. The salt content of the bile was remarkably constant. Bile secretion does not seem to be influenced by intake of fluid. In his total thirty-one cases requiring an operation on the common bile duct, there was only one instance of abnormally profuse secretion of bile, a true polycholia.

Salt Content of Bile.—Kröck in twenty cases found that the salt content was remarkably constant, regardless of the intake of salt in the food.

Influence of Endocrine Glands on Spastic Conditions and Electric Excitability.—Specht gives fourteen pages of tabulated data of extensive experiments on guinea-pigs to determine whether removal of one or several endocrine glands would modify spastic conditions. The experiments were numerous and diverse, but the findings were constantly negative. They do not sustain in any way Brüning's recent suggestion that removal of the suprarenals might favorably affect epilepsy.

Regional Anesthesia for Abdominal Operations. Hütten reports seventy-three operations under paravertebral or parasacral anesthesia. The nerves and rami communicantes are blocked as they emerge from the intervertebral foramina. For the kidneys, this seems the preferable method of anesthesia, but for other abdominal operations it has several drawbacks. He saw nothing to confirm the alleged dangers of the technic, and Siegel came to the same conclusion from his experience in 2,000 cases. Hütten says that Braun's parasacral anesthesia is harmless, simple and certain, and is superior to all other methods of anesthesia for organs innervated by nerves that can be blocked by injection through the sacral foramina. This includes the prostate, bladder and rectum. Hütten gives a table to show the special nerves blocked for the various operations. In the seven kidney cases the forty-five minute operation was done with only 15 gm. of procain, and the anesthesia was perfect. The nerves blocked were the sixth to the twelfth dorsal and first and second lumbar. The anesthesia was perfect also in the eight cases of rectal cancer. The operation lasted up to 150 minutes, but only 2.5 gm. of procain was used. The nerves blocked were the tenth to twelfth dorsal, the first to the third lumbar and the first to the fifth sacral. The after-effects of the anesthesia are extraordinarily mild.

Superiority of Sugar Over Salt Solutions for Infusion. Düttmann reports tests with isotonic salt and sugar solutions given by subcutaneous infusion in twenty cases and compares the results. The water was not eliminated so rapidly with sugar solution as with salt, but it stimulated metabolism more effectually. This was manifest in the increased elimination of urates and phosphates in the urine, and excellent elimination of sodium chlorid. Sugar is also useful for nourishment, and tends to ward off acidosis.

Tests of Kidney Function with Hypertrophied Prostate.—In four of eleven patients with hypertrophied prostate, the tests revealed pronounced insufficiency of the kidneys, and one succumbed to uremia after the prostatectomy. Düttmann ascribes the kidney changes mainly to mechanical injury from retention of urine in the bladder. The resulting disturbance may be in the nature of stasis polyuria, the kidneys being unable to secrete concentrated urine. The blood becomes thicker, and symptoms of dehydration appear. The derangement is functional, as all the symptoms soon subside after suprapubic incision of the bladder. In this class of cases, with polyuria and not much nonprotein nitrogen, the operation should always be done at two sittings. When the nonprotein nitrogen in the blood is much above normal, whether or not there is stasis polyuria, the kidneys are organically diseased, and the blood pressure is generally high. Any attempt to remove the prostate is dangerous under these conditions. A simple fistula into the bladder, if the outflow of urine is much impeded, is preferable to other intervention.

Acute Dilatation of the Stomach.—Braun explains that acute dilatation of the stomach can occur as a primary affection, and arteriomesenteric occlusion of the duodenum may likewise occur as a primary, independent clinical picture. Either may occur and be followed by the other. Prognosis is favorable if the condition is recognized promptly and the cause treated (position, emptying the stomach, removal of hampering factors). A rapidly progressive course renders the prognosis extremely grave if the true condition is not recognized. If improvement does not follow at once, operative treatment should not be deferred too long. The great danger is that no one thinks of acute dilatation of the stomach, and hunts for other causes. Perforation peritonitis is the usual diagnostic blunder. The stomach tube clears up the diagnosis and is important in treatment. If there is a history of acute dilatation of the stomach in the past, extreme caution is indispensable in giving an anesthetic. The rapid distension of the abdomen, dullness, splashing sound, and typical vomiting render the diagnosis easy if the possibility is borne in mind. There is no vomiting at first as the stomach is paralyzed, but it finally becomes so distended that pressure forces the contents upward, and small amounts are repeatedly vomited.

Traumatic Nutritional Disturbance in the Semilunar Bone.—Saupé reports a case in a young woman and compares it

with seventy-six on record. The prognosis is favorable when treatment is applied early, but not otherwise.

Protection of the Parathyroids.—De Quervain emphasizes the necessity for special care in regions where tetany is common; also in operations for recurrence of goiter. He has never had an instance of pronounced tetany after any of his 2,203 operations for goiter in the last twelve years. In only three cases were there slight functional disturbances suggesting possible parathyroid injury. He gives a few rules which he always observes and to which he ascribes his success.

Bile Peritonitis.—Burckhardt declares that no authentic cases of "bile peritonitis without perforation" are on record. The perforation may have been overlooked or may have healed. An effusion from the biliary apparatus may be somewhat tinted, but this is not bile.

Deutsche Zeitschrift für Chirurgie, Leipzig

December, 1922, 176, No. 5-6

- *Aneurysm of Renal Artery. K. Vogeler.—p. 297.
- *Goiter Statistics. M. Stoss.—p. 325.
- *So-Called Aseptic Renal Pyurias. W. Peters.—p. 342.
- Lymph Glands in the Cheek at the Commissure. Seifert.—p. 354.
- *Pathology of the Thymus. II. E. Bircher.—p. 362.
- *Appendix in Hernia on Left Side. K. H. Erb.—p. 379.
- *Operative Treatment of Excessively Large Hernia. Denk.—p. 399.
- Sarcoma of Spermatic Cord. M. Mettenleiter.—p. 402.
- Unusual Chronic Invaginations. O. Hagedorn.—p. 407.

Aneurysm of the Renal Artery.—Vogeler gives details of a case personally observed and of twenty-eight others he has compiled from the literature of 200 years. The correct diagnosis was made during life in only five of the cases. The tumor developing slowly after a slight trauma and the blood in the urine are the main elements for diagnosis. In the seven operative cases, the kidney usually had to be removed with the aneurysm, and the patients were all saved but one. In this case, in isolating the tumor the artery ruptured, and fatal hemorrhage ensued. Orth succeeded in suturing the tear in the renal artery and thus saved the kidney.

Statistics of Goiter.—Stoss analyzes 606 operative cases of goiter at Munich. In men the goiter seems to be more of an ordinary tumor type, and the disturbances are mainly mechanical, while in women the goiter seems to be more closely connected with the endocrine system, and thyrotoxic disturbances predominate.

Aseptic Renal Pyuria.—Peters relates that in fifteen cases no bacteria could be found to explain the renal pyuria, and conservative treatment was applied in ten. In the others the kidney was removed and in every instance recent or old inflammatory lesions were found, amply explaining the pyuria and justifying the nephrectomy even in the absence of tuberculosis.

The Thymus in Surgical Infections.—Bircher's experience in Switzerland has confirmed the importance of operative reduction of the thymus to break up the vicious circle of the thymic-lymphatic status. The hospital records showed this thymic-lymphatic status in 75 to 80 per cent. of the thirty-five deaths in 276 cases of tetanus, diphtheria, appendicitis, and acute infectious cholecystitis. He contends that, with the mechanical factors, endocrine factors are involved in cases of "thymus death." He has operated on the thymus in ten cases. The portions resected measured up to 10 cm. and weighed up to 45 gm. The benefit on the general condition thereafter was beyond question. The medulla always showed marked hyperplasia. He does not approve of roentgen treatment of persistent thymus or of the thyroid, regarding it as treatment in the dark, without possibility of correct dosage, while the treatment affects the whole of the thymus and thymoprival idiocy is liable to follow. He has seen a case in which the growth was completely and permanently arrested three years after roentgen exposures of the thymus. In another case the exposures aggravated the symptoms so that the thymus had to be resected after all. At the operation it is easy to resect the abnormal and leave the normal portions.

Appendix in Hernia on Left Side.—Erb states that situs inversus was not discovered in any of the 50 cases he has compiled in which the vermiform appendix was included in

the left hernia. He adds a case personally observed to the list. The hernia was of the femoral type in only 5 of the cases. In 5 the hernia was congenital; in 14 it was of long standing. In one case the hernia had existed from birth to the age of 41.

Large Irreducible Hernia.—Denk commends resection of the irreducible portion of the intestine, and reports a case that illustrates the advantages. The portion of the bowel resected measured 265 cm. Numerous lipomas in the omentum and mesentery had impeded reduction. The patient was a man aged 57, and recovery was smooth.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 10, 1923, 1, No. 6

- *Therapeutic Abortions. J. A. van Dongen.—p. 538.
- *Pseudohemophilia. F. van der Zande.—p. 544.
- *Epilepsy with Dementia Praecox. A. Endtz.—p. 554.
- Accessory Coronary Artery. H. Feriz.—p. 567.
- *Rupture of Varicose Vein in Vagina. H. Veen.—p. 571.
- Prolapse of Umbilical Cord. J. Krull.—p. 572.

Therapeutic Abortion.—Van Dongen relates that in six of his 2,000 curettements the procedure was undertaken as an emergency measure to save the woman's life, although the pregnant uterus itself was intact. There was always a consultation between the family physician, an experienced obstetrician and the specialist in the affection responsible for the grave condition. He never emptied the uterus on account of uncontrollable vomiting alone, or chronic kidney disease, but pregnancy pyelitis compelled this in one case not seen until too late for ordinary measures. Irrigation of the kidney pelvis is difficult in advanced pregnancy, and is less certain in its effects than abortion. In one case of rapidly progressing pulmonary tuberculosis with anemia, in a primipara in the third month of pregnancy, arrest of the pregnancy brought a turn for the better, and the disease has been stationary since. In another case a specialist advised interruption of the pregnancy on account of the severity of an affection of the maxillary sinus which had returned at each of the woman's five pregnancies, with other sinus and brain complications in the last. The interval since the last menstruation was only six weeks, and the sinusitis healed after the abortion. Progressive pulmonary tuberculosis, or threatening heart disease were the indications in the other cases, the grave condition continuing after the abortion, but the patients survived for nearly a year or to date.

Inherited Hemorrhagic Blood Platelet Insufficiency.—Glanzmann noted a family tendency to repeated epistaxis and other hemorrhages in his 8 cases of hemorrhagic purpura. There was a history of 4 instances of Werlhof's disease in one family, 2 in the second and 2 in the third generation. Six of the 12 members of the second generation presented a hemorrhagic diathesis, and 2 females and one male in the third generation. This thrombasthenia explains the hemorrhagic diathesis in women which has raised the question whether hemophilia can occur in women. The two conditions differ decidedly. In hemophilia there is bradythrombia, in contrast to the tachythrombia of Glanzmann's thrombasthenia. Van der Zande describes a family which seems to belong to this type although no instances of actual hemorrhagic purpura are known in the five generations, with 8 bleeders, men and women. The number of blood platelets is normal or above normal, but they are abnormal in shape, and coagulation does not occur normally. Zande suggests the term pseudohemophilia for this type of bleeders, as he does not think it has been proved that the blood platelets alone are to be incriminated, and this term suggests the familial and hereditary tendency.

Epilepsy Associated with Schizophrenia.—In one of the two cases reported the epilepsy was accompanied by catatonia and schizophrenia. In the second case paranoid dementia praecox was prominent. Both women had been mentally backward. He assumes a congenital tendency to schizophrenia, with an acquired genuine epilepsy.

Hemorrhage from Varices in the Vagina.—The danger from this cause is mainly that no one thinks of the possibility of a ruptured varicose vein as responsible for sudden profuse genital hemorrhage during pregnancy.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 17

CHICAGO, ILLINOIS

APRIL 28, 1923

THE REVISION OF THE MEDICAL CURRICULUM *

ARTHUR DEAN BEVAN, M.D.
CHICAGO

In the last few years there has been among medical educators much discussion of the necessity or, at least, the desirability of revising the medical curriculum. During the last year I have made this matter the subject of a special study, and shall present the result briefly.

The problem of this special research was: What should the medical student be taught? What must the medical student know in order to qualify as a practitioner of medicine? I undertook to find out, first, what the medical student is being taught in our better medical schools today. This I attempted to do, first, by visiting various laboratory and clinical departments and inspecting the work done in these departments; and, secondly, by reading and reviewing (I found this both interesting and instructive) some recent generally employed textbooks on each subject, such as Macleod's "Biochemistry and Physiology" applied to medicine, Cunningham's "Anatomy," Starling's "Physiology," Jordan's and Zinsser's books on bacteriology, MacCallum's "Pathology," Kaufman's "Special Pathology," Cushny's "Pharmacology," Osler's "Medicine," Williams' "Obstetrics," Rosenau's "Hygiene and Public Health," and Lexer's "General Surgery" and the "Handbuch der praktischen Chirurgie."

I interviewed the heads of the various departments and asked them what they thought (a) of the present curriculum of their own departments, and (b) of the curriculum as a whole, and obtained from them their views as to changes which they deemed advisable.

The questions were asked and answered with the understanding that there were two fixed conditions: first, that the purpose of the medical course was to train practitioners of medicine, and, second, that the present seven years of technical training (two premedical and four in the medical school, and the hospital intern year) were not to be increased. I attempted to obtain from the chief of each laboratory department his views, since it was impossible to cover completely his science in the course given to a medical student as to:

(a) What portion of his subject should be taught.

(b) In what part of the curriculum his subject should be presented.

(c) What prerequisite should be required, and his opinion of the instruction given to the medical students before they came to his department.

(d) What, if any, subjects in the first and second years in the medical school could be pushed back into the pre-medical years.

(e) The advisability of introducing the patient, "clinical problems," into the freshman and sophomore years of medicine, and, if in his opinion this should be done, his views as to how it should be done, whether by the clinical departments, the laboratory departments, or by both.

(f) If the laboratory subjects should be continued in some way throughout the third and fourth years, and if so in what way.

(g) The advisability of better cooperation between the various departments: (1) between the laboratory departments; (2) between the clinical departments, and (3) between the laboratory groups and the clinical groups.

I interviewed the heads of the clinical departments in much the same way: First, What portion of his subject should be taught, and how? I especially emphasized the questions:

(a) What portions of the laboratory subjects, anatomy, physiology, pathology and pharmacology, do you think the medical students should be taught?

(b) What is your opinion of the way these subjects are being taught at present, etc.?

(c) Do you think it advisable to introduce the medical student to the clinic in his first and second years, and if so, how should this be done?

(d) In the third and fourth years, largely clinical work, should the laboratory sciences of anatomy, physiology, pathology and pharmacology be continued in some way in the medical course, and, if so, in what way?

(e) What suggestions have you as to better coordination and team work between departments?

(f) In what way should the clinical departments be organized in the undergraduate medical course? Under three heads, medicine, surgery and obstetrics, with the specialty subtopics under these main departments, such a scheme in detail would be:

General medicine	{	Neurology
		Pediatrics
		Dermatology
		Hygiene and Public Health
General surgery	{	Orthopedic
		Oral
		Rectal
		Genito-urinary
		Ear, nose and throat
Obstetrics	{	Eye
		Including gynecology

or should each of these specialties be a separate department?

FIELD COVERED IN ACTUAL PRACTICE

In order to obtain a knowledge of what portions of the sciences of anatomy, physiology, pathology and bacteriology, pharmacology, medicine, surgery and obstetrics are actually used in the practice of medicine, I made a study of the work done in a well equipped hospital of

* Read at the Congress on Medical Education, Licensure, Public Health and Hospitals, Chicago, March 5, 1923.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several case reports. The complete article will appear in the author's reprints.

more than 400 beds. This is a teaching hospital in which a fair amount of research is being done, but in which the primary object (with which nothing is allowed to interfere) is to give to the patient the best care and the benefits of modern science. In analyzing the work done in this hospital, I asked myself the question, "What portions of these daughter sciences of medicine do I employ in my own work?" and I answered it by studying some of the cases which were under my care.

CASE 1.—In an old depressed fracture of the skull with epilepsy and paralysis of some of the muscles of the right forearm and hand, with resulting deformity and complete loss of function of the hand in which we did an arthrodesis of the wrist joint and transplanted the flexor carpi ulnaris into the extensor tendons, the special studies involved were anatomy and physiology: the anatomy and function of the motor area of the brain, especially the arm center and the anatomy of the wrist joint and the muscles and nerves of the forearm.

CASE 2.—In a case of resection of the stomach for carcinoma by the Billroth II method, the sciences employed were: (a) physiology, in the chemical analysis of the gastric contents and the examination of blood, blood pressure and urine; (b) physics, in the use of the roentgen ray, demonstrating the filling defect in the stomach; (c) pharmacology, in the use of morphin for pain; nitrous oxid and ether for anesthesia, and alcohol and mercuric chlorid to prepare field of operation; (d) anatomy, in making the abdominal incision and in the technic of the stomach resection; (e) pathology, in the recognition of the mass as a carcinoma from the gross appearance of the primary lesion, character of the involvement of the lymphatic glands, and the microscopic study of the specimen.

CASE 3.—A young man had a carbuncle on the back of his neck, and secondary hematogenous infection of the soft tissues of his foot and thigh. Here were involved: (a) pathology and bacteriology; the organisms in the carbuncle and in the foot were *Staphylococcus aureus*, and examination of the blood for bacteria was negative; (b) physiology; he did not have diabetes, but increased sugar content in the blood—170; (c) anatomy, in the technic of the operation.

CASE 4.—In a case in which there was a tumor of the spinal cord with pressure on the cord and resulting paralysis, the tumor was removed, followed by relief and recurrence. The tumor was malignant. Here the sciences of anatomy, physiology and pathology were especially employed.

CASE 5.—A boy, aged 4, had exstrophy of the bladder. Sonenburg's operation of removing the bladder mucosa, and transplanting the ureters to the dorsum of the penis was performed, and the raw surface was closed with skin and superficial fascia flaps. Here a knowledge of embryology was important and interesting.

CASE 7.—A girl of 18, with marked exophthalmic goiter, presented a typical picture. The basal metabolism was +75. She had unfortunately been given for a short time iodine treatment. Ligation of both superior thyroid arteries, and six weeks later removal of four-fifths of the thyroid gland were performed. Here, were involved physiology in the basal metabolism test; pharmacology in regard to the iodine treatment; pathology of the specimen removed, and anatomy in the technic of ligating the superior thyroid arteries and removal of the thyroid.

CASE 8.—In a case in which the patient had a huge carbuncle of the back of the neck, and diabetes, urine examination showed a large amount of sugar, etc.; blood examination was negative for bacteria; pus showed *Staphylococcus aureus*. The patient was given insulin, improved, and became sugar free, but died in a few days. Postmortem examination showed multiple abscesses in the lungs, kidneys, etc. This case illustrated the importance of applied physiology, bacteriology, pathology and pharmacology.

CASE 9.—A man, aged 40, admitted on the medical side, had abdominal actinomycosis, which was mistaken first for kidney lesion and infected hypernephroma. Examination was

performed by the cystoscopist in the surgical department. There was a mass in the right lower quadrant of the abdomen extending into the flank and kidney region. A perinephritic abscess was opened and drained under ether; a large amount of pus and degenerated granulation tissue was removed. The clinical diagnosis at the time of operation was "actinomycosis," on account of the clinical picture and especially the wooden infiltration of the abdominal wall. The laboratory report on the tissue was probable hypernephroma. Roentgen-ray treatment was given some weeks later. The surgeon again reviewed the case and again made a clinical diagnosis of actinomycosis, curetted the sinus, examined the granulation tissue removed, and found *Actinomyces*. The patient was put on mixed treatment of copper and potassium iodid, with copper sulphate irrigation and roentgen ray, with marked improvement. This illustrates: applied anatomy in the technic of the operation; applied pathology in examining the tissue; applied bacteriology in finding *Actinomyces*; applied pharmacology in using copper and potassium iodid; applied physics in the roentgen-ray treatment.

CASE 10.—A man, aged 60, with cirrhosis of the liver and an enlarged spleen, had had syphilis and was addicted to the use of alcohol; since prohibition he had been drinking extract of ginger with 82 per cent. alcoholic content. This illustrates: applied bacteriology in the Wassermann reaction; applied anatomy in the physical examination of the patient; applied physiology in examination of the blood, blood pressure, urine, etc., and applied pharmacology in treatment with mercury and iodid.

CASE 11.—There were three cases of ascites in my service at the time I made these studies:

A girl, aged 14, underwent exploratory laparotomy under local anesthesia, which showed malignant papilloma of the ovary, with extensive peritoneal implantations.

A woman, aged 40, presented a mass in the region of the gallbladder. The leukocyte count was 25,000; hemoglobin, 50 per cent. There was great loss of strength and weight; there were great pain in the back, and fluid in the abdomen. My clinical diagnosis was carcinoma. The attending physician and the husband were very urgent for an operation. Operation under gas-oxygen disclosed the peritoneum filled with milky peritoneal fluid chylous ascites, and an inoperable carcinoma of the liver, bile tracts and probably the pancreas and thoracic duct.

A woman, aged 50, ill many months, seen by many physicians, had suffered great loss of weight and strength; she was in pain; the temperature ranged from 100 to 102.5 F.; the leukocyte count from 55,000 to 60,000; the hemoglobin was 42 per cent.; there was fluid in the abdominal cavity. Clinical methods were exhausted without arriving at a diagnosis. Exploratory laparotomy revealed several pints of clear, yellowish peritoneal fluid. The abdominal viscera were carefully examined with the entire hand within the cavity. At first nothing was found; after long search a carcinoma of the left lobe of the liver was found.

All these cases of ascites illustrate the application of laboratory branches to clinical work.

CASE 12.—A man, aged 25, presented a clinical picture of renal colic on the right side. The urine showed red blood cells and pus. Roentgen-ray examination showed multiple kidney stone. A pyelogram showed dilated pelvis and calices. Catheterization of the ureters showed two functioning kidneys. The right kidney showed blood and pus in the urine; the urine from the left kidney was normal. There were no tubercle bacilli in either kidney. The phenolsulphonephthalein test disclosed the right kidney one-third normal, the left kidney normal. Blood chemistry was normal. The diagnosis was: stones in a greatly damaged right kidney; normal left kidney. Surgical therapy consisted of removing the right kidney under ether. The proper handling of this case shows the application of anatomy, physiology, pathology, pharmacology and physics.

CASE 25.—A man, aged 68, was ill six or eight months; there was blood from the rectum, and blood from the bladder. Later there was great bladder irritation. There was a sharp rise of temperature, and evidences appeared of ascending pyelitis, and then fecal matter from the bladder and urine

from the rectum. Proctoscopic and cystoscopic examination disclosed a mass between the bladder and the rectum just above the prostate. Fecal matter was seen pouring into the bladder. There was no opening from the bladder into the rectum on proctoscopic examination. The bladder was filled with sodium bromid and a roentgenogram was taken to determine what part of the intestinal tract communicated with the bladder. A colostomy was done under local anesthesia to exclude feces from the urinary tract and save the patient from immediate danger of death from hydronephrosis. The distal end of the bowel was completely separated from the proximal by dissecting off and invaginating the mucosa into the distal loop.

There were two cases that were interesting from the standpoint that an immediate diagnosis was made from the clinical picture and the physical examination without any laboratory findings, and immediate operation done:

One of my medical students was taken with a sudden pain while in the classroom. The instructor giving the course brought him at once into the Presbyterian Hospital, which building is connected with the college building. The student, aged about 25, was evidently suffering intense pain in the abdomen, especially in the upper portion, and the abdominal muscles were intensely rigid: what might be described as a boardlike rigidity. He had been treated for duodenal ulcer several years ago, before he entered the army; these symptoms had disappeared during his army life. We made the clinical diagnosis of perforating duodenal ulcer, sent him at once to the operating room, and found a very small perforation in the anterior wall of the duodenum, which was closed with two purse-string sutures.

A man, aged 60, was taken with a violent pain in the right lower quadrant of the abdomen. I saw him at his own home. The attending physician had made the diagnosis of an acute appendicitis with probable gangrene and perforation. The man was very ill, with a very rigid abdomen, especially in the right lower quadrant, and definite tenderness over the ordinary position of the appendix. Nothing was done in the way of laboratory tests except examination of the urine, which was negative, and a leukocyte count, which was 19,000; the temperature was 101 and the pulse rate 108. He was sent at once to the hospital by ambulance. Operation showed a ruptured gangrenous appendix, and the appendix was surrounded with two or three drams of very foul-smelling pus.

I cite these two cases particularly to show the great importance of the gross clinical picture and the necessity often of such immediate action based on these clinical findings as to exclude an exhaustive study of laboratory means of diagnosis.

These cases were in the service of a hospital surgeon. We want to remember, however, that without exception they were first in the hands of general practitioners, and they represent, therefore, some of the problems which confront the practitioner of medicine.

If we analyze in this hospital the general clinical work, the history taking, the physical examinations, the clinical laboratory work, the roentgen-ray laboratory work and the special work in basal metabolism in blood chemistry, in special bacteriologic examinations, Wassermann examinations, etc., in infant feeding, etc., and the technic employed in the sciences of diagnosis and therapeutics, and if we analyze each department as I have analyzed my own department, we can form an accurate estimate of what portions of the various sciences that go to make up the science and art of medicine are used in actual practice.

OPINIONS OF MEN IN GENERAL PRACTICE

In order to obtain a conception of the work which the general practitioner does in private practice, I obtained

the evidence from several well-trained men, practicing in communities of from three to five thousand inhabitants, and also from men doing general practice in Chicago. I asked them what classes of cases they were taking care of without the assistance of consultants and specialists, what proportion of their cases were sent to a specialist, what laboratory work they were doing themselves, and what arrangements they made for laboratory work in general. These general practitioners are doing all sorts of medical work: obstetrics; infantile disease; general medicine, such as pneumonia, typhoid fever (fortunately now rare), kidney and gallstone colic, nephritis, and various lesions of the gastro-intestinal tract; injuries in general; fractures; dislocations; hernias; the ordinary ear, nose and throat work, including by some of them the removal of tonsils; the ordinary skin diseases; neurologic cases that develop in their work; insurance examinations; testifying in medical legal cases, such as personal damage cases; testifying in regard to the insanity of individuals; general preventive medicine involved in handling infectious diseases in a community, such as diphtheria, measles and scarlet fever; venereal diseases; heart lesions, and the ordinary minor eye conditions, such as foreign bodies, conjunctivitis and iritis. In their practice they themselves use the simple laboratory methods, such as urine examinations, blood examinations, especially hemoglobin, the leukocyte count and the differential white cell count, and examinations of sputum, feces and stomach contents. They make the blood pressure examinations. A considerable proportion of them do their own roentgen-ray work. There are certain laboratory tests which, as a rule, they do not do. They send their Wassermann examinations, Widal tests and pathologic specimens from operative work to some commercial laboratory. They send their specimens from the infected throats in suspected diphtheria cases to the state laboratory for examination and report. Most of them do minor surgery and many of them do emergency surgery, such as operations for acute appendicitis and strangulated hernia.

The consensus among these men seemed to be that they took care of about 97 per cent. of the patients who came to them, in the sense that they took complete charge of the case, and they referred about 3 per cent. of their cases to specialists. My conception before I investigated this matter thoroughly was that the general practitioner probably referred from 10 to 15 per cent. of his cases to specialists. After discussing the matter with well informed general practitioners, as I have done, I am convinced that in a large general practice, the practitioner sees so many slight ailments that the percentage of cases which requires the services of a specialist is probably well under 5. The well qualified general practitioner can take good care of 95 per cent. of the patients in his community.

I have gained from this investigation a wholesome respect for the practitioner in general practice who prepares himself so that he can take care of all classes of medical cases. His task is a much more difficult one than the task of mastering a narrow specialty, and he has a much broader conception of disease, a conception which enables him to be often of more service than a specialist.

The patient, as a rule, does not know just what is the matter with him. He does not know what specialist to consult, and the normal plan of handling the sick people in a community is for the patient to go to a competent general practitioner. From the evidence of my

investigation in from 95 to 97 per cent. of the cases, the well trained general practitioner is the best man to handle his case, and in the other 3 or 5 per cent. the general practitioner is better qualified than any one else to determine in a general way what the condition is and to select the specialist required for the particular lesion from which the patient suffers. The specific purpose of the undergraduate medical course is to train these general practitioners properly. The general practitioner must have on his desk, and within ready reach at all times, and must use them in his everyday work, his textbooks on anatomy, physiology, pharmacology and pathology, his textbooks on medicine, obstetrics and surgery, and some small textbooks especially written for the general practitioners on specialties of the eye, ear, nose and throat, and dermatology; also a good book on hygiene and public health. The general practitioner who will study his cases with the aid of such textbooks will be doing the best possible kind of postgraduate work. Nothing that the American Medical Association could do in the way of postgraduate medical education would be so important as a propaganda urging all members of the Association to do just that sort of postgraduate work in their own practice, the work that can be done by their own brains, with their own books and on their own patients.

OPINIONS OF STUDENTS

After obtaining this evidence from the medical teachers, I sought the opinions of the medical students, and was fortunate in obtaining the opinion of 600 medical students who were completing their clinical work. I present a composite of their views:

1. The work of the first two years is too theoretical; much of it is intended primarily for research. There is too much note-book work and too little reference to clinical application.

2. Anatomy receives much criticism. There is too little lecture work and demonstration, too little individual teaching, too much instruction by student assistants and very little clinical application.

3. The work in biochemistry is considered too theoretical. It requires time far out of proportion to its importance. It could be made to include subjects given in laboratory diagnosis. There is much criticism of this department.

4. Pharmacology is unsatisfactory in that its practical application is not made clear to the student.

5. Physiology does not have enough practical application pointed out and emphasized. There is too much frog work, too little human physiology.

6. Pathology, on the whole, receives more favorable criticism than any other department in the first two years. Pathology and bacteriology are taught from the point of view of their application to medicine, and the students recognize this fact.

The work of the third and fourth years received the following criticisms:

1. In therapeutics, better courses in prescription writing should be given. More discussion on therapeutics should be given in the clinics. The definite line of treatment should be given as each case is presented, and more definite instruction on such therapeutic agents as the roentgen ray and radium. The clinical value of such tests as basal metabolism and electrocardiograph should be made clearer.

2. In medicine, better courses in laboratory diagnosis are urged. The value of the small teaching clinic is recognized. Better instruction in physical diagnosis is needed. More systematic instruction should be given in the large teaching clinics.

3. In surgery, the courses on surgical pathology and the principles of surgery are favorably criticized, on the whole. It is urged that these subjects be taught with ample pathologic material, both gross and microscopic, and that the

clinical application be shown by the introduction of patients illustrating the various conditions discussed. The value of the large teaching clinic is recognized, and the criticism made of operating in these large teaching clinics. They feel that little operating should be done in these clinics. The great value of dispensary work and of the small section hospital clinic and the ward walks is recognized. The courses on dog surgery and of surgical anatomy and operative surgery on the cadaver are favorably criticized.

4. In obstetrics, the chief criticism is that the student sees too little pathologic obstetrics. The outside obstetric cases attended by the student under intern and obstetric assistant instruction are appreciated by the student and criticized favorably.

5. The instruction in the specialties, eye, ear, nose and throat, and dermatology, pediatrics and neurology, receives fairly general favorable criticism.

I have also obtained from a number of interns and senior students their opinions of the fifth hospital or intern year. They all regard it as absolutely essential, and more than 90 per cent. prefer a mixed to a single service.

As I have carried on this investigation, I have been much impressed by the excellent work that is being done in our American medical school. There is, however, a general feeling that the medical curriculum should be revised in order to secure better cooperation, better team work; and there is a very general willingness to bring this about.

A SPECIFIC PLAN

What we lack is a specific plan. On the basis of this study I venture to submit the following specific plan:

1. There are certain portions of the subjects of anatomy, physiology, pathology and pharmacology which are essential in actual practice and which are used every day in clinical work and which must be mastered.

2. The sum total of this knowledge now actually required is enormous, and is sufficient to crowd the time that can be allotted to the medical curriculum.

3. The essential portions of the daughter sciences should be taught so as to make clear their application to clinical work. This necessitates a radical change in the curriculum, the introduction of the patient and the clinic at the very beginning of the medical course.

It is the function of the departments of anatomy, physiology, surgery, medicine, etc., to make physicians: not to make anatomists and physiologists, orthopedic surgeons and neurologists. The making of anatomists, physiologists, orthopedic surgeons and neurologists is, to be sure, a part of the work of a medical school, but it belongs to graduate work. Such preparation is individual and special, and the undergraduate medical curriculum must not be burdened with it or handicapped by it. This means that the time has come when we must make a sharp line of division between undergraduate and graduate medicine. In revising the undergraduate curriculum, we must drop those portions of the sciences that have no clinical application in the hands of the general practitioner. As an illustration, a large part of the formidable subjects of biochemistry and intricate neurology should be eliminated. These subjects should be taught, but in a simpler, clearer way.

There should be introduced into the first year a joint laboratory and clinical conference. This conference should be given once or twice a week, and at this conference should be demonstrated clinical cases and pathologic material representing big general problems, such as diabetes, toxic goiter, jaundice, ascites, syphilis, tuberculosis and leukemia, and such subjects as wound repair, wound infections, aseptic technic, burns, frac-

ture, hemorrhage, shock, osteomyelitis, anesthesia, tumors and congenital malformations; and the use the clinician makes of anatomy, physiology, pathology and pharmacology in handling these problems should be demonstrated. At the same time, the laboratory teachers should have access to this clinical material so that they can demonstrate examinations of blood, urine, blood pressure, basal metabolism, etc., and the laboratory side of the same clinical problems. In this way, the student would learn how these sciences are applied in clinical work, and the laboratory men and clinicians could work together on the same problems.

In the work of the clinical years, provision for continuing the work of the laboratory years should be made. Each clinical department should see that this is done as thoroughly as possible. The department of medicine might make special effort to continue the work of physiology, pharmacology and pathology, and the department of surgery especially the work of anatomy and pathology. Each clinical department should have its own clinical laboratory and have full control of its clinical laboratory work. For purposes of convenience, it may be better organization to have a single roentgen-ray laboratory, a single laboratory for such work as blood chemistry and the Wassermann test, and a single laboratory for basal metabolism.

Pathology should be continued into the clinical years as a well organized department in charge of the post-mortem work and general pathologic laboratories and museum, and the professor of pathology should act as a consultant to the clinical departments in important problems in pathology. There should be the best possible cooperation between the department of pathology and the clinical departments, and this depends largely on the personal equation of the men involved. If the department of pathology should seek to appropriate to itself all pathologic laboratory work, it would be fatal to the full development of the clinical departments, and it would be better to drop the department entirely out of the clinical years and appoint a hospital pathologist who would work under the joint direction of the clinical departments. This is true because the patient, his tissue and secretions and everything that goes with him must remain in the control of the clinician.

Whatever revision of the medical curriculum is made, there must be no conflict of authority and there must be good team work. The laboratory departments must remain supreme in their work, and the clinical departments must remain in absolute control of the hospital and the clinic. There is plenty of field for research for both groups and for all departments. Each department, both laboratory and clinical, must be actively engaged in research. The creation of a special research department in a medical school is a serious error which would sterilize the school and should not be considered.

In regard to the organization of the clinical work, the best plan for the undergraduate school is that of three departments:

Medicine, including subdepartments of pediatrics, neurology, dermatology, and hygiene and public health.

Surgery, including subdepartments of orthopedics, urology, oral surgery, eye, and ear, nose and throat.

Obstetrics, including gynecology.

Such a plan of organization is especially valuable in securing the well rounded curriculum that is so needed by the medical practitioner. The specialists and specialties find their special independent field and an ample field in the graduate school. What must the medical student know in order to qualify as a practitioner of

medicine? That is our problem. If a number of our better schools made this the subject of a special investigation, we could then from such a joint study revise the curriculum on better and sounder lines.

MEDICAL EDUCATION, PAST AND PRESENT

J. A. WITHERSPOON, M.D.

NASHVILLE, TENN.

There has been a rapid transition in medical education during the last twenty years. During this period, the number of medical schools has been reduced one half. In 1904 there were enrolled in our medical schools 28,142 students, while in 1922 there were 16,140. The increased cost of medical education and the years, unproductive financially, to be spent in internships and assistants' positions will tend to restrict students to the wealthier classes. The constantly increasing number of specialists has caused a diminution in the ranks of those who practice among the great and vitally important group of citizens living in rural districts. Inevitably, these citizens will succeed in demanding, through the legislatures, that they have physicians that come from medical schools and that are well trained, or failing in this, they must accept those that come from some source with inferior equipment. While it would not be fair to say that the advance in medical education is alone responsible for the inadequate number of physicians in rural districts, the fact remains that demands for physicians are so insistent that already, in some states, legislators are seriously threatening a revision of our state laws and, unless something is done, our present standard will be seriously disturbed, if not abrogated altogether. Although the demand for physicians is constantly more insistent, high standards and increased costs are not entirely responsible for this condition. Richly endowed schools are limiting the number of students and turning away many thoroughly prepared men who have met every entrance requirement.

The medical profession has never failed to meet emergencies when they arise. Today, as has been shown, two glaring crises confront it. One is that we are not furnishing physicians who are willing to practice in the places where they are most needed; the other is that our system of education is training men in such a way that they could not practice efficiently in these places if they desired to do so. This is not only a menace to the people; it also threatens the system on which the blame falls.

HISTORICAL REVIEW

It is not pertinent to discuss medical education prior to the Civil War. In that period, medical schools were rare and the study of medicine under preceptors was the custom. In such a system, numerous defects are easily recognized.

Subsequent to the Civil War, medical schools began to multiply, and in less than half a century, there were more schools in the United States than in the rest of the world. This multiplication resulted from three factors: 1. The profession as a whole was poorly organized and had no data regarding the number and quality of its members, and no supervision over, or interest in, the numerous schools. 2. The states had not interested themselves in the enactment of laws

regulating the practice of medicine or of the schools that taught medicine. 3. The business of conducting a medical school proved so successful financially that the chairs had become valuable; reputations of professors were heralded abroad among the people by the students, and referred work came almost exclusively to those who taught. There were no preliminary requirements worthy of the name. One of the most emphatic lessons taught was that all surgical cases, and many of the others, should be referred to the professor. Consequently, there grew up, even in the smaller cities, two groups of physicians definitely separated and thoroughly despising each other: those that taught and those that did not teach. The teachers were successful, possibly some times boastful and supercilious. Those who did not teach could only look with jealous eyes on the "school men." There was no chance to get into the faculty of the school of that day. The only hope for ambitious outs was to organize a new school. This was promptly done: Tennessee had ten schools. The curriculums of the schools were poorly arranged, in most instances. In many, the subjects were poorly taught. The specialties were for the most part touched on very superficially.

Some schools, however, maintained standards in keeping with the demands of the times. Among those honestly trying to give the students a square deal were numerous schools in which the specialists laid the burden of stress on such phases of their work as the students who entered general practice would be called on to do. What was taught was intended to prepare the students to become general practitioners.

In spite of the flagrant faults and glaring inefficiencies of these schools of a former day, many of the leading men in the profession today graduated from them. Although their inadequacies must be decried, it would be well to look back and inquire whether or not they had aught of good.

STANDARDIZATION OF MEDICAL SCHOOLS

It was the consensus of opinion of the leaders in the profession, and the unanimous verdict of the legislatures of the states of this Union, that these old schools were not as good as they should be. Asepsis, bacteriology, abdominal surgery and the specialties were coming into prominence, and the profession and the public were being impressed with the idea that the future physician must be trained more widely and more thoroughly, and that expensive equipment and better trained teachers must be had. This impression gained its chief, if not its first, impetus toward realization in the work undertaken by the American Medical Association, in the investigation of conditions existing in medical schools, and, subsequently, in the standardization of these schools.

When the wisdom of the recommendations made by the American Medical Association was recognized, various state legislatures began to enact laws governing the practice of medicine. Those schools that realized the gravity of the situation began to consider how they could meet the new requirements. Numerous schools were discontinued, either by voluntary closure or because they could not enroll students to enable them to meet expenses, for students were not willing to receive degrees from a school whose graduates were barred from practice in a number of states. Other schools combined their resources to gain in strength of faculties and in numbers of students. Many prospective students were not eligible because of insufficient preliminary training, meager as the requirements were

in the early days of this period. This tendency to increase the preliminary requirements has continued until now the Class A schools demand at least two years of college work, and a demand for a preliminary degree in academic work is probably not far in the future. The course of instruction was systematized; the term increased; the number of years of training leading to the degree of Doctor of Medicine was raised from two to four. An enormous amount of equipment had to be purchased; new buildings became necessary; all-time teachers were demanded for all laboratories; clinical facilities had to be obtained, either through securing control of hospitals already in existence, or through building, owning and operating hospitals. In other words, medical schools were rapidly converted from an asset to a liability, and the financial value of chairs dwindled to nothing—to less than nothing. The expense of operation of schools soon came to be far in excess of any revenue that might be gained from fees paid by students. The old dispensation had fulfilled its mission and passed away. The only hope for continuation of medical schools lay in endowment. This is one of the reasons why only those associated with, or which were an integral part of, great universities have been able to weather the storm and to maintain rank as first-class schools. It has been necessary to increase tuition charges, and still the call for more money rises as a perpetual cry from the boards of trust who must provide for meeting the ever-increasing expense.

All of this was brought about with splendid purposes in mind; but, in some way, the education of today seems to unfit men for the real practice of medicine at the bedside.

DEFECTS IN THE NEW SYSTEM OF TEACHING MEDICINE

That this revised, improved method of teaching medicine is not devoid of defects is apparent to all who have devoted much time to study of the problems involved. One objection is that it overworks the student and gives him an enormous amount of instruction which he cannot learn to use to advantage in so short a time—this in spite of, possibly also because of, greater clinical facilities. Another defect is that each teacher has felt and has tried to impress on his pupils the great importance of his own particular subject. Specialties, therefore, have been emphasized out of all proportion to their merit, and the student has been robbed of time and mental effort that could have been employed more profitably. It may be worth while at this juncture to call attention to the fact that the transactions of the last meeting of the Association of American Medical Colleges suggest reducing the amount of time devoted to the specialties to a minimum.

There has sometimes arisen a feeling among laboratory men that the clinical men were inferior in their training, and that teaching would be more competent if clinical professors would come into closer contact with laboratories. Recently, clinicians have reversed this sentiment, and they feel that laboratories would serve students and the public better if laboratory teachers knew something of patients and of disease as it actually exists in the living subject.

A FURTHER REVISION OF THE TEACHING SYSTEM

A plan of further revision of our teaching system has been recommended, whereby the teaching faculty shall be constituted of men who are to devote their whole time to medical teaching and to research work. This

plan, its authors believe, will prove ideal. It proposes virtually to establish a profession of medical pedagogy. This idea did not originate in the medical profession, but in the mind of a layman. The profession has not taken kindly to the idea. Yet, in all fairness, they should either accept it or show cause why it should be rejected. A layman might actually know more about this matter than a physician. On the face of it, that sounds unreasonable. Physicians have taught all the physicians the world has produced; practicing physicians have taught physicians to practice. If, as physicians, we do not believe that men who have never practiced medicine and who never intend to practice can teach the medical student as well as men who have practiced and are practicing can teach him, we should be able candidly to present good reasons for such belief.

THE PURPOSE AND FUNCTION OF A MEDICAL SCHOOL

Before presenting reasons for the conviction that is firmly entertained that the scheme providing for full-time teachers of medicine is impracticable, it is required that the purpose and function of the medical school be defined.

1. The only excuse for the existence of medical schools, hospitals or physicians is that there are the sick who wish to become well, and the well who wish to be protected against disease. The physician is the man who is employed and paid to accomplish the cure. The hospital offers him opportunity to perform his work skilfully and promptly.

2. The function of the medical school is to prepare physicians to cure the sick.

3. The volume of medical literature is so enormous that the student would be lost unless he had some one competent to guide him in its use. It has been the opinion, right or wrong, of the able and wise men in medicine that they could guide best who have been long, laboriously, earnestly and successfully engaged in the work of healing the sick. Thousands of theories, some of them wilder than the ravings of maniacs, have been fabricated. Who has proved them useless or wrong? The physician at the bedside.

4. The faculties of medical schools of the past have felt that there is an art in the practice of medicine, that circumstances arise in which tact and discretion different from and higher than that demanded in the ordinary walks of life—peculiar discretion and tact—are necessary, and that the student could acquire these best from men who had developed them to the highest degree; that successful clinicians could probably better transmit a modicum of their necessity and their significance than could some one groping from a musty library or a laboratory.

Thus, men go to medical schools to study, to learn lessons, clinical and didactic, to acquaint themselves as far as possible with the present state of advancement in medical knowledge, and with the methods of applying this knowledge in the practice of the healing art among the people. And the people are crying, whole communities, whole counties, for men to come to them with this skill.

5. Is not he who has responsibly healed the sick the best teacher to those on whom his mantle is to fall? Does he not have a sympathy that no other man could acquire? Does he not know from his experience with people and life and death a thousand things that were never written and that cannot be written? Has he not a sense of responsibility builded on his relationship with his patients, in homes as well as in hospitals?

Other things being equal, which is the better teacher—one who has succeeded, or one who has not tried? Which the better teacher—one who has gone out and achieved success by hard work and the exercise of sound judgment and skilful practice, or one who has hesitated and trembled and finally has remained cloistered within the walls of the school or hospital because he fears to go? Does appointment to professional position make great clinicians and renowned surgeons? No evidence has been adduced thus far that it does.

6. It is the purpose—or should be—of the medical school to train general practitioners and to reduce the time devoted to special studies to a minimum so that the student may devote a maximum of time to the subjects embraced by the term "general practice." If any man would specialize, he should be required to spend sufficient time after graduation in acquiring proficiency in the chosen line of work. This cannot be done during his undergraduate years without neglect of the broad foundation in general medicine, without which no man can hope to become a truly great specialist.

To the average physician's mind, the word specialties suggests a group of lines of work in rather narrow fields of practice. Lately, a new and important specialty has arisen—medical research. Of them all, fewest men are capable of undertaking this. It is the most comprehensive, the deepest specialty, and it requires a much broader foundation than any of the others, as well as a sane head and a sound judgment. If the other specialties are to be omitted or given in limited degree to the undergraduate, because he has neither the time nor the foundation to grasp them, what shall be done about training him for research? He knows nothing; yet he is expected to discover something new.

OBJECTIONS TO THE EMPLOYMENT OF FULL-TIME TEACHERS

The objections to the employment of full-time men in medical schools to teach the practical branches are so numerous that it is difficult to reckon them.

1. First class, able men cannot be secured, at present, to occupy the chairs in any reasonably large number of schools on the salaries which the universities can pay them.

2. Certain intellectual traits are seldom associated in the same individual. Great teachers are rare; great research workers are still more rare. By the laws of chance, the two would almost never be found in the same individual. They are psychologic incompatibilities. To be a research worker worthy of the name is to be an inventor. It requires the ability to seize on an idea or suspicion and never to release it, never to dismiss it from the mind, until the last detail is finished, in a year or two, or in ten, or until it has proved a definitely unfruitful lead. That is real research work, and should be encouraged and fostered whenever a man with that kind of bent can be found. But such a man should not be put in the classroom. If he *can* teach, it would distract his mind from his research, and such men are geniuses and should be given rein and left to their own inclinations. If the real research worker should undertake to teach, he would either overload the student with the details and the spirit of his research, or, by lack of devotion of sufficient time to other subjects of his department, would fail to keep abreast the times. The student would be overloaded with this specialty and would fail to obtain the amount of valuable instruction required to equip him for practice,

which has already been shown to be prejudicial to the welfare of the student and to the public he is to serve.

3. There is no place in the actual practice of medicine for sustained medical research. It is condemned by law, and, according to all moral standards, a reprehensible practice. No man employs a physician to advance science at his expense and risk. No man would knowingly tolerate it. If a student is taught to do research work on his patients in the university hospital and is complimented on something great or small in connection with it, he might become convinced that that was a proper or permissible course—convinced, in a word, that the patient is only a sort of advanced laboratory animal. Could he then reasonably be expected to disgorge his mind of all these impressions and become an honest servant of his patrons on graduation? Would he not feel justified in trying out his new ideas on them?

4. For the foundation for this objection to full-time clinical teaching, it is necessary to appeal to the experience of every practicing physician. Has he not acquired anything during his years of practice that he did not have at the beginning? Would he not have been worth more to his patients had he known what he has learned twenty or thirty years sooner? Could he not, by contact with medical students, be of service to them by giving them something of this practical side of the work? Has not the desire to build and maintain and increase his practice caused him to search for the valuable, practical things, as contrasted with the theoretical? Has not his feeling of responsibility been increased by the fact that embarrassment invariably follows failure to accomplish the cure of his patients? Have not need and pride and ambition and fear of just criticisms and competition been the great stimuli that have forced him up and onward? Would these factors have affected the same good results if he had not been personally responsible for his success or failure? Is any normal man immune to the influence of these elements of success?

Suppose that the full-time professors and research workers conduct a hospital in which they treat patients and do research work for the education of medical students and for the advancement of science, and suppose the same professors have never been in private practice; is it not reasonable to imagine that this great thing which has been handed down from practitioner to practitioner and on which the good faith and responsibility of our profession rests will be lost to the men who go out from such a school? But suppose this hospital and the associated school take private patients. If the physician who treats them receives pay for treating them, he is not a full-time man. If he receives no pay for treating them, he still fails to secure the personal relationship between himself and his patient which a private practitioner experiences. If, however, he treats them and the hospital receives pay for his services and he receives only his salary, this teacher not only renders himself unworthy to teach because he sells his services for less than it is worth (otherwise the hospital would not have him), but he also becomes a menace to the fundamental principles of American institutions. Such practice is definitely socialistic, and such derelict usage cannot fail to impress the students who work under this regimen long enough to receive a degree.

5. Not only this, but such a man can and will, in the name of science and humanity, undermine and destroy the practice of competent, honorable, ethical men practicing in the community of the university and

in adjacent communities. This is not imagination: it is history. The profession has grown into a dignified body, and, as a consequence of the deliberation of the wise fathers, has established and lived by a code of ethics. It has at times dealt harshly with members guilty of even minor offenses. A prominent clause in this code forbids the physician to advertise; and another forbids him, in any open, secret or underhand way, to rob his neighbor of his practice. These are the two peaks in the principles of medical ethics that loom high.

6. There is a possibility of injustice to the profession in that full-time teachers, with exclusive hospital facilities, may give service free to those able to pay, thus creating mendicants and paupers, to the great detriment of the individual, and an injustice to physicians who must sustain offices and other legitimate expenses. The advertisement of the position in the great university and hospitals, intentional or not, gives a great advantage. In fact, these places will in time, when thoroughly understood, be filled by men belonging to the research type who have had little or no experience in the practice of medicine or surgery, who are interested in the refinements of modern research in its application to their branch of activity, which of necessity develops a scientific attitude toward the patient rather than a humanitarian attitude, and which every experienced practitioner feels toward the life and comfort of those entrusted to his care. However ethical and high grade he may be, he has a great advantage through the advertisement that his position gives him; and the hospital and university place him in a position in which he gives service for less than his skill warrants. Sooner or later he will realize the injustice he is a party to, and will feel that he occupies a rather unenviable position in the profession. He takes no pay, and what fees are paid go to the hospital or university he serves. This is unfair and will sooner or later bring about a feeling of resentment in those who are the sufferers from this system. It is apparent that the patient will not receive the benefit of the real art of medicine, which means so much in the management of the sick.

7. The live, active, intelligent clinician is the man above all who knows where the weak places in medicine are. He knows the real problems, and, if allowed to work jointly in the schools, can be of untold service in directing the attention of research workers to fruitful fields.

8. The objection raised against clinicians as teachers is more valid when applied to research work, for the latter is a more time-consuming occupation than the former, less diversified, and offering much greater temptation to bias.

This new idea of full-time teachers in the practical departments of medical schools did not originate in the profession. It is the child of the brain of a man who never studied medicine, never practiced medicine and who doubtless has no inclination to do so; the child of one who, therefore, cannot realize fully what it means to be a physician; what the difference between a physician and a banker or a teacher is; who does not know the feeling of responsibility that every good physician knows. Now, this fond father brings this strange child and leaves it on the doorstep of the profession with the assurance that it is a fine child, and with the insistence that the profession adopt the child and make it sole heir to the throne of the empire which their fathers and they themselves have builded.

ANALYSIS OF METHODS OF MODERN
MEDICAL EDUCATION *

WILLIAM COGSWELL CLARKE, M.D.

NEW YORK

The dilemma which confronts us today in any consideration of medical education is two horned. On the one hand we have the vast and ever-increasing fund of information that must be given to the student, and on the other, the shortness of the allotted time in which to give it to him. Methods of teaching must be found that are best suited to the majority of students, and that will serve to prepare them for the practice of medicine or for a life of research. What should be taught must also be decided. The good and the bad in past and present medical education must be remembered in order to solve this problem. Present methods have failed to deal adequately with the difficulties of the situation, and, if they are persisted in, the purposes of the medical school will be increasingly defeated.

The day of the morphologic ultramechanical impress on medicine, inculcated by the continuous study of dead tissues, has passed. The life-giving conceptions which the study of physical chemistry has given to all chemistry must be developed in advancing medicine. Medicine must thus vitalize its anatomy, its physiology and its pathology.

The medical schools as never before must develop the scientific spirit in research and in their teaching. The scientific spirit is that which influences a man to seek evidence and to seek it whole heartedly and dispassionately, whether it proves him right or wrong. No effort in science is wasted except the insincere effort. No medical school can reach the heights in education and continue on such a plane without this development in its ideals.

IMPORTANCE OF "PREMEDICAL EDUCATION"

In this consideration of medical education, no analysis has been made of the most important and difficult problem of "premedical" ¹ education partly because it is impossible to do it justice and treat it as a subheading of the topic under consideration. Ideally, the student should learn of the relationship of the fundamentals of knowledge at as early an age as possible. His understanding of the interrelations of philosophy, ethics, biology and physical chemistry should be so thoroughly cultivated as to become of the nature of an essence, not a veneer. And this knowledge of the sciences must rest on a foundation of history and of the classics. Such students would solve many of the problems of medical education and make a suitable complement for able instructors.

The reorganization of medical education may be considered under five main subjects: (1) teachers; (2) students; (3) the subject matter included in a medical course; (4) methods of teaching and of study, and (5) the chief aims in medical education and the present hindrances to their attainment.

TEACHERS

A teacher is one who interests students in learning so that they endeavor to acquire knowledge for its

intrinsic value. The fundamental difficulty lies with the teachers themselves. Boas ² says: Intelligence does not come from the acquisition of facts; intelligence is insensitive to a mere fact; it reacts only to ideas. . . . The issue is the education, not of the student, but of the teacher."

Good teachers must not only be intelligent: they must understand and sympathize with the student's outlook, be able to keep alive the student's interests. A good teacher feels that he learns from his own students through an intimate association with their ideas. It is only through a constant revaluation of his own methods in the light of student opinion and by comparison with his colleagues that he can hope to grow. Who, indeed, can teach ably year after year, isolated from all ideas and criticism except his own?

The effect on the students of the personality and attainments of able men is well recognized. Their undefinable influence may be profoundly felt throughout an entire school; it may be as inspiring and dynamic as that of a Pasteur. Until schools make every effort to select for teachers men of stimulative personality, most teaching institutions will continue to be crowded with "good hearted," acquiescent individuals.

Continuance of Poor Teachers.—Much blame must be laid at the door of those who appoint the inferior teachers. Possibly their appointment may be excused, but the policy common to so many medical schools, of allowing them to remain year after year, cannot be forgiven.

Student Advice.—One of the main reasons for the continuance of poor teachers and poor methods in the medical schools is that student opinion is looked down on. The bitterest criticism by students at once changes into the most helpful advice as soon as they realize that they are listened to without prejudice and with sympathy. In a successful business, because success is dependent on output, complaints and advice of consumers are never ignored. Dickenson Miller has pointed out that "each professor knows only his own classroom, and the dean knows all the professors but not all their classrooms, while the students alone have a survey over the entire curriculum and see all the classrooms."

"Student advice" does not in any way refer to the partisan, back-stairs gossip of student cliques, telling the teacher only what they think he wishes to hear. By student advice is meant the general student opinion of the methods of the individual teachers, who hold their interest, who aid them to think, and under whom they gain related knowledge.

When the private quiz system was in vogue, some quiz masters continued to teach year after year, for they were the ones from whom the students learned. The mediocre and poor teachers discontinued their quiz within a few years. With roll-calls and compulsory attendance at college quizzes, this effective and silent criticism has been lost, and the teacher who is not teaching has found a sinecure in those medical schools in which the student's spoken opinion is not regarded. In universities in which the courses are all electives, the useless teacher is automatically eliminated. The docent system in vogue in German universities recognizes the value of student opinion to such an extent that the man who desires to teach after he has qualified as a docent is simply given a room to teach in. If the students come to hear him and take his courses, he is considered a successful teacher, and it is from the successful docents that the professors are chosen.

* From the Department of Surgery, Columbia University College of Physicians and Surgeons.

1. "Premedical" courses are given in many colleges. They attempt through physics, chemistry and biology to remedy the dogma of authority of school and kindergarten. Until the teachings of primary schools develop the thinking powers, an introductory medical course should supplement earlier education by attempting to develop the students' minds in seeking the truth.

2. Boas, George: What Do Teachers Know?

THE STUDENTS

Professor N. B. Pillsbury has drawn our attention to the fact that "one of the chief functions of education is selection." Education does not make stupid people intelligent, it merely aids in selecting the intelligent and develops their potentialities.

Though the average ability of the students entering a medical school remains about the same year after year, there are striking mental and physical differences among these "selected" men. Their perceptive power varies greatly; some learn best by their eyes, a few by their ears. No two of them have the same affective response to any situation. This response differs greatly even in a single individual from day to day. A good teacher is aware of these potentialities in individual students. He makes use of as many "affects" as possible to teach, to stimulate and interest them. He finds those most nearly attuned to his own emotional response the ones most helped by his personality.

The student's early education—their surroundings, whether sons of doctor, lawyer, soldier or sailor, have all produced an effect. A way must be found to help those who have not had previous opportunities to acquire something of the outlook which comes from a scientific and an intelligently critical atmosphere. If the school hopes to raise its standard, some system of selecting those desirable must be employed other than using high school and college "marks." In fact, if possible, the aptness of students for medicine and their general honesty of purpose should be determined before they are accepted. Methods which inspect the students—those about to enter and those already enrolled—from every angle, mental, moral and physical, will help in selecting the best to practice medicine.

SUBJECTS TO BE TAUGHT

Too much is forced into the schedule today. That there should be an extensive reduction in the number of required hours will readily be granted; but the manner in which this should be done is still undecided. The long standing lack of sympathy between the pure scientist and the pure clinician, each seeking to over-emphasize one side of medicine, is a difficult complication.

The brunt of this lack of sympathy has fallen on the student, and it is for him that the two must be brought together. Medicine must make all developments of pure science eventually of practical use. The pure scientists must be asked for the answers to the problems of life. Therefore, for a medical school to do the most for its students, these links in knowledge must be continually fitted into the chain of education. The students who wish to go into pure science are entitled to every opportunity in the medical school. At the same time, the community has every right to expect that medical schools shall always provide the best for those who are to become practitioners of medicine.

It is evident that subjects of great importance to modern medicine have as yet found no place in our curriculum. There is a continuous up and down in the estimated value of methods of diagnosis and of therapeutics. Scientific knowledge concerning the relation of mental to bodily disease, and the methods of understanding and dealing with the resulting complexities, have been ignored almost to exclusion in many departments. Psychology has too intimate a relation to the science of healing to permit a first class medical school to exclude it.

In many schools, biology has been approached purely structurally. The angle worm and the frog have been

dissected. The ameba and the paramecium have been drawn. It has not effectively developed the basic conceptions of life and its interrelatedness. The tissues have been treated as if dead; or, if alive, separated from the dynoplasm³ of the animal. Biology should tell of the interrelation of the living cell with its environment, of heredity and of the energetics of living tissues, and act as a direct introduction to bacteriology, to histology, to embryology, and particularly to medicine and surgery.

In any schedule flaws and omissions can be found. Yet "touching on" so many subjects has led to much of the superficial study of the present day. The thing to be learned is how to evaluate knowledge. Such evaluation can best be reached by concentration and by correlated study in all their ramifications of a few subjects which best lend themselves to provide a background of medical knowledge.

Elective courses through which the students may fit themselves more fully for one or another phase of medical work play at present practically no part in many curriculums, so that only through the required courses does either pure scientist or clinician meet the students.

METHODS OF TEACHING AND OF STUDY

The greatest faults are those of commission; too much is being taught, and the material taught is uncoordinated. The different methods by which students have been prepared to become fit to practice medicine may be condensed into four general groups:

Group 1, in which the student attends passively, is constantly guided, dependent on the experience of others; A, the lecture; B, assigned textbook study; C, laboratory demonstration and clinical presentation of cases.

Group 2, in which the student both listens and talks: the quiz, conference and discussion.

Group 3, in which the student observes, reports and discusses: experiments and cases in the dissecting room, laboratory and clinic.

Group 4, in which the student takes the entire responsibility: student experimentation and investigation, either in the laboratory or in the study of cases in hospital or dispensary.

GROUP 1.—In which the student attends passively, is constantly guided, dependent on the experience of others. A. *Lecture System*.—Under this method of teaching, the relation between student and teacher is at its thinnest. The teacher cannot really know what effect his words are having on the students individually. Some lecturers almost expect the students to take stenographic reports of their lectures, and many attempt to do so, swallowing undigested the material handed out to them. The mental strain of madly writing down what they hear hour after hour, and of attempting to think at the same time, is bitterly fatiguing. If the lecturer is good, there is a constant sense of disturbance due to the fact that there is no outlet for the stimulus he creates. To those who do not take notes, the lecture, as one professor of biology remarked, "is a method by which the student is enabled to lean back perfectly at leisure and observe the personal peculiarities of the lecturer. Moreover, it is a kind of a sedative, an opiate to all parties, by which in the presence of a thin substitute for education, they are able to forget the aching need of the reality." In lectures, as one college professor has put it, "the ears do most of the work, using only one of the senses. In order

3. Dynoplasm: a term to suggest the inseparability of the energy manifestations of the living tissues; the inseparability of physicochemical actions and of substance.—H. A. Murray.

to fix a subject in a student's mind, he must experience the things talked about."

Aside from these real faults of the method, it is the one almost invariably used by the poorest teachers. The students speak of most lecturers as purveying cut and dried or "canned" knowledge, in that they follow some favorite or personally written textbook. The lecturer often uses the same notes year after year, unaware of their weaknesses. This could not happen so often if the students could be persuaded to ask questions during the hour, or could remember what to ask about at the end, and if there were real opportunity to do so. But questions are rarely asked, and the lecturer rarely comprehends his audience; he unconsciously presents blocks of knowledge, the relationship of which is not evident to the student. Small gaps or defects in the presentation of a subject are stimulating to the student who attempts to fill them in by mental effort and thus is led to think and to reason. But if the breaks are too great or too numerous, no amount of mental effort will make the student able to keep up with the train of thought, and he will eventually cease to supply the gaps between the bits of new information and the familiar knowledge given.

A plea for the lecture system is that much time is saved for a busy man, who may talk to a large class; but this is a poor argument in the eyes of the students, unless the lecturer gives more than can be found in a textbook. The lecture, however, is a simple and valuable means of leading the student safely through a new and difficult process of thought. A good lecturer can do this better than any book, and at far less expenditure of time and waste of effort on the part of the student; but he must be an unusual teacher, one who can think more rapidly than his students, and who can feel intensely whether or not the latter are following his argument. He must state conflicting ideas without prejudice, and explain the process of reasoning by which he has arrived at his own opinions. The man who comes fresh from his personal activities, whether from the clinic or the laboratory, and talks vividly of his work, gives much more than mere facts, in that he instils enthusiasm. The value of such a man as a teacher and inspirer can scarcely be overestimated. His stimulation leaves the student in a sensitized frame of mind.

Good lectures, if few and scattered, are useful, but good lecturers are rare. Further, if many good lectures were used, their composite effect would still be fatiguing; collectively, they would defeat just what makes any single lecture a success.

The fact that there is frequently no textbook arrangement which fits the curriculum of a school makes it impossible to abolish the lecture system completely, without loss of its correlating tendency.

Whatever the value of a single lecture, a long series of scheduled lectures in a day is educationally unsound. The students say that by the third hour they have fallen into a sort of daze, and that by 5 o'clock they are mentally paralyzed, utterly unfitted for the evening's work.

B. Textbooks.—These are invaluable, if several opinions on subjects are made available and if the student is fully aware that usually each book represents merely the opinion of one man. Too often assigned reading is from those books alone which agree with a teacher's opinion. Students frequently complain in that if they do not recite according to the assigned text, their statements are held as wrong even though they follow other authority. The teacher who assigns so

many pages per lesson and asks in recitation for an unassimilated return of the material, lays his qualifications as a teacher open to serious doubts. Unfortunately, such use of books tends to fix even more firmly in students' minds the fallacy that the printed word must be true.

Even books that record only those observations which the writer regards as facts must not be thought of as authoritative. If the student reads opposed statements, made in all honesty by two or more "authorities," the experience is convincing that all books must be handled with mental care and read without prejudice.

C. Laboratory Demonstration and Clinical Presentation of Cases.—These should be distinguished from laboratory and clinical work, in which the specimens, cases and experiments are handled directly by the students. A series of specimens or cases is lectured on and exhibited; the students are passive listeners, and even those in the front rows can see but little, rarely anything that they are not told to see. Here, again the students' powers of critical observation of the facts presented are but little developed.

The method may have some uses, however; for instance, in the presentation of some difficult experiment, the technic of which requires so much time or is so difficult that the student is incapable of doing it himself; or in the exhibition of some exceedingly rare and seldom seen clinical case, such as anthrax or leprosy. Quite aside from what the student may learn of the clinical case presented is the inspiration which he will often acquire from watching an instructor who is an adept in the art of extracting all the essential facts about a patient, while at the same time gaining his complete confidence.

GROUP 2, in which the student both listens and talks. —*The quiz conference and discussion.* These may be regrouped either under an autocratically dogmatic procedure or a Socratic procedure. The dogmatic method suits many teachers, since they can more readily follow one textbook, and pleases some students, who then receive blocks of knowledge as facts which can be readily pigeon-holed in mind and note book, to be turned in at examination time. With the Socratic method, the teacher is under more of a strain; he must be mentally alive, continually matching his wits against the students'. By their example, teachers in this way help the students to think and to weigh evidence, and thus to build up for themselves coordinated knowledge.

The dogmatic procedure does not train the student to think; it teaches him only to remember. The objections to it are practically the same as the objections to the didactic, dogmatic lecture already discussed.

The Socratic method, in which the teacher and the students, by questions and answers, proceed from one bit of knowledge to another, because there are definite connecting links, can be used only by teachers thoroughly familiar with their own and interrelated subjects. The students are continually oriented as they proceed. This method forces the teacher to be aware of the students' mental equipment and progress.

In the quiz and conference, the student need not sit passively awaiting his turn, and, having recited, sink into a safe and sleepy neutrality; he can take a large part in the constructive work—how great a part is dependent especially on the ability of the teacher, but also on the development of the student.

The essence of merit in the quiz conference method is that coordination of subjects can be assured. This coordination in knowledge tends to develop an aware-

ness of what is important or unimportant in each subject. Thus, the student's burden is trimmed with discrimination as he proceeds.

GROUP 3, in which the student observes, reports and discusses specimens, experiments and cases with which he has come into direct contact in the laboratory and clinic.—By this method, the students are forced not only to think, but also to see for themselves. That they are desperately in need of such development is evident each time we hear them say, "I do not know what I am expected to see," or, on the other hand, when they see or hear what they are told to, even if it is not present: they can always feel a spleen.

The good teacher who understands the possibilities in coordination of topics usually also appreciates the differences in students' powers of observation and mental development. Under the method of individual study, he has opportunity to lead each, step by step, to observe and to understand what he sees. If students are first shown complicated specimens or cases, they become confused and acquire less knowledge than when they begin with simpler ones. Their studies must always be related with one another and with bits of knowledge already possessed. The success of this method for many students is dependent on the ability of the teachers, since the present day premedical development has not been such as to make students able to stand on their own feet.

On the other hand, this method is intensely stimulating to those well equipped, able to observe and learn without constant help. It is also an important aid in the selection of the most desirable students. The students who memorize facts and do well through their accuracy in presenting them, who are able to graduate at the top of their class through marks thus received, do not always shine when acquiring knowledge by personal observation and when they are forced to think for themselves. This is no criticism of any student with a good memory: only of those whose memories alone commend them. Such students are not of the type who advance general knowledge or who make good physicians; they should be recognized and taught to think, not encouraged by good marks to a false sense of their superiority. Individual observation forces each man to use his own senses, not accepting the evidence of another; reporting such observations requires of him an accuracy that he is willing to defend; interpreting them requires of him judgment and use of bits of knowledge previously acquired; and discussing them gives him an opportunity to defend his position and become aware of the degree of validity of his judgments.

GROUP 4, in which the student takes the entire responsibility: student experimentation and investigation.—*Independent study.* This is comparable to the "honors" system prevalent in English universities, wherein the student is free to study in his own way and is himself the judge of the time when he feels fitted to present himself for his examinations. Aside from the general basic knowledge required to pursue the course he has chosen, he is free to follow up the subjects that interest him most; always with the help and guidance of a tutor, who, though he is usually an instructor or research worker in one branch of science, must have his knowledge so well correlated that he will be able to guide the student in all branches. Examinations under this system come, not as a lock to close forever any part of the student's mind deemed by the professor to be sufficiently crammed, but as a key to give the student a further understanding of the relation-

ship between the masses of knowledge he has accumulated throughout the years.

This method of independent study may not be practical for the average medical student of today, but is it not worth while to give to the better men a special chance to develop, even if they are an extremely small minority? Since this method tends to develop the resourcefulness of the capable student, it at least can be combined in many ways with a didactic scheme. With sufficient free time granted in the schedule, a student may study and experiment for himself under the heads of any of the main laboratory courses. Paternalism does not tend toward individual development: there is failure to throw the student on his own resources in not forcing him to think. A method which permits students to work independently and does not so carefully guard them that errors may not occur in experiments and observations tends to force each student to formulate his own conclusions. Thus, in spite of much poor teaching, the intelligent students will educate themselves, learning to weigh evidence and, through experience, acquire judgment.

DEVELOPMENT OF THE STUDENT

What is it that a school through all these methods of teaching seeks to develop in the student? Whether he is to become a pure scientist or a practitioner, in order to accomplish most for himself and others, must he not, as a student, acquire a truly scientific habit of mind? He will then in practice make use of available knowledge without prejudice. From the aspect of pure science, the value of this attitude is generally acknowledged; but from the standpoint of the community, this attitude for the clinician is even more important. For is it not through the practitioner that practical application is made of the discoveries in science? In fact, is it not probable that much of the lack of sympathy between the laboratory worker and the clinician has been engendered by the failure of the clinician so often to make full application of science in his practice and by the failure of the laboratory worker to develop a truly scientific spirit in future practitioners while they are students?

INCULCATION OF SCHOLARSHIP

The incultation of a high degree of scholarship and an insistent craving for knowledge as something ideal is also most desirable. If those who have been taught at the College of Physicians and Surgeons, New York, in the dissecting room at any period during the last thirty years, will analyze that experience, they will see that Dr. George S. Huntington's impress on them to do well with honesty of purpose was of much more value than the knowledge of anatomy they acquired.

ENCYCLOPEDIA TEACHING

Have not medical schools fallen into the error of feeling that they must pack into the students' minds great masses of facts, more or less useless, but which must be found in that encyclopedia of medical information, the completely educated student? Why attempt the impossible? Must he not "practice" medicine during the rest of his life before his education can be completed? If the teacher of long ago realized this when he adopted the word "practice," how can it be hoped that all knowledge of medicine can be imparted at the present time in four years?

Should not medical education rather aim to have students able to judge what is important and what is unimportant, or at least to give them an opportunity to

undergo experience and to practice their judgment? They are then better qualified to be on the lookout for evidence, and to evaluate it as they find it. No teacher can lay down rules for discovering the important or unimportant, while the general teachers of anatomy, of bacteriology, of chemistry, of histology and of pathology must treat all fields as of equal importance.

Until there is a close coordination of the needs of many specialists, unimportant details will still seem to the student to be of equal value with the most important.

RELATEDNESS

Should not medical education particularly aim to link for the future practitioner of medicine all specialties so that their relatedness may be ever before him? Students are lost in the maze of seemingly contradictory statements of specialists. What the gynecologist teaches seems to contradict the teachings of the urologist, and the obstetrician disagrees with both, simply because each does not know of the needs of the other. Cooperation and interdepartmental sympathy with the necessities of specialists would not only save time in the study of medicine, but would give the students this much needed interlinking of the parts to form an orderly whole.

Relatedness is essential for comparison, and it is on comparisons that knowledge is built. It is necessary that topics and subjects be overlapped. Therefore, no topic can ever be regarded as finished: the practice of medicine is continuous and so is its study.

NONMEDICAL HEADS OF DEPARTMENTS

For the sake of such relatedness, the heads of all departments must be intimately acquainted with the needs of medicine. Medical experience alone can give this acquaintance. In choosing heads of departments, the search again is for men preeminently interested in the education of the medical student, and it is the exception for a man without a medical degree to have had such experience that his perspective will enable him to see his own subject in a coordinated relation with medicine as a whole.

DEPARTMENTAL BARRIERS

Interdepartmental partitions which are the inheritance of tradition and custom are distinct barriers to coordination. The terms physiology, pathology, medicine and surgery suggest that they are subjects apart, while in reality physiology and pathology shade by insensible gradients into each other and again into medicine and surgery. All of these rigid departmental partitions are imaginary. The present custom of departmental education in medicine tends to separate teachers both by a physical living apart, and by mental discord, because of different tenets and purposes. When the old line subjects—anatomy, physiology and pathology—were taught by a single practitioner, the students did not suffer from such discord.

THE BLOCK SYSTEM

From time to time, courses have been altered by the introduction of the so-called block system, whereby subjects are attached and finished in rotation. This is bad for two reasons: 1. What is learned by study of only a few minutes a day, carried through the years, results in the acquirement of more actual knowledge than that acquired by a continuous application over a short period of time. 2. The block system is not adapted to the material which is taught. It treats knowledge as if it could be divided into bricks, each

one to be finished and packed away, a box when filled with such bricks to constitute a medical education. Knowledge of a topic, on the contrary, is no such solid matter, but is interdependent and vanishes if not kept alive through its increment. This block method obviously defeats all aims at correlation and orientation of students.

Students who are "fed facts" because they are "not capable of discrimination," as undergraduates, are not trained to judge wisely and with discrimination when they enter on their independent medical lives. Physiology can never be acquired to the full by assigning 800 hours of a schedule in the first year "to get it out of the way," as one man put it. Rather to be fully assimilated must physiologic thought and physiologic investigations continue throughout the four years, interwoven with medicine and surgery. Must not the "fundamental scientific subjects" be carried into the later years? Thus the student will be able to pick with more readiness the essentials from the nonessentials in his pure science courses. To be able to do this to the full, no subject can be regarded as finished, as in the block system.

FALLACY OF THE MARKING SYSTEM

Is not our real aim for the student to have him continue as a student during his lifetime? Circumstances which militate against this development are therefore objectionable because students are led to feel that in acquiring an A or B, day by day, their paper record as it grows in the hands of the quiz master is tantamount to a personal acquisition of knowledge. Hence the development of memory rather than of thought gains for a man the reputation of a real student. Further, the marking system forces students, too intelligent not to see the fallacy of the procedure, into at least a pragmatic acceptance of it. Again and again the most serious and well meaning will cut the classes and clinics in which they might be gaining valuable interests in order to cram a superficial, temporary memorization of facts necessary to attain "a good mark" in an announced test. Nor are they to be blamed; if the others set a standard for memorization, they feel they must follow, to get the "good mark" which in so many cases is used as the basis for the judgment of a man's worth—as though it were anything but the poorest reflection of his true capabilities.

The passing mark of 75 per cent.—C, used in many colleges—is another vicious influence, especially when there are many marked tests throughout the year. It tends to make the student feel he need make but three quarters of effort, only clean three quarters of a table, or at amputation cut through but three quarters of the tissues, especially since such marks are obviously inadequate, representing in no way the instructor's thoughtful estimate of the student's work or ability. Similarly, the mark tends to stimulate some students to obtain surreptitiously from notes or neighbors facts for the written test or recitation. Would it not be of greater aid both to student and to teacher to use a shifting scale? Work would then be either "satisfactory" or "unsatisfactory," according to the teacher's estimate of the student's ability.

Like the marking system, the formal examination which calls for an assembly of concrete facts is particularly to be deplored. The student who has the greatest amount of mental surface tension, and who can balance the largest number of facts on the end of his pencil, is the victor in such a contest, regardless of his ability or inability to understand or make use of these facts.

COMPETITION AS A STIMULUS FOR STUDY

Nearly all teaching methods employ a goad of some form; and the one which tends to maintain the student's self respect is the best. It is foolish to blind one's eyes to the fact that, since the world was young, man has striven and succeeded in competition, and he has become weak and vegetative without such a stimulus. Where the annual practical examination in anatomy is in vogue, all students aspire to enter the group of those who make no mistakes. Such a distinction comes only to those who make no mistake in competition with themselves and anatomy. This method serves as a healthy goad to the acquirement of a knowledge of the subject. The exercise of this stimulus can be produced in all subjects, not alone in anatomy.

PRACTICE OF MEDICINE

Having considered teachers, students, methods of teaching and of study, it is necessary to formulate what medical education is expected to give. The epoch of a morphologic, ultramechanical aspect of the living animal as a conception and basis for study is apparently passing. The substratum may be regarded as structural, but the correlation of functional activities must be regarded as the essence of life in an individual. Further, the biologist is insistent that derangement of functions brings about related functional changes and, progressively, alteration of structure. The progressive summation of functions and equilibration of structure constitutes the living individual. Students, however, are still led to think in mechanical terms and fail to realize that individual patients are not at all "closed systems." They are aware of the patient's environment, but have not a full conception of the interrelatedness and intrarelatedness of all energy phases even to the *n*th dimension. To make plain this concept of dynamism, coordination must be sought; the interdependence of all "normal" and "pathologic" conditions must be stressed that no graduate of a medical school shall go out with his knowledge walled off by interdepartmental barriers.

In essence, all are seeking what M. Louis so forcefully expressed to his pupils nearly a hundred years ago:

Such and such have been my observations. You can observe as well as I. If you will study the art of observation, and if you will come to it with an honest mind and be faithful in noting all which you discover, and not merely the things which are interesting at the moment, or those which support a favorite dogma. I state to you the laws of nature as they appear to me; if true, your observations will confirm them; if not true they will refute them; I shall be content if only the truth be ascertained.

Think how far the capable student could travel on the road to a good medical education in the allotted four years, if all the teachers of "departments" should together frame a carefully thought out course, topic by topic. Up to the present, the various departments in many schools, without a due recognition of one another's responsibilities in the teaching of medicine as a whole, have devised a system which fills the student's time completely. Is there any valid reason why this should continue? And yet it has continued and does continue, and every year the ruts are worn deeper and the vision of the future is more and more obscured by the piled up walls of habit.

Many things that have been said in the preceding pages are but platitudes and repetitions to those who are interested in medical education; but until in some way these foundation stones of education cease to be

used as roofing and are put where they can be of real value—not in books or even in the minds of educators, but in the practice and curriculum of schools—clinical lecturers will continue to think they are showing a skin mole to a whole class, when it is so small they can hardly see it themselves. Instructors will continue to lay down the law of dogma, and wonder what is the trouble when interns fail to cope with emergencies not laid down in the books. And we shall continue to write articles on medical education.

CONCLUSIONS

Only the best instructors should be chosen, because on them depends the selection of students and to a large degree their development and education. The surest way to have many good instructors available is continuously to develop them from those possessing the greatest apparent potentialities.

Teachers who do not continuously prove of value should not be allowed to remain in a school.

The method maintained should aim for the selection and maintenance of good teachers and laboratory workers, for under them any method of education is successful.

437 West Fifty-Ninth Street.

DISPOSITION OF URETERS IN CERTAIN
ABNORMAL CONDITIONS OF THE
URINARY BLADDER*

WILLIAM E. LOWER, M.D.

CLEVELAND

In the majority of cases, the condition for the relief of which transplantation of the ureters is indicated is a congenital anomaly known as exstrophy of the bladder; this condition is not progressive, and regarding its causation no information which will affect the condition itself may be expected to be developed. It is estimated that exstrophy of the bladder occurs once in every 30,000 to 50,000 births. If this is a correct estimate, there must be about 2,000 cases of exstrophy in the United States. With one or two exceptions, no single surgeon has had more than a very limited series of cases, so that when the occasional case comes to him he has no basis of judgment as to the best mode of procedure. It follows that in many cases only a plastic operation is performed which closes the external defect but does not relieve the chief source of distress, and nothing remains for the unfortunate patient but the continual use of some device for holding the constantly dribbling urine. Even with the utmost efforts to maintain cleanliness, however, these patients can scarcely ever be free from the pervasive odor of urine, and they are practically forced into a life of self-aborrent isolation. Moreover, none of these devices are effective at night. All of my own patients, at least, have stated that at night they were obliged to wrap themselves in rubber sheets. It is difficult to imagine a more uncomfortable existence. In addition, the appliance itself may prove an added menace for, as in one of my own cases, the constant irritation of the already excoriated surface produced an epithelioma.

It would appear fitting, therefore, to discuss the management of these cases with a view to standardizing a technic which will effectively and permanently remove

* Read before the Philadelphia Genito-Urinary Society, Jan. 29, 1923.

the most distressing symptom. Moreover, since this congenital condition has no relation to any method of prevention, the necessity of establishing a standardized operative technic becomes even more urgent.

Much has been written regarding the developmental factors which give rise to exstrophy, but that information does not aid us in correcting the deformity or relieving the chief cause of distress—the constant dribbling of urine. While other deformities are often associated with this anomaly, these patients, as a rule, are not mentally defective, and if given the opportunity would progress intellectually with other children of their own age; but, as they cannot be sent to school, they are deprived of the educational advantages that other children receive.

CHOICE OF SITE

The preliminary queries which must be answered in considering a standardized technic are these: 1. What is the safest and most efficient site to which to transplant the ureters? 2. At how early an age may correction of the condition be undertaken? In answering the first question, one must consider the utmost possible control of the urine and the minimum danger of ascending infection to the kidneys. It will be noted that, contrary to the judgment of most writers, I have placed the danger of ascending infection as second in importance; with the ureters in their exposed site in the exstrophied bladder, the danger of ascending infection could hardly be increased, whatever the site selected for their transplantation.

Moreover, there has been no case as yet of damaging infection in any of my own cases. Nor can I agree with Peterson that the prevention of ascending renal infection is dependent on the transplantation of the vesical flap with the ureteral orifices—that is, by Maydl's operation. The extensive experimental work of Baird, Scott and Spencer¹ also seems to justify our assumption that the danger of an ascending postoperative renal infection is in no wise an expected sequence of transplantation of the ureters. Of particular interest in this connection are experiments by Draper and Braasch² in which they produced an intensive infection in the bladder, but "were never able to show that there was any infection whatsoever of the kidneys in these animals, and many of them lived for a number of months. Moreover, hydronephrosis did not occur; the real factor in reflux prevention being the physiologic activity of the ureters, rather than the mechanical action of the valve." Since in transplantation to any site we have no reason to believe that the normal physiologic activity of the ureters themselves has been impaired, these findings would stand, whatever the site of their termination.

There are certain other conditions besides exstrophy of the bladder for which transplantation of the ureters to some site outside the bladder is indicated, such as other malformations, either congenital or acquired, in which the bladder no longer acts as a reservoir for the urine, or in which the presence of the urine causes intolerable irritation; and also injuries as the result of which the vesical sphincter has been permanently damaged so that it no longer functions and in which repeated attempts at plastic repair have failed. Neoplasms of the

bladder involving the ureteral orifices may also require this operation. However, in such cases a simple form of transplantation in situ as previously described by me may be adopted.³ In any of these conditions, the urgency of operative relief is sufficiently indicated by the intolerable incontinence which makes the patient a burden to himself and an offense to others.

The prime problem, as I have indicated above, is the choice of a site to which to transplant the ureters. In making this choice, various authors in the past have considered the openings of aberrant ureters or have made their choice in accordance with embryologic and evolutionary considerations. As for the extravescical openings of aberrant ureters, little is to be gained by their consideration. The fact that aberrant ureters may open in the urethra, the vagina, the vestibule of the vagina, Gärtner's ducts, the uterus, the seminal vesicle, the vas deferens or ductus ejaculatorius, the rectum or the intestines, with the exception of the last two sites named, does not offer any suggestion of possible value. Embryologic and evolutionary considerations, however, seem to be of more value.

As was noted by Simon,⁴ who, as far as I know, was the first to consider a direct union between the rectum and the ureter, the fact that in the embryo the cloaca serves as a common reservoir for intestinal and urinary excretion, and that this is the case also with birds and with certain of the lower mammals, appears to indicate that the bladder was developed, as it were, as an after-thought, not from the point of view of safety, but for the greater efficiency of the highly developed organism. There is no fundamental reason why urine and feces should not be collected in a common reservoir. Moreover, as I shall show later, the normal mode of exit of the ureters can more readily be approximated in the intestines than in any other of the sites that have been proposed.

Nevertheless, a review of the literature shows that practically every possible site has been used for transplantation—the urethra, the vagina, the loin, the groin, as well as the colon and the rectum. Transplantation to the loin, in particular, has had its latest and most ardent advocate in Bottomley,⁵ who believes that by this method danger of infection is minimized and that, with the wearing of a properly fitted urinal, the patient is relieved from undue discomfort to himself and annoyance to others. Watson⁶ advocates a direct connection between the pelvis of the kidney and the skin of the loin by means of rubber tubing, in the belief that the danger of infection is thus minimized. By far the greater number of authors, however, have advocated some method of transplantation to the intestinal wall. As far as I have been able to discover, the first diversion of the stream of urine to the intestines was made by Lloyd⁷ in 1851. By means of a skein of silk used as a seton, he endeavored to conduct the urine from the bladder to the rectum. Simon, who has usually been credited with the first ureteral transplantation, did not perform a true transplantation, but made a ureterorectal fistula.

3. Lower, W. E.: Disposition of the Ureter in Surgical Conditions of the Bladder, *J. A. M. A.* **75**:711-713 (Sept. 11) 1920.

4. Simon, J.: Ectopia Vesicae: Absence of the Anterior Walls of the Bladder and Pubic Abdominal Parietes; Operation for the Directing of the Orifices of the Ureters into the Rectum; Temporary Success; Subsequent Death; Autopsy, *Lancet* **2**:568-570, 1852.

5. Bottomley, J. T.: Operative Treatment of Exstrophy of the Bladder by Transplantation of the Ureters into the Loin, *J. A. M. A.* **49**:141-144 (July 13) 1907.

6. Watson, F. S., and Cunningham, J. H.: Genito-Urinary Diseases **1**:445, 1908.

7. Lloyd: Ectopia Vesicae (Absence of the Anterior Walls of the Bladder); Operation; Subsequent Death, *Lancet* **2**:370-372, 1851.

1. Baird, J. S.; Scott, R. L., and Spencer, R. D.: Studies on the Transplantation of the Ureters into the Intestines, *Surg., Gynec. & Obst.* **24**:482-484 (April) 1917.

2. Draper and Braasch, in discussion on Furniss, H. D.: Post-operative Renal Infection, *J. A. M. A.* **61**:957-961 (Sept. 20) 1913.

It is interesting to note that Roux,⁸ in 1853, proposed "that the ureters be sunk in the rectum, and that the exstrophied bladder be covered by skin through plastic operations. . . . Roux was led to believe that these operations were anatomical possibilities from a study of cases where the ureters opened into the rectum, and from the numerous instances on record where, after the removal of the vesical stone and the establishment of vesicorectal fistulas, the patients were still able to control their liquid evacuations. He refrained from putting these ideas into practice because of his uncertainty as to the relations of the peritoneum and rectum in exstrophy of the bladder."⁹

As far as I have been able to discover, the first true transplantation was done by Smith,¹⁰ in 1878, who performed a bilateral ureterocolonic anastomosis in two stages by the extraperitoneal route. From then until 1891, no cases seem to have been reported; but since Küster's report in that year, the literature has been fairly rich in reports of transplantations into the rectum or colon by various methods.

Extensive reports from the literature have been made by Peterson⁹ and Buchanan,¹¹ while perhaps the largest single series is that reported by C. H. Mayo¹² in 1919. Peterson compiled thirty-three uretero-intestinal implantations, among which sixteen were double implantations—six for cancer of the bladder; one for tuberculosis of the bladder; seven for exstrophy; and two for cancer of the uterus, extension from which had involved the ureteral orifices. In this total series of thirty-three operations, the primary mortality was 33 per cent. Later deaths from pyelonephritis are noted in six cases with two deaths from uremia. Peterson compiled also thirty-six cases of ureterotrigonal-intestinal anastomosis, among which thirty-two were for exstrophy, with an operative mortality of 14 per cent. Among these, two patients died of pyelonephritis, four and fifteen months after the operation. The not unduly forbidding percentage of deaths in the second series, and the rare occurrence of pyelonephritis make one wonder why the value of intestinal implantation was so greatly questioned. A mortality of 14 per cent. after operations for a condition which in itself limits the length of life, and in any case makes life a continual burden throughout its duration, does not seem to be one which should have warranted any question of the fundamental value of the procedure. As C. H. Mayo has stated, "statistics show that 50 per cent. of all persons thus afflicted are dead by their tenth year, and 66.67 per cent. are dead by their twentieth year." Buchanan compiled from the literature 131 cases of intestinal implantation of the intact ureters with part of the bladder wall, with an operative mortality of 25 per cent. Among the ninety-nine surviving patients, eleven were reported to have died subsequently of ascending renal infection. Although this is a comparatively high percentage—11.2 per cent.—nevertheless, as Buchanan himself

states, there is no way of ascertaining whether or not the kidney infection may not have existed at the time of operation; nor was the condition of the transplanted ureters themselves known, a point which is considered important by many investigators. Buchanan does not give any statistics regarding continence, but Peterson states in connection with the second series of thirty-six cases that sphincteric control was mentioned in the reports of twenty-nine, the average frequency of evacuations being from two to four hours. In the Mayo Clinic series of twenty-six cases referred to above, twenty-two of the operations were reported as successful.

Researches by various investigators have shown that the transplantation of the ureters to the duodenum is accompanied by symptoms of uremia with a fatal termination. If one ureter is transplanted to the duodenum, the remaining kidney seems to be able to take care of the uremic toxins—death occurring promptly, however, when the second ureter is transplanted, or when the kidney in the nontransplanted side is removed. It appears to me that the result of transplantation to the duodenum can hardly be used as a basis of argument as to effects of transplantation to the rectum. It has been shown that absorption from the intestine decreases progressively within the large intestine, until within the lower colon and rectum it is practically nil. If absorption from the rectum were sufficient between evacuations to produce uremia, it would also be sufficient to produce a chronic toxemia from the products of intestinal digestion.

As a result of an experimental study in 1909 in which normal sterile urine was allowed to leak directly into the peritoneal cavity, Barney¹³ concluded "that the abdomen may bear without damage, and even in some cases without severe reaction, the effusion of a certain amount of sterile urine, and that it is able to guard itself quite promptly and efficiently against this effusion by the formation of adhesions. . . . It is in those cases where this prompt occlusion does not occur, seen oftenest in dogs, or where the urine is septic from the start, that a general peritonitis sets in." He concluded that the cause of death in these animals was primary sepsis, even though uremia played its part. On the other hand, Cecil and Cummings,¹⁴ in 1918, called attention to the possibility of deleterious remote effects of absorption of urine from the colon, drawing their conclusions from their observations in a case of traumatic unilateral uretero-intestinal anastomosis. It is to reduce to the minimum the danger of urinary absorption that I advocate the retention of a rectal tube immediately after operation until normal periods of evacuation are established. Later, when the longest periods of retention last over night—that is, not more than seven or eight hours—the danger of uremia from absorption would appear to be a remote possibility. Blood chemistry tests in a number of cases of my own have been made during the last few weeks, and in no instance has any abnormal urea content been noted.

Of special interest in this connection is Keen's¹⁵ case, "in which for thirty-five years a woman defecated and urinated, and for eleven years menstruated, by the rectum." He reports that "no ascending renal, vesical or uterine infection occurred at any time, nor did the

8. Roux, Jules: Exstrophie de la vessie: autoplastie pour masquer la difformité et créer un réservoir capable de retenir l'urine pendant un certain temps; succès; établissement définitif d'un canal cutané propre à maintenir en place un réservoir en caoutchouc vulcanisé, *Union méd.* 7: 114-115, 1853.

9. Peterson, Reuben: Anastomosis of the Ureters with the Intestine: A Historical and Experimental Research, *J. A. M. A.* 36: 444-445 (Feb. 16); 506-507 (Feb. 23); 569-573 (March 2); 632-635 (March 9); 735-738 (March 16); 808-815 (March 23), 1901.

10. Smith, P.: An Account of an Unsuccessful Attempt to Treat Extroversion of the Bladder by a New Operation, *St. Bartholomew's Hosp. Rep.* 5: 29-35, 1879.

11. Buchanan, J. J.: Remote Results of Implantation of the Ureters into the Bowel for Exstrophy, *Surg., Gynec. & Obst.* 8: 146-155, 1909.

12. Mayo, C. H.: Exstrophy of the Bladder, *Contributions to Medical and Biological Research, Dedicated to Sir William Osler* 2: 1095-1110, 1919.

13. Barney, J. D.: Intraperitoneal Division of One Ureter: A Clinical and Experimental Study, *Tr. Am. Urol. A.* 3: 262-288, 1909.

14. Cecil, A. B., and Cummings, R. S.: The Remote Effects of Absorption of Urine from the Colon: A Case of Traumatic Unilateral Uretero-Intestinal Anastomosis, *J. Urol.* 2: 469-479 (Dec.) 1918.

15. Keen, W. W.: A Case in Which for Thirty-Five Years a Woman Defecated and Urinated and for Eleven Years Menstruated by the Rectum, *Surg., Gynec. & Obst.* 69: 606-608, 1919.

mucous membrane of the rectum at any time resent the constant presence of the urine or the periodical presence of the menstrual blood."

As for the danger of ascending infection, that this danger exists cannot be denied; but I do not believe that it is greater in the case of the transplanted ureter than in the case of the exposed ureter in the exstrophied bladder. I believe, moreover, that within the rectum with its natural defenses it must be less than when the ureters are transplanted to the skin, where they meet with no such natural defense.

Steinke,¹⁶ Sweet and Stewart,¹⁷ Wislocki and O'Connor,¹⁸ Satani,¹⁹ Sampson²⁰ and others have made extensive studies of the possibilities of reflux of urine from the bladder to the kidney, and have apparently established the fact that the direct waves of peristaltic activity are determined by the metabolic gradient—the metabolism being increased at a point of infection. It would follow that, if a point of infection is near the terminal of the ureter, a reflux peristaltic action might carry bladder or rectal bacteria to the kidneys; but this argument does not seem to me to be pertinent for the reason that I have stated above. Such a reverse peristalsis would also carry toxic substances from the exposed ureters in the exstrophied bladder.

AGE

The second of the queries noted in the beginning of this paper, regarding the age at which transplantation of the ureter should be undertaken, cannot be answered with certainty. My judgment is, however, that operation should be deferred until the child has reached the age when he can be trained to control the anal sphincter, and that the operation should be done as soon after that age is reached as possible in order that the control of the anal sphincter for urine as well as for feces may be acquired more easily and more completely, and that the child may mingle with his fellows and begin his schooling at the normal age.

It is not necessary to review these various methods, in particular that of Maydl, which was for many years the method of choice until Coffey's²¹ investigations, whereby he developed a method of implantation closely analogous to the normal route of the ureters through the bladder wall. Coffey's method was the result of a research to determine a procedure whereby the portion of the pancreas remaining after its head had been removed might efficiently deliver pancreatic juice through a new opening in the intestine. This study became a study in hydrostatics, or, as Coffey himself calls it, *static intra-intestinal pressure*. The principle of the operation, as summarized by him, consists of "submucous implantation of the duct for the purpose of reversing the course of *static intra-intestinal pressure* and bringing it to bear on the site of the duct. . . . The essential mechanical principle necessary to uniformly successful implantation of the ureter is that *the ureter shall be made to run immediately under the loose*

mucous membrane for a distance, before entering the lumen of the intestine."

Stiles' application of Witzel's tubularizing principle and Martin's muscularizing method should also be noted as efficient modes of implantation. My own belief is that some technic which insures the application of the principle proposed by Coffey should be adopted. The following special points, however, may be mentioned here. Preliminary to operation, the function of the kidneys, as for any operation on the ureters or bladder, is checked up by blood chemistry and by the use of dyes. For two days before the operation the bowels are cleared out, a rectal douche being given on the day of the operation. Of particular importance is the placing of the patient in the Trendelenburg position, which brings the abdominal viscera well out of the pelvis, according to the method of Guthrie, who advocates that the patient be put in the Trendelenburg position before the anesthetic is given so that the suction of the diaphragm will help to pull the intestines out of the pelvis. All the abdominal viscera are held out of the pelvis by sufficient packing with gauze. Formerly, I clamped off the bowel as suggested by Coffey; but, if the bowels have been thoroughly cleaned out preoperatively, this is not necessary, and more recently I have not used the intestinal clamp.

The interval between the transplantations, of course, varies with the individual patient; but, in general, two weeks is required for the wound to heal solidly and in order to make sure that the kidney on the transplanted side is functioning. The extraperitoneal route, in my opinion, should be avoided. My own greater success has come from operation by the intraperitoneal route. There is a physiologic reason why the danger of infection is increased in extraperitoneal operations, for, as Crile has suggested, the extraperitoneal space is weak or lacking in defenses against infection. In these defenses, the intraperitoneal area is among the most richly supplied of any in the body. Operation by the intraperitoneal method should therefore minimize the danger of infection. Since I have adopted the present method of operation by the intraperitoneal route, I have had no case of infection.

As stated above, another important point, in my estimation, is the use of a rectal tube until the rectum shall become adjusted to the presence of urine, and the employment of saline rectal douches. Danger of urinary absorption is thus reduced to a minimum.

My own personal series of bilateral transplantation of the ureters into the large intestine includes sixteen cases: three for carcinoma of the bladder, and thirteen for exstrophy. In addition to these, I have made one transplantation into the loins.

The age of these patients has varied from 4 months to 54 years. The patients have been presented or have presented themselves for the outstanding disability noted above; namely, constant irritation of the parts, penetrating odor of urine and resultant isolation. Ten of these operations have been performed by the method described above, the operation being performed in two stages in five cases, and in three stages in four cases. In the tenth case the patient died after the first ureter had been transplanted. In this case, on account of a greatly dilated ureter, it was impossible to make a good transplantation, and leakage occurred.

I have never had any series of cases in which the patients themselves have reported so happily as is the case with these. From frail, unhappy, morbid individuals, these patients are transformed into happy, optimistic,

16. Steinke, C. R.: Transplantation of the Ureters into the Gastro-Intestinal Tract. Univ. Pennsylvania M. Bull. **22**: 110-121, 1910.

17. Sweet, J. E., and Stewart, L. F.: The Ascending Infection of the Kidneys, Surg., Gynec. & Obst. **18**: 460-469, 1914.

18. Wislocki, G. B., and O'Connor, V. J.: Experimental Observations upon the Ureters, with Special Reference to Peristalsis and Anti-Peristalsis, Bull. Johns Hopkins Hosp. **31**: 197-202 (June) 1920.

19. Satani, Y.: Experimental Studies on the Ureter, Am. J. Physiol. **49**: 474-495 (Aug.) 1919.

20. Sampson, J. A.: Ascending Renal Infection, with Special Reference to the Reflux of Urine from the Bladder into the Ureters as an Etiological Factor in Its Causation and Maintenance, Bull. Johns Hopkins Hosp. **19**: 334-352, 1903.

21. Coffey, R. C.: Transplantation of the Ureters into the Large Intestine in the Absence of a Functionating Urinary Bladder, Surg., Gynec. & Obst. **32**: 383-391 (May) 1921.

social beings, who are able to go about their business. It should be emphasized not only that the immediate recovery is of prime importance in such cases as these, but also that the economic saving is of inestimable value in the end-results.

One patient, a bank teller, is regularly at work; he has sphincteric control for from three to four hours during the day, and has complete control throughout the night. He has gained in weight, and states that he "feels fine and was never so comfortable or happy."

Another patient, one of the rare cases of epispadias in a woman, was a wan, unhappy, shrinking person when she first presented herself. Now, more than a year since her operation, she has sphincteric control for eight hours; scarcely ever gets up at night; has gained in weight, and is exuberantly happy.

Although the sphincteric control has varied, in no instance in this series has it failed completely, in nearly every case the control being possible for from three to four hours.

SUMMARY

Transplantation of the ureters is an operation urgently indicated in the presence of certain malformations of the bladder, either congenital or acquired. The choice of site should be one to which the transplantation can be made with the minimum of immediate operative mortality and a maximum of ultimate comfort to the patient. Based on my own personal series is my belief that the submucous implantation of the ureters in the sigmoid or rectum by the technic first proposed by Coffey most nearly fulfils the foregoing requirements. In any case, agreement regarding the most efficient method of treating the class of patients on whom this operation is required is needed in order that the technic may be standardized. The basis of judgment for the final selection of such a standardized technic should be its ability to give to the patient the utmost possible diminution of his misery and the best possible economic status.

ALOPECIA AND POLIOSIS OF THE EYELIDS

WILLIAM CAMPBELL POSEY, M.D.

PHILADELPHIA

A married woman, aged 37, a brunette, consulted me, Dec. 27, 1922, on account of a falling out of the eyelashes from the left upper lid. This process had not been accompanied by any inflammatory condition of the lid itself or by any loss of hair elsewhere on the body; its duration had been rather rapid, all the lashes disappearing in about four months, with the exception of those growing from the nasal quadrant, which remained several weeks longer than the rest. The patient's physician, Dr. Morris Flexner of Louisville, Ky., attributed the condition to a general asthenia following a miscarriage, three or four months preceding the loss of lashes. An examination of the blood made at the time showed hemoglobin, 85 per cent.; red blood cells, 4,040,000; leukocytes, 11,200; polymorphonuclear neutrophils, 87 per cent.; eosinophils, 3 per cent., and lymphocytes, 10 per cent. Urine examination and the Wassermann test were negative.

Before consulting me, she had been under the care of Dr. E. T. Corson of this city, who had prescribed a salve and applied electricity to the affected lid, with some beneficial effect.

Examination showed a complete alopecia of the left upper lid, with a normal supply of lashes elsewhere, and with unaffected brows or hair of the head. The eyes and adnexa were also of normal appearance, with the exception of a slight widening of the left palpebral fissure, this being

occasioned by a slight retraction of the lower lid. There was no scarring along the margin of the affected lid, and no other evidence of a previous inflammatory condition of that structure.

The patient was directed to rub a stimulating salve of ammoniated mercury along the margin of the lid once daily, and was referred to her family physician for proper general treatment with iron and strychnin. A message received from her a few days ago was to the effect that she saw evidence of the return of the lashes.

ALOPECIA OF THE EYELASHES

Cases similar to the foregoing, illustrative of the condition designated as alopecia of the eyelashes, by which is understood the partial or entire absence of the cilia due to conditions other than local inflammations of the lid, are rare. Loss of the lashes from local disease of the lids is, as is well known, extremely common, and will not come under the scope of the present communication, as I shall confine myself to an analysis of causes arising elsewhere than in the lids themselves.

Regarding the genesis of alopecia, it may be noted that the literature contains quite a few instances of congenital origin, some of which show the influence of heredity. Michel¹ refers to cases reported by Pincus of a father and son: The former had few cilia and no mustache; the son, little hair on the head, and scanty brows, but well developed cilia. Four brothers and sisters between 8 and 22 years of age were cited by Baer, with scanty cilia and brows perfectly bald. Cases such as these are to be regarded as due to retarded development, and are frequently associated with other anomalies of the eyelids.

Dermatologists record the condition as occurring in leprosy, leukoderma, pityriasis and seborrhea. In Steindorff's case of vitiligo and traumatic poliosis, the whitening of the skin of the left side of the forehead and of the hair of the scalp, eyelids, eyebrows and lashes of the left side followed a blow. The hairs of the scalp recovered their natural brown, but the eyelids, eyebrows and lashes remained white. Syphilis is a frequent cause of alopecia, gumma of the lid depriving that structure of its lashes in a complete and characteristic manner, while the cilia may fall out without previous inflammatory symptoms, in association with the loss of hair in other parts of the body which is so frequently observed in constitutional syphilis. Thus, in 136 cases of syphilis observed in the early stages, Wilbrand and Stählin found a loss of cilia alone in 5.1 per cent.; of the brow alone in 8.8 per cent., and a simultaneous disappearance of cilia and brows in 33.3 per cent.

Alopecia has been observed in connection with chronic arsenic poisoning, either as a local condition or accompanying the loss of hair in other parts of the body.

In a case of fatal hemiatrophy, Berger² reported falling out of the cilia simultaneous with that of the eyebrows and hair of the head.

Scarlet fever has been known to cause loss of lashes. An interesting case is recorded by J. T. Shoemaker,³ following an attack of measles at 6 years of age. Nearly all the hair of the scalp fell out, most of which came in later; the eyebrows and eyelashes were entirely absent; a few axillary and pubic hairs developed. At the age of 18, some fuzzy hairs of a lanugo type grew on the face. At about 23 years of age, the patient became entirely bald, and has remained so. The hair

1. Michel, in Graefe-Saemisch Handbuch, Ed. 2, 5: 287.
2. Berger: Deutsch Arch. f. klin. Med. 21: 432.
3. Shoemaker: Ophthalmic Year Book 13: 294.

of the face and other parts of the body was also lost. The Wassermann test was negative. The patient married and had three children, the first of which was prematurely born; the other two were normal, with the usual development of hair; this was also true of the patient's parents. The man himself appeared perfectly healthy. In conjunction with this case, Shoemaker discussed the functions of the ductless glands with reference to various trophic conditions, and came to the conclusion that his patient had some form of dysendocrinism due to a diminished secretion of the endocrine glands (pituitary body, pineal glands, thyroid, parathyroid, thymus, suprarenals, pancreas and testis), but was unable to state what particular glands were affected, though, judging from the part which the thyroid and the gonads (testis) seem to play in the growth of hair, he thought it probable that these may have been the ones at fault.

Alopecia of the lids, in connection with disturbances in the thyroid gland, has occurred in the practice of a number of observers. Most interesting of these is a report by Yeo⁴ of a case of exophthalmic goiter in a young woman in whom the hairs of the eyebrow and eyelids fell out coincidentally with the protrusion of the eyeballs. The symptoms manifested themselves in this order: first, the projection of the left eye and enlargement of the right lobe of the thyroid, with the shedding of the hairs of the left eyebrow and eyelashes; then the slighter enlargement of the left lobe of the thyroid with the slighter but simultaneous projection of the right eyeball, and shedding of the hairs of the right eyebrow and eyelids.

In a young girl with exophthalmic goiter, observed by Wilbrand and Saenger,⁵ not a hair of the lashes or brow remained, giving the patient a most unpleasant expression. Von Molliere and Choostek saw similar cases.

Alopecia neurotica is the name given to loss of cilia through so-called "nervous influences." Michel has found this of rare occurrence, and usually associated with change in color of the eyelashes. He asserts that the process is in all probability that of a trophoneurosis, especially when the loss of cilia is unilateral. The case that I reported is probably of this origin, doubtless associated with some obscure nutritional change, emanating from disordered glandular function.

Of not uncommon occurrence is so-called hysterical alopecia of the eyelids. Twenty years ago, Gifford⁶ cited the cases of two girls, aged 10 years, who had acquired the practice of pulling out the lashes. Since then, this author writes that he has probably seen a dozen additional cases of this trouble. In some of these the habit extended to pulling out nearly all the eyebrows as well as the eyelashes. In fact, from a condition with an hysterical element, or at least an element reveling in the excitement and alarm caused by the patient's environment, Gifford points out that the practice gets to be a more or less permanently fixed habit, which it is difficult or impossible for the patient to get rid of even when he (or more generally she) actually wants to stop.

The same author suggests that a better name for the condition might be trichomania or trichotilomania or something of that sort, a term used by dermatologists for cases in which, sometimes, the habit extends to pulling out a good deal of the hair of the head.

Revaton saw discoloration and falling out of the hair of the head and of the right brow and cilia after a head injury which caused blindness of the right eye. Velardi's⁷ case, that of a boy, aged 16, in whom all the cilia of the left upper lid and the right lower lid fell out two days before the occurrence of a severe headache and a slight attack of fever, is also of interest. No disease of the lid margin or parasitic disease of the rest of the hairy parts was present. Heavy doses of quinin relieved the headache, and the cilia grew in again completely after several months.

In a case of double trigeminus affection and bilateral keratitis neuroparalytica reported by Sachsaler⁸ there arose symmetrically, corresponding to the region of supply of the first branch of the fifth nerve, alopecia areata and catarrh of both sides of the throat and nose. Wilbrand and Saenger think this case and others present strong evidence of trophic qualities in the fifth nerve.

Schüle⁹ graphically describes the manner in which the insane occasionally pull out the eyelashes, and even at times rub sand into the conjunctiva. In concluding this part of the paper, I may quote from Lawrence's standard textbook, written a century ago:

I saw a young lady in whom the lashes of one upper eyelid had dropped out without previous inflammation or any other ascertainable change in the part. My opinion was that they would not be reproduced; but I recommended the trial of a stimulating ointment, and the ung. hydrarg. nitrat. in a dilute form was consequently employed. After the lapse of some months the hairs again appeared, and were ultimately restored, of natural size, color and number.

POLIOSIS OF THE LIDS

Closely allied to alopecia, or falling out of the lashes, is that of loss of color, graying and whitening of the lashes—poliosis of the lids, so called. As an instance of this condition, which is not nearly so rarely encountered as the former, I may cite this case:

Mrs. H. W. T., aged 42, consulted me in March, 1920, for glasses to correct presbyopia. In the examination, it was noted that the hair of the right eyebrow was entirely white, and the lashes of the corresponding side similarly affected except for one or two in the lower lid which had retained their original color (dark brown). The hair of the head was dark, with the exception of a white patch in the right temple. This blanching process had been accomplished during the three months preceding, and was of unknown origin, the health of the patient having been fairly good. There had been no history of accident or nervous shock. Dr. Schamberger was consulted, who, finding a low blood pressure and other evidences of a poor circulation and chronic constipation, placed the patient on a strict regimen as regards diet, etc., and suitable cardiac tonics. No improvement being manifest within a short time, the patient discontinued all treatment, and the condition has remained unchanged.

As with alopecia of the lid, partial or total lack of pigmentation of the cilia may be congenital. Streatfield¹⁰ reported such a case confined to the cilia of one lid. Wilde saw one brow totally white, the other half white and half normal, congenital; Michel, a congenital light coloration of the cilia of both left eyelids, with hair of a light coloration of the front of the head, especially of both temporal regions. In another of his patients, a child aged 8 years, a partial discoloration of otherwise normal cilia, with a whitish discoloration of the points of the cilia, with a sharp line of demarcation from the brown of the hair pigment, dated from birth.

4. Yeo: Brit. M. J., No. 12, 1877.

5. Wilbrand and Saenger: Die Neurologie des Auges.

6. Gifford: Ophth. Rec. 10, No. 1

7. Velardi, in Nagel's Jahresbericht für Ophthalmologie 12: 438.

8. Sachsaler: Wien. klin. Wchnschr., 1893, No. 36.

9. Schüle: Allg. Ztschr. f. Psychiat. 39: 1.

10. Streatfield: Lancet, July, 1882.

The color of the hair is due mainly to the varying amount of pigment granules and diffuse pigment present in the cortex or body of the hair and the medullary portion. The presence of air, usually as thick vesicles, is also doubtless an important factor, especially in light brown, white or gray hair. Stelwagon says it is presumably owing to a rapid evolution of air vesicles that sudden graying of the hair is produced. Under ordinary circumstances, in graying of the hair, the scalp hairs are usually the first to become gray; later the bearded parts share in the blanching, although in some instances the bearded parts suffer first. Still later and usually slight and long deferred, the eyebrows, and finally the other general surface hairs, may undergo depigmentation. Although occurring much more rarely than one would be led to believe by the more or less frequent accounts in general literature of the hair being made white over night by grief or shock, there are well authenticated instances in medical literature of such occurrences. Stelwagon¹¹ speaks of a man who, within a week after an accident, lost all the hair from his scalp and later from the brows and eyelashes. The same author goes on to say:

Instances following injuries to the scalp are also reported by Schütz, and extensive development—universal alopecia—has been observed after severe fright by Boisser and Bidon. Malcolm Morris mentions a case in which total alopecia occurred in a woman within forty-eight hours of receiving news of the death of her son. Other examples have been referred to by Duhring, Crocker, Duckworth, Steppe and many others. Indeed, the clinical proof that fright, shock, accidents, great anxiety and mental worry, etc., are the causative factors in many cases is overwhelming. Jacquet's belief, that it may be due to peripheral irritation from defective teeth, has not received much support; nevertheless, it is not impossible that such reflex irritation as from this source as well as from defective vision, nasopharyngeal disorders, etc., may be influential in some cases.

Stelwagon says that the question of heredity in the extensive or generalized examples has received no attention, though he himself had observed two instances in which the family history disclosed a similar condition in a member of a preceding generation. In these two were involved three patients, all males, two of whom were brothers. The alopecia, beginning as an ordinary case of alopecia areata, in all about the age of 3 or 4 years, rapidly spread and involved the entire scalp, eyebrows and eyelashes, and the down on some other parts. Inquiry elicited the fact that in both instances a grand-uncle had had the same misfortune, likewise developing it early in life.

A century ago, Demours, in his *Traité des maladies des yeux*, stated that the eyelashes, like the hair of the head, can become rapidly white after prolonged psychic excitement, and he cited the case of a pregnant woman in whom the cilia of the right eye became white after a great fright, a miscarriage occurring eleven days later.

Von Roose¹² reports a case of a youth, aged 17 years, who received a fright in the night, and the next morning the eyelashes on the right side were white.

An acquired whitish coloration of the cilia may result at times from the inflammation of the margin of the lids accompanying certain skin affections, such as vitiligo, and also in progressive facial hemiatrophy.

Wilbrand and Saenger saw discoloration of the cilia affecting the upper lid of one eye alone, in a young man who suffered from repeated attacks of migraine,

while, in an epileptic observed by Räuber, there was periodic recurring change in the color of the hair of the head, the eyebrows and cilia remaining unchanged.

Bock¹³ reported a number of cases in which the changes in the color of the cilia came on after affections of the fifth nerve, after hemicrania, and especially in association with sympathetic ophthalmia and painful affections of the eyeball.

In this connection, it will be of interest to recount the narrative of an example of local blanching of the eyelashes, cited by Jonathan Hutchinson:¹⁴

A very neurotic woman, aged 29, fair, with reddish auburn hair, was brought to me with hysteria, bordering very closely upon insanity. Her appearance was striking, owing to the lashes on the inner half of the upper lid of the right eye being quite white—strikingly so. The whiteness began in one lash only in the center, and from that spread inward to the nose. This occurred ten years ago on a voyage from Australia. There were no gray hairs in the head, but latterly some have shown in the inner quarter of the right eyebrow. She has had no blow or injury, or inflammation about the eye; no illness, and no neuralgia or headache; but there is a mark of a leech-bite close to the outer canthus of the right eye, which she thinks was put on after a severe attack of measles which she believes caused her at that time some temporary blindness (at the age of 5). Her health has always been good. Her mother died of phthisis two years after giving birth to her.

I have seen several cases of local bleaching of the eyelashes, more or less similar to one recorded above. Mr. Warren Tay has shown me at least one such case. I possess a good portrait illustrating this condition in a man who had suffered from a very peculiar form of destructive iritis. He had lost both eyes, and in both upper eyelids, placed quite symmetrically, there were tufts of white eyelashes. His eyebrows and the rest of his eyelashes remained of their natural brown tint. There can be little or no doubt that these changes are brought about from lesions of the nervous system, and in that relation they are of great interest.

Vogt,¹⁵ who has contributed the most comprehensive paper on poliosis of the eyelid, was able to trace a connection, the nature of which was, however, unknown, between this condition and some form of iridocyclitis, especially that due to sympathetic disease, in 39 per cent. of all cases in the literature. Schencke observed gray cilia in both the exciting and the sympathizing eye; Jacobi,¹⁶ Nettleship,¹⁷ Bock and Tay¹⁸ in the sympathizing eye. Reich¹⁹ noted that the cilia became white on the side of the operated eye two or three weeks after a painful cataract operation; Bach, discoloration of the cilia after eye injuries.

Fuchs²⁰ has thus epitomized his experience:

In severe cases of iridocyclitis (especially of sympathetic origin) blanching of the cilia of the lids of the affected eye is sometimes observed.

Poliosis of the lids can apparently be spontaneous and without known cause: thus, Hirschberg²¹ saw partial whiteness of the cilia in a healthy girl, aged 14 years, with healthy eyes. The right palpebral fissure was somewhat smaller than the other (sympathetic nerve). The lids were normally sensitive. The white cilia occupied the middle third of the upper lid. In the lower lid, white bundles alternated with black. The

11. Stelwagon: Text-Book on Dermatology.

12. Von Roose: Ann. d'ocul. 122: 314.

13. Bock: Klin. Monatsbl. f. Augenh. 28: 484.

14. Hutchinson: Arch. Surg. 4: 357, 1892.

15. Vogt: Klin. Monatsbl. f. Augenh. 44: 228.

16. Jacobi: Klin. Monatsbl. f. Augenh., 1874, p. 367.

17. Nettleship: Tr. Ophth. Soc. U. K., 1884, p. 76.

18. Tay: Tr. Ophth. Soc. U. K., 12: 29.

19. Reich: Arch. d'Ophth. 1: 307.

20. Fuchs: Text-Book on Ophthalmology.

21. Hirschberg: Centralbl. f. Augenh., January, 1888, p. 15.

discoloration of the cilia was increasing. Rindfleisch²² and Ponti have reported somewhat similar cases.

An instance of the central part of the lashes of the right upper lid of a healthy brown-haired girl, aged 18 years, becoming white in a week's time has been cited by de Schweinitz. No cause could be found. Both eyes were myopic.

CONCLUSION

Attention may be drawn to the length of time concerned in the process. In Rossi's case the discoloration came on over night, in Schenkel's,²³ in three days, and in de Schweinitz's, in one week. In the cases of Hirschberg, Reich, Rindfleisch, Ponti, Herzog and Michel, the period varied from between five and fifteen days to several months.

2049 Chestnut Street.

OPERATIVE TREATMENT OF CERTAIN FRACTURES OF LONG BONES*

JOHN J. MOORHEAD, M.D.

NEW YORK

It is generally conceded that the "closed," or non-operative, method of dealing with certain fractures is so unsatisfactory and uncertain that in selected cases "open" or operative reduction is justifiable. To avoid operating in that class of case in which closed reduction is impossible, resort is frequently made to skeletal traction by use of the tongs (calipers), a transfixion nail, or a metal band (stirrup).

This procedure of skeletal traction is, strictly speaking, an "open" or operative method; but, because the procedure is relatively simple, requiring a small incision, it is finding increasing favor and is properly regarded as an intermediate method between "closed" and "open" reduction. For the purpose of selecting a type of treatment in my own services we have for some time divided all fractures into two general "types," either of which may be simple (closed) or compound (open). Type 1 is that group in which the fragments are overlapped, malaligned or disconnected by an amount equal to at least their own diameter. Type 2 is that group in which the fragments, while perhaps separated, are neither overlapped, wholly disconnected, nor grossly malaligned. In Type 1, treatment is based on the necessity for reduction (setting) and retention (splinting). In Type 2, retention (splinting) is alone required. Obviously, operative reduction in Type 2 is almost never required, but in Type 1 there are many cases in which "closed" or non-operative reduction is impossible, and hence this class falls into the "open," or operative reduction group. That group in which "closed" reduction is impossible or improbable is termed by me the "irreducibles," and in these the choice of treatment is as between "open" reduction and skeletal traction.

EXTERNAL AND INTERNAL TRACTION METHODS

The essential object in the treatment of a Type 1 (overlapping) fracture is to convert it into a Type 2 (nonoverlapping) fracture, just as the object in treating a compound (open) fracture is to convert it into

a simple (closed) fracture. In the last analysis, all bony displacements are corrected by traction, and our manipulation may be (1) manual, (2) mechanical or (3) operative.

1. Manual traction is the accepted method applicable to many fractures.

2. Mechanical traction is applied by means of (a) the fracture table, or by (b) straps fastened to the parts, and these in turn are suspended in apparatus and attached to weights.

Experience shows that reduction once attained on the table may not always be retained, because deformity often recurs as soon as the splintage (usually a plaster-of-Paris cast) loosens. Likewise, the necessary hiding of the part in such a dressing is not without danger (pressure on the soft parts; circulatory embarrassment), and there is no opportunity of mobilizing joints; massage and motion are impossible, and thus splintage of this sort prevents attention to the associated pathologic conditions of most fractures, namely, myotendosynovitis, arthrosynovitis hematoma, ecchymosis, blebs and neural or vascular damage. Hence this method is less employed than formerly.

Traction and suspension in fractures of the upper extremity means bed treatment for a class of case in which ambulatory treatment is usually indicated, or at least is provided.

In the lower extremity, my own preference is for skeletal traction rather than for traction by straps, because I have been unable to attain reduction satisfactorily or uniformly by straps except in minor grade Type 1 cases or in compound fractures. The vogue for strap traction found greatest impetus in military fractures, and in these the treatment is excellent and very satisfactory. However, it is well known that muscle resistance is relatively inactive in a compound fracture (especially if debrided) and very active in a simple fracture.

Strap traction and suspension is an admirable method in selected cases in which supervision in the hospital or home can be constant and intelligent; but in the average hospital or home, this method has not been as universally satisfactory as we had hoped. For example, in overlapping fracture of the lower end of the femur or tibia it has often failed in my hands, and it has been virtually abandoned except in certain selected simple, and in some compound, fractures. In passing, we must not forget that this method is the Buck's extension method with modifications.

These preceding (1) manual, and (2) mechanical traction methods may be termed "external traction" methods. The "internal traction" method will now be described.

3. Operative traction is applied by means of (a) skeletal traction or (b) direct traction. In skeletal traction, the tongs, nail or stirrup are used. These appliances are most useful for fractures of the tibia or femur. Direct traction is applied by cutting down on the fracture site and prying apart ("jimmying") the bone fragments. If they are notched (dovetailed), they will probably remain aligned if brought together and jammed; if not, then they are deliberately notched. The bone ends may also be held by chromic or kangaroo tendon passed through holes or bound around the fragments. Some surgeons use a metal plate or clamp on the fragments. Wire, screws, steeples and a variety of metallic devices have also been used.

Bone inserts are usually reserved for later cases, or for definite nonunion or bony loss of substance. For

22. Rindfleisch: *Klin. Monatsbl. f. Augenh.* 40: 53.

23. Schenkel: *Arch. f. Dermat. u. Syph.* 5: 137.

* Read before the Medical Association of the Greater City of New York, Jan. 15, 1923.

* From the Department of Traumatic Surgery, New York Post-Graduate Medical School and Hospital.

very good reasons, the use of buried metallic substances in fracture treatment is now very much restricted, and shortly will be employed about as often as is silver wire in the repair of a hernia or a cervix.

COMMENT

The preceding survey briefly reviews the accepted methods in fracture treatment, and it is safe to say that no part of general surgery is today receiving greater attention than fracture surgery, an important part of traumatic surgery.

The deficiencies of skeletal traction in certain cases of fracture of the leg focused our attention on the possibilities of "open" or operative correction in this location. For a long time it has been our custom to operate on Type 1 (overlapped) fractures of the forearm, because by any other method we were never certain of attaining reduction. In the lower tibia nonunion was very frequent in my own cases, and presumably other surgeons were also having similar difficulty, so that it soon became evident that nonunion in the lower third of the tibia was more common than in all other parts of the body combined. Next in order in nonunion was the radius, next the ulna, and next the humerus.

In this nonunion group at operation it was demonstrated that nonunion usually meant noncoaptation of fragments because soft parts (muscle, fascia, tendon, aponeurosis) or bony spicules intervened. Virtually, then, a spontaneous arthroplasty occurred when soft parts intervened, and nonunion was a sequel despite relatively accurate coaptation of fragments. For example, the periosteal and fascial coverings of the lower tibia are relatively thick, so that a fringe of torn soft parts frequently overlaps the fragments after the manner of a fractured patella. Under these conditions, not only is it difficult by external methods to engage or notch the bone ends one with the other, but even if they are notched, the interposed soft parts act as would soft parts deliberately interposed to prevent union. This failure by the "closed" reduction occurs so regularly in fracture of the shaft of the ulna or radius (or both) that direct exposure of the fragments is now our method of choice. Since Sept. 15, 1922, eleven cases of this sort have been thus treated, and the success attained directed attention to such an extent that "open" reduction was used in certain fractures of the leg also.

When the fragments of a broken forearm or leg are exposed to direct inspection at operation, it is often surprising to note the extent of the damage, and the wonder is that satisfactory union is so often attained by the "closed" method. The contiguous muscles are torn, and bony fragments are often covered by or pushed into muscular, fascial or periosteal bundles. Many bony spicules, some not seen in the roentgenograms, are frequently found, and some of these may be quite denuded of periosteum and may even be jammed crosswise into the medullary cavity. The hematoma about the bone ends is often extensive, and this, of course, is greatest in an area normally quite vascular.

Now the objection to "open" reduction is that in the majority of cases it is not needed, especially if skeletal traction is used. The other objection is the danger of postoperative infection. A third objection is that based on the necessity of providing some means to *retain* reduction even after the operation enables us to *obtain* it. To meet this objection, Lane in 1894 sponsored

metal plating, and thereupon fracture treatment entered on a new epoch, bringing broken bones into the operative class, and thus attracting a group of surgeons until then mainly concerned with and skilled in other fields of surgery.

This was a good thing for fracture surgery because, among other benefits, it definitely and very dramatically demonstrated that the reduction of the fracture, even by operation and plating, was in reality only the initial stage of treatment, and that often the determining factor was after-care, if maximum function was to be attained. This after-care phase of traumatic surgery is unattractive to some surgeons who, by precept and practice, naturally enough look on the operation as the principal, and in many cases, the only treatment of importance. Another deterrent was the realization that traumatic cases regularly show a higher rate of postoperative infection than nontraumatic or pathologic cases, herniotomy not excepted.

This tendency toward easier infection is dependent on several elements, in my opinion. The first is that traumatized tissue is less resistant than nontraumatized tissue. The second is that, in fractures particularly, blood and serum has been thrown out, muscle has been macerated, and in effect the operation is performed in a culture medium of bouillon, an autogenous culture, made up of the patient's own blood, serum and macerated muscle. If into this is introduced infection from the skin coccus which lodges in the skin of every patient, it is not surprising that pus is formed under circumstances in which every surgical precaution has been taken to prevent this very thing. A third reason is that, in my opinion, many patients are virtual carriers of infection, and that from an infected focus organisms migrate to the traumatized area and find in the autogenous culture medium described above a most suitable incubating habitat. Skilled surgeons soon found that bone plating was a hazardous procedure even when practiced with that grade of hypersepsis advised by so dexterous a surgeon as Lane. Hence the method has been less and less employed, and, indeed, the introduction of nonabsorbable buried material in any form of surgery is now regarded as a very exceptional requirement.

The lessons learned from this plating epoch in fracture treatment have been extremely valuable, and among other things we learned that a fracture is a lacerated wound of bone and, like any other laceration, would heal best when the edges were promptly and accurately brought together and held thus by some means that would neither constrict nor yet permit too great latitude of motion. Accurate coaptation of severed bone edges brings about primary union just as in severed soft part edges; the reverse means secondary union. In the one case we obtain a minimum, and in the other a maximum of scarring, whether we call this "scarring" callus or granulation tissue. However, despite relatively perfect coaptation of fragments, we are often confronted with nonunion, and this occurs notably, as stated, in very important bones, namely, the tibia, radius, ulna or humerus. Joint fractures, however, neck or femur excepted, heal with great regularity, and it is very rare, for example, to see nonunion in a Colles' or Pott's fracture. The reason is probably the greater blood supply of joints and the lessened opportunity for the interposition of soft or hard parts.

It is, of course, well known that a cabinet-maker's type of coaptation is not necessary to bring about a functionally satisfactory result; but it is equally well

known that, the more accurate the coaptation, the earlier and more certain the repair. More and more we are appreciating that nonunion usually begins as malunion, in that imperfect reduction has prevented bridging of the gap by the form of granulation tissue that we call callus. The next factor in nonunion is imperfect splinting, too tight or too loose, for a splint is to severed bone what a suture is to severed skin. Experience shows that many fractures cannot be disengaged from surrounding soft parts even by adequate and prolonged traction, and it is to this class that "open" reduction is applied. This group, as stated, is in the forearm mainly, and to a lesser extent in the leg and arm.

I am not partisan to unrestricted "open" reduction in long bones, except for the forearm, because in this location skeletal traction is inapplicable. In the femur and tibia, skeletal traction is applicable and is usually efficient. In the humerus, manual reduction is usually possible; if not, traction and suspension may be used if the patient will remain abed; if not, "open" reduction can be employed here also.

As related in the preceding, "open" reduction is of no great value unless it can be maintained, and heretofore for this we have been forced to rely on plating, wiring, screws or other metallic or nonabsorbable sutures. Intramedullary tubes were advised some years ago, and Elsberg and others used aluminum for this purpose. Magnesium tubing has been employed with the same object. After reasonable trial, both of these have been discarded.

It has long been known that, when fragments are jagged, dovetailed, spikelike or otherwise serrated or notched they are readily impacted one into the other. Conversely, it is also known that smooth transverse or smooth oblique fragments are difficult to coapt. This principle of "notching" has been employed in the series of cases herein reported, and success by this procedure has been so gratifying that in future many recent and old cases previously subjected to nonoperative reduction will be managed by this method.

The time to operate is within the first thirty-six hours, if possible, the earlier the better if there are none of the usual operative contraindications.

THE STEPS IN THE PROCEDURE

1. Incision. This adequately exposes the underlying bone, and is planned to conserve the soft parts, especially the neural, vascular and tendinous structures. The parts have previously been shaved and covered for twenty-four hours in an iodine solution dressing.

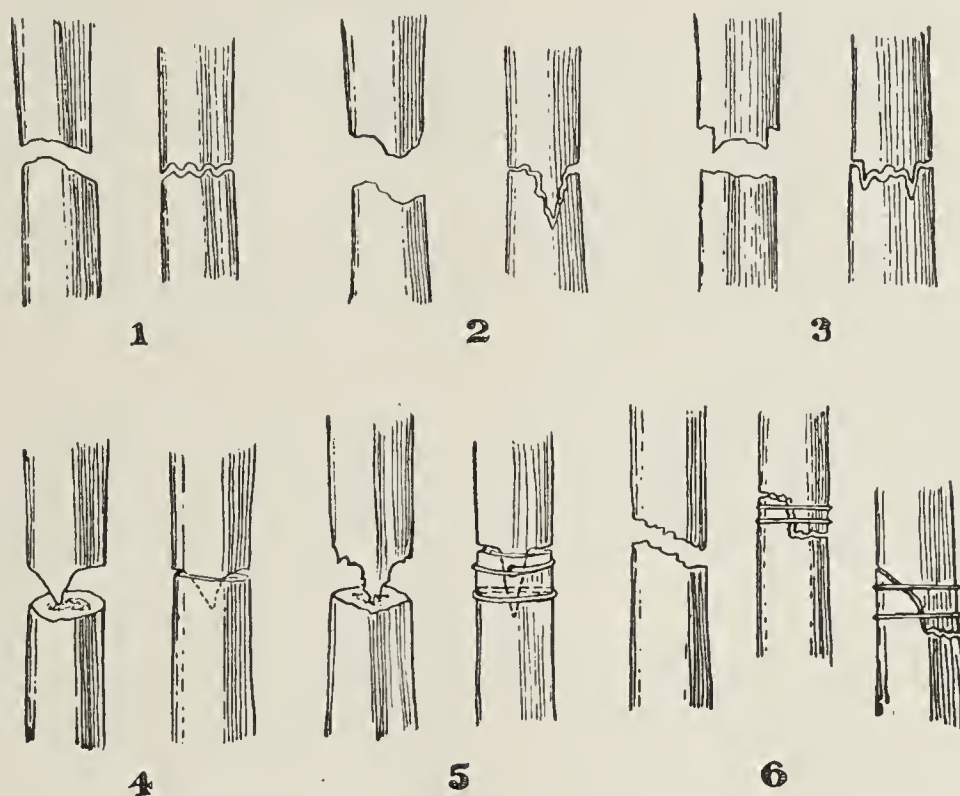
2. Extrusion. The bone is extruded by markedly bending the limb or by the use of suitable bone forceps, elevators or skids. Special bone-holding forceps of the

Lambotte type are very useful, as is the bone skid device of the late John B. Murphy.

3. Excision. All debris is removed from the bone ends, especially overhanging periosteum, fascia and muscle. The medulla is demonstrated to be patulous. The surrounding soft parts are rendered free of blood clots, frayed soft parts or loose or denuded bony spicules.

4. Notching. The fragments are tested to determine whether, when apposed, they remain of themselves in position. If not, they are deliberately notched by a rongeur, chisel, saw or the "bone notcher," thus: (a) serrated edges (Fig. 1); (b) irregular edges (Fig. 3); (c) steeple edges (Figs. 2, 4 and 5); (d) oblique edges (Fig. 6); (e) shaped edges (Fig. 6). In any of these, holes may be bored and kangaroo or chromic sutures passed for greater security. Jamming the fragments will materially aid in holding them. The type shown in Figures 2, 4 and 5 affords great firmness in that lateral motion is prevented by the "steeple" passing into the medulla of

one fragment; usually the upper fragment is pushed into the lower. The "steeple" should project one-quarter inch or more. If the edges are not straight in the long axis, it usually makes little difference because the overlapping is the essential fault to correct. Shortening is to some extent caused by this procedure, but in most instances this will amount to but little. In the smooth transverse varieties, a bone segment 2 inches long can be taken from one fragment, placed in the medulla of each fragment (virtually a medul-



Various methods of "notching" and "steeping" fractures.

lary plug), and held there by chromic or kangaroo tendon.

5. Hemostasis. This should be complete, and every effort should be made to leave no clots or blood pools, which are virtually culture mediums.

6. Suture. Catgut, interrupted, is employed for the muscle and fascial layers, special effort being made to cover the fracture line by untorn soft parts. Skin sutures of interrupted nonabsorbable material are used, silk, cotton, linen, silkworm or horsehair.

7. Drainage. Rubber tissue, rubber band or pipe cleaner is used if the parts have been much macerated or there is free bleeding. Drains are taken out in from twenty-four to forty-eight hours. No drainage is employed if the contrary obtains.

8. Dressings. These are of gauze wet in some mild antiseptic (as iodine-saline, which consists of tincture of iodine, 1 dram, to saline solution, 1 pint). This is used to prevent skin infection from the ever present skin cocci.

9. Splintage. Two-piece molded plaster-of-Paris splints are used, including the distal and proximal joints.

10. After-treatment. Passive motion to contiguous joints is used after the first few days, the principle of "guarding" the fracture, while so doing, being employed; that is, encircling the fracture site by a firm grasp and thus "guarding" against motion of the fragments. "Guarded" active motion begins when passive motion causes no reaction in terms of persistent pain, heat, redness or swelling; in other words, when no "hot box" develops on motion of the joint. Massage is taken up when the stitches are removed, usually after the seventh day. When "firm" union is obtained, one half of the splint is removed. I call "firm" union that stage in which healing has progressed enough to give a "lead pipe consistency" to the union. When "solid" union is obtained, the remaining half of the splint is removed. I call "solid" union that stage in which healing has reached the "iron pipe consistency." In the lower extremity, "walking calipers" are used after the plaster is removed, and thus the patient is more promptly permitted to walk with all the attendant advantages of becoming ambulatory instead of nonambulatory.

The foregoing plan of early but safe activation of the parts makes the later use of physiotherapy less necessary. Physiotherapy should rarely become a terminal necessity in fracture treatment; on the contrary, it should usually begin shortly after the bone has been set. Open reduction should so set or impinge the fragments that our attention thereafter can be directed to the pathologic changes associated with every fracture; namely, myotendosynovitis, arthrosynovitis, and vascular and neural damage. To forget or neglect these associated lesions is just as reprehensible as to forget or neglect the concomitant lesions of a ruptured appendix after appendectomy. By a laparotomy we may save life by removing a source of peritonitis; but we restore function only if we prevent adhesions or postoperative hernia.

ADVANTAGES OF THIS FORM OF TREATMENT

(a) More accurate coaptation means firmer, earlier union in more exact alinement; in other words, we have produced that grade of correction we call "anatomic reduction" as opposed to "surgical reduction."

(b) With the assurance that definite coaptation has been obtained, there is less danger of interposition of soft or hard parts which would prevent or impede union.

(c) Primary neural or vascular damage is more readily discovered and corrected; secondary neural or vascular damage from pressure or callus inclusion is very unlikely.

(d) Fractures of this carefully selected type are made problems in general surgery, thus attracting to this important field the grade of surgeons who have done so much in other branches of surgery. This will inevitably make fracture treatment much more exact and more progressive, to the end that the patient and the profession will equally benefit.

(e) This selected form of fracture treatment should eventually supplant the use of nonabsorbable internal splints in that its development will make unnecessary the use of plates, screws, nails or wires in a group of cases in which metallic material is even now too frequently employed.

DISADVANTAGES

(a) Fractures are put into the operative class with the attendant risks of anesthesia and infection. This cannot be denied, and the only answer is that we should

develop a technic that will make this procedure as safe as the modern laparotomy. In my opinion, many fractures of long bones are major surgery problems and should be so regarded.

(b) The method is needlessly severe and dangerous, since good results have heretofore been obtained by simpler methods. As stated, this method should be reserved for a selected group of cases in which prior experience indicates that nonoperative treatment frequently leads to failure, as denoted by nonunion, deformity or disability. I do not subscribe to the view that the older surgeons obtained better results than are now obtained, but do concede that they made better use of their special senses for diagnosis than we do. They lacked the checking up afforded by the roentgen rays as to the actual result of setting, and I am quite sure that they had a group of patients more willing than ours by their own efforts to overcome disability incident to injury. Also, they did not encounter the same types of fracture because the industrial and transportation situation of even twenty-five years ago was vastly different. The greatest single cause of injury today is the automobile; and when the coming generations reach the flying stage, they will probably say that we also did not know what a real fracture was.

(c) It is inapplicable for general use. That is true to the same degree that every special process is not adapted to general application.

(d) It produces shortening. This is usually slight and of no importance.

INDICATIONS

The method is particularly adapted to recent displaced or old malunited fractures of the shaft of the radius, ulna, tibia and humerus, in the order named. The femur is not included because skeletal traction is here so effective. Joint fractures are usually amenable to closed correction, perhaps excepting those of the elbow and some at the shoulder and ankle.

In children up to 16 years of age, open correction is less often needed; however, many forearm cases, even in young children, are operative problems from the onset.

In the aged, those of poor physique, the diabetic, the arteriosclerotic—these are the bad risks for any surgical procedure, and operation is often as much contraindicated for a fracture as for a hernia. Under such circumstances we shall probably continue to resort to "truss" treatment, for that is exactly what our fracture therapy now is in too many cases.

115 East Sixty-Fourth Street.

Hospital and Dispensary Personnel.—The purpose of a hospital or dispensary is to meet the need of physically or mentally defective individuals whatever may be the contributing or underlying cause of such defects. Beginning with the chief executive down through the various departments wherever the medical situation dominates there is definitely required a medical or nursing personnel. In the cause of effective and economic service, such personnel should be relieved as far as possible of the nonmedical features of the case through the service of other workers skilled in such features, not less also in the cause of economic efficiency should the medical workers be expected to have such knowledge of the nonmedical aspects of the case as to understand the importance of their relation and furthermore to deal with such aspects where the body of the work will not justify the two specialists.—A. W. Goodrich, *Hospital Social Service* 7:169 (March) 1923.

AN ANALYSIS OF SOME CASES OF
TUBERCLES IN THE TONSIL

W. V. MULLIN, M.D.

COLORADO SPRINGS, COLO.

Tuberculosis of the tonsils and adenoids occupies an anomalous position in oral surgery, as this lesion is not recognizable clinically, and is seldom even suspected until the tissues have been sectioned by the pathologist.

There are two conditions in which the tonsils are frequently found to be tuberculous: 1. In advanced pulmonary tuberculosis, the tonsils will show tubercles in the majority of cases. 2. In tuberculous cervical adenitis, the tonsils will show this infection in approximately one half of the persons examined.

Ulcerative lesions of the mouth and throat as seen in the terminal states of pulmonary tuberculosis may involve the tonsils, but the process is seldom limited to these structures. These cases have an entirely different significance, and are, therefore, not included in this analysis.

Perhaps the most comprehensive early work in this country on tuberculosis of the tonsils was done by G. B. Wood,¹ who has added contributions to the subject from time to time. Reports on large series of tonsillectomies in which the tissues were examined for tubercles were made by Weller,² from the University Hospital, Ann Arbor, Mich., and another by Crowe, Watkins and Rotholz,³ from the Johns Hopkins Hospital. Levy⁴ has written on the tuberculous tonsil as a clinical entity. The literature on all phases of this subject is liberally quoted in the reports just mentioned.

This analysis is based on 400 consecutive tonsillectomies in Glocker Hospital, Colorado Springs, in which the tissues were sectioned and examined microscopically. The series covers a period from June, 1921, to December, 1922. These cases have all been in private practice. The patients are all living, and are under the continuous observation of myself and my associates. On this account they may allow of more advantageous study than larger series of patients observed under less favorable conditions. The pathologist reported seventeen of these patients, or 4.25 per cent., as showing tuberculosis of the faucial or pharyngeal tonsils, in various combinations. A careful review of the histories of the seventeen cases shows no characteristics, such as size, color or appearance, which might serve to identify the tonsils as tuberculous before they reached the microscope. These cases will be considered mainly from the point of view of the clinical significance of removal of a tuberculous tonsil.

A classification which naturally suggests itself and is commonly used divides the cases into primary and secondary infections. Such a division is more or less arbitrary and is not susceptible of proof for the given case, but nevertheless it has considerable value. Open pulmonary tuberculosis accounts for practically all of the secondary tuberculous infections of the tonsils. Sixty per cent. of the positive cases in this series gave a history of pulmonary tuberculosis. This high pro-

portion is accounted for by the large number of lung cases under treatment in Colorado. That these tonsillar lesions are secondary to the pulmonary disease is clearly indicated by the fact that in 70 per cent. of them, both tonsils were involved. Twenty-five persons were known to have pulmonary tuberculosis, and of these, ten, or 40 per cent., were found to have tubercles in the tonsils. This is in accord with the usual findings. The proportion increases in advanced pulmonary tuberculosis, until the percentage at postmortems averages 70 or more.

Primary tuberculosis of the tonsils may be taken to include all cases in which there is no suspicion of pulmonary disease. This stand is purely arbitrary, and ignores, among other possibilities, hematogenous infections including miliary tuberculosis; but such cases must be few in number. Probably the most tangible problem in primary tonsillar tuberculosis is concerned with its relationship to the cervical glands.

It is generally believed that, in Colorado, tuberculous cervical adenitis is relatively infrequent. Certainly, this condition does not figure very largely in this series.

Of three cases of definite tuberculous cervical adenitis, two presented tuberculous tonsils or adenoids. In the cases reported from Johns Hopkins Hospital in which the glands were definitely infected and the tonsils were removed and sectioned, 50 per cent. of the tonsils were found to be tuberculous. An analysis of all tuberculous tonsils showed the cervical glands to be also involved in 50 per cent.

Five of our seventeen positive cases, approximately 30 per cent., gave no history or evidence of tuberculosis elsewhere. This is a little more than 1 per cent. of the total of 400 tonsillectomies. The importance of this group as presenting a possible portal of entry for pulmonary lesions must be left to the internists.

The adenoid is rather largely represented in these primary cases, and the reason is fairly obvious since the pharyngeal tonsil is not removed very frequently during the age period when pulmonary tuberculosis commonly becomes manifest. The total number of adenoids sectioned was small (167 cases) in comparison with the number of tonsils (390 cases). The percentage found to be tuberculous was: adenoids, 1.8 per cent.; tonsils, 3.6 per cent.

It is not surprising that the tonsils should so frequently become infected with the tubercle bacillus, situated as they are in the common portal of entry to the respiratory and gastro-intestinal tracts. The remarkable thing is that the tonsil resists so well the usual destructive action of this process. Since the tonsil is commonly infected, yet seldom presents clinical evidence of the disease, it must be inferred that the ultimate tendency of the local lesion is toward recovery. The pathologists have noted that hyaline and fibrous scars are common in the tonsils, and these may well represent an extinct infection.

I have been unable to discover any difference in the behavior, after tonsillectomy, of the cases which had presented tubercles and of those which had shown no such lesion. Cases presenting tubercles in the tonsil did not respond better than those in which there was no such infection. This was equally true whether the patient was suffering from pulmonary tuberculosis or from cervical adenitis. Twenty-five persons in this series gave a history of pulmonary tuberculosis; of these, 44 per cent. were found to have tuberculous tonsils and 56 per cent. were apparently free. No difference is apparent in studying these two groups. If this

1. Wood, G. B.: Significance of Tuberculous Deposits in Tonsils, *J. A. M. A.* **44**: 1425 (May 6) 1905.

2. Weller, C. V.: Incidence and Histopathology of Tuberculosis of the Tonsils, *Arch. Int. Med.* **27**: 631 (June) 1921.

3. Crowe, S. J.; Watkins, S. S., and Rotholz, A. S.: Relation of Tonsillar and Nasopharyngeal Infections to General Systemic Disorders, *Bull. Johns Hopkins Hosp.* **28**: 1 (Jan.) 1917.

4. Levy, Robert: The Tuberculous Tonsil, *J. A. M. A.* **55**: 1520 (Oct. 29) 1910.

is true, tubercles in the tonsils are neither clinically recognizable nor clinically important; and, until our knowledge of this subject is more definite, I believe that, for all practical purposes, we can dismiss this type of infection of the tonsils from our minds, as a pathologic curiosity. This does not imply any doubt in my mind as to the value of tonsillectomy in tuberculous

culosis otitis, in both tonsils, in one, and tuberculous cervical adenitis, in both tonsils, in one.

Dr. Charles T. Ryder, who did the pathologic work in all of these cases states that:

"The pathologic diagnosis of tuberculosis was made only when typical tubercles, consisting of large mononuclear cells, usually accompanied by giant cells, were found in sections. Our routine is to examine one longitudinal section from the middle of each tonsil or adenoid. Very large tonsils are sometimes cut transversely. In some suspicious cases, many sections have been cut from different planes of the tonsil, but as yet tubercles have not been found in these when they were wanting in the first routine section.

"The tubercles found were single, or confluent in small groups with slight caseation at the center. They have usually been found just beneath the epithelium of surface and crypts, and deeper in the lymphoid tissue. In some instances, they have been limited to the region of one crypt with its branches, but more often they have been diffuse. Their distribution does not enable us to draw positive conclusions as to the route of infection.

"No example of ulcerative tuberculosis has been encountered in this series, nor have any large areas of caseation or tuberculous infiltration. In no case has it been possible to make the diagnosis of tuberculosis of tonsils or adenoids in the gross.

"It is not unusual in examining sections of tonsils to find small rounded areas of scar tissue which greatly resemble healed tubercles. These are always noted with interest, but the diagnosis of tuberculosis is never made unless typical tubercles of active type are found also.

"Foreign body giant cells have not been a source of confusion in this series. In a case not included in the series, a number of single giant cells were found beneath the epithelium of a gland or crypt in the adenoid. The diagnosis in this case remained in doubt. Stratified epithelium cut tangent to the end of a tonsil crypt is sometimes momentarily puzzling, but need never lead to a false positive diagnosis.

TABLE 1.—*Pulmonary Tuberculosis and Tuberculous Tonsils*

Case	Pulmonary Lesion Before Operation		Facial Tonsils Affected	Indication for Operation	Lung Condition at Present
	Activity	Extent			
1	Inactive	Moderately advanced	Both	Frequent tonsillitis; fever	Improved
2	Inactive	Incipient	Both	Large tonsils; sore throat	Improved
3	Active	Advanced	Both	Frequent tonsillitis, causing relapses	Improved
4	Inactive	Moderately advanced	One	Fever unaccounted for by lung condition	Improved
5	Active	Moderately advanced	Both	Frequent colds; sore throat	Unimproved
6	Active	Advanced	Both	Tonsillitis; cryptic debris odor	Improved
7	Inactive	Incipient	Both	Hypertrophic tonsils; tuberculous otitis	Improved
8	Inactive	Incipient	One	High blood pressure	Improved
9	Active	Moderately advanced	Both	Bronchial asthma	Improved
10	Active	Moderately advanced	One	Arthritis-fever relapses	Improvement very slow
11	Active	Moderately advanced	Both	Caseous cryptic debris; irritation; cough	Cough improved; patient walking 16 blocks a day

cervical adenitis, or when indicated in properly selected cases of pulmonary tuberculosis; but I feel that the presence or absence of tubercles in the tonsils, on microscopic section, is immaterial.

Only positive cases have been reported, all suspects being eliminated. In cervical adenitis, the glands have been classed as tuberculous only when the diagnosis has been made pathologically.

In 400 consecutive cases in which operation was performed for removal of tonsils or adenoids, tubercles were found pathologically in both tonsils, ten times, in one tonsil, four times and in the adenoid, three times; or in 4.25 per cent. of all cases.

Of these seventeen cases in which tubercles were found, there was a positive history of tuberculosis in twelve, or 70.6 per cent: pulmonary tuberculosis in ten (of both tonsils in seven, of one in three); and pulmonary tuberculosis and tuberculous otitis in one (both tonsils).

Of these seventeen cases, no history or diagnosis of tuberculosis could be made in five (29.4 per cent.). Both tonsils were tuberculous in one case; one tonsil was tuberculous in one case, and the adenoid in three cases.

Tuberculosis of tonsils and adenoids, excluding cases of persons with a tuberculosis history, was found in five cases in 400, or in 1.25 per cent.

Tonsillectomies were performed in twenty-seven persons with known tuberculosis. Pulmonary tuberculosis was present in twenty-four; pulmonary tuberculosis and tuberculous otitis, in one; pulmonary tuberculosis and tuberculous cervical adenitis, in one, and tuberculous cervical adenitis, in one.

Of these twenty-seven tuberculosis was present by pathologic test in twelve, or 44.4 per cent: pulmonary tuberculosis in ten, two tonsils being affected in seven, one tonsil, in three; pulmonary tuberculosis and tuber-

TABLE 2.—*Primary Tuberculosis of Tonsils and Adenoid*

Case	Age, Yrs.	General Health and Nutrition	Indication for Operation	Tonsil or Adenoid	Present Condition
1	5	Very delicate; undernourished	Tonsillitis; otitis media	Adenoid	Slight improvement
2	8	Fair; nervous and irritable	Mouth breathing; enlarged anterior cervical glands	Adenoid	Marked improvement
3	9	Good	Tonsillitis; enlarged anterior and posterior cervical glands	Adenoid	Improvement; heliotherapy employed
4	28	Fair; has heart lesion and arthritis	Arthritis; purpura	Both tonsils	Slow improvement
5	41	Fair; nervous	Headaches; tinnitus; vertigo	One tonsil	Improvement

"This work has been done in the routine of a hospital laboratory, and it has not been practical to stain and examine for tubercle bacilli, which are usually rare and hard to find in miliary lesions of lymphoid tissue.

"Nontuberculous lesions encountered in this series involve: hyperplasia of germinal areas and of tonsil or adenoid as a whole; serous and seropurulent exudation, with lymphocytes predominating; accumulation in the crypts of such exudate and of hyaline desquamated epithelium and rounded clumps of bacteria, which seem

to consist chiefly of leptothrix, though they have not been thoroughly studied; obstruction of crypts by the plica; formation of retention cysts, sometimes containing cholesterol crystals or calcified concretions; fibrosis, and development of cartilaginous areas in capsule and trabeculae; infiltration and erosion of the epithelial surface, or chronic inflammatory infiltration of deeper parts especially in areas partly fibrosed. No tonsil examined has failed to show some of these features of deviation from the ideal normal, and it is doubtful that any actual tonsil would fail to show them."

301 Ferguson Building.

THE COMMON SOURCES OF ERROR IN LUNG EXAMINATIONS

E. A. DUNCAN, M.D.

EL PASO, TEXAS

There is a very large group of persons in which a positive diagnosis of pulmonary tuberculosis has been made erroneously on insufficient and inconclusive evidence. Some of these diagnoses have been based on suggestive histories and suspicious symptoms, others on physical signs which are entirely normal, with or without supportive evidence in history or symptoms. Physicians are prone to confirm a diagnosis of tuberculosis, faulty or not, in any patient who has previously been declared tuberculous, perhaps through doubt of their own diagnostic ability, perhaps through fear of erring on the wrong side, perhaps, when former physical findings are corroborated, on the mistaken assumption that a once manifest tuberculosis must forever after leave signs evident on physical examination. In any case, these mistaken diagnoses are almost invariably supported by descriptions of nonexistent or misinterpreted physical signs.

It goes without saying that the earliest possible diagnosis is highly desirable; but, on the other hand, it is inexcusable to put the stigma of tuberculosis on any patient without clear and sufficient grounds therefor. Such a diagnosis is a stigma, and a very definite one. Patients with suggestive histories and symptoms may be regarded as suspects and kept under observation with such therapeutic measures as are indicated but undamaged by a premature diagnosis of tuberculosis with all that it implies as regards his future life, social status, employment, earning capacity, residence, etc.

The possibilities of damage to the individual by hasty diagnosis on uncertain grounds are immense: the possibilities of damage by reasonable delay are insignificant. The acute case will quickly make itself known beyond any doubt. A delay in diagnosis of a few weeks in the slow, chronic case will not affect the outcome.

Much of the literature of the early recognition of tuberculosis has tended to make the error of ill-advised diagnosis more common. The detection of early tuberculosis is often so described as to impress the student that it is possible only to a favored few with a super-refinement of diagnostic acumen. The effect of this has been to spur the examiner to an uncritical acceptance of symptoms, to put him in an attitude of receptiveness to vague and doubtful physical findings, sometimes to discover even gross physical signs when they do not exist. The often encountered positive diagnosis of pulmonary tuberculosis unsupported by physical signs, unsustained by roentgenograms and

unconfirmed by the laboratory is to be deprecated. More frequent are mistaken diagnoses based on symptoms and histories along with deductions made from physical signs elicited in normal chests.

The existence of this considerable number of persons who bear the burden of mistaken diagnosis of tuberculosis has been recognized as a military problem by several of the greater nations engaged in the World War. In a recent study of tuberculosis epidemiology in the war, Bushnell¹ makes this impressive statement with regard to the United States Army: "The total number of admissions to tuberculosis hospitals in the United States up to Jan. 1, 1920, is 18,713. In these the diagnosis was not confirmed in 4,305." The problem is as much a civil as a military one.

Accurate and critical physical examination is a primary essential in the diagnosis of pulmonary tuberculosis. It is not my aim in this paper to discuss what should constitute the standards of diagnosis or the possible mistakes due to sins of omission on the part of the examiner. My purpose here is to consider the mistakes due mainly to misinterpretation of physical signs in the normal chest.

FREMITUS

The statement of Fishberg² that palpation of vocal fremitus is of little diagnostic value in any stage of phthisis is undoubtedly correct, gross changes within the chest, pneumonia, pleural effusion and pneumothorax, of course, excepted. Fremitus must be mentioned here, however, since many examiners seem to lay some weight on it. Textbooks generally state that fremitus is normally increased over the right upper lobe; it is usually increased throughout the right lung. The intensity of fremitus is so variable that, unless greatly increased or absent in a given area, it means but little. This is especially true in regard to increase over the area of normal accentuation.

PERCUSSION

The dissimilarity in the anatomic relations of the pulmonary apices described by Fetterolf and Norris³ accounts for the difference in the character of the percussion note on the two sides. The shorter and higher pitched note of the right apex is the principal source of error in percussion signs. That this is a normal finding cannot be too strongly emphasized. Kroenig's isthmus may be narrowed, or there may be a definite apical dullness on one or both sides without alteration in the structure of the underlying lung. Minute changes in the percussion note in symmetrical areas, of the variety sometimes described as "slight possible," are misleading and of no diagnostic value. The personal experience of Cornet⁴ is significant. "Two very renowned and experienced physicians exhibited the same patient on the same day, the one in the morning, for dullness of the right apex, the other in the afternoon, for dullness over the left apex!" Contraction of the sternomastoid muscle and tension on the tissues of the neck when the patient turns his head toward the opposite side, a common trick, produces a deceptive dullness

1. Bushnell, G. E.: Tuberculosis Epidemiology in the World War, Mil. Surgeon. 51: 5 (Nov.) 1922.

2. Fishberg, Maurice: Pulmonary Tuberculosis, Ed. 3, Philadelphia, Lea and Febiger, 1922, p. 312.

3. Fetterolf, G., and Norris, G. W.: The Anatomical Explanation of the Relatively Less Resonant, Higher Pitched, Vesiculotympanic Percussion Note Normally Found at the Right Pulmonary Apex, Am. J. M. Sc. 143: 5 (May) 1912.

4. Cornet, G.: Tuberculosis, etc., in Nothnagel's Practice, American edition, Philadelphia, W. B. Saunders Company, 1905, p. 425.

above the clavicles. It may be stated that impairment of resonance over an apex without retraction, without alteration in the breath sounds or without râles cannot justify a diagnosis of increased pulmonary density.

AUSCULTATION

There is, unfortunately, no common terminology nor a fast standard in use for the description of breath sounds. What one examiner regards as bronchial breathing is to another bronchovesicular. For the purposes of this paper, bronchial breathing is defined as that type of respiratory sound in which inspiration is roughened and expiration prolonged and equal or higher in pitch than inspiration. Bronchovesicular breathing is defined as the type in which the prolonged expiration is lower in pitch than inspiration. These terms are satisfactory for the description of abnormal breath sounds, and leave little margin for error. They may be modified as necessary by qualifying adjectives: distant, diminished, cavernous, amphoric, etc. Such terms as "altered," "modified" and "impure" are hardly descriptive when applied to breath sounds.

There are two main sources of mistake in the interpretation of breath sounds: (1) the normally present bronchovesicular breathing on the right side down to the second rib and third dorsal spine; (2) noisy respiration. The bronchovesicular breathing of the interscapular area does not seem to give rise to confusion. It is remarkable how often a report of examination reads about as follows: "Fremitus increased over right upper lobe. Shorter percussion note to second rib and spine of scapula. Roughened inspiration and prolonged expiration to second rib and spine of scapula." From these signs a diagnosis is made of fibrosis of the right upper lobe. The findings are those of a normal chest.

Auscultatory signs in the lungs cannot be intelligently interpreted unless the examiner first sees to it that the patient is breathing properly. When the average individual is directed to breathe, the mere focusing of his attention on his respiration almost always results in noisy respiratory sounds which are impossible of evaluation. Forcible noisy respiration produces bronchovesicular breathing throughout the chest. Over the area of normal intensification, the right upper lobe, and even throughout thin-walled chests, the sounds may be definitely bronchial in character. As in the case of dulness in a supraclavicular space, a similar area of bronchial breathing, unaccompanied by other physical signs, does not justify a diagnosis of increased density of the subjacent lung.

RÂLES

The terms in common use for the description of râles are variously employed by different physicians. Confusion is most evident in the case of moist and dry râles; that is, what one examiner describes as moist are to another dry. An excellent classification and one which does not permit variation in description is that of Seiffert and Müller.⁵ This schema classifies râles as moist and dry. Moist râles are discontinuous or interrupted sounds, a series of clicks. A dry râle is a continuous sound. It is a sound produced by stenosis, whether by partial obstruction by mucus or by turgescence of the bronchial mucosa. Under this head fall what are described as squeaking, piping, sibilant and sonorous râles. Moist râles are subdivided into crepitant, fine, medium and large; dry râles into fine,

medium and large. The terms consonating and metallic are used as required. This classification seems sufficient, and the introduction of more descriptive terms is of doubtful advantage and productive of confusion.

No lung examination is complete without auscultation after cough, a fact recognized by the patients themselves. Turban described a consumptive who had been the subject of many examinations and who judged the ability of his examiner by whether or not he was required to breathe and cough during the examination. This patient now has many followers, and they are on safe ground. But latent, or, better, provoked râles, may not be produced by cough if the procedure is not correctly carried out, especially if few in number and in a limited area. The cough must occur at the end of expiration. This will be apparent on consideration of what, I believe, is the correct explanation of the somewhat disputed mechanism of the production of provoked râles. The explanation of Bray⁶ is not adequate: the older idea, somewhat modified, of the separation of moist surfaces and breaking of fluid films is preferable. Bray believes that the râles occur with cough which, by the sudden increase of pressure first separates the walls of alveoli and bronchioles and then, their patency established, puts into vibration the fluid therein. Provoked râles do often, but by no means always, occur at the end of the expulsive effort as the lung recoils, but they also occur in large numbers at the beginning of the following inspiration.

The movements of and the pressure conditions within the lung as judged by the fluctuations of the diaphragm may be studied under the fluoroscope. With cough, as the glottis is opened, the diaphragm ascends sharply, and as suddenly descends as the abdominal pressure is released. The recoil of the lung with descent of the diaphragm is timed with the end of the expulsive effort of the cough, but while air is still being expelled from the mouth. The tracheobronchial air column is evidently under sufficient pressure to pass in both directions, both out of the mouth and downward into collapsed bronchioles when the lung is permitted to expand on release of the pressure within the abdomen. It is with the recoil of the lung that the first provoked râles occur: the later ones are definitely inspiratory. The production of fine moist, that is, bronchiolar râles in this way is best explained by the accompanying diagram, which represents a condition often seen in large sections of lung in inflammatory diseases when the knife has traversed a bronchiole for some distance in its long axis.⁷ It is manifest from the foregoing that, unless bronchioles are well flattened by expiration and cough fluid, particles may not completely occlude the lumen, and no râles will be produced when the bronchiole again widens.

Of the adventitious sounds which may simulate râles, only passing mention is called for by muscle sounds, scapular grating, noises produced by swallowing, or crepitations due to insecure application of the stethoscope or its contact with hair. None of these should prove a source of error by confusion with râles. The sounds which notably simulate râles are those of cartilaginous origin and marginal sounds. The former, which Ewart⁸ has termed "audible motor crackles,"

6. Bray, H. A.: The Latent Râle in the Diagnosis of Incipient Tuberculosis, *J. A. M. A.* **66**: 11 (March 11) 1916.

7. A photomicrograph illustrating this condition may be found in Edens, E.: *Lehrbuch der Percussion und Auskultation*, Berlin, Julius Springer, 1920, p. 152.

5. Seiffert and Müller: *Taschenbuch der medizinisch-klinischen Diagnostik*, Ed. 15, Wiesbaden, J. F. Bergman, 1912, p. 31.

8. Ewart, William: On Perez's Sign, *Brit. M. J.* **1**: 2675 (April 6) 1912.

are encountered with great frequency. The statistics of King⁹ to their occurrence, in 4 per cent. of patients examined, are very low. My own impressions are more in accord with the studies of Hawes,¹⁰ who found them in 22 per cent. of persons observed.

Joint sounds have one common characteristic, namely, that they rarely occur at the end of cough but later in the inspiratory phase. Over the front of the chest they originate in the sternoclavicular joints, the junctions of the pieces of the sternum, the sternochondral and costochondral junctions. They are heard above the clavicle, and, lower down, mainly between the sternum and nipple line. It is not a difficult matter to differentiate them from râles. They have a more marked snapping, clicking quality than râles, they are conducted along the bony structures, they may be followed up to their point of origin, where they become loud and consonating and they may be made to disappear by securing partial immobility of the structures in which they originate if the patient is made to draw his shoulders forward or backward and if they are forcibly held in that position during auscultation.

The questions for the examiner to decide in following up these clicks to their point of production are whether they occur at the same point in inspiration, whether their number continues the same, and whether they increase in intensity to their place of origin. I have found no mention in the literature of joint sounds heard posteriorly. In the back, crepitations are heard near the spine down to the lower interscapular area. These sounds originate in the intervertebral or costovertebral articulations. At a little distance from the spine, muffled by conduction through soft tissues, they may exquisitely simulate fine, moist râles except in the general characteristic mentioned above, that they occur later in inspiration. These vertebral noises are instantly recognized as such if the stethoscope is applied to the adjacent spine.

Though clicking noises at the bases of the lungs have been described in all sorts of intrathoracic disease, most writers on physical diagnosis have learned to pay little attention to them, usually ascribing them to marginal atelectasis. Bushnell¹¹ has shown that these sounds are due to the separation of the moist surfaces of the diaphragmatic and mural pleura as the diaphragm peels from the chest wall with the descent of the lung margin. Thus, they accompany the descending sulcus of Litten's phenomenon. Marginal sounds are still mistaken for râles with some frequency, and a diagnosis of tuberculosis thereby made by the unwary, in spite of the fact that their location, without other findings, should not suggest tuberculosis. They do, in fact, markedly simulate moist râles, and, in some vigorous

breathers, occur in showers and with a consonating quality.

The differentiation of râles and marginal sounds is readily made. The patient is directed forcibly to exhale and cough, but without following the cough by inspiration. With the breath now held in forced expiration, the lung border is rapidly determined by percussion and is marked. It will be found on subsequent cough and inspiration that marginal sounds are not found above the marked line, and that, from above downward, they are heard at a progressively later stage of inspiration. Furthermore, they do not occur with the cough but with the following inspiration. The same sounds are occasionally heard along the left border of the heart with the downward and inward movement of the lingula on inspiration.

NONTUBERCULOUS INFECTIONS

Mention must be made of the chronic nontuberculous infections occurring at the base of one or both lungs, usually posteriorly, which are so often erroneously assumed to be tuberculous. They are a frequent cause of chronic cough and mucopurulent expectoration, sometimes blood streaked. Rarely they may be the source of a profuse hemoptysis, perhaps when complicated with bronchiectasis or when syphilitic in origin. Impairment of the patient's general health is, as a rule, trifling. On physical examination, these infections present the signs of a more or less extensive bronchitis with or without evidence of insufficient ventilation of that portion of the lung, or of some increase in pulmonary density. In the absence of signs of involvement of the upper lobes and without sputum containing tubercle bacilli, a diagnosis of tuberculosis in these cases cannot be made.

SUMMARY

1. The considerable number of erroneous diagnoses of pulmonary tuberculosis are almost always based on or supported by descriptions of nonexistent or misinterpreted physical signs.

2. Any single sign of increased pulmonary density, especially at the apexes, unaccompanied by other evidence, must be regarded as insufficient and conclusions therefrom withheld. This applies equally to alterations in fremitus, percussion changes, and abnormal breath sounds.

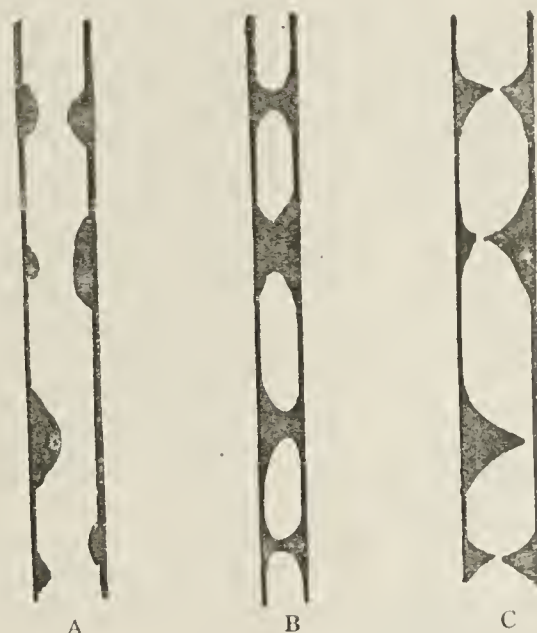
3. The misleading differences in the physical signs of the two sides must be kept in mind.

4. Vigilance on the part of the examiner to recognize factitious accentuations of breath sounds, extrapulmonary noises of cartilaginous origin and marginal sounds is essential to correct diagnosis.

5. The elicitation of provoked râles requires a considerable reduction of pulmonary volume by expiration followed by cough.

6. Basal bronchitis without upper lobe involvement must be proved tuberculous by the laboratory before such diagnosis can be made.

610 Martin Building.



A, bronchiole with fluid masses clinging to walls; no râles present; B, bronchiole narrowed by expiration and cough; fluid masses now completely obstruct lumen; C, bronchiole widened with the elastic recoil of the lung or on inspiration; the clicks occur as the fluid films break or are detached from the wall by the air current.

9. King, J. T., Jr.: Auscultation of the Pulmonary Apices in Young Men, *Mil. Surgeon* 42: 1 (Jan.) 1918; abstr. *J. A. M. A.* 70: 7 (Feb. 16) 1918.

10. Hawes, J. B.: Extrapulmonary and Other Sounds Which May Lead to Errors in the Diagnosis of Pulmonary Tuberculosis, *Boston M. & S. J.* 170: 25 (June 18) 1914.

11. Bushnell, G. E.: Some Extrapulmonary Sounds Which Simulate Râles, *M. Rec.* 81: 3 (Jan. 20) 1912; Marginal Sounds in the Diagnosis of Pulmonary Tuberculosis, *ibid.* 82: 55 (Dec. 21) 1912.

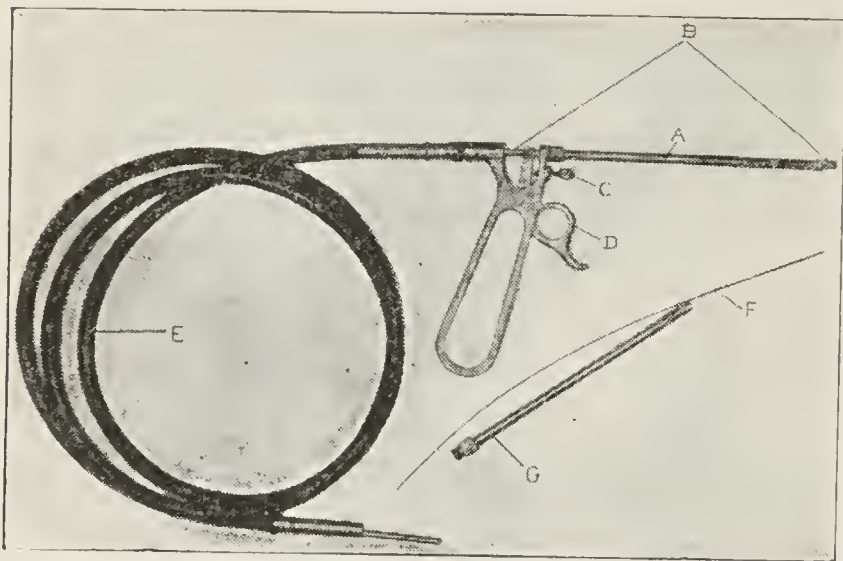
Clinical Notes, Suggestions, and New Instruments

NASAL DRILL FOR REMOVAL OF SEPTAL SPUR*

HUGH H. YOUNG, M.D., BALTIMORE

About a year ago it was necessary to have my sphenoid and ethmoidal cells opened and drained. In order to obtain a good view of these cells, it was necessary to remove a large eburnated mass of bone, which had resulted from a fracture many years ago. After the mucous membrane had been stripped back, the bone was removed, first with chisels and then with bone forceps.

While I lay there undergoing this procedure, the idea struck me (or perhaps was "hammered into my brain") that a rapidly revolving drill, so designed as to be accurately used in the nasal cavities, would be a far more gentle and rapid method of removing bone. Accordingly, during my convalescence in the hospital I made drawings of such an instrument, and summoned the chief mechanic of the Brady Institute and had him construct the instrument shown in the accompanying illustration.



Nasal drill for removal of septal spur: A, outer tube; B, drill; C, set-screw to regulate the exact penetration of the drill; D, trigger that advances the drill point; E, flexible cable; F, whalebone bougie that is first introduced through the natural orifice into the sphenoidal sinus; G, tube that replaces tube A when sphenoid is to be opened.

As will be seen here, it consists principally of a drill about one-fourth inch in diameter, which revolves by means of a flexible cord connected with an electric motor. This drill revolves within a tube, by means of which it is connected with the handle, and a trigger action, which carries it back and forth at will. The distal end of the tubular shaft contains four small, sharp, toothlike projections, which are intended to penetrate into the bone at the site of attack and hold the instrument steady while the drilling is in progress. The action of the drill can be regulated by means of a set-screw, so that a depth of boring, varying from 0 to one-half inch, can be secured. It is also possible to have drills of different sizes to connect with the same instrument, as they are easily detached from the handle and shaft.

Experiments with bones outside the body showed that the drill would penetrate even very hard bones with great speed, and that the work could be accurately done and the desired depth assured.

The trigger action is arranged so as to allow the operator to hold the instrument with a firm grip. The thumb of the operating hand is provided with a special receptacle so as to add to the accuracy of the manipulation.

With the idea of utilizing the same instrument for opening the sphenoid, a second tubular shaft has been provided. This tube carries a small collar and eyelet, to be threaded on a whalebone filiform, which has previously been inserted into the sphenoidal foramen, and thus lead the instrument

to the exact spot at which the opening is to be made. Here, again, the set-screw makes it possible to determine exactly the depth of boring, and accuracy is thus assured.

I wish to apologize for thus seeming to invade another specialty; but, as Dr. Crowe has been good enough to use this instrument in several cases and pronounces it of value, and as he also refuses to report it himself, I am prompted to give this brief description.

NOTE BY DR. S. J. CROWE, BALTIMORE

The instrument devised by Dr. Young is very ingenious, and greatly facilitates the removal of the large septal spurs and deflections arising from the lower portion of the septum. The bone in this location is often very hard, and its removal necessitates the use of a hammer and chisel.

I have used this revolving drill in every suitable case during the last year, and always with success. The mucous membrane overlying the spur is elevated, and the drill is placed on the bone. By firm pressure, the small, sharp projections on the end of the tube will penetrate the bone sufficiently to hold the drill in place after the power is turned on. It is possible to thus bore two or three parallel channels through a spur, after which the intervening bone can be easily and painlessly removed, with ordinary nasal rongeurs.

It is rarely necessary to elevate the mucous membrane on both sides of the spur, and often it is not necessary to cocaine both sides of the nose. The drill is operated by a foot switch, and is started only after it has been placed in position. By means of the small, sharp projections, it can be held in place with accuracy. The rapidly revolving drill is pushed out of the tube by pressure on the trigger, and it will penetrate the hardest bone without vibration or pain.

This instrument is well balanced and small enough to allow its introduction into the nose under direct vision.

I have not used this instrument for opening the sphenoidal sinus, because I am afraid that fragments of bone or other debris might be introduced into the sinus cavity; but mechanically it is possible with this drill safely and rapidly to open the sphenoidal sinuses or the antrums with the minimum of discomfort and time.

THE DETERMINATION OF PHENOLSULPHONEPHTHALEIN EXCRETION IN THE PRESENCE OF HEMATURIA*

EDWARD G. WATERS, PH.B., M.D., BROOKLYN

The importance of the phenolsulphonephthalein test for kidney function, and its relative simplicity of performance, are now well appreciated by all whose work includes diagnosis of the various nephropathies. More recent work¹ indicating that lowered excretion of phenolsulphonephthalein is practically always the first evidence of renal damage, functional or organic, only enhances its value to the clinician. It is obvious, therefore, that any factor which may inhibit successful use of the test in the presence of certain of the various nephropathies offers a serious handicap. One of the most frequent and objectionable hindrances to the satisfactory use of the dye is the presence of blood in the urine. Another is a urine of high color.²

Burwell and Jones³ recently offered a method for rendering the urine free from blood and bile. Previously there had been no successful method for removing the blood pigment without altering the phenolsulphonephthalein reading, or in some other way preventing accurate determinations.

* From the Brooklyn Hospital.

1. Tardo, A.: The Phenolsulphonephthalein Test in Urinary Surgery, *J. d'uro.* **13**: 167 (March) 1922; Phenolsulphonephthalein in Urinary Surgery, *ibid.* **12**: 393 (Dec.) 1921. MacNider, W. de B.: Study of Renal Function and the Associated Disturbance in the Acid Base Equilibrium of the Blood in Certain Experimental and Naturally Acquired Nephropathies, with Citation of Previous Papers, *Arch. Int. Med.* **26**: 1 (July) 1920. Lichty, J., and Bradshaw, W.: The Clinical Interpretation of the Phthalein Test and Ambard Coefficient in Certain Disturbances of Kidney Function, *Pennsylvania M. J.* **25**: 838 (Sept.) 1922. Rowntree, L. G.: Renal Function Tests, *Northwest Med.* **21**: 220 (July) 1922.

2. Christian, H. A.: *Oxford Medicine* **3**: 637.

3. Burwell, C. S., and Jones, C. M.: The Removal of Bile and Blood from the Urine in Performing the Phenolsulphonephthalein Test of Kidney Function, *J. A. M. A.* **77**: 462 (Aug. 6) 1921.

* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

The method suggested by Rowntree and Geraghty,⁴ employing lead acetate, while clearing the urine of bile, did not remove hemoglobin from solution.

The desirability of simple methods for clearing urine of blood is apparent. The method here described is of value because it clears the specimen of the last trace of blood-coloring matter. It leaves a clear, benzidin-negative specimen, which shows no absorption bands for hemoglobin in the spectroscopy, and in which the phenolsulphonephthalein percentage is not altered.

The method rests on the action of magnesium chlorid on an alkaline solution of hemoglobin.⁵ When magnesium chlorid is added to an alkaline solution of hemoglobin, the hematin split off is carried down out of solution with the precipitate of magnesium hydroxid formed, and the filtered solution is clear. The necessary reagents are two: (1) a concentrated solution of sodium hydroxid, and (2) a half-saturated solution of magnesium chlorid. The latter is conveniently made by dissolving magnesium chlorid crystals in water, or by dissolving magnesium hydroxid in hydrochloric acid.

The steps in the procedure to determine the phenolsulphonephthalein output in cases presenting hematuria, then, are as follows:

One cubic centimeter (60 mg.) of phenolsulphonephthalein solution is injected into the lumbar muscles or into the deltoid, in the usual manner, and the time is noted. Ten minutes is allowed for absorption and distribution, the bladder is emptied, and the urine is collected at the end of one hour and of two hours. The excretion of the first hour is then put into a beaker, and from 10 to 15 c.c. of concentrated sodium hydroxid solution is added, and the solution heated. Alkaline oxyhemoglobin forms, and hematin is split off, giving the solution a dark brown color, if the amount of blood present is appreciable. When the solution in the beaker is warm, 10 c.c. of magnesium chlorid solution is added, the mixture being rapidly stirred, and the contents of the beaker are heated almost to boiling. The contents of the beaker are then poured into a 1,000 c.c. measuring vessel, and diluted up to the mark with tap water. A sufficient amount is then filtered and read against a known standard, or with the convenient standards of the Hynson-Westcott set. As no unusual dilutions have been made, the reading is direct, and the percentage read corresponds to the percentage of phenolsulphonephthalein in the specimen cleared.

It will be noted that the filtrate is clear of bacterial clouding, sediments, proteins and hematin, and that the amount and color of the dye are unaltered. As an added refinement, we divide the specimen, retaining half should the portion used be destroyed in any way. Obviously, when half the specimen is used, the dilution is only to 500 c.c.

Despite the evident simplicity of the method described, there are some possible sources of error. If an insufficient amount of sodium hydroxid is used, the filtrate is brown, owing to the hematin still in solution. If the solution is tested with litmus paper after the magnesium chlorid has been added and still found alkaline, no difficulty of this sort will be encountered. Of course, when the solution is not alkaline, the color of the dye will not appear. It will seldom be necessary to add more than 10 c.c. of the magnesium chlorid solution. If very large amounts of blood are present, it will be necessary to increase the amounts of the reagents used; but the quantities given above have been sufficient in practically all of the hospital cases presenting hematuria.

Extensive studies made to determine the effect of the "clearing" method on the amount of phenolsulphonephthalein present have shown conclusively that there is no appreciable loss of the dye. The following mixtures were treated with the methods described above:

1. Normal urine plus varying percentages of blood gave clear urine.

2. Distilled water plus varying percentages of blood gave clear water.

3. Normal urine plus varying percentages of blood and phenolsulphonephthalein gave clear solutions showing the dye present in the same percentages as in controls.

4. Distilled water treated as was the urine in the preceding paragraph gave similar results.

5. Normal urine and distilled water, containing the dye in varying percentages, showed no loss or change in color of the dye.

In addition to the foregoing artificial mixtures, a large series of tests was conducted on persons without hematuria. The specimens were divided, one portion was used as a control, and to the other was added blood, the amount varying to make the percentage of blood in the specimen range from 0.1 to 30 per cent. in the cases tried. The readings checked accurately. In those instances in which a low excretion was expected, a lower dilution was made, the "concentration" of the dye thus giving more accurate and easily read results.

SUMMARY

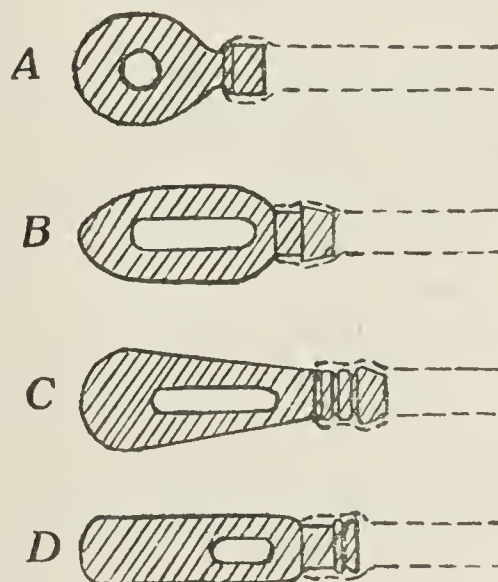
This simple modified test is of value because it is quickly and easily done with simple reagents, employs no dilutions requiring complicated figuring, and is of proved accuracy and efficiency. It has been applied clinically in cases in which there was persistent hematuria, and has been found satisfactory.

De Kalb Avenue and Raymond Street.

A NEW TIP FOR GASTRODUODENAL TUBES*

EDWARD HOLLANDER, M.D., NEW YORK

The tip here illustrated is constructed to fulfil what I believe are the theoretical mechanical requirements of an ideal tip for gastric and duodenal tubes. In practice, because of its narrow diameter combined with proper weight, it has been found superior to the tips that are in popular use. Its construction is based on the following principles of gastroduodenal intubation and drainage:



Types of properly fenestrated gastroduodenal tips: A, ball-shaped tip (Palfeski); B, olive-shaped tip (Rehfuss); C, pear-shaped tip (Lyon); D, author's narrow, cylindric tip.

1. The diameter of the tip should be as small as possible. This is determined by the caliber of the rubber tubing. No. 8 French tubing is considered most practicable for gastroduodenal work. When such tubing is stretched over the shank of a duodenal tip to secure the latter in place, its outer diameter becomes 6 mm., which should be the diameter of the tip.

The advantages of a narrow tip are obvious. It can pass into the duodenum through moderate degrees of pylorospasm more readily than a wider tip. It can be swallowed and withdrawn more easily. Especially in withdrawing the tube, in many patients, the average tip is caught tightly at the level of the glottis, causing anxiety to both patient and physician. This has never occurred with the narrow tip.

2. The weight of the tip should be sufficient to carry the tube down the esophagus and maintain the tip in a dependent position in the stomach. Making its distal half a solid lead-filled shell brings its weight up to 4.5 gm. (70 grains), which is sufficient to fulfil these conditions. In the fasting state, the walls of the antrum are collapsed, obliterating that portion of the gastric cavity. Therefore, in duodenal intuba-

4. Rowntree, L. G., and Geraghty, J. T.: An Experimental and Clinical Study of the Functional Activity of the Kidneys by Means of Phenolsulphonephthalein, *J. Pharmacol. & Exper. Therap.* 1: 579-661, 1910.

5. Mathews: *Physiological Chemistry*, 1916, p. 504.

* From the Medical Department, Mount Sinai Hospital.

tion, while the weight of the tip should keep it in a dependent position, its progress through the pylorus will depend chiefly on peristaltic action. Entrance of the tip into the duodenum is facilitated by three steps: (a) The placing of the patient in the right Sims position brings the duodenum to a position lower than that of the stomach; (b) the drinking of half a glass of water, after the tip has passed the cardia, stimulates the peristalsis of the stomach; (c) swallowing the last ten inches of the tube slowly over a period of half an hour allows the tip to advance slowly with the peristalsis without coiling of the tube in the stomach.

3. The lumen of the tip and the width of the fenestrations should equal the bore of the rubber tubing.

4. The drainage chamber of the tip should be ample to provide for continuous drainage through the tube. This is accomplished by making four elongated fenestrations equal to one-third the length of the tip.

5. The tip should be held securely by the rubber tubing without being fastened with thread. If two sharp elevated rings are placed at the proximal end of the shank, the tip is "hugged" tightly and can be removed only by the use of much greater force than that used in withdrawing the tube from the duodenum.

A point worth emphasizing in duodenal intubation is the importance of the proper quality of the rubber tubing. A tube that is too soft, or that is aged and inelastic tends to coil and does not follow the curvature of the stomach as it is slowly introduced. As a simple and practical test for the proper quality of the tubing, I have found that when any two inches of its length is turned end to end it should not "kink" in the middle but should maintain a uniform diameter throughout the loop.

71 East Ninety-Sixth Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

NEO-SILVOL.—Colloidal silver iodide compound.—A compound of silver iodide with a soluble gelatin base containing 18 to 22 per cent. of silver iodide in colloidal form.

Actions and Uses.—Neo-Silvol, even in concentrated solutions, causes neither irritation of mucous membranes nor coagulation of albumin. It does not stain the skin.

It is claimed that neo-silvol in laboratory tests for germicidal value has been found as effective as phenol in its action on bacteria.

Neo-silvol is intended for the prophylaxis against, and treatment of infections of accessible mucous membranes and is claimed to be indicated in infections of the genito-urinary tract and of the eye, ear, nose and throat.

Dosage.—In the treatment of acute inflammations of the mucous membranes solutions of neo-silvol as strong as 50 per cent. may be used. In inflammatory infections of the ear, nose and throat, 5 to 40 per cent. solutions are used; for irrigating sinuses 2 to 5 per cent.; for inflammatory conditions of the eye and conjunctival infections in strength of 10 to 40 per cent.; in acute anterior urethritis, as an abortive measure, 20 per cent.; for posterior urethritis or in the routine treatment of anterior urethritis, 10 per cent.; in the genito-urinary tract of the female, from 10 to 50 per cent.

Solutions of neo-silvol are prepared by adding the substance to the required amount of water and agitating the mixture until solution occurs.

Manufactured by Parke, Davis and Co., Detroit, Mich. U. S. patent and trademark applied for.

Capsules Neo-silvol, 6 grains.

Neo-silvol is prepared by heating freshly precipitated silver oxide with gelatin (which has been previously dissolved in a dilute alkaline solution) until the silver oxide has been reduced to metallic silver in a colloidal state of subdivision. The solution is treated with iodine,

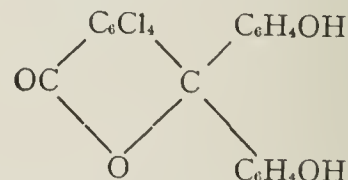
which combines with the silver. The liquid is then evaporated to dryness in vacuo. The finished product contains from 1 to 3 per cent. of combined iodine in excess of that required for combination with the silver.

Neo-silvol occurs as pale yellow granules. In concentration up to 50 per cent. neo-silvol forms with water almost colorless, milky or opalescent solutions (colloidal suspensions). Neo-silvol is insoluble in fixed oils, but slowly soluble in glycerine. Solutions of neo-silvol are not precipitated in the cold by strong acids or sodium chloride.

If a solution of neo-silvol is treated with a solution of potassium hydroxide no precipitate of silver iodide is formed; if this solution is boiled for a few minutes, it darkens gradually, but no precipitate is formed unless it is allowed to stand for some time. If a solution of neo-silvol is treated with dilute hydrochloric acid silver iodide is not precipitated; if this mixture is now boiled, the silver iodide is gradually precipitated. Dilute solutions of neo-silvol do not discolor in sunlight (absence of silver chloride and silver bromide).

Transfer about 1 Gm. of neo-silvol, accurately weighed to an 8 ounce Erlenmeyer flask containing 100 Cc. water and heat on steam bath until "solution" is effected. Add 5 Cc. of hydrochloric acid and boil gently over a flame for ten or fifteen minutes; cool; when sufficiently cool to handle, filter through a tared Gooch crucible containing a fairly thick pad of asbestos. Wash thoroughly with water acidulated with hydrochloric acid (0.3 per cent. hydrochloric acid). Dry at 100 C. and weigh as silver iodide. (The weight found is equivalent to 18 to 22 per cent. of silver iodide.)

PHENOLTETRACHLOROPHTHALEIN-H. W. & D.— Phenoltetrachlorophthaleinum.—



A dibasic dye formed by the condensation of phenol and tetrachlorophthalic acid or its anhydride. It differs from phenolphthalein in that four hydrogen atoms have been replaced by four chlorine atoms.

Actions and Uses.—Phenoltetrachlorophthalein has been used for the determination of the functional activity of the liver. It can be used, in form of the sodium salt, intravenously; it cannot be given subcutaneously or intramuscularly. It has been proposed that the excretion can be determined by any one of these methods:

1. The excretion of the drug in the stool: Rowntree, Hurwitz and Bloomfield (*Bull. Johns Hopkins Hosp.* 24:327, 1913); Whipple, Puchtol and Clark (*Bull. Johns Hopkins Hosp.* 24:343, 1913); Rowntree, Marshall and Chesney (*Proc. Am. A. Phys. & Surg.*, 1914; *THE JOURNAL*, Oct. 31, 1914, p. 1533).

2. The excretion of the drug in the duodenum by means of a duodenal tube: Aaron, Beck and Schneider (*THE JOURNAL*, Nov. 19, 1921, p. 1631).

3. Its disappearance from the blood stream: S. M. Rosenthal (*J. Pharmacol. & Exper. Therap.* 19:385 [June] 1922); H. H. Rosenfield and E. F. Schneiders (*THE JOURNAL*, March 17, 1923, p. 743).

Dosage.—From 0.05 to 0.4 Gm. administered in the form of the disodium salt. The solution must not be exposed unduly long, as the salt is sensitive to the action of the carbon dioxide of the atmosphere.

Manufactured by Hynson, Westcott & Dunning, Baltimore, Maryland. No U. S. patent or trademark.

Ampules Phenoltetrachlorophthalein-H. W. & D. Each ampule contains more than 2 Cc. of a solution of disodium phenoltetrachlorophthalein, each cubic centimeter representing 0.05 Gm. of phenoltetrachlorophthalein-H. W. & D.

Phenoltetrachlorophthalein-H. W. & D. is a pink powder; odorless; permanent in the air. It is practically insoluble in water; very soluble in acetone; soluble in alcohol, ether and glacial acetic acid; slightly soluble in chloroform, benzene and carbon disulphide. It dissolves in solutions of the alkalis and carbonates to form solutions which are deep purple when concentrated, but which change to violet on dilution, and in very dilute solutions assume a bluish tint (distinction from phenolphthalein).

Phenoltetrachlorophthalein does not melt when heated to 300 C. It does not respond to the U. S. P. test for heavy metals as described under phenolphthalein.

Dry about 1 Gm. of phenoltetrachlorophthalein-H. W. and D., accurately weighed, to constant weight at 115 C. The loss is not more than 0.5 per cent. To about 5 Gm. of the substance, accurately weighed, add 25 Cc. of normal sodium hydroxide solution, heat to about 70 C. and stir. Dilute with warm water to about 75 Cc., filter through a tared Gooch crucible, dry to constant weight at 115 C. and weigh. The weight of the insoluble matter (*tetrachlorfluorane*) does not exceed 0.2 per cent. Incinerate about 2 Gm. of the substance, accurately weighed. The ash does not exceed 0.15 per cent.

Hospital a Health Exponent.—The hospital as an exponent of health should provide for its entire personnel sanitary surroundings, adequate and suitable diet, and a properly proportioned daily life from the standpoint of occupation, intellectual development, recreation and rest.—A. W. Goodrich, *Hospital Social Service* 7:173 (March) 1923.

STATE BOARD STATISTICS FOR 1922

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1220 to 1227 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1922. All state licensing boards sent in reports, and the figures have been carefully verified.

Tables A and B, when read from left to right, show for each medical college named (a) the number of graduates appearing for examination in each state, (b) whether they passed or failed, (c) the total number examined during the year, (d) the number who passed, (e) the number who failed, (f) the percentage of failures, and (g) the number of states in which graduates of that school appeared for examination. Read from above downward, they give the results by states, showing (h) the number registered and rejected from each college, (i) the total numbers examined, registered and rejected, and (j) the percentage of rejections. The majority of graduates take the license examination in the state in which the college is located, as shown by the dark diagonal line of figures passing from the upper left to the lower right corner of each table. These tables are worthy of careful study, since important deductions are possible. The marginal numbers will enable one to follow readily the line for any college.

GRADUATES OF ALL YEARS EXAMINED IN 1922

Table A shows the results for all candidates who took examinations in 1922, regardless of the years in which they graduated. This shows that altogether 3,993 candidates were examined last year, as compared with 4,807 in 1921, 4,787 in 1920, 4,736 in 1919, and 3,637 in 1918. This year shows a decrease of 814 since last year, but an increase of 356 over 1918. Since 1906 and until 1919 there was a steady decrease in the totals examined owing chiefly to (a) the increasing number registered through reciprocity, and (b) the general diminution in the number of medical colleges, students and graduates. The marked decrease in 1918 was due to the enlistments for military medical service, while the decrease in 1922 was due to the small number, 2,529—the war class—who graduated in that year. Of those examined in 1922, 12.3 per cent. failed, as compared with 12.4 in 1921, 15.3 in 1920, 14.3 in 1919, and 13.3 in 1918.

There were 70 medical colleges in the United States granting degrees in 1922 which had graduates examined, as compared with 75 in 1921, 78 in 1920, 79 in 1919, and 80 in 1918. There has been a decrease of 83 since 1905, when graduates from 153 medical colleges were examined. The statistics covering schools which have ceased to exist are included in the line for "miscellaneous colleges."

Graduates of Canadian medical schools were examined in 22 states. The largest number, 37, were examined in New York, the next largest number being 7 examined in Michigan. The figures for each college are given separately in order to show the number of candidates coming from each, and to show the successes of their graduates at the examinations. Altogether, 82 candidates from Canadian colleges were examined, of whom 9, or 11.0 per cent., failed.

Foreign graduates were examined in 30 states, the total examined being 186, and of this number 76, or 40.9 per cent., failed. In 1918 45, in 1919 67, in 1920 86, and in 1921 178 foreign graduates were examined. There has been a steady increase of foreigners licensed since 1918. The largest number of foreigners examined in any state in 1922 was 63 in New York, where 29, or 46 per cent., failed.

CAUTION IN FORMING CONCLUSIONS

In making comparisons on the basis of these statistics, the reader must keep in mind (a) the number of graduates examined; (b) the number of states in which a school's graduates have been examined; (c) the character of the board making the examination and the methods employed. Some

boards refuse to examine graduates of inferior medical colleges, while others (see Table H) not only examine graduates of all medical colleges but also admit osteopaths to the physicians' and surgeons' examination. Some boards hold careful examinations which include practical laboratory and clinical tests or they mark the papers more severely, while others, especially partisan boards, are very lenient. It is particularly important, in forming conclusions based on these statistics to note for each college the states in which its graduates are not admitted to examination—information set forth with these statistics in Table D. A state board which admits to its examinations graduates of low-grade medical schools would be expected to have a higher percentage of failures.

UNDERGRADUATES AND OSTEOPATHS EXAMINED AS PHYSICIANS DURING 1922

For the last four years the few undergraduates examined have been accidental instances due evidently to imperfect credentials. In 1906, there were 703 undergraduates examined, and 342 were licensed. Colorado is now the only state which will knowingly admit nongraduates to its examinations, but only seven have been licensed in that state in sixteen years. The door has been closed, therefore, against the admission to practice of those whose medical training is known to be incomplete. At present, however, several boards register as physicians and surgeons, by examination or by reciprocity, graduates of osteopathic colleges—no one of which compares favorably with the lowest grade Class C medical college. In one of these states—Texas¹—the board refuses to admit graduates of Class C medical schools to its examinations but nevertheless continues to examine graduates of osteopathic colleges which, in fact, are nothing more than very low-grade medical schools.

RECENT GRADUATES EXAMINED DURING 1922

Table B gives the results for graduates of 1918 to 1922, inclusive, examined during 1922. This table is important, since it deals with recent graduates, and is, therefore, the fairest basis for comparison between colleges. Of all candidates examined in 1922, 3,285, or 82.3 per cent., were recent graduates, and of this number 7.3 per cent. failed, as compared with 12.3 per cent. for all candidates.

OLD PRACTITIONERS EXAMINED DURING 1922

Table C is so arranged as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1917 and previous years (third column), and for graduates of 1922 (fourth column). Of the graduates of 1917 and previous years—"old practitioners"—563 were examined, and of this number 188, or 33.4 per cent., failed, as compared with 7.3 per cent. of failures for recent graduates. The total number of these candidates is diminishing² as state licensing boards extend the provision for reciprocity, or for the endorsement, without further examination of licenses granted by other states where a physician's qualifications are otherwise satisfactory. As a rule, the states which have limited or no reciprocal relations with other states (Connecticut, Massachusetts, New York, Oregon and Rhode Island, see Table G) examined the largest number of old practitioners.

GRADUATES OF 1922 EXAMINED DURING 1922

Table C also gives the results for the graduates of 1922 who were examined during the year by the state boards, and shows that 2,138, or 53.5 per cent., of all candidates examined

(CONTINUED ON PAGE 1227)

1. See Table D on pages 1226 and 1227.
2. See Table 2 on p. 1230.

[illegible]

H = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Totals		Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number	
Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions								
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F							
																1	0										2	1						
																1	0										23	23	0	0.0	3	3		
																			1	0			0	1			30	28	2	6.7	3	3		
																											41	41	0	0.0	1	4		
1	0																								0	1	17	16	1	5.9	4	5		
							6	1			1	0								1	0						30	28	2	6.7	7	6		
							4	1					3	0													28	26	2	7.1	6	7		
							4	1	1	0		1	0														27	26	1	3.7	9	8		
2	0				2	0	5	2	1	1		1	0									2	0			1	44	33	11	25.0	14	9		
							3	0	3	1					1	0								1	0		76	74	2	2.6	8	10		
																										24	20	4	16.7	4	11			
0	1						1	1			1	0	0	1	1	0							1	1		1	30	13	17	56.7	5	12		
											1	1	0	1	2	0								1	1		22	18	4	18.2	8	13		
0	4	0	2	0							3	0	2	0			1	0					2	2	1	0	36	28	8	22.2	10	14		
0	1	0					2	0		2	0	1	0			6	0	1	0			0	1	1	0	7	110	105	5	4.5	19	15		
			3	0							1	0	2	0		1	0						0	1	1	0	3	172	163	9	5.2	24	16	
																											61	60	1	1.6	10	17		
														1	0												34	34	0	0.0	4	18		
	1	0																									48	48	0	0.0	7	19		
	1	0					1	0								4	0						1	0			23	23	0	0.0	3	20		
4	0																										30	29	1	3.3	8	21		
							2	0		1	0		1	0									1	0		1	93	91	2	2.1	14	22		
0	1	0					6	1	5	1		2	0				3	0					2	0			104	101	3	2.9	17	23		
							19	2			3	0					1	0				1	0		1	0	79	77	2	2.5	17	24		
							21	1	4	0			5	0			3	0					5	0										
																											32	32	0	0.0	6	25		
							7	0						1	0	1	0						1	1			17	6	11	64.7	6	26		
3	0						19	0	1	0		5	0	1	0	1	0					3	0	1	0	2	113	112	1	0.9	28	27		
																											56	40	16	28.6	2	28		
							9	3		1	0			12	0									2	0		115	110	5	4.3	11	29		
							2	0																			25	23	2	8.0	4	30		
							9	1								1	0									2	87	85	2	2.3	1	31		
																											86	85	1	1.2	6	32		
	1	0																									27	21	6	22.2	7	33		
1	0										1	1													1	1	24	12	12	50.0	7	34		
1	1												1	0	0	1								0	1	0	62	24	38	61.3	13	35		
5	10										1	0	0	1										1	2	0	51	50	1	2.0	10	36		
31	0						3	0			4	0	2	0										2	0		57	56	1	1.8	13	37		
40	0	1	0				1	0			1	0		1	0									3	0	1								
																											33	32	1	3.0	10	38		
							1	0					1	0		2	0			1	1					1	23	22	1	4.4	6	39		
																											12	12	0	0.0	1	40		
							12	0																			95	94	1	1.1	9	41		
							75	1						1	0												98	94	0	0.0	9	42		
							38	0																			49	48	1	2.0	5	43		
							45	0						1	0												27	23	4	14.3	2	44		
							22	4																			44	41	3	6.8	6	45		
							33	2					2	0													95	95	0	0.0	12	46		
0							79	2			1	0	3	0	1	0											27	25	2	7.5	4	47		
							22	2					1	0																				
																											48	42	6	12.5	11	48		
							5	5						1	0												37	37	0	0.0	7	49		
																											59	58	1	1.7	7	50		
							1	0																			27	27	0	0.0	3	51		
												6	0			1	0			3	0						11	11	0	0.0	4	52		
																											14	10	4	28.6	3	53		
							0	1					9	3																				
																											54	43	11	20.4	6	54		
							4	2					32	7													139	133	6	4.3	26	55		
							12	3	13	1			57	0	1	0	4	0		1	0	1	0	2	0		34	32	2	5.9	6	56		
													22	2													47	47	0	0.0	2	58		
0							14	1	6	0	1	0	60	1					1	0						2	126	121	5	4.0	20	57		
													37	0													20	19	1	5.0	10	59		
							6	1					3	0																				
																											18	18	0	0.0	5	60		
							1	0								13	0																	
2	2	0												1	0												78	49	29	37.2	15	61		
0																											23	21	2	8.7	9	62		
																											9	2	7	77.8	3	63		

TABLE A—PHYSICIANS EXAMINED

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F
	TEXAS																						
65	Baylor University College of Medicine.....																	1	0				
66	University of Texas School of Medicine.....		1	0		1	0																
	VERMONT																						
67	University of Vermont College of Medicine.....						5	3		1	0										6	0	
	VIRGINIA																						
68	Medical College of Virginia.....						2	0					1	1						0	1		
69	University of Virginia Department of Medicine.....									1	0		1	0			1	0		1	0		
	WISCONSIN																						
70	Marquette University School of Medicine.....												1	1									
	CANADA																						
71	Dalhousie University Faculty of Medicine.....																						
72	Laval University Faculty of Medicine.....																				0	1	
73	McGill University Faculty of Medicine.....				2	0							0	1					2	0	1	0	1
74	Queen's University Faculty of Medicine.....				1	0	1	0															
75	University of Alberta Faculty of Medicine.....																						
76	University of Manitoba Faculty of Medicine.....				1	0									1	0						1	0
77	University of Montreal Medical Faculty.....																		1	0			
78	University of Toronto Faculty of Medicine.....				1	0	1	0			1	0										5	0
79	Western University Medical School.....																					1	0
80	Foreign Colleges				8	4	2	0	1	3	1	0		1	1			3	9	1	1	2	0
81	Miscellaneous Medical Colleges.....	4	1		6	0	17	17	0	3	4	1	1	0	4	0	9	11					
82	Undergraduates and Osteopaths.....				32	34	8	7	25	10													
83	Totals by States.....	32	9	31	275	66	149	17	61	77	69	11	354	36	49	33	41	59	28	77	300	123	10
84	Totals — Examined — Passed.....	31	7	30	208	32	114	17	54	56	68	11	286	35	49	28	37	55	28	74	244	119	10
85	Totals — Examined — Failed.....	1	2	1	67	34	26	0	7	21	1	0	68	1	0	5	4	4	0	3	56	4	
86	Percentage of Failures.....	3.1	22.2	3.2	24.4	51.5	18.6	0.0	11.5	27.3	1.4	0.0	16.4	2.8	0.0	15.2	9.8	6.8	0.0	3.9	18.7	3.3	2
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

H = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

TABLE B—GRADUATES OF 1918 TO 1922, INCLUSIVE

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F
	ARKANSAS																						
1	University of Arkansas Medical Department.....																						
	CALIFORNIA																						
2	College of Medical Evangelists.....				21	0																	1
3	Stanford University School of Medicine.....				27	1																	
4	University of California Medical School.....				41	0																	
	COLORADO																						
5	University of Colorado School of Medicine.....					14	0																
	CONNECTICUT																						
6	Yale University School of Medicine.....				1	0		8	0										6	0		2	0
	DISTRICT OF COLUMBIA																						
7	Georgetown University School of Medicine.....									16	0										2	0	
8	George Washington University Medical School.....									14	0												
9	Howard University School of Medicine.....									12	5	1	0						0	2			
	GEORGIA																						
10	Emory University School of Medicine.....	8	0							7	0	45	0										
11	University of Georgia Medical Department.....									2	0	13	0								1	0	
	ILLINOIS																						
12	Chicago Medical School.....												10	13							1	0	
13	Hahnemann Medical College.....		0	1		1	0						12	0									
14	Loyola University School of Medicine.....											1	0									1	0
15	Northwestern University Medical School.....		1	0		1	0					1	0									2	0
16	Rush Medical College (University of Chicago).....				22	0							69	2		3	0	1	0				
17	University of Illinois College of Medicine.....				4	0				1	0		98	5	1	0	1	0	2	0		1	0
	INDIANA																						
18	Indiana University School of Medicine.....														30	0							
	IOWA																						
19	State University of Iowa College of Medicine.....														2	0		37	0				
	KANSAS																						
20	University of Kansas School of Medicine.....																18	0					
	KENTUCKY																						
21	University of Louisville Medical Department.....														1	0				21	0		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

H = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	38	49	50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Missouri		Montana		Nebraska		Nevada		New Hampshire		New Jersey		New Mexico		New York		North Carolina		North Dakota		Ohio		Oklahoma		Oregon		Pennsylvania		Rhode Island		South Carolina		South Dakota		Tennessee		Texas		Utah		Vermont		Virginia		Washington		West Virginia		Wisconsin		Wyoming		U. S. Territories and Possessions		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F

AMINED BY BOARDS DURING 1922

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50								
Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number		
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
																												0	0	0	0.0	0	1		
																	1	0			1	0						23	23	0	0.0	3	2		
																												29	28	1	3.4	2	3		
																												41	41	0	0.0	1	4		
	1	0																								0	1		16	15	1	6.3	3	5	
								5	0		1	0									1	0						24	24	0	0.0	7	6		
								3	0					3	0													24	24	0	0.0	4	7		
								2	0	1	0			1	0													19	19	0	0.0	4	8		
	2	0				2	0	5	1	1	1	1		2	0							2	0				1	0	40	31	9	22.5	12	9	
								3	0	3	1													1	0			71	69	2	2.8	7	10		
																											16	16	0	0.0	3	11			
	0	1						1	0		1	0												1	1		1	0	28	13	15	53.6	5	12	
											1	1		0	1	2	0											17	16	1	5.0	6	13		
								1	0		3	0						1	0									29	25	4	13.8	7	14		
6	0	4	0	2	0		1	0			1	0					6	0	1	0			2	2	1	0	2	106	102	4	3.8	17	15		
1	0	1	0					1	0		2	0		1	0									1	0	6	0	160	155	5	3.1	21	16		
			1	0						2	0	1	0														3	0	55	54	1	1.8	6	17	
																1	0																		
		1	0																									32	32	0	0.0	3	18		
																	3	0							1	0									
	4	0																																	
								2	0						1	0									1	0									
																												26	26	0	0.0	5	21		
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50								

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan				
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F			
22	LOUISIANA Tulane University of Louisiana School of Medicine	11	0	2	0	3	0			1	0			5	0				46	0						
23	MARYLAND Johns Hopkins University Medical Department					5	0			2	1	1	0	1	0					41	0	5	0	4	0	
24	Univ. of Md. School of Med. and Coll. of P. & S.							3	0	1	0	1	0	2	0					25	0	2	1			
25	MASSACHUSETTS Boston University School of Medicine																		3	0			19	0		
26	College of Physicians and Surgeons, Boston											1	1					1	0			2	3			
27	Harvard University Medical School				1	0	1	0		5	0		1	0	1	0			3	0			38	0	2	0
28	Middlesex College of Medicine and Surgery.—N.							13	1										3	0			27	15		
29	Tufts College Medical School							5	0							1	0		8	0			64	1		
30	MICHIGAN Detroit College of Medicine and Surgery																									
31	University of Michigan Medical School			1	0							1	0	1	0								20	1		
32	MINNESOTA University of Minnesota Medical School					2	0					0	1			2	0		1	0			2	0	65	0
33	MISSOURI Kansas City College of Medicine and Surgery.—N.				14	1			0	2	2	1														
34	Kansas City University of Phys. and Surgs.—N.							2	8	2	0							2	1				2	2		
35	St. Louis College of Physicians and Surgeons							1	8	8	2							2	1				5	12		
36	St. Louis University School of Medicine				2	1								1	0				1	0						
37	Washington University School of Medicine				2	0	1	0						1	0			2	0							
38	NEBRASKA Creighton University College of Medicine													2	0			1	0							
39	University of Nebraska College of Medicine				1	0																				
40	NEW YORK Albany Medical College																									
41	Columbia University College of Phys. and Surgs.							4	0													5	0			
42	Cornell University Medical College							1	0					1	0											
43	Long Island College Hospital							1	0																	
44	New York Homeo. Med. Coll. & Flower Hosp.—H.																									
45	Syracuse University College of Medicine													2	1											
46	University and Bellevue Hospital Medical College				1	0				1	0						1	0					2	0		
47	University of Buffalo Medical Department							1	0		1	0														
48	OHIO Eclectic Medical College.—E.				2	0	1	0		1	0				1	0							2	1		
49	Ohio State University College of Medicine												1	0	1	0						1	0			
50	University of Cincinnati College of Medicine				3	1																				
51	Western Reserve University School of Medicine													2	0											
52	OKLAHOMA University of Oklahoma School of Medicine																									
53	OREGON University of Oregon Medical School				1	0																				
54	PENNSYLVANIA Hahnemann Medical College and Hospital.—H.			0	1					2	0											2	0			
55	Jefferson Medical College	2	0			1	0			4	0	3	0				1	0		1	0		1	0		
56	Temple University School of Medicine							1	0	5	0															
57	University of Pennsylvania School of Medicine				4	0				1	1	3	0		2	0										
58	University of Pittsburgh School of Medicine																							1	0	
59	Woman's Medical College of Pennsylvania				1	0			1	0												1	0		1	
60	SOUTH CAROLINA Medical College of the State of South Carolina													1	0											
61	TENNESSEE Meharry Medical College	3	0											1	0											
62	University of Tennessee College of Medicine	1	0		1	0								0	3			0	4	1	2	1	1			
63	University of West Tennessee Medical Department																					2	0			
64	Vanderbilt University School of Medicine	1	0																							
65	TEXAS Baylor University College of Medicine																									
66	University of Texas School of Medicine			1	0		1	0																		
67	VERMONT University of Vermont College of Medicine							5	2		1	0														
68	VIRGINIA Medical College of Virginia							1	0																	
69	University of Virginia Department of Medicine									1	0			1	1											
70	WISCONSIN Marquette University School of Medicine																									
71	CANADA Dalhousie University Faculty of Medicine																									
72	Laval University Faculty of Medicine																									
73	McGill University Faculty of Medicine					2	0																			
74	Queen's University Faculty of Medicine				1	0	1	0						0	1					2	0	1	0	2	1	
75	University of Alberta Faculty of Medicine																									
76	University of Manitoba Faculty of Medicine																									
77	University of Montreal Medical Faculty														1	0								1	0	
78	University of Toronto Faculty of Medicine																		1	0						
79	Western University Medical School																							1	0	
80	Foreign Colleges				3	2	2	0	1	2	1	0														
81	Miscellaneous Medical Colleges				17	4			1	0	1	0	2	0												
82	Undergraduates and Osteopaths																									
83	Totals by States	26	7	22	176	46	83	17	58	24	68	6	310	33	48	30	36	51	24	72	234	115				
84	Totals — Examined — Passed	26	5	21	167	22	73	17	51	24	68	6	275	32	48	26	32	50	24	70	196	112				
85	Totals — Examined — Failed	0	2	1	9	24	10	0	7	0	0	0	35	1	0	4	4	1	0	2	38	3				
86	Percentage of Failures	0.0	28.6	4.5	5.1	52.2	12.0	0.0	12.0	0.0	0.0	0.0	11.3	3.0	0.0	13.3	11.1	2.0	0.0	2.8	16.2	2.6	0			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			

H = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50								
	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number		
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F		
0	1	0						6	0	5	1			2	0			3	0						2	0			90	89	1	1.1	13	22	
						2	0	14	1			3	0	4	0			1	0			1	0					88	86	2	2.3	14	23		
						1	0	20	1	4	0			3	0			1	0		1	0						74	72	2	2.7	16	24		
								7	0							1	0	1	0									32	32	0	0.0	5	25		
3	0				1	0	2	0	15	0	1	0	5	0	1	0	1	0		4	0		1	0	1	0	2	0	102	102	0	0.0	28	27	
					3	0	2	0	7	2			1	0			11	0								1	0	56	40	16	28.6	2	28		
								7	2																			107	104	3	2.8	11	29		
								2	0					1	0												2	0	23	22	1	4.4	2	30	
								9	1					1	0													83	82	1	1.2	8	31		
	1	0																										85	84	1	1.2	6	32		
1	0			1	0							1	0					1	0							1	1	25	20	5	20.0	7	33		
1	1			2	0							1	0					0	1					1	1	0	1	2	0	57	24	33	22.8	11	35
5	7							3	0			4	0	2	0										2	0		46	45	1	2.2	9	36		
29	0							1	0			1	0	1	0										3	0		52	52	0	0.0	10	37		
39	0																																		
		1	0	21	0			1	0				1	0			2	0		1	1							31	30	1	3.2	8	38		
			18	0				1	0		1	0					1	0										22	22	0	0.0	5	39		
					1	0			12	0													1	0				12	12	0	0.0	1	40		
								72	1																			85	84	1	1.2	6	41		
				1	0			38	0						2	0						2	0					46	46	0	0.0	7	42		
								45	0																			46	46	0	0.0	2	43		
								19	2																			22	20	2	9.1	2	44		
								33	2					1	0													42	39	3	7.1	5	45		
0								79	0					2	0	1	0		1	0								90	90	0	0.0	9	46		
								22	2					1	0													27	25	2	7.5	4	47		
								4	5			22	0	1	0													44	38	6	13.6	9	48		
				1	0							31	0		1	0								1	0			37	37	0	0.0	7	49		
								1	0			43	0												1	0		59	58	1	1.7	7	50		
												25	0											1	0	1	0	27	27	0	0.0	3	51		
													6	0						3	0							9	9	0	0.0	2	52		
								0	1					9	3													14	10	4	28.6	3	53		
						2	1	3	2					32	7	0	1	0	4	0		1	0	1	0	2	0		130	127	3	2.3	24	55	
						1	0	12	2	13	1			55	0						1	0	1	0	2	0		34	32	2	5.9	6	56		
												2	0	22	2													114	112	2	1.8	18	57		
0						5	0	12	0	6	0			57	1					1	0						47	47	0	0.0	2	58			
												10	0	37	0												17	16	1	5.9	9	59			
						1	0	6	1					3	0																				
								1	0								13	0										15	15	0	0.0	3	60		
2	2	0						2	1			3	0	1	1			22	0	2	0							57	42	15	26.3	12	61		
1	0																	10	0	1	0						19	18	1	5.3	7	62			
																												8	2	6	75.0	2	63		
								3	0					1	0			13	0									18	18	0	0.0	4	64		
								2	1										21	0								24	23	1	4.2	3	65		
								3	0									1	0	41	0						48	48	0	0.0	5	66			
					1	0		7	1												15	0						40	37	3	7.5	7	67		
2	0		1	0				2	0	3	1							1	0				25	0		1	0	37	35	2	5.4	8	68		
								1	0														13	0		2	0	23	23	0	0.0	9	69		

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1918-1922					Graduates of 1917 and Previous					Graduates of 1922				
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States
ARKANSAS																					
1	University of Arkansas Medical Department.....	2	1	1	50.0	2	0	0	0	0.0	0	2	1	1	50.0	2	0	0	0	0.0	0
CALIFORNIA																					
2	College of Medical Evangelists.....	23	23	0	0.0	3	23	23	0	0.0	3	0	0	0	0.0	0	23	23	0	0.0	3
3	Stanford University School of Medicine.....	30	28	2	6.7	3	29	28	1	3.4	2	1	0	1	100.0	1	27	27	0	0.0	2
4	University of California Medical School.....	41	41	0	0.0	1	41	41	0	0.0	1	0	0	0	0.0	0	39	39	0	0.0	1
COLORADO																					
5	University of Colorado School of Medicine.....	17	16	1	5.9	4	16	15	1	6.3	3	1	1	0	0.0	1	16	15	1	6.3	3
CONNECTICUT																					
6	Yale University School of Medicine.....	30	28	2	6.7	7	24	24	0	0.0	7	6	4	2	33.3	3	16	16	0	0.0	4
DISTRICT OF COLUMBIA																					
7	Georgetown University School of Medicine.....	28	26	2	7.1	6	24	24	0	0.0	4	4	2	2	50.0	3	14	14	0	0.0	3
8	George Washington University Medical School....	27	26	1	3.7	9	19	19	0	0.0	4	8	7	1	12.5	6	13	13	0	0.0	2
9	Howard University School of Medicine.....	44	33	11	25.0	14	40	31	9	22.5	12	4	2	2	50.0	4	5	5	0	0.0	3
GEORGIA																					
10	Emory University School of Medicine.....	76	74	2	2.6	8	71	69	2	2.8	7	5	5	0	0.0	3	63	62	1	1.6	6
11	University of Georgia Medical Department.....	24	20	4	16.7	4	16	16	0	0.0	3	8	4	4	50.0	2	13	13	0	0.0	0
ILLINOIS																					
12	Chicago Medical School.....	30	13	17	56.7	5	28	13	15	53.6	5	2	0	2	100.0	1	23	10	13	36.5	3
13	Hahnemann Medical College.....	22	18	4	18.2	8	17	16	1	5.9	6	5	2	3	60.0	5	13	13	0	0.0	4
14	Loyola University School of Medicine.....	36	28	8	22.2	10	29	25	4	13.8	7	7	3	4	57.1	5	21	20	1	4.8	3
15	Northwestern University Medical School.....	110	105	5	4.5	19	106	102	4	3.8	17	4	3	1	25.0	3	97	94	3	3.1	12
16	Rush Medical College (University of Chicago)....	172	163	9	5.2	24	160	155	5	3.1	21	12	8	4	33.3	9	134	129	5	3.7	14
17	University of Illinois College of Medicine.....	61	60	1	1.6	10	55	54	1	1.8	6	6	6	0	0.0	5	55	54	1	1.8	6
INDIANA																					
18	Indiana University School of Medicine.....	34	34	0	0.0	4	32	32	0	0.0	3	2	2	0	0.0	2	30	30	0	0.0	1
IOWA																					
19	State University of Iowa College of Medicine....	48	48	0	0.0	7	43	43	0	0.0	4	5	5	0	0.0	4	40	40	0	0.0	3
KANSAS																					
20	University of Kansas School of Medicine.....	23	23	0	0.0	3	22	22	0	0.0	2	1	1	0	0.0	1	22	22	0	0.0	3
KENTUCKY																					
21	University of Louisville Medical Department.....	30	29	1	3.3	8	26	26	0	0.0	5	4	3	1	25.0	4	23	23	0	0.0	3
LOUISIANA																					
22	Tulane University of Louisiana School of Medicine	93	91	2	2.1	14	90	89	1	1.1	13	3	2	1	33.3	3	64	63	1	1.6	9
MARYLAND																					
23	Johns Hopkins University Medical Department....	104	101	3	2.9	17	88	86	2	2.3	14	16	15	1	6.3	7	46	45	1	2.3	6
24	Univ. of Md. School of Med. and Coll. of P. & S	79	77	2	2.5	17	74	72	2	2.7	16	5	5	0	0.0	4	52	52	0	0.0	10
MASSACHUSETTS																					
25	Boston University School of Medicine.....	32	32	0	0.0	6	32	32	0	0.0	6	0	0	0	0.0	0	25	25	0	0.0	3
26	College of Physicians and Surgeons, Boston.....	17	6	11	64.7	6	8	4	4	50.0	3	9	2	7	77.8	4	1	1	0	0.0	1
27	Harvard University Medical School.....	113	112	1	0.9	28	102	102	0	0.0	28	11	10	1	9.1	7	55	55	0	0.0	13
28	Middlesex College of Medicine and Surgery.—N. ...	56	40	16	28.6	2	56	40	16	28.6	2	0	0	0	0.0	0	27	20	7	25.9	2
29	Tufts College Medical School.....	115	110	5	4.3	11	107	104	3	2.8	11	8	6	2	25.0	5	67	66	1	1.5	4
MICHIGAN																					
30	Detroit College of Medicine and Surgery.....	25	23	2	8.0	4	23	22	1	4.4	2	2	1	1	50.0	2	21	20	1	4.8	1
31	University of Michigan Medical School.....	87	85	2	2.3	11	83	82	1	1.2	8	4	3	1	25.0	4	68	68	0	0.0	4
MINNESOTA																					
32	University of Minnesota Medical School.....	86	85	1	1.2	6	85	84	1	1.2	6	1	1	0	0.0	1	76	76	0	0.0	3
MISSOURI																					
33	Kansas City College of Medicine and Surgery.—N	27	21	6	22.2	7	25	20	5	20.0	7	2	1	1	50.0	2	18	16	2	11.1	3
34	Kansas City University of Phys. and Surgs.—N. ...	24	12	12	50.0	7	24	12	12	50.0	7	0	0	0	0.0	0	11	5	6	36.3	3
35	St. Louis College of Physicians and Surgeons.....	62	24	38	61.3	13	57	24	33	22.8	11	5	0	5	100.0	3	28	14	14	50.0	7
36	St. Louis University School of Medicine.....	51	50	1	2.0	10	46	45	1	2.2	9	5	5	0	0.0	3	36	36	0	0.0	7
37	Washington University School of Medicine.....	57	56	1	1.8	13	52	52	0	0.0	10	5	4	1	20.0	4	36	36	0	0.0	5
NEBRASKA																					
38	Creighton University College of Medicine.....	33	32	1	3.0	10	31	30	1	3.2	8	2	2	0	0.0	2	22	22	0	0.0	3
39	University of Nebraska College of Medicine.....	23	22	1	4.4	6	22	22	0	0.0	5	1	0	1	100.0	1	18	18	0	0.0	1
NEW YORK																					
40	Albany Medical College.....	12	12	0	0.0	1	12	12	0	0.0	1	0	0	0	0.0	0	12	12	0	0.0	1
41	Columbia University College of Phys. and Surgs.	95	94	1	1.1	9	85	84	1	1.2	6	10	10	0	0.0	7	54	53	1	1.9	1
42	Cornell University Medical College.....	48	48	0	0.0	9	46	46	0	0.0	7	2	2	0	0.0	2	31	31	0	0.0	2
43	Long Island College Hospital.....	49	48	1	2.0	5	46	46	0	0.0	2	3	2	1	33.3	3	43	43	0	0.0	2
44	New York Homeo. Med. Coll. & Flower Hosp.—H	27	23	4	14.3	2	22	20	2	9.1	2	5	3	2	40.0	2	18	17	1	5.6	1
45	Syracuse University College of Medicine.....	44	41	3	6.8	6	42	39	3	7.1	5	2	2	0	0.0	2	32	30	2	6.2	1
46	University and Bellevue Hospital Medical College.	95	95	0	0.0	12	90	90	0	0.0	9	5	5	0	0.0	5	79	79	0	0.0	5
47	University of Buffalo Medical Department.....	27	25	2	7.5	4	27	25	2	7.5	4	0	0	0	0.0	0	20	19	1	5.0	1
OHIO																					
48	Eclectic Medical College.—E.	48	42	6	12.5	11	44	38	6	13.6	9	4	4	0	0.0	4	42	37	5	11.9	9
49	Ohio State University College of Medicine.....	37	37	0	0.0	7	37	37	0	0.0	7	0	0	0	0.0	0	32	32	0	0.0	2
50	University of Cincinnati College of Medicine.....	59	58	1	1.7	7	59	58	1	1.7	7	0	0	0	0.0	0	46	46	0	0.0	3
51	Western Reserve University School of Medicine....	27	27	0	0.0	3	27	27	0	0.0	3	0	0	0	0.0	0	25	25	0	0.0	1
OKLAHOMA																					
52	University of Oklahoma School of Medicine.....	11	11	0	0.0	4	9	9	0	0.0	2	2	2	0	0.0	2	2	2	0	0.0	1
OREGON																					
53	University of Oregon Medical School.....	14	10	4	28.6	3	14	10	4	28.6	3	0	0	0	0.0	0	14	13	1	7.2	2
PENNSYLVANIA																					
54	Hahnemann Medical College and Hospital.—H. ...	54	43	11	20.4	6	52	41	11	21.1	6	2	2	0	0.0	2	1	1	0	0.0	1
55	Jefferson Medical College.....	139	133	6	4.3	26	130	127	3	2.3	24	9	6	3	33.3	7	34	33	1	8.8	14
56	Temple University School of Medicine.....	34	32	2	5.9	6	34	32	2	5.9	6	0	0	0	0.0	0	2	2	0	0.0	1
57	University of Pennsylvania School of Medicine....	126	121	5	4.0	20	114	112	2	1.8	18	12	9	3	25.0	7	16	16	0	0.0	8
58	University of Pittsburgh School of Medicine.....	47	47	0	0.0	2	47	47	0	0.0	2	0	0	0	0.0	0	17	17	0	0.0	3
59	Woman's Medical College of Pennsylvania.....	20	19	1	5.0	10	17	16	1	5.9	9	3	3	0	0.0	2	6	6	0	0.0	1
SOUTH CAROLINA																					
60	Medical College of the State of South Carolina....	18	18	0	0.0	5	15	15	0	0.0	3	3	3	0	0.0	2	21	19	2	9.5	3
TENNESSEE																					
61	Meharry Medical College.....	78	49	29	37.2	15	57	42	15	26.3	12	21	7	14	66.7	7	32	31	1	15.6	7
62	University of Tennessee College of Medicine.....	23	21	2	8.7	9	19	18	1	5.3	7	4	3	1	25.0	2	13	13	0	0.0	5
63	University of West Tennessee Medical Department	9	2	7	77.8	3	8	2	6	75.0	2	1	0	1	100.0	1	2	0	2	100.0	1
64	Vanderbilt University School of Medicine.....	22	22	0	0.0	7	18	18	0	0.0	4	4	4	0	0.0	4	13	13	0	0.0	1
TEXAS																					
65	Baylor University College of Medicine.....	27	26	1	3.6	4	24	23	1	4.2	3	3	3	0	0.0	2	22	22	0	0.0	2
66	University of Texas School of Medicine.....	50	50	0	0.0	6	48	48	0	0.0	5	2	2	0	0.0	1	41	41	0	0.0	1

NAME OF COLLEGE	Graduates of All Years					Graduates of 1918-1922					Graduates of 1917 and Previous					Graduates of 1922					Marginal Number
	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
VERMONT																					
University of Vermont College of Medicine.....	44	40	4	9.1	8	40	37	3	7.5	7	4	3	1	25.0	4	18	18	0	0.0	4	67
VIRGINIA																					
Medical College of Virginia.....	42	39	3	7.1	10	37	35	2	5.4	8	5	4	1	20.0	5	26	26	0	0.0	3	68
University of Virginia Department of Medicine....	24	24	0	0.0	9	23	23	0	0.0	9	1	1	0	0.0	1	10	10	0	0.0	3	69
WISCONSIN																					
Marquette University School of Medicine.....	24	22	2	8.3	2	22	20	2	9.1	2	2	2	0	0.0	2	20	19	1	5.0	1	70
CANADA																					
Dalhousie University Faculty of Medicine.....	2	2	0	0.0	2	1	1	0	0.0	1	1	1	0	0.0	1	0	0	0	0.0	0	71
Laval University Faculty of Medicine.....	1	0	1	100.0	1	0	0	0	0.0	0	1	0	1	100.0	1	0	0	0	0.0	0	72
McGill University Faculty of Medicine.....	32	27	5	15.6	12	23	18	5	21.8	9	9	9	0	0.0	5	4	4	0	0.0	3	73
Queen's University Faculty of Medicine.....	16	16	0	0.0	6	10	10	0	0.0	3	6	6	0	0.0	3	1	1	0	0.0	1	74
University of Alberta Faculty of Medicine.....	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	75
University of Manitoba Faculty of Medicine.....	3	3	0	0.0	3	2	2	0	0.0	2	1	1	0	0.0	1	0	0	0	0.0	0	76
University of Montreal Medical Faculty.....	1	1	0	0.0	1	1	1	0	0.0	1	0	0	0	0.0	0	0	0	0	0.0	0	77
University of Toronto Faculty of Medicine.....	24	21	3	12.5	9	11	9	2	18.2	4	13	12	1	7.7	8	0	0	0	0.0	0	78
Western University Medical School.....	3	3	0	0.0	3	1	1	0	0.0	1	2	2	0	0.0	2	0	0	0	0.0	0	79
Foreign Colleges	186	110	76	40.9	30	80	49	31	38.7	23	106	61	45	42.5	23	1	1	0	0.0	1	80
Miscellaneous Medical Colleges.....	214	140	74	34.1	38	65	55	10	15.4	13	149	85	64	43.0	36	30	29	1	3.3	5	81
Undergraduates and Osteopaths.....	145	83	62	42.8	10	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	82
Totals by States.....	3093					3285					563					2138					83
Totals — Examined — Passed.....		3501					3043					375					2061				84
Totals — Examined — Failed.....			492					242					188					77			85
Percentage of Failures.....				12.3					7.3					33.4					3.1		86

H = Homeopathic; E = Eclectic; N = Nondescript.

(CONTINUED FROM PAGE 1219)

during the year, graduated in 1922, including 5 who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 2,529 students last year; therefore, 84.5 per cent. of all graduated in 1922 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which accounts for some of the remaining 14.7 per cent. Of the 1922 graduates examined, 77, or 3.1 per cent., failed, as compared with 3.7 per cent. in 1921, 7.2 per cent. in 1920, 4.2 per cent. in 1919, and 5.5 per cent. in 1918.

NONRECOGNITION OF MEDICAL COLLEGES

Table D shows for each college, from official reports, the states in which its diplomas are not given unqualified recognition. Nonrecognition is expressed by different terms in different states. Some boards list colleges as "not in good standing"; some give them as "not reputable"; in New York full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group 1 having full recognition. This table also shows the latest rating given to each college by the Council on Medical Education and Hospitals.

From the point of view of the prospective student who may be selecting a medical college, the facts in Table D are of extreme importance. There are 61, or 75.3 per cent. of all medical colleges which have complete recognition in all states. There are 7 others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining 13 colleges, he will find on graduation that his diploma is not recognized in from 9 to 47 states.

Without the information published in Table D, these state board statistics would be not only incomplete—they would be actually misleading. For example, 56 graduates of the Middlesex College of Medicine and Surgery were examined in 1922. Of these 40 passed and 16, or 28.6 per cent., failed. Note, however, that all these candidates were examined in two states, while graduates of this school are reported as not admitted to the examinations for licensure in 46 states!

During the ten years this table has been published, the percentages of fully recognized colleges were, respectively, 29.0, 32.3, 43.7, 65.6, 57.3, 61.3, 67.8, 71.6 and 75.3. This indicates an improvement in the medical colleges. Of the 50 states—counting in Alaska and the District of Columbia—47 state licensing boards, to some extent at least, are now

utilizing their legal power to refuse recognition to medical colleges which do not meet the requirements in the respective states. In the other three states, however, either the boards do not have the authority to enforce reasonable standards, or they are not exercising it. In Connecticut the regular and homeopathic boards do not recognize low grade colleges but the eclectic board has evidently assumed the right to recognize any and all colleges not recognized by the other boards.

Arizona reports four colleges not recognized, Wyoming reports three, and Nevada reports one, while Massachusetts and the District of Columbia do not report any as not in good standing. It is evident that if the graduates of low standard medical colleges are not eligible for license in the majority of states, they will flock to these few which still grant liberal recognition. The following states, therefore—Arizona, Connecticut, Massachusetts, Nevada, Wyoming and the District of Columbia—will remain the dumping grounds for the output of low grade medical colleges until the licensing boards obtain and exercise the needed authority to bar them.

It is reported that no examinations were held during the year by the Arkansas Homeopathic Board. There are now only two remaining homeopathic colleges in the United States and none in or near Arkansas.

TABLE 1.—Recognition of Medical Colleges (Based on Table D)

	No. of Colleges
Recognized by all state boards.....	61
Not recognized by 1 or 2 state boards.....	7
Not recognized by 9 to 17 state boards.....	6
Not recognized by 44 to 47 state boards.....	7
Total.....	81

The Arkansas eclectic board still examines the graduates of the Kansas City College of Medicine and Surgery, a nominally eclectic affair which is not recognized in 44 other states. This board, however, is not authorized nor does it pretend to examine other than graduates of eclectic colleges. In Connecticut, however, during 1922 the eclectic board of medical examiners licensed by examination 55 applicants, only 8 of whom are found to be graduates of eclectic colleges. Of the 47 other applicants examined, only 2 were graduates of medical schools which are recognized, one each by the regular and homeopathic boards of medical examiners. It is interesting to note, also, that of these regular applicants 11

(CONTINUED ON PAGE 1230)

38	St. Louis University School of Medicine.....	A																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
----	--	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

the medical colleges give only the first two years of the medical course.

* Ten medical colleges give only the first two years of the course.

† Classification revised to April 15, 1923.

1. Formerly the Chicago Hospital College of Medicine, Fort Dearborn Hospital School,"

2. This college claims to be an eclectic college, but is reported as not recognized by the National Eclectic Medical Association. It is an offshoot of the Eclectic Medical University, an institution which during its existence was rated in Class C. The new college has refused inspection.

3. Formerly the Central College of Osteopathy; in 1917 became the Central College Medical Department; present title in 1918.

(x) According to official reports the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to admit to their examinations graduates of, the colleges marked by this letter—x.

(CONTINUED ON PAGE 1227)

claimed graduation from the St. Louis College of Physicians and Surgeons, a regular college not recognized by 47 states. It appears, therefore, that graduates who are not eligible to take the Connecticut regular medical board's examination need only apply to the eclectic board and be accepted! Furthermore, the list of those registered contains the names of 18 for whom we have no evidence that they graduated from any bona fide medical school!

STUDY OF TOTALS AND PERCENTAGES

A study of totals and percentages (see Table 2) as compared with previous years is of interest. The number examined in 1922 was 814 less than in 1920, the decrease being due to the small "war class"—2,529—which graduated in 1922. It is the smallest number examined since 1918. The fluctuations indicate similar fluctuations in the numbers of graduates in the various years. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables G, H, I, J, K and L. By all methods—examination, reciprocity under exemption, etc., 5,497 physicians were licensed during 1922, 851 less than in 1921, 1,060 less than in 1920, and 1,087 less than in 1919, but 1,312 more than in 1918, and 2,368 less than in 1906, when 7,865 physicians were licensed.

STUDY OF LARGER COLLEGES

Table E is also based on the three large tables, and gives the results of state board examinations as they affect the twenty-two larger medical colleges. Although these colleges represent 31.4 per cent. of the seventy medical colleges in the United States having graduates examined in 1922, they furnished 58.4 per cent. of all candidates for license coming from medical schools of the United States. The table shows also that the graduating of large classes by a medical college does not prove excellence of teaching, since four of these have high failure percentages.

TABLE E.—Colleges Having Fifty or More Examined

COLLEGES	Graduates of All Years					Graduates of 1918-1922					Graduates of 1917 and Previous					Graduates of 1922					Marginal No., Table A
	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	
Rush Medical College.....	172	163	9	5.2	24	160	155	5	3.1	21	12	8	4	33.3	9	134	129	5	3.7	14	16
Jefferson Medical College.....	139	133	6	4.3	26	130	127	3	2.3	24	9	6	3	33.3	7	34	33	1	8.8	14	55
University of Pennsylvania School of Medicine...	126	121	5	4.0	20	114	112	2	1.8	18	12	9	3	25.0	7	16	16	0	0.0	8	57
Tufts College Medical School.....	115	110	5	4.3	11	107	104	3	2.8	11	8	6	2	25.0	5	67	66	1	1.5	4	29
Harvard University Medical School.....	113	112	1	0.9	28	102	102	0	0.0	28	11	10	1	9.1	7	55	55	0	0.0	13	27
Northwestern University Medical School.....	110	105	5	4.5	19	106	102	4	3.8	17	4	3	1	25.0	3	97	94	3	3.1	12	15
Johns Hopkins University Medical Department..	104	101	3	2.9	17	88	86	2	2.3	14	16	15	1	6.3	7	46	45	1	2.3	9	23
Columbia University College of Phys. and Surgs.	95	94	1	1.1	9	85	84	1	1.2	6	10	10	0	0.0	7	54	53	1	1.9	1	41
University and Bellevue Hosp. Med. College....	95	95	0	0.0	12	90	90	0	0.0	9	5	5	0	0.0	5	79	79	0	0.0	5	46
Tulane University School of Medicine.....	93	91	2	2.1	14	90	89	1	1.1	13	3	2	1	33.3	3	64	63	1	1.6	9	22
University of Michigan Medical School.....	87	85	2	2.3	11	83	82	1	1.2	8	4	3	1	25.0	4	68	68	0	0.0	4	31
University of Minnesota Medical School.....	86	85	1	1.2	6	85	84	1	1.2	6	1	1	0	0.0	1	76	76	0	0.0	3	32
Univ. of Md. School of Med. and Coll. of P. & S.	79	77	2	2.5	17	74	72	2	2.7	16	5	5	0	0.0	4	52	52	0	0.0	10	24
Meharry Medical College.....	78	49	29	37.2	15	57	42	15	26.3	12	21	7	14	66.7	7	32	31	1	15.6	7	61
Emory University Medical College.....	76	74	2	2.6	8	71	69	2	2.8	7	5	5	0	0.0	3	63	62	1	1.6	6	10
St. Louis College of Physicians and Surgeons...	62	24	38	61.3	13	57	24	33	22.8	11	5	0	5	100.0	3	28	14	14	50.0	7	35
University of Illinois College of Medicine.....	61	60	1	1.6	10	55	54	1	1.8	6	6	6	0	0.0	5	55	54	1	1.8	6	17
University of Cincinnati College of Medicine....	59	58	1	1.7	7	59	58	1	1.7	7	0	0	0	0.0	0	46	46	0	0.0	3	50
Washington University Medical School.....	57	56	1	1.8	13	52	52	0	0.0	10	5	4	1	20.0	4	36	36	0	0.0	5	37
Middlesex College of Medicine and Surgery.....	56	40	16	28.6	2	56	40	16	28.6	2	0	0	0	0.0	0	27	20	7	25.9	2	28
Hahnemann Med. Coll. and Hosp., Philadelphia.	54	43	11	20.4	6	52	41	11	21.1	6	2	2	0	0.0	2	1	1	0	0.0	1	54
St. Louis University School of Medicine.....	51	50	1	2.0	10	46	45	1	2.2	9	5	5	0	0.0	3	36	36	0	0.0	7	36
Totals.....	1968	1826	142	7.2	....	1819	1714	105	5.8	....	149	112	37	24.8	....	1166	1130	37	3.2		

This table is interesting, since it gives data relating to the 22 medical colleges having over fifty graduates examined arranged according to the number. This allows of comparison between colleges having classes of nearly equal size. Rush Medical College had the largest number of graduates examined last year. The position was held by Jefferson Medical College from 1919 to 1921; by the Chicago College of Medicine and Surgery from 1913 to 1918, inclusive, by the University of Illinois College of Medicine in 1912. The higher places from the standpoint of the numbers examined, however, do not always mean the higher rank from the standpoint of scholarship as evidenced by the percentages of failures. The four highest failure percentages are for St. Louis College of Physicians and Surgeons, 61.3; Meharry Medical College, 37.2; Middlesex College of Medicine and Surgery, 28.6, and Hahnemann Medical

TABLE 2.—Results for This and Previous Years

Year	All Candidates Examined				Recent Graduates		Older Graduates		Nonde-script		Registered with-out Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	959	6371
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7370
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7239
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	.....	.....	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	.....	.....	1362	5423
1918	3637	3154	483	13.3	2984	9.3	479	30.5	.....	.....	1031	4185
1919	4736	4060	676	14.3	3904	10.5	766	30.8	66	47.0	2521	6584
1920	4787	4053	734	15.3	3984	11.5	738	33.2	65	50.8	2504	6557
1921	4807	4211	596	12.4	4046	7.8	673	37.3	88	33.0	2137	6348
1922	3993	3501	492	12.3	3285	7.4	563	33.3	83	49.7	1996	5497

TOTALS EXAMINED IN FIVE YEARS

Table F shows the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of THE JOURNAL (Aug. 19, 1922, p. 637, Table 11) shows—what would be expected—that the states having the several largest numbers of medical graduates examined the largest number of physicians. New York leads, having examined 3,951 candidates in five years, followed by Illinois with 2,228. Altogether, 21,960 physicians were examined by state boards in five years, an average of 4,392 each year.

TOTAL REGISTRATION IN 1922

The tables thus far described have referred only to the results of examinations and to those registered on that basis. Table G, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether 5,497 physicians were registered by all methods during 1922, as compared with 6,348 in 1921, 6,557 in 1920, 6,584 in 1919, and 4,185 in 1918. The total registered in 1918—4,185—was the lowest number registered in any year since the publication of these statistics was begun, owing undoubtedly to the war. In 1919 the total increased by 2,399 and was the largest number since 1912. There has been a steady

TABLE F.—Physicians Examined by State Boards
1918 to 1922, Inclusive

STATES	1918		1919		1920		1921		1922		Totals				
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected	
Alabama.....	20	0	23	12	34	2	37	3	31	1	172	145	27	15.7	
Arizona.....	33	8	48	5	33	14	6	10	7	2	166	127	39	23.5	
Arkansas.....	68	4	70	7	48	28	46	6	30	1	308	262	46	14.9	
California.....	203	71	109	56	150	34	184	56	208	67	1,138	854	284	24.9	
Colorado.....	44	10	57	16	56	46	44	16	32	34	355	233	122	34.4	
Connecticut.....	39	14	94	24	97	26	145	27	114	26	606	489	117	19.3	
Delaware.....	10	1	19	1	6	3	8	0	17	0	65	60	5	7.7	
Dist. of Columbia...	37	4	51	6	61	5	42	11	54	7	278	245	33	11.9	
Florida.....	21	8	64	17	72	18	50	24	56	21	351	263	88	25.1	
Georgia.....	48	2	60	5	70	6	68	0	68	1	328	314	14	4.2	
Idaho.....	16	0	31	0	27	2	14	0	11	0	101	99	2	2.0	
Illinois.....	367	57	475	96	404	66	348	61	286	68	2,228	1,880	348	15.6	
Indiana.....	43	6	34	0	64	0	65	0	35	1	248	241	7	2.8	
Iowa.....	50	1	78	4	76	2	61	0	49	0	321	314	7	2.2	
Kansas.....	20	0	32	3	32	2	46	1	28	5	169	158	11	6.5	
Kentueky.....	40	2	31	7	30	4	54	5	37	4	214	192	22	10.3	
Louisiana.....	50	6	80	6	81	2	74	7	55	4	365	340	25	6.8	
Maine.....	27	3	43	3	24	1	35	2	28	0	166	157	9	5.4	
Maryland.....	54	5	145	11	107	11	123	7	74	3	540	503	37	6.9	
Massachusetts...	228	18	305	41	217	69	225	93	244	56	1,496	1,219	277	18.4	
Michigan.....	97	4	52	0	161	2	176	2	119	4	617	605	12	1.9	
Minnesota.....	68	0	98	0	90	4	120	1	107	3	491	483	8	1.6	
Mississippi.....	12	0	18	3	30	1	15	2	27	2	110	102	8	7.3	
Missouri.....	143	21	136	1	117	5	132	12	107	16	690	635	55	8.0	
Montana.....	20	7	26	12	25	3	17	2	11	2	125	99	26	20.8	
Nebraska.....	44	1	102	5	27	0	76	3	42	0	300	291	9	3.0	
Nevada.....	5	1	13	0	14	2	3	1	13	1	53	48	5	9.4	
New Hampshire.....	4	2	5	0	6	1	4	1	12	0	35	31	4	11.4	
New Jersey.....	16	1	61	1	38	1	26	3	25	10	182	166	16	8.8	
New Mexico.....	2	0	2	0	3	0	1	0	0	0	8	8	0	0.0	
New York.....	456	117	627	189	703	246	806	128	599	80	3,951	3,191	760	19.2	
North Carolina.....	49	3	59	9	70	3	51	4	37	8	293	266	27	9.2	
North Dakota.....	6	3	6	4	13	3	6	5	6	2	54	37	17	31.5	
Ohio.....	142	6	156	8	179	5	207	14	183	6	906	867	39	4.3	
Oklahoma.....	24	0	34	0	14	0	38	1	20	2	133	130	3	2.3	
Oregon.....	35	7	39	3	61	19	31	12	23	7	237	189	48	20.3	
Pennsylvania.....	168	22	213	28	288	41	303	34	265	18	1,380	1,237	143	10.4	
Rhode Island.....	13	4	20	5	25	5	27	1	27	0	127	112	15	11.8	
South Carolina.....	17	12	45	14	33	8	28	2	24	1	184	147	37	20.1	
South Dakota.....	14	0	20	1	38	2	19	1	19	0	114	110	4	3.5	
Tennessee.....	103	19	96	7	82	0	102	0	65	1	475	448	27	5.7	
Texas.....	82	2	89	3	103	0	77	1	77	0	434	428	6	1.4	
Utah.....	10	1	29	0	18	1	17	1	11	3	91	85	6	6.6	
Vermont.....	24	0	22	0	18	0	31	0	19	0	114	114	0	0.0	
Virginia.....	50	6	65	12	55	4	61	4	55	0	312	286	26	8.3	
Washington.....	59	7	63	10	24	5	20	7	6	6	207	172	35	16.9	
West Virginia.....	16	4	35	15	41	10	37	11	42	9	220	171	49	22.3	
Wisconsin.....	34	2	34	0	46	1	59	6	60	3	245	233	12	5.3	
Wyoming.....	22	2	19	8	9	0	4	1	8	3	76	62	14	18.4	
U. S. Territories and Possessions.....	1	0	27	18	33	21	42	7	28	4	181	131	50	27.6	
Totals.....	3,637		4,736		4,787		4,807		3,993					21,960	
Registered.....	3,154		4,060		4,053		4,211		3,501					18,979	
Rejected.....	483		676		734		596		492					2,981	
Per Cent. Rejected...	13.2		14.3		15.4		12.4		12.3					13.5	

This table gives the number of physicians who passed and failed in the examinations in each state during the last five years. The last four columns give the totals and the percentage rejected by each state. Four states registered over 1,000 candidates by examination in the last five years, these being New York, Illinois, Pennsylvania and Massachusetts. Altogether 21,960 physicians were registered by examination in the five years with an average of 4,392 each year.

The five states having the highest percentages of failures in the five years were Colorado, 34.4; North Dakota, 31.5; Florida, 25.1; California, 24.9, and Arizona, 23.5. California and Colorado admit osteopaths to their examinations for physicians and surgeons and would be expected to have high percentages rejected. On the other hand, in many states, boards refuse to recognize low-grade colleges (see Table D) and thereby eliminate many inferior candidates prior to the examination, as a result, the percentages of failures at examinations in these states are lower than otherwise they would be. For example, Ohio rejected only 4 per cent. of those who took its examinations, but refused to admit graduates of eight inferior medical colleges to its examinations. The lowest failure percentages were in New Mexico, 0.0; Texas, 1.4; Minnesota, 1.6; Mississippi, 1.8; Michigan, 1.9.

decrease each year since 1919. There has likewise been a decrease in reciprocal registrations since 1919.

Over 100 were registered by all methods in fourteen states; over 200 in eight; and over 300 in four, the largest numbers being 748 in New York; 630 in California; 335 in Illinois, and 313 in Pennsylvania. Of those licensed in California,

TABLE G.—Registration by State Boards During
the Year 1922

STATES	By Examination			By Reciprocity	Written Examination or Under Exemption	Total Registered
	Graduates, 1918-1922	Graduates, 1917 and Previous	Nongraduates and graduates of Nondescript Colleges			
Alabama.....	26	5	....	12	....	43
Arizona.....	5	2	....	30	....	37
Arkansas.....	21	9	....	36	....	66
California.....	167	9	32	422	....	600
Colorado.....	22	2	8	87	....	119
Connecticut.....	73	16	25	30	6	150
Delaware.....	17	0	....	5	....	22
Dist. of Columbia.....	51	3	....	15	....	69
Florida.....	24	32	....	0	....	56
Georgia.....	68	0	....	16	....	84
Idaho.....	6	5	....	11	....	22
Illinois.....	275	11	....	49	....	335
Indiana.....	32	3	....	34	....	69
Iowa.....	48	1	....	21	....	70
Kansas.....	26	2	....	58	....	86
Kentucky.....	32	5	....	31	1	69
Louisiana.....	50	5	....	9	....	64
Maine.....	24	4	....	6	....	34
Maryland.....	70	4	....	19	....	93
Massachusetts.....	196	35	13	0	....	244
Michigan.....	112	7	....	83	....	202
Minnesota.....	99	8	....	93	....	200
Mississippi.....	24	2	1	16	....	43
Missouri.....	93	13	1	23	....	130
Montana.....	7	4	....	0	....	11
Nebraska.....	40	2	....	20	....	62
Nevada.....	8	5	....	11	....	24
New Hampshire.....	6	6	....	0	....	12
New Jersey.....	21	4	....	112	....	137
New Mexico.....	0	0	....	2	39	41
New York.....	538	61	....	143	6	748
North Carolina.....	37	0	....	29	....	66
North Dakota.....	4	2	....	8	....	14
Ohio.....	171	12	....	78	....	261
Oklahoma.....	16	4	....	58	....	78
Oregon.....	16	7	....	24	....	47
Pennsylvania.....	239	26	....	48	....	313
Rhode Island.....	20	7	....	0	....	27
South Carolina.....	18	6	....	6	....	30
South Dakota.....	13	6	....	3	....	22
Tennessee.....	58	7	....	0	....	65
Texas.....	71	4	2	101	....	178
Utah.....	11	0	....	16	....	27
Vermont.....	18	1	....	2	....	21
Virginia.....	52	3	....	25	....	80
Washington.....	5	1	....	53	....	59
West Virginia.....	40	2	....	40	....	82
Wisconsin.....	50	9	1	50	....	110
Wyoming.....	4	4	....	9	....	17
U. S. Terr. and Poss.....	19	9	....	0	....	28
Totals.....	3043	375	83	1944	52	5497

This table shows the total number registered during 1922 in each state by examination, by reciprocity, and by the endorsement of credentials. The first three columns show those registered by examination, including recent graduates, older practitioners and nongraduates or graduates of nondescript colleges—including also osteopaths who were granted licenses as physicians and surgeons. The fourth column shows the number licensed by the endorsement of licenses issued by other states (reciprocity) and of certificates of the National Board of Medical Examiners. The fifth column shows those licensed under various exemption clauses in the practice acts, such as because of high professional standing or (in New Mexico) by the endorsement of diplomas of recognized medical schools. California licensed as physicians 32 out of 66 graduates of osteopathic colleges who took the examination, and Colorado so licensed 7 out of 12 osteopaths.

The last column shows the total number of physicians registered by all methods in each state during 1922. Four states registered over 300 each, these being in New York, 748; California, 630; Illinois, 335, and Pennsylvania, 313. Twenty states registered less than fifty physicians each. The total registration by all methods was 5,497, a decrease of 851 below the total registration in 1921.

422, or 67 per cent., were registered by the endorsement of licenses granted in other states. Several boards examined and licensed osteopaths as physicians and surgeons. California registered 48; Massachusetts licensed 13; Colorado, 8, and Texas, 5. Altogether 74 osteopaths—graduates of colleges decidedly inferior to the lowest grade medical schools—were licensed as physicians and surgeons.

TABLE H.—Registration by State Boards for Five Years

STATE	1918	1919	1920	1921	1922	Totals	STATE	1918	1919	1920	1921	1922	Totals
Alabama.....	26	55	54	51	43	229	Nevada.....	16	22	31	6	24	99
Arizona.....	33	48	33	6	37	157	New Hampshire.....	7	18	21	18	12	76
Arkansas.....	81	130	97	97	66	471	New Jersey.....	101	263	171	164	137	836
California.....	342	445	651	581	630	2,649	New Mexico.....	33	50	46	38	41	208
Colorado.....	97	141	138	123	119	618	New York.....	496	711	779	879	748	3,613
Connecticut.....	46	107	108	164	150	575	North Carolina.....	67	82	114	101	66	430
Delaware.....	24	28	7	14	22	95	North Dakota.....	11	18	28	14	14	85
District of Columbia.....	41	66	77	57	69	310	Ohio.....	175	285	311	326	261	1,358
Florida.....	21	64	72	50	56	263	Oklahoma.....	73	116	71	108	78	446
Georgia.....	72	111	114	86	84	467	Oregon.....	35	39	65	31	47	217
Idaho.....	31	49	41	33	22	176	Pennsylvania.....	172	269	316	334	313	1,404
Illinois.....	392	568	482	399	335	2,176	Rhode Island.....	13	20	25	27	27	112
Indiana.....	58	65	158	102	69	452	South Carolina.....	17	45	41	40	30	173
Iowa.....	79	149	132	126	70	556	South Dakota.....	14	20	49	24	22	129
Kansas.....	56	89	96	99	86	426	Tennessee.....	114	123	83	102	65	487
Kentucky.....	54	68	51	94	69	336	Texas.....	149	275	271	195	178	1,068
Louisiana.....	57	98	93	85	64	397	Utah.....	23	54	32	29	27	165
Maine.....	32	51	30	41	34	188	Vermont.....	25	24	20	34	21	124
Maryland.....	73	179	164	160	93	669	Virginia.....	78	127	85	82	80	452
Massachusetts.....	228	305	217	225	244	1,219	Washington.....	59	105	127	158	59	508
Michigan.....	145	182	287	248	202	1,064	West Virginia.....	41	76	95	74	82	368
Minnesota.....	97	179	174	215	200	865	Wisconsin.....	54	148	106	119	110	537
Mississippi.....	15	46	47	34	43	185	Wyoming.....	28	19	34	18	17	116
Missouri.....	186	232	177	165	130	890	U. S. Possessions.....	1	27	35	42	28	133
Montana.....	20	26	26	19	11	102							
Nebraska.....	77	167	75	111	62	492							
							Totals.....	4,185	6,584	6,557	6,348	5,497	29,171

This table shows the totals registered in each state during the last five years. Increases over 1921 are noteworthy in California and Massachusetts—states where liberal licensure standards are in effect. Marked decreases are noteworthy in several states. Totals also are given for the entire five years. Eight states registered over a thousand physicians, the largest number being New York with 3,613, followed by

California with 2,649, Illinois with 2,176, Pennsylvania with 1,404 and Ohio with 1,358. The lowest number registered during the five years was in New Hampshire, where only 76 physicians were registered, followed by North Dakota with 85 and Delaware with 95.

For the five years there were registered altogether 29,171 physicians with an average of 5,834 each year.

TABLE I.—Character of Physicians Licensed in 1922

Marginal Number	STATE	By Examination					By Reciprocity or Credentials					Totals Registered from Medical Colleges in Class				Grand Totals	Marginal Number
		Medical Colleges in Class				Totals	Medical Colleges in Class				Totals						
		A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.		
1	Alabama.....	24	6	0	1	31	4	2	0	6	12	28	8	0	7	43	1
2	Arizona.....	6	0	0	1	7	10	2	1	17	30	16	2	1	18	37	2
3	Arkansas.....	7	6	17	0	30	17	9	1	9	36	24	15	18	9	66	3
4	California.....	127	38	34	9	208	222	36	29	135	422	349	74	63	144	630	4
5	Colorado.....	17	1	12	2	32	45	7	2	33	87	62	8	14	35	119	5
6	Connecticut.....	57	2	51	4	114	7	4	23	2	36	64	6	74	6	150	6
7	Delaware.....	11	2	3	1	17	5	0	0	0	5	16	2	3	1	22	7
8	District of Columbia.....	53	0	1	0	54	6	0	3	6	15	59	0	4	6	69	8
9	Florida.....	42	3	1	10	56	0	0	0	0	0	42	3	1	10	56	9
10	Georgia.....	66	2	0	0	68	9	1	0	6	16	75	3	0	6	84	10
11	Idaho.....	7	3	0	1	11	8	0	1	2	11	15	3	1	3	22	11
12	Illinois.....	255	17	10	4	286	33	6	0	10	49	288	23	10	14	335	12
13	Indiana.....	34	0	0	1	35	19	4	0	11	34	53	4	0	12	69	13
14	Iowa.....	45	1	0	3	49	19	1	0	1	21	64	2	0	4	70	14
15	Kansas.....	26	0	0	2	28	30	10	4	14	58	56	10	4	16	86	15
16	Kentucky.....	24	6	4	3	37	20	5	0	7	32	44	11	4	10	69	16
17	Louisiana.....	48	3	2	2	55	6	0	0	3	9	54	3	2	5	64	17
18	Maine.....	27	0	0	1	28	2	0	1	3	6	29	0	1	4	34	18
19	Maryland.....	69	1	1	3	74	12	1	0	6	19	81	2	1	9	93	19
20	Massachusetts.....	178	2	51	13	244	0	0	0	0	0	178	2	51	13	244	20
21	Michigan.....	112	4	0	3	119	49	3	3	28	83	161	7	3	31	202	21
22	Minnesota.....	102	2	0	3	107	76	4	0	13	93	178	6	0	16	200	22
23	Mississippi.....	18	6	3	0	27	7	2	0	7	16	25	8	3	7	43	23
24	Missouri.....	92	3	7	5	107	17	1	0	5	23	109	4	7	10	130	24
25	Montana.....	10	0	0	1	11	0	0	0	0	0	10	0	0	1	11	25
26	Nebraska.....	40	0	0	2	42	12	5	0	3	20	52	5	0	5	62	26
27	Nevada.....	2	0	5	6	13	3	3	0	5	11	5	3	5	11	24	27
28	New Hampshire.....	8	1	1	2	12	0	0	0	0	0	8	1	1	2	12	28
29	New Jersey.....	21	1	0	3	25	78	4	5	25	112	99	5	5	28	137	29
30	New Mexico.....	0	0	0	0	0	15	5	0	21	41	15	5	0	21	41	30
31	New York.....	537	40	3	19	599	93	13	2	41	149	630	53	5	60	748	31
32	North Carolina.....	37	0	0	0	37	15	4	0	10	29	52	4	0	10	66	32
33	North Dakota.....	4	0	0	2	6	6	0	0	2	8	10	0	0	4	14	33
34	Ohio.....	136	38	0	9	183	52	8	1	17	78	188	46	1	26	261	34
35	Oklahoma.....	10	5	2	3	20	22	10	4	22	58	32	15	6	25	78	35
36	Oregon.....	18	1	0	4	23	10	0	1	13	24	28	1	1	17	47	36
37	Pennsylvania.....	223	22	5	15	265	38	0	0	10	48	261	22	5	25	313	37
38	Rhode Island.....	22	0	0	5	27	0	0	0	0	0	22	0	0	5	27	38
39	South Carolina.....	20	1	0	3	24	4	1	0	1	6	24	2	0	4	30	39
40	South Dakota.....	13	2	0	4	19	2	0	0	1	3	15	2	0	5	22	40
41	Tennessee.....	35	26	2	2	65	0	0	0	0	0	35	26	2	2	65	41
42	Texas.....	67	4	2	4	77	41	18	6	36	101	108	22	8	40	178	42
43	Utah.....	11	0	0	0	11	13	1	0	2	16	24	1	0	2	27	43
44	Vermont.....	19	0	0	0	19	2	0	0	0	2	21	0	0	0	21	44
45	Virginia.....	53	0	1	1	55	17	4	1	3	25	70	4	2	4	80	45
46	Washington.....	6	0	0	0	6	32	7	0	14	53	38	7	0	14	59	46
47	West Virginia.....	37	1	3	1	42	29	4	1	6	40	66	5	4	7	82	47
48	Wisconsin.....	49	2	1	8	60	39	3	0	8	50	88	5	1	16	110	48
49	Wyoming.....	1	0	3	4	8	4	3	2	0	9	5	3	5	4	17	49
50	U.S. Territories and Possessions.....	23	1	0	4	28	0	0	0	0	0	23	1	0	4	28	50
	Totals.....	2,849	253	225	174	3,501	1,150	191	91	564	1,996	3,999	444	316	788	5,497	

Of the 18 Class C graduates licensed in Arkansas, 1 was registered by the Regular Board and 17 were registered by the Eclectic Board. The Arkansas Homeopathic Board reported no candidates licensed either by examination or by reciprocity.

Of the 63 graduates of Class C colleges licensed in California, 48 were graduates of osteopathic colleges—institutions not generally recognized as medical colleges by state licensing boards. In Colorado 8 graduates of osteopathic colleges were registered.

Of the 150 physicians licensed in Connecticut, the Regular Board registered 62 Class A and 4 miscellaneous graduates and the Homeopathic Board registered 1 Class A, 1 Class B, and 2 miscellaneous graduates, while the Eclectic Board registered 1 Class A, 4 Class B, and 75 Class C graduates.

Illinois harbors the Chicago Medical School, a Class C medical college; Massachusetts has two Class C colleges, the College of Physicians and Surgeons and the Middlesex College of Medicine and Surgery, and does not have authority to refuse recognition to low grade institutions. This accounts for the larger numbers of Class C graduates licensed in these states.

Texas does not recognize Class C medical colleges, but, nevertheless, accepts graduates of osteopathic schools which are, in fact, medical schools of a still lower grade.

Eight states accepted Class C graduates through reciprocity where they did not license any by examination. On the whole 225 Class C graduates were licensed by examination, and 91 through reciprocity, a total of 316.

TOTAL REGISTRATION IN FIVE YEARS

Table H permits the reader to compare the registrations in each state for the last five years. In 1918 there was a decrease of 1,238 below 1917—due undoubtedly to the war. There was an increase of 2,399 in 1919 and slight decreases in 1920 and 1921. The decrease in 1922 was 851.

The registrations in different states are interesting. In 1918, regardless of the general decrease in other states, Massachusetts had an increase. This increase was continued in 1919 and, during the three succeeding years had increases in spite of the general decrease. Since Massachusetts does not

registrations are New Hampshire with 76, North Dakota with 85, Delaware with 95, and Nevada with 99.

MEDICAL TRAINING OF APPLICANTS LICENSED IN 1922

Table I is of special interest, since it shows for each state the numbers of candidates coming from medical schools rated in classes A, B and C, thereby indicating the character of the medical training of the candidates licensed during 1922. Of the 5,497 candidates registered, 3,501 were licensed by examination and 1,996 by reciprocity or on presentation of acceptable credentials. Those who graduated prior to 1907,

TABLE J.—Qualifications of Physicians Licensed by State Medical Boards in Six Years

Mar. No.	STATE	Graduates of Class A Medical Schools							Graduates of Class B Medical Schools							Graduates of Class C Medical Schools							Grads. of Misc. Colleges 6 Yrs.	Total Registrations 6 Yrs.	Mar. No.
		1917	1918	1919	1920	1921	1922	Total	1917	1918	1919	1920	1921	1922	Total	1917	1918	1919	1920	1921	1922	Total			
1	Alabama.....	41	18	37	39	37	28	200	3	5	13	10	7	8	46	0	0	0	3	1	0	4	27	277	1
2	Arizona.....	23	11	13	21	4	16	88	3	4	10	3	0	2	22	0	1	2	0	0	1	4	75	189	2
3	Arkansas.....	27	12	31	36	47	24	177	34	32	34	16	9	15	140	26	26	33	26	21	18	150 ¹	115	582	3
4	California.....	114	67	154	265	235	349	1,184	97	69	69	69	85	74	463	88	116	20	61	47	63	405 ²	1,037	2,589	4
5	Colorado.....	50	30	56	57	54	62	309	11	7	13	7	9	8	55	1	24	33	33	25	14	120 ³	234	818	5
6	Connecticut.....	61	37	89	93	69	64	413	9	4	7	4	7	6	27	5	1	2	1	66	74	149 ⁴	60	559	6
7	Delaware.....	12	13	21	3	10	16	75	3	4	6	3	1	2	19	0	2	0	1	2	3	8	10	112	7
8	Dist. Columbia..	23	37	55	66	45	59	285	4	1	2	4	0	0	11	2	0	2	1	1	4	10	37	343	8
9	Florida.....	30	3	31	33	28	42	167	4	2	5	5	5	3	24	0	0	3	3	1	1	8	108	307	9
10	Georgia.....	91	46	80	76	72	75	440	19	11	18	25	6	3	82	0	1	1	1	2	0	5	62	589	10
11	Idaho.....	15	11	25	31	12	15	109	2	1	5	2	5	3	18	1	2	2	0	0	1	6	68	201	11
12	Illinois.....	191	199	376	370	320	288	1,744	273	161	129	54	21	23	661	40	11	38	33	45	10	177 ⁵	114	2,696	12
13	Indiana.....	50	45	41	103	81	53	373	13	7	10	27	10	4	71	0	0	2	2	0	0	4	83	531	13
14	Iowa.....	60	48	104	103	97	64	476	20	13	19	15	15	2	84	1	5	4	2	6	0	18	69	647	14
15	Kansas.....	31	29	53	62	71	56	302	4	9	17	10	7	10	57	4	4	6	2	4	4	24	109	493	15
16	Kentucky.....	50	26	40	35	63	44	258	23	18	11	8	10	11	81	0	5	4	3	5	4	21	52	412	16
17	Louisiana.....	44	45	81	82	74	54	380	5	4	9	6	3	3	30	0	0	1	0	1	2	4	34	448	17
18	Maine.....	34	24	39	23	32	29	181	1	1	1	0	2	0	5	1	0	0	0	0	1	2	42	230	18
19	Maryland.....	85	57	154	130	140	81	647	4	3	11	3	10	2	33	2	2	4	3	4	1	16	73	769	19
20	Massachusetts..	202	188	243	184	153	178	1,148	6	8	14	9	4	2	43	6	9	19	19	42	51	146 ⁵	100	1,438	20
21	Michigan.....	150	118	122	215	195	161	961	18	3	19	24	26	7	97	1	1	0	1	2	3	8	196	1,262	21
22	Minnesota.....	86	82	140	146	190	178	812	3	5	16	14	7	6	51	0	0	1	1	0	0	2	90	968	22
23	Mississippi.....	17	12	32	34	27	25	147	9	0	6	4	4	8	31	1	0	1	1	0	3	6	38	222	23
24	Missouri.....	101	85	159	127	136	109	717	27	26	25	32	14	4	128	61	52	11	5	5	7	141 ⁶	110	1,096	24
25	Montana.....	28	7	15	18	14	10	92	7	4	5	2	0	0	18	0	0	1	1	0	0	2	33	145	25
26	Nebraska.....	62	55	119	44	82	52	414	7	7	22	17	12	5	70	8	0	7	2	5	0	22	85	591	26
27	Nevada.....	8	3	7	10	1	5	34	2	3	2	2	0	3	12	2	0	5	6	0	5	18	60	123	27
28	New Hampshire..	12	3	14	17	10	8	64	0	0	0	0	1	1	2	0	1	1	0	1	1	4	24	94	28
29	New Jersey.....	82	63	187	111	113	99	645	13	6	22	11	15	5	72	1	1	0	7	1	5	15	226	958	29
30	New Mexico.....	28	10	17	14	20	15	104	4	4	11	7	3	5	34	1	0	1	0	0	0	2	135	275	30
31	New York.....	530	417	600	675	758	630	3,610	57	44	66	55	73	53	348	17	7	3	0	1	5	33	257	4,248	31
32	North Carolina..	55	46	67	91	76	52	387	19	6	5	12	5	4	51	1	1	1	2	1	0	6	72	516	32
33	North Dakota...	16	3	11	23	10	10	73	4	1	4	3	0	0	12	0	0	0	0	0	0	0	24	109	33
34	Ohio.....	170	120	194	228	189	188	1,089	43	33	51	44	84	46	301	1	1	1	0	3	1	7	205	1,603	34
35	Oklahoma.....	35	10	28	35	50	32	190	52	26	45	13	10	15	161	0	5	5	5	26	6	53	184	588	35
36	Oregon.....	23	18	27	41	19	28	156	2	4	0	6	1	1	14	4	0	2	3	2	1	12	72	254	36
37	Pennsylvania...	224	157	239	289	289	261	1,459	24	7	18	16	16	22	103	0	0	1	1	14	5	21	79	1,662	37
38	Rhode Island....	19	10	14	20	15	22	101	0	1	2	1	1	1	5	0	1	1	1	1	0	4	25	134	38
39	South Carolina..	31	16	42	36	31	24	180	3	0	3	1	2	2	11	0	0	0	1	3	0	4	15	210	39
40	South Dakota...	21	9	8	33	17	15	103	2	2	2	3	2	2	13	0	1	1	2	1	0	5	32	154	40
41	Tennessee.....	95	40	69	54	69	35	362	63	58	25	24	30	26	226	6	14	23	2	0	2	47	19	654	41
42	Texas.....	101	71	156	159	116	108	711	38	30	38	16	18	22	162	5	21	16	28	34	8	112 ⁷	259	1,244	42
43	Utah.....	15	14	35	24	21	24	133	3	2	6	0	1	1	13	0	1	3	2	4	0	10	29	185	43
44	Vermont.....	11	24	20	20	29	21	125	1	0	2	0	0	0	3	0	0	0	0	0	0	0	9	137	44
45	Virginia.....	72	54	102	70	75	70	443	4	7	8	7	2	4	32	1	3	0	1	2	2	9	50	534	45
46	Washington.....	35	26	49	60	73	38	281	8	9	13	8	19	7	64	1	10	9	3	2	0	25	195	565	46
47	West Virginia...	52	15	47	71	48	66	299	14	13	15	10	8	5	65	1	0	1	3	1	4	10	78	452	47
48	Wisconsin.....	44	27	97	78	87	88	421	17	9	21	13	12	5	77	0	0	2	1	9	1	13	77	604	48
49	Wyoming.....	11	2	12	17	10	5	57	5	8	11	6	1	3	34	2	12	5	1	1	5	26	42	143	49
50	U.S. Territories and Possessions	1	0	16	25	31	23	95	1	0	6	0	2	1	10	0	0	0	1	2	0	3	26	135	50
Totals.....		3,369	2,456	4,368	4,597	4,445	3,999	23,234	988	682	872	631	585	444	4,202	297	342	278	275	394	316	1,902	5,256	34,594	

1. Of the 150 graduates of low grade colleges licensed in Arkansas during the last five years, 147 were licensed by the eclectic board of medical examiners and only 2 by the regular board.

2. During the five years, 342 graduates of low grade colleges were licensed in California, including 248 osteopaths who were licensed as physicians.

3. Of the 106 Class C graduates licensed in Colorado, 73 were osteopaths who were licensed with the same privileges as physicians.

4. During the last two years the Connecticut eclectic board has registered 145 graduates of Class C colleges, or those for whom no evidence of their having graduated anywhere has been received.

5. Illinois and Massachusetts are the homes of Class C medical colleges, which accounts for the large number of Class C graduates licensed each year.

6. Although Missouri has three Class C medical colleges in the state, it is noteworthy that the numbers licensed have decidedly decreased since 1918.

7. Of the 112 graduates of low grade institutions licensed in Texas during the five years, only 14 were licensed by examination, while 98 were licensed by reciprocity. Of those licensed, 45 were osteopaths who were licensed with full privileges as physicians.

have reciprocal relations with other states, this increase is evidently due to the board's lack of authority to refuse recognition to low-grade medical colleges and to the fact that the board cannot insist on reasonable standards of preliminary and professional education. In California and Texas the large registrations were apparently due to the generous provisions for reciprocity and for the licensing of osteopaths. In 1920 California had 651 registrations, including 501 (76.9 per cent.) who were registered by reciprocity. In 1921 and 1922 this state still retained second place in the number of registrations.

During the last five years, New York registered 3,613, followed by California with 2,649; Illinois with 2,176; Pennsylvania with 1,404, and Ohio with 1,358. The four lowest

when the first classification of medical colleges was completed by the Council on Medical Education, are included among those graduating from "Miscellaneous Colleges." Among the graduates of Class C schools are included 74 graduates of osteopathic colleges who were licensed as physicians in California, Colorado, Massachusetts and Texas.

As will be noted, the largest number of Class C graduates were licensed in Connecticut, 74; followed by California with 63; Illinois with 45, and Massachusetts with 51. All but one of the Class C graduates registered in Arkansas were licensed by the Eclectic Board, and in Connecticut all of the Class C graduates were registered by the Eclectic Board. It is noteworthy also that of the 74 registered by the Eclectic Board, 30 were graduates of regular medical schools, and 18 were

TABLE K.—Physicians Registered Through Reciprocity by State Examining Boards During 1922

[illegible]

This table shows the number of physicians registered by each state through reciprocity during 1922. Read from left to right, it shows the total number of physicians registered through reciprocity in the state named and the number of such candidates coming from each of the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named in the corresponding lines, and at the bottom the total number of candidates leaving the state to go elsewhere. For example, read from left to right the table shows that North Dakota registered 8 candidates

through reciprocity in 1922 and that of these candidates 1 each came from Illinois, Indiana and Michigan, and 5 from Minnesota. Read from above downward the table shows that 18 physicians went from North Dakota, and of these 7 went to California, 1 each went to Colorado, Illinois, Kansas, and Oregon, 2 each to Michigan and Washington, and 3 to Minnesota. The line at the bottom shows in what states physicians who registered through reciprocity obtained their original licenses. The total number licensed by reciprocity was 1,944, or 246 less than in 1921. This total includes 20 osteopaths, 16 in California, 1 in Colorado, and 3 in Texas, who were granted full privileges as physicians and surgeons.

TABLE L.—*Reciprocal Registration in Five Years (Showing What States Issued Original Licenses)*

STATE	Physicians Going from States Named During					Totals	STATE	Physicians Going from States Named During					Totals
	1918	1919	1920	1921	1922			1918	1919	1920	1921	1922	
Alabama.....	12	27	32	31	19	121	New Mexico.....	6	9	3	3	3	24
Arizona.....	4	7	6	8	12	37	New York.....	74	197	163	135	127	696
Arkansas.....	24	72	58	33	43	230	North Carolina.....	16	24	15	21	8	84
California.....	5	14	23	23	28	93	North Dakota.....	4	17	25	15	18	79
Colorado.....	10	22	13	18	15	78	Ohio.....	27	73	98	58	70	326
Connecticut.....	2	12	9	10	11	44	Oklahoma.....	28	53	26	27	27	161
Delaware.....	11	8	6	10	12	47	Oregon.....	7	15	18	6	26	72
District of Columbia.....	14	30	37	20	27	128	Pennsylvania.....	57	113	123	92	90	475
Florida.....	2	2	3	4	1	12	Rhode Island.....	1	4	1	3	6	15
Georgia.....	10	38	47	40	34	169	South Carolina.....	4	5	11	10	24	54
Idaho.....	0	7	11	14	10	42	South Dakota.....	6	3	15	11	9	44
Illinois.....	125	325	367	304	246	1367	Tennessee.....	34	124	102	91	75	426
Indiana.....	30	57	52	50	44	233	Texas.....	23	38	33	43	34	171
Iowa.....	40	71	88	81	65	345	Utah.....	6	17	22	21	17	83
Kansas.....	28	75	65	54	41	263	Vermont.....	7	25	18	11	13	74
Kentucky.....	31	71	68	56	40	266	Virginia.....	36	61	59	52	46	254
Louisiana.....	5	36	43	40	33	157	Washington.....	12	21	23	27	37	120
Maine.....	8	18	16	26	14	82	West Virginia.....	16	41	41	18	24	140
Maryland.....	25	61	62	63	64	275	Wisconsin.....	13	51	35	30	27	156
Massachusetts.....	10	36	59	31	28	174	Wyoming.....	4	6	7	8	4	29
Michigan.....	24	69	58	70	70	291	Army, Navy, P. H. Service.....	10	130	108	61	52	361
Minnesota.....	20	27	66	47	40	200	National Board of Medical Examiners.....	1	19	18	23	15	76
Mississippi.....	11	48	17	24	24	124	U. S. Territories and Possessions.....	1	4	8	2	8	23
Missouri.....	65	144	143	158	126	636	Foreign and Misc.	0	2	8	8	10	28
Montana.....	1	8	17	41	23	90							
Nebraska.....	36	60	71	48	57	272							
Nevada.....	7	8	9	5	5	34							
New Hampshire.....	4	24	5	10	7	50							
New Jersey.....	15	30	27	15	25	112							
							Totals.....	972	2459	2458	2110	1944	9943

This table shows that 9,943 candidates were registered through reciprocity during the last five years. In 1918 there was a marked decrease due largely to the war. In 1919 there was an increase of 1,487 due to a large migration of physicians following the return from military service, and in 1920 this large number was continued. In 1921, there was a reduction of 349, and in 1922 there was a further reduction of 166. I will be noted that 130 were registered in 1919 on the basis of military

service, the numbers since being 108 in 1920, 61 in 1921, and 52 in 1922. A study of the totals for the different states shows that of the 9,943 registered during the five years, 1,367 obtained their original licenses in Illinois. New York could easily lead Illinois but reciprocal relations have been established with only nine other states where Illinois has such relations with twenty-nine.

registered for whom it is doubtful whether they graduated anywhere.

California registered 74 Class B graduates, the largest number, followed by New York with 53, and Ohio with 46. Only Class A graduates were registered either by examination or by reciprocity in Montana, North Dakota, Rhode Island and Vermont.

SOURCE OF CANDIDATES REGISTERED IN SIX YEARS

Of the 5,497 physicians registered by all methods in 1922, 3,999, or 72.8 per cent., graduated from Class A medical colleges; 444, or 8.1 per cent., from Class B medical colleges; 316, or 5.7 per cent., from Class C medical colleges, and 738, or 13.4 per cent., graduated prior to 1907, when the first classification of medical colleges was prepared or came from foreign medical colleges. By comparing these figures with the results for the previous five years as shown in Table 3, it is noteworthy that the percentages from Class B and Class C colleges are steadily decreasing and that the percentage of graduates of Class A colleges are increasing notwithstanding the fact that in a few states osteopaths are being licensed as physicians and surgeons.

TABLE 3.—Source of Physicians Licensed in Six Years

Year	Medical Colleges in						Miscellaneous and Foreign		Total
	Class A		Class B		Class C		Number	Per Cent.	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.			
1917.....	3,369	62.1	988	18.2	297	4.3	769	14.4	5,423
1918.....	2,456	58.7	682	16.3	342	8.2	705	16.8	4,185
1919.....	4,368	66.4	872	13.2	278	4.2	1,066	16.2	6,584
1920.....	4,597	70.2	631	9.6	275	4.2	1,054	16.0	6,557
1921.....	4,445	70.0	585	9.2	394	6.2	924	14.6	6,348
1922.....	3,999	72.8	444	8.1	316	5.7	738	13.4	5,497
Totals.....	23,234	64.3	4,202	12.1	1,902	5.5	5,256	15.2	34,594

TRAINING OF PHYSICIANS REGISTERED IN SIX YEARS

Table J is added this year and shows the character of the training of physicians registered during the last 6 years. It is noteworthy that of the 34,549 physicians registered in the six years, 23,234, or 64.3 per cent., were graduates of Class A medical schools, 4,202, or 12.1 per cent., were graduates of Class B schools, and 1,902, or 5.5 per cent., were graduates of Class C schools. Graduates of foreign medical schools and others who graduated prior to 1907 from schools which have not always since been rated in Class A have been grouped under "Miscellaneous Graduates," and during the six years there were 5,256 of these graduates registered.

It is noteworthy that the largest number of candidates who graduated from Class C schools or osteopathic colleges was 405 in California, the next highest numbers being 177 in Illinois, 150 in Arkansas, 149 in Connecticut, 146 in Massachusetts, 141 in Missouri, and 112 in Texas.

REGISTRATION BY RECIPROCITY

Table K gives those registered without examination on presentation of satisfactory credentials, which included a license issued by some other state or by the National Board of Medical Examiners. Some state boards—Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina, as examples—accept a physician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. Had not reciprocal relations been established by the forty states shown in this Table, 1,944 physicians—many of whom had been in practice for ten or more years—would have been compelled to undergo the ordeal of a second trying examination.

Table L shows in what states were granted the original licenses of those who were registered elsewhere under the reciprocity provision during the last five years. Of the 9,943 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 1,367 who obtained their original licenses in Illinois.

Although New York has a larger number of medical college graduates each year than Illinois,³ only 696 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-nine states, while New York has relations with only nine.

IMPROVED STANDARDS OF LICENSURE

Table M shows the states which have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine

TABLE M.—State Requirements of Preliminary Education

There are now forty-two states (counting Alaska Ter.) which have adopted requirements of preliminary education in addition to a standard four-year high school education. Of this number 38 now require the two year standard. These states, the number of college years required and the time the higher requirements became or become effective are as follows:

State Examining Board of	One Year of College Work		Two Years of College Work	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates
Alabama.....	.....	....	1915-16	1919
Alaska.....	1914-15	1918	1918-19	1922
Arizona.....	1914-15	1918	1918-19	1922
Arkansas ¹	1915-16	1919	1918-19	1922
California.....	1915-16	1919	.....	....
Colorado.....	1908-09	1912	1910-11	1914
Connecticut.....	1911-12	1915	.....	....
Delaware*.....	.....	....	.....	....
District of Columbia†	.....	....	.....	....
Florida.....	1914-15	1918	1918-19	1922
Georgia.....	.....	....	1918-19	1922
Idaho.....	.....	....	1915-16	1919
Illinois.....	1915-16	1919	1918-19	1922
Indiana.....	1910-11	1914	1911-12	1915
Iowa.....	.....	....	1911-12	1915
Kansas.....	1910-11	1914	1918-19	1922
Kentucky.....	1914-15	1918	1918-19	1922
Louisiana.....	1915-16	1919	1918-19	1922
Maine.....	1915-16	1919	1916-17	1920
Maryland.....	1914-15	1918	1918-19	1922
Massachusetts†.....	.....	....	.....	....
Michigan.....	1914-15	1918	1918-19	1922
Minnesota.....	.....	....	1908-09	1912
Mississippi.....	1915-16	1919	1919-20	1923
Missouri*.....	.....	....	.....	....
Montana.....	1914-15	1918	1918-19	1922
Nebraska*.....	.....	....	.....	....
Nevada*.....	.....	....	.....	....
New Hampshire.....	1914-15	1918	1915-16	1919
New Jersey.....	1915-16	1919	1917-18	1921
New Mexico.....	1914-15	1918	1918-19	1922
New York.....	1917-18	1921	1918-19	1922
North Carolina.....	1914-15	1918	1918-19	1922
North Dakota.....	.....	....	1908-09	1912
Ohio*.....	.....	....	.....	....
Oklahoma.....	1914-15	1918	1917-18	1921
Oregon.....	.....	....	1920-21	1924
Pennsylvania.....	1914-15	1918	.....	....
Rhode Island.....	1914-15	1918	1918-19	1922
South Carolina.....	.....	....	1918-19	1922
South Dakota.....	1908-09	1912	1911-12	1915
Tennessee.....	1916-17	1920	1918-19	1922
Texas.....	1914-15	1918	.....	....
Utah.....	1913-14	1917	1922-23	1926
Vermont.....	1913-14	1917	1918-19	1922
Virginia.....	1914-15	1918	1917-18	1921
Washington.....	1914-15	1918	1918-19	1922
West Virginia.....	1917-18	1921	1920-21	1924
Wisconsin.....	.....	....	1915-16	1919
Wyoming†.....	.....	....	.....	....

* Require a four-year high school education or its equivalent.

† No fixed standard.

1. The higher standards in Arkansas are evidently not enforced by the sectarian licensing boards of that state.

in those states. The first and third columns show, respectively, when the one year and the two years of premedical college work affects students matriculating in medical colleges, and the second and fourth columns give the years in and after which all applicants for licenses are affected by the increased requirements. This table shows the rapidity with which requirements of preliminary education have been

advanced by state boards since 1908, prior to which no state was requiring more than a four year high school education. As will be noted, there are now forty-two states which have adopted the higher standard, and thirty-eight of these require as a minimum two years of premedical college work. It is understood that in every instance the one or two years of collegiate work must have included courses in physics, chemistry and biology. As shown in the footnotes, in the District of Columbia, Massachusetts and Wyoming no standards of preliminary education have been fixed.

In Table N the advance in standards of licensure is shown for all states since 1904. The most marked increase is in regard to the requirement of collegiate work in forty-two states—referred to in Table L. An equally great increase is

TABLE N.—Advances in State License Requirements in Seventeen Years

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1922	Increase	
Preliminary Education—				
Any requirement	20	47	27	3 ¹
A standard four-year high school education or higher.....	10	47	37	3 ¹
One year or more of college work..	0	42	42	8 ²
Two years of college work as a minimum	0	38	38	12 ³
That all applicants be graduates of a medical college	36	49	13	1 ³
That all applicants undergo an examination for license.....	45	50	5	0
Requirements of practical tests in the license examinations	1	13	12	37
Hospital intern year required.....	0	10 ⁴	10	40
Full authority by board to refuse recognition to low-grade colleges.....	14	47	33	3 ⁴
Boards refusing to recognize low-grade colleges	5	47 ⁶	42	37
Reciprocal relations with other states..	27	44	17	6 ³
Single boards of medical examiners....	36	45	9	5 ³

1. District of Columbia, Massachusetts and Wyoming.
2. See Table M.
3. Colorado.
4. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; Rhode Island, 1917; North Dakota, 1918; Washington, 1919; Illinois and Michigan, 1922; Iowa, 1923, and Texas, 1924.
5. District of Columbia, Massachusetts and Wyoming.
6. In two states, Arkansas and Connecticut, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges and have enforced higher standards of preliminary education.
7. The states named in Footnote 5.
8. Alaska, Arizona, Connecticut (regular board), Florida, Massachusetts, Rhode Island. To this list should be added the outlying territories of Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
9. Multiple boards still remain in Arkansas, Connecticut, District of Columbia, Louisiana and Maryland.

in the number of states—now forty-seven—which are refusing to recognize low-grade medical colleges. Although, as shown in the third column, marked improvements have been made in state requirements for licensure, nevertheless, as indicated by the last column, there is still room for further improvement. The greatest needs are for a wider adoption of the requirement of the hospital intern year, the standard of two years of premedical college work, and—a matter of more vital importance—a more general and larger use of practical tests in the examinations. The states in which the boards are making really effective use of such examinations are Illinois, Massachusetts, Minnesota, North Dakota, Ohio and South Dakota. They are being followed to a certain extent in a few other states.

IN CONCLUSION

In the publication of these statistics, the endeavor has been to present the facts, a knowledge of which is always beneficial. We reiterate our acknowledgments to the state licensing boards for their ready cooperation and the complete reports which have been furnished. We believe the information here published will be of service not only to the medical colleges and the state boards, but also to the public.

National Board of Medical Examiners

The National Board of Medical Examiners, which was organized in 1915, consists of nineteen members, including the Surgeon-Generals of the Army, Navy and Public Health Service, and one other representative of each of those services, three representatives of the state medical licensing boards and six members appointed at large. Up to Dec. 31, 1921, eleven examinations have been held as follows:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington.....	10	5	5	50.0
June, 1917	Washington.....	12	9	3	33.3
Oct., 1917	Chicago.....	28	22	6	21.5
Jan., 1918	New York.....	20	18	2	10.0
Apr., 1918	Ft. Riley, Ft. Oglethorpe..	23	18	5	26.1
Dec., 1918	Chicago, New York.....	16	15	1	6.3
June, 1919	Philadelphia.....	52	51	1	1.9
Feb., 1920	Chicago, St. Louis.....	48	36	12	25.0
May, 1920	Philadelphia.....	60	46	14	23.3
Feb., 1921	Rochester, Minn.	16	11	5	31.3
June, 1921	Boston.....	40	37	3	7.5
	Totals.....	325	268	57	14.4

Following completion of the examinations shown in the above table, those who were passed were granted the board's certificate. Since Jan. 1, 1922, however, the examinations have been divided in three parts as follows:

Part I, a written examination in the six fundamental medical sciences: Anatomy, including histology and embryology; physiology, physiologic chemistry; general pathology; bacteriology; materia medica and pharmacology. Part II, a written examination in: Medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene, and medical jurisprudence. Part III, a practical examination in each of the following four subjects: (a) Clinical medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; (b) clinical surgery, including applied anatomy, surgical pathology, operative surgery and the surgical specialties of the diseases of the eye, ear, nose and throat; (c) obstetrics and gynecology; (d) public health, including sanitary bacteriology and the communicable diseases.

Parts I and II are written examinations held in any Class A medical school and Part III is entirely practical and clinical and given by subsidiary boards in Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St. Louis, Chicago, Washington, D. C., and Nashville. The fee is \$25 each for the first and second parts and \$50 for the third.

Three examinations in Parts I and II have been held as follows:

PART I

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1922.....	87	80	..	7	8.0
June, 1922.....	141	88	31	22	15.6
September, 1922.....	160	95	27	38	23.8
Totals.....	388	263	58	67	17.3

PART II

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1922.....	21	18	..	3	14.3
June, 1922.....	61	51	..	10	16.4
September, 1922.....	27	21	..	6	22.2
Totals.....	109	90	..	19	17.4

The examinations in Part III, which were entirely clinical and practical, were held in several of fifteen subsidiary centers in different parts of the country. The results of the examinations were as follows:

PART III

Examinations of	Total Exam-ined	Passed	Failed	Per-centage Failed
1922.....	28	28	0	0.0

Of the 388 who took the examination in Part I, 58 are listed as incomplete. These are the candidates who took examinations in all but one of the subjects included in Part I. These are listed as incomplete until they have taken an examination also in the remaining subject. They, therefore, are not counted among either those who passed or those who failed.

Forty-one medical schools were represented in Parts I, II and III of the examinations in 1922 and the results were as follows:

College	Total Exam-ined	Passed	Failed	Per-centage Failed
Boston University School of Medicine..	4	4	0	0.0
Columbia Univ. Coll. of P. and S.....	3	3	0	0.0
Cornell University Medical College.....	7	7	0	0.0
Creighton University Coll. of Med.....	4	1	3	75.0
Harvard University Medical School.....	44	40	4	9.1
Howard University School of Medicine..	3	0	3	100.0
Indiana University School of Medicine..	1	1	0	0.0
Jefferson Medical College.....	1	1	0	0.0
Johns Hopkins University Med. Dept....	60	46	14	23.3
Long Island College Hospital.....	1	0	1	100.0
Loyola University School of Medicine..	1	1	0	0.0
Medical College of South Carolina.....	1	0	1	100.0
Medical College of Virginia.....	3	2	1	33.3
Rush Medical College.....	19	16	3	15.8
St. Louis University School of Med....	1	1	0	0.0
Stanford University School of Medicine	2	2	0	0.0
State University of Iowa Coll. of Med.	7	5	2	28.6
Syracuse University College of Medicine	6	5	1	16.7
Tufts College Medical School.....	7	5	2	28.6
University and Bellevue Hosp. M. Coll.	3	2	1	33.3
Univ. of Buffalo Medical Department...	6	2	4	66.7
Univ. of California Medical School.....	1	1	0	0.0
Univ. of Colorado School of Medicine...	5	2	3	60.0
Univ. of Illinois College of Medicine...	4	3	1	25.0
Univ. of Kansas School of Medicine.....	2	0	2	100.0
Univ. of Louisville Medical Department.	2	2	0	0.0
Univ. of Michigan Medical School.....	3	3	0	0.0
Univ. of Minnesota Medical School.....	4	4	0	0.0
Univ. of Nebraska College of Medicine..	10	5	5	50.0
Univ. of Oklahoma School of Medicine..	1	0	1	100.0
Univ. of Oregon Medical School.....	15	11	4	26.7
Univ. of Pennsylvania School of Med...	47	38	9	19.1
Univ. of Pittsburgh School of Medicine.	7	5	2	28.6
Univ. of Tennessee College of Medicine.	4	0	4	100.0
Univ. of Texas School of Medicine.....	3	1	2	66.7
Univ. of Vermont College of Medicine...	1	0	1	100.0
Univ. of Virginia Dept. of Medicine....	3	3	0	0.0
University of Zurich.....	2	1	1	50.0
Washington Univ. School of Medicine..	15	13	2	13.3
Woman's Med. Coll. of Pennsylvania...	36	27	9	25.0
Yale University School of Medicine.....	5	5	0	0.0
Totals.....	354	268	86	24.3

Holders of certificates from the National Board of Medical Examiners are registered without further examination in the following twenty-three states:

Alabama	Idaho	Nebraska	Rhode Island
Arizona	Iowa	New Hampshire	South Carolina
Colorado	Kentucky	New Jersey	Texas
Delaware	Maryland	North Carolina	Vermont
Florida	Massachusetts	North Dakota	Virginia
Georgia	Minnesota	Pennsylvania	

A holder of the National Board certificate is eligible for the regular medical corps of the United States Army and the United States Navy without further professional examination if a review of his examination papers by the boards of examiners of those services is satisfactory. In 1920, a recommendation was adopted by the Triple Qualification Board of Scotland providing that holders of the National Board certificate be admitted to its final examination, and in January, 1921, similar action was taken by the Conjoint Examining Board of England.

HOSPITAL INTERN YEAR

Eleven medical colleges have adopted the requirement of a fifth year to be spent by the student as an intern in an approved hospital or in other acceptable clinical work before

the M.D. degree will be granted. These colleges and the years when the requirement became effective for matriculants and graduates are as follows:

	Affects Matriculants	Affects Graduates
University of Minnesota Medical School.....	1910-11	1915
Stanford University School of Medicine.....	1914-15	1919
Rush Medical College (University of Chicago)...	1914-15	1919
University of California Medical School.....	1914-15	1919
Marquette University School of Medicine.....	1915-16	1920
Northwestern University Medical School.....	1915-16	1920
University of Illinois College of Medicine.....	1917-18	1922
Loyola University School of Medicine.....	1917-18	1922
Detroit College of Medicine and Surgery.....	1919-20	1924
College of Medical Evangelists.....	1922-23	1927

The hospital intern year has been adopted as an essential qualification for the license to practice in ten states, becoming effective in different years, as follows:

State Board of	Affects Student Matriculants	Affects All Applicants
Pennsylvania	1909-10	1914
New Jersey	1911-12	1916
Alaska	1912-13	1917
Rhode Island	1913-14	1917
North Dakota	1913-14	1918
Washington	1914-15	1919
Illinois	1917-18	1922
Michigan	1917-18	1922
Iowa	1918-19	1923
Texas	1919-20	1924

RECOGNITION OF GOVERNMENT EXAMINATION

The examination given under federal authority, which should be generally recognized by all state licensing boards as a qualification for license to practice medicine, is that given to medical officers of the United States Army, Navy, and Public Health Service. In fact, retired officers from the services mentioned are now eligible to receive licenses without further examination in

Alabama	Illinois	Utah
Arizona	North Carolina	Virginia
California	Pennsylvania*	Wisconsin
Colorado	Porto Rico	

*Army and Navy only.

Proportion of Physicians to Population

State	Population (1920)	Physicians* (1922)	People to Each Physician
Alabama.....	2,348,174	2,313—	1,015
Arizona.....	333,903	372—	897
Arkansas.....	1,752,204	2,303—	760
California.....	3,426,861	7,549+	454
Colorado.....	939,629	1,882+	499
Connecticut.....	1,380,631	1,727—	799
Delaware.....	223,003	265+	842
District of Columbia.....	437,571	1,924+	227
Florida.....	968,470	1,348+	718
Georgia.....	2,895,832	3,274—	885
Idaho.....	431,866	452—	956
Illinois.....	6,485,280	10,716+	605
Indiana.....	2,930,390	4,353—	673
Iowa.....	2,404,021	3,490—	689
Kansas.....	1,769,257	2,492—	709
Kentucky.....	2,416,630	3,155—	766
Louisiana.....	1,798,509	2,058+	874
Maine.....	768,014	1,067—	718
Maryland.....	1,449,661	2,349—	616
Massachusetts.....	3,852,356	5,977+	645
Michigan.....	3,668,412	4,653+	788
Minnesota.....	2,387,125	2,774+	860
Mississippi.....	1,790,618	1,792+	999
Missouri.....	3,404,055	5,827—	584
Montana.....	548,889	568—	966
Nebraska.....	1,296,372	1,913—	678
Nevada.....	77,407	140—	553
New Hampshire.....	443,083	615—	720
New Jersey.....	3,155,900	3,362+	939
New Mexico.....	360,350	399—	903
New York.....	10,384,829	16,857+	616
North Carolina.....	2,559,123	2,226—	1,149
North Dakota.....	645,680	517—	1,248
Ohio.....	5,759,394	8,086—	712
Oklahoma.....	2,028,283	2,600—	779
Oregon.....	783,389	1,158+	677
Pennsylvania.....	8,720,017	11,241—	775
Rhode Island.....	604,397	754—	801
South Carolina.....	1,683,724	1,368—	1,231
South Dakota.....	636,547	630—	1,010
Tennessee.....	2,337,885	3,228—	724
Texas.....	4,663,228	6,094—	765
Utah.....	449,396	497+	904
Vermont.....	352,428	556—	634
Virginia.....	2,309,187	2,503—	918
Washington.....	1,356,621	1,756—	772
West Virginia.....	1,463,701	1,751—	836
Wisconsin.....	2,632,067	2,772+	950
Wyoming.....	194,402	263—	739
Totals.....	105,708,771	145,966+	724

* The plus and minus signs indicate, respectively, an increase or a decreased in the number of physicians in the state since 1920.

Special Article

THE STATUS OF INSULIN

In November, 1920, while reading an article by Barron, on the relation of the islands of Langerhans to diabetes, F. G. Banting, then assistant in physiology of Western University, London, Ontario, conceived the idea of preparing an active extract of the islet tissue. Barron had called attention to the fact that degenerative changes occur in the acini of the pancreas following ligation of the ducts, and it occurred to Banting that therefore, after sufficient time had elapsed, the pancreas could be removed and the islet extract elaborated. It had been known that total removal of the pancreas in dogs results in severe and violent diabetes. However, attempts at feeding pancreatic tissue had been without beneficial results, and injections of various extracts of pancreatic tissue, although securing a reduction in sugar, had been followed by symptoms which did not warrant their use in the treatment of diabetes. In fact, a complete review of the available literature warranted Banting in formulating an opinion (1) that the secretion produced by the acinous tissue of the pancreas is in no way connected with carbohydrate utilization; (2) that all injections of whole gland extract have been futile as a therapeutic measure, and (3) that the islands of Langerhans are essential in the control of carbohydrate metabolism. It seemed clear, therefore, that the relation of the pancreas to carbohydrate metabolism was dependent on some process controlled by the islet tissue, and Macleod suggested two possible mechanisms whereby this control might be exerted: (1) The blood might be modified while passing through the islet tissue, and (2) the islets might produce an internal secretion.

THE FIRST EXPERIMENT

In May, 1921, the feasibility of the experiment having been recognized by Prof. J. J. R. Macleod, work was begun under the latter's direction in the Physiological Laboratory of the University of Toronto. Under suitable anesthesia, dogs were depancreatized by appropriate surgical methods. Other dogs had been operated on and the pancreatic ducts ligated. After suitable time, the latter dogs were given a lethal dose of chloroform, the degenerated pancreas swiftly removed and then an extract prepared. This extract was injected intravenously into depancreatized animals. As a result, it was shown that intravenous injections of such a solution invariably exercised a reducing influence on the percentage of sugar in the blood and the amount of sugar excreted in the urine. The extent and duration of the reduction varied directly with the amount of the extract injected, and the presence of the extract enabled the diabetic animal to retain a greater percentage of injected sugar than it would otherwise. At that time it was the opinion of Drs. Banting and Best that boiling of the extract made it impossible for it to have an effect on the reduction of blood sugar, and that preparation of the extract in neutral saline solution with retention under cold storage conditions would permit the extract to remain active for seven days. This, in brief, is an account of the first experiments on the production of

insulin. This account does not, however, give any indication of the scientific methods employed, of the thoroughly accurate check on the work through the use of suitable controls, or of the great significance of the final result. Furthermore, it says but little of the many years of research by hundreds of physiologists all over the world who contributed their mite to the knowledge of this subject and who trembled repeatedly on the threshold of the final discovery without carrying their experiments to the logical conclusion. It remained for Banting, as the result of an accidental observation made while casually reading an article outside the field to which he devoted himself, to see the final step.

The experiments first carried out by Banting and Best justified the conclusion that some constituent of the pancreas destroys the active principle of the internal secretion of the gland when extracts are made of the whole gland substance by the usual methods. It therefore became apparent that some method of inhibiting this destruction must be secured in a method for preparing the active extract, and for producing it on a larger and more satisfactory scale. Previous experiments by other investigators gave ground for the belief that the pancreas of the fetus furnishes to the mother an internal secretion which is necessary for the metabolism of sugar. This suggested to the Canadian investigators that fetal pancreas might prove a source of an extract rich in internal secretion, and yet free from the destructive enzymes of pancreatic juice. Experiments were therefore performed utilizing extracts of fetal calf pancreas, and the results of these experiments showed that neutral saline extracts prepared from the pancreas of the bovine fetus at about the fifth month, when injected intravenously and subcutaneously in depancreatized dogs, markedly reduce the percentage of blood sugar and the daily urinary excretion of sugar. With such injections, a depancreatized dog lived for seventy days. It had previously been shown by Allen that completely diabetic dogs did not live more than fourteen days.

PREPARATION OF THE PURIFIED EXTRACT

In view of the results thus far achieved, the assistance of J. B. Collip of the Department of Pathological Chemistry in the University of Toronto was secured, to take up the problem of isolating the active principle, and with his collaboration an extract was prepared from the whole gland, sterile and highly potent, which was suitable for administration subcutaneously to human beings. With the assistance of Drs. W. R. Campbell and A. A. Fletcher of the Department of Medicine in the University of Toronto, its use was undertaken on patients with diabetes in the wards of the Toronto General Hospital between December, 1921, and March, 1922. The effects of the preparations were observed in seven cases of diabetes mellitus, and it was shown that the results observed in animals could be paralleled in man. Following the injection of the extract, there is a rise in the respiratory quotient indicating carbohydrate utilization, and also a return to the normal blood sugar level. Furthermore, the patients reported a complete relief from the subjective symptoms of the disease. The results warranted the conclusion that in these extracts "we have a therapeutic measure of unquestionable value in the treatment of certain phases of the

disease in man." However, it was also found that, without careful control, severe toxic reactions may be encountered, and the authors warn that this will undoubtedly be a factor in the evaluation of the ultimate therapeutic utility of the method. In the meantime, Professor Collip had shown that an active extract could be prepared from the pancreas of the full-grown ox by using alcohol as an extracting medium so as to circumvent the destructive action of trypsin, as was previously shown by E. L. Scott. The fact that the extracts first studied seemed to cause a certain degree of irritation and involved the use of pancreas of special character and available only in small amounts caused Dr. Collip to elaborate a method for preparation of the extract from adult pancreas by fractional precipitation with alcohol. Briefly stated, it was as follows:

The best method for separating the active principle from protein, salts and lipoids was found to be the following: Equal volumes of fresh minced pancreas and 95 per cent. alcohol were allowed to stand for several hours with occasional shaking, and then filtered. To the filtrate was added 2 volumes of 95 per cent. alcohol. After allowing several hours for precipitation of most of the protein, filtration was repeated, and this filtrate was evaporated to small volume in vacuo at a temperature of from 10 to 30 C. An aqueous extract was thus obtained, which was washed twice with ether in a separatory funnel to remove lipoids, and then further distilled in vacuo to a pasty consistency. Addition of 80 per cent. alcohol and centrifugation then resulted in the formation of four layers, namely, a bottom layer of salt crystals, above it a saturated aqueous solution of salt, above this a flocculent layer of protein, and on top a clear layer of alcohol containing the entire active principle in solution. This top layer was pipetted off, and delivered into several volumes of 95 per cent. or (preferably) absolute alcohol. Several hours were then allowed for the active principle to precipitate out. It was then dissolved in distilled water, concentrated by vacuum distillation, filtered through porcelain, tested for sterility, and delivered to the clinic. Such extracts, practically free from proteins, salts and alcohol-soluble substances, could be made isotonic and injected subcutaneously without local reactions.

During the preparation it is necessary to keep the acidity of the fluid correctly adjusted.

DOSAGE AND ASSAY

It now remained to devise a method for securing accurate dosage, and it was determined that the effect of an extract might be measured by its results when injected into rabbits. Large doses of insulin cause hyperexcitability, followed by coma, rapid breathing, sluggish reflexes and dilated pupils. The effects, on the whole, resemble those of strychnin poisoning. Slight stimuli, even shaking of the floor, caused violent convulsions lasting one or two minutes, and death finally resulted from respiratory failure. Coincident with the appearance of these symptoms is a lowering of the blood sugar. After a large number of these experiments, it was found satisfactory to consider as one unit the amount of insulin which, on subcutaneous injection, can lower the percentage of blood sugar to 0.045 within four hours in a rabbit, weighing about 2 kg., from which food has been withheld for from sixteen to twenty-four hours. Recently prepared solutions are concentrated so that a small volume may contain a sufficient number of units. As pointed out by Macleod, the reason why 0.045 was chosen as a percentage to which the sugar should become lowered is that at this level, almost without fail, the animal develops

highly characteristic symptoms. As indicated later this method of assay is not wholly satisfactory and efforts to arrive at still more accurate standards are being continued.

In the meantime, the investigators continued to study the effects of the extract on the chemistry of the blood and the urine in the establishing of a number of important points. It was shown that in the presence of insulin the power to metabolize carbohydrates is restored. When insulin is given, the acetone bodies entirely disappear from the urine, and remain absent so long as the administration is maintained. It is shown that insulin, possibly because of its primary influence on carbohydrate metabolism, also effects the metabolism of fat.

It has been known that a number of procedures will produce hyperglycemia and glycosuria, among them puncture of the floor of the fourth ventricle of the medulla, subcutaneous injections of epinephrin, and the various forms of asphyxia, including ether anesthesia. It was then shown that in rabbits previously fed abundantly with carbohydrates so as to insure a high percentage of glycogen in the liver, none of these experimental procedures would cause more than a slight increase in the blood sugar in animals previously injected with insulin. The importance of the remedy in surgical operations under ether anesthesia in diabetes can therefore be estimated.

As pointed out by Macleod, the therapeutic effects of insulin in diabetes mellitus in man were definitely forecast by animal experimentation in each instance. After all of these effects had been determined in the laboratory, the drug was administered in hospital wards. Had administration been permitted unguided by the results of these observations on rabbits, it seems almost certain that sooner or later an overdose would have been given, causing convulsions, and there would have been no indication as to what remedy should be used. But the experiments on rabbits showed clearly that these serious symptoms may be immediately antidoted by injection of glucose. Furthermore, in several patients in whom these symptoms have appeared, injection of glucose has immediately and permanently removed them. Finally, Jan. 6, 1923, Drs. Banting, Campbell and Fletcher published in the *British Medical Journal* the results of the administration of the drug in fifty cases. The most striking results have been seen in children and young adults, and it is stated that all the patients were benefited by the treatment. On the first and second days of treatment, if sufficient insulin is given, the urine becomes sugar free, and on the second or third day, ketone free. The patient becomes conscious of increasing strength before the end of the first week. Hunger is replaced by appetite, thirst is lessened, edema disappears in about ten days, and considerable amount of physical vigor is restored. The weight frequently increases, and this can be brought about by supplying food in excess of the caloric requirements and with it an increased amount of insulin. One patient, aged 16, who had lost 40 pounds (18 kg.) during three years of diabetes, gained 35 pounds (16 kg.) in less than four months.

THE DISTRIBUTION OF INSULIN

As pointed out in THE JOURNAL Jan. 6, 1923, the discoverers of insulin have assigned their rights in the product to a committee of the University of Toronto,

and patents have been applied for in Canada, the United States, Great Britain and other countries. The committee has decided to expand the production of the drug by collaborating with some firm regularly engaged in the manufacture of organ extracts. A firm was secured which undertook, under an agreement with the university, to manufacture the product. By this agreement, the university contracted not to issue licenses to other firms in the United States until the lapse of a period during which the large scale method could be carried out so as to yield the output of a preparation of standard and uniform potency, both when assayed by the rabbit test and when tested therapeutically on diabetic patients. The firm agreed "to distribute a sufficient number of free samples of their preparation to various physicians specializing in the treatment of diabetes in properly controlled clinics." This collaboration has been in effect for several months, and the American manufacturer has submitted his product to the Council on Pharmacy and Chemistry, which will, no doubt, issue a report within the near future. A product is also in course of submission from the Canadian manufacturer who cooperates with the Toronto insulin committee.

SOURCE OF INSULIN

One of the problems that is giving most concern to the investigators has been the provision at a reasonable price of a considerable quantity of the extract. The entire animal kingdom has been investigated, and particular attention has been given by Macleod to the proportion of potent insulin products from the pancreas of certain fishes. These fishes have been particularly investigated, because in them the islet tissues are separated fairly definitely from the remainder of the pancreas. These experiments are continuing, but it is not possible as yet to state definitely whether or not this will constitute an important source of the product.

MODE OF ACTION OF INSULIN

Other investigations have been concerned largely with the mechanism by which insulin produces its satisfactory results. Thus, Forrest, Smith and Winter have shown that insulin and liver extract *in vitro* cause an alteration of the rotary powers of glucose and fructose without a corresponding alteration of the copper-reducing power. They state that "a possible explanation of the action of insulin is that it causes a shifting of the equilibrium in the direction of increased γ -glucose formation, which is stored or utilized, and that the increased utilization of sugar by the diabetic after the injection of insulin may be put down to the increased formation of this type of glucose." Their experiments seemed to show that a continual supply of insulin is necessary for the working of some enzymatic body which is responsible for lowering the blood sugar, for the blood sugar invariably rose between insulin injections.

Carrying out the experiments on rabbits still further, McCormick, Macleod, Noble and O'Brien have shown that there is an immediate decline in blood sugar during the half hour following an injection of insulin, but a variability both in the time of onset and in the rate of recovery which afterward occurs. The rate of the initial fall is independent of the nutritional condition of the animal. After from thirty to ninety minutes, the blood sugar rises more rapidly in glycogen-rich animals than in those glycogen free. Within wide limits the

dose of insulin has no constant influence on the rate of the fall. These observers have been unable to find that insulin has any influence on the rate of glycolysis in sterile, incubated defibrinated or oxalate blood, or in mixtures of blood and expressed muscle juice. They have elaborated the view that sugar must disappear from the blood because it passes into the tissues, that insulin no doubt also passes out of the blood into the tissues, and that when it enters the tissue cells it sets up in them some process that leads to the immediate disappearance of sugar as such, so that a "vacuum" for sugar is created in the cell, and sugar is withdrawn from the blood more rapidly than the supply can be replenished. "It is possible," the authors say, "that the first step in this process is the formation of some compound between sugar and insulin, and that this may occur in part in the blood itself; but it is unlikely that such an intravascular process is any essential step in the disappearance in blood sugar." In view of the fact that the blood sugar rises much more rapidly in glycogen-rich animals than in those which are glycogen-free after the initial fall after the injection of insulin, the authors consider that it is impossible to make a precise physiologic assay of insulin by determining the percentage of blood sugar at varying periods following its injection. The approximate assay may best be arrived at by measuring the blood sugar from ninety minutes to three hours following the injection in animals from which food has been withheld for twenty-four hours. When considerable doses of insulin are given, the typical toxic symptoms may not appear until the percentage of sugar has fallen considerably below the level of 0.045, at which they most frequently occur with weaker doses. It is therefore the final conclusion that the occurrence of these typical convulsions can not be depended on as an exclusive method of physiologic assay.

CLINICAL USE OF INSULIN

From the fifty cases originally studied by Banting and his collaborators, and from a large number of cases studied by the investigators in various American diabetic clinics, a number of facts relating to the clinical administration of insulin have been determined. In view of the great potency of the remedy for harm when improperly used, it is wise to begin at once to emphasize these facts and to impress them repeatedly on physicians in order that permanent harm may not result. The picture of a successful result has already been given. Such a result is secured when a correct dosage is administered to a patient who, at the same time, is receiving a properly selected diet. Early in the work, preparations of insulin contained certain amounts of protein and split protein products. The natural result was a toxic reaction in a certain number of cases. The present products are practically protein free, so that with the exception of urticarial eruptions in one or two sensitive patients such reactions were not observed among the fifty patients first studied. However, the fall in blood sugar, as has been mentioned, may produce a characteristic train of symptoms when the blood sugar falls to 0.07 per cent. Under the influence of insulin, the patient becomes promptly aware of this. He may first complain of hunger or, most often, of a sense of weakness or fatigue; and, especially if it is his first reaction, he is conscious of some anxiety or of what he calls nervousness, or he

may even show signs of a definite neurosis, with a loss of emotional control, such as crying spells. Almost constantly present is a feeling of tremulousness; but actual tremor is rarely seen. The patient may also have some incoordination of finer movements. Vasomotor phenomena, such as pallor or flushing, a sense of heat, of chilliness or a profuse sweat are common. Should the hypoglycemia increase and the lowering of the blood sugar come to 0.05 per cent., there is an acute distress or mental disturbance, such as confusion and disorientation. Finally, a blood sugar of 0.032 in one patient resulted in a state of coma with hypotonia and loss of the deep reflexes. Several of the patients suffered difficulties of articulation when the blood sugar reached the lower levels mentioned.

Fortunately, these serious symptoms may be relieved by the immediate administration of food. From 50 to 100 c.c. of orange juice has an almost immediate effect in clearing up the symptoms. A better result is obtained with from 5 to 25 gm. of glucose given with orange or lemon juice. "When a patient is unconscious," says Banting, "1 c.c. of epinephrin (1:1,000 solution) should be given intramuscularly followed by glucose by mouth, and if the patient is not well enough in a few minutes to swallow glucose, it may be given subcutaneously or intravenously." Special nursing precautions should be adopted for detection of reactions when insulin treatment is first started, when a new preparation is given and when insulin is administered late in the day, as the reaction may occur during sleep. The patients soon recognize the state of a reaction, and may be able to avert the symptoms of their own accord.

In view of the fact that the insulin effect on the blood sugar is not exerted immediately after subcutaneous injection, it is customary to space the injections so that their effect occurs during the period of assimilation of carbohydrates. This means that the insulin is injected at, or shortly before, the meal. But instances occur, possibly due to delayed or too rapid absorption of sugar into the blood stream, or the use of diets containing too much carbohydrate in which glycosuria may occur or which a reaction may follow. To Banting, this emphasizes the necessity for observing diabetic patients for a short time in the hospital under insulin before returning them to their homes for general treatment.

In establishing the insulin treatment, it is advisable to begin with a moderate dose, gradually increasing it until the desired effect is obtained. The amount of insulin used will depend not only on the carbohydrate tolerance of the patient but also on the height and fixity of the blood sugar level. At present the authors believe that the best results are secured by aiming at maintaining a normal blood sugar level. This is accomplished by injecting insulin in relation to a meal at which a certain amount of carbohydrates is given. As the patients improve, the amount of carbohydrate is increased, and at the same time the amount of insulin is increased.

The most important uses of the product are unquestionably in juvenile diabetics, in whom the mortality previous to the introduction of insulin was almost 100 per cent., diabetics who are undergoing surgical operations, and diabetics with coincident infections, such as tuberculosis, gangrene or syphilis. Many diabetics at the

present time are able to exist comfortably and satisfactorily with a well selected diet. On the other hand, many diabetics are not thus amenable to treatment. In the latter group of patients, under the proper administration of insulin glycosuria was abolished and ketones disappeared from the urine and the blood, the blood sugar was markedly reduced and maintained at normal levels, the alkali reserve and alveolar carbon dioxide of patients in acidosis and coma returned to normal, the respiratory quotient showed evidence of increased utilization of carbohydrates, and the cardinal symptoms were relieved with marked clinical improvement. In diabetic coma, insulin may be characterized as a specific.

CONCLUSION

It appears, then, that as a result of a vast amount of research on diabetes mellitus, and still earlier on the physiology and pathology of the pancreas, researches by numerous investigators all over the world, conducted largely on experimental animals, as well as with human beings, there has finally been evolved from the pancreas a principle which has a specific effect on the carbohydrate metabolism of the body. The effects of this extract have been thoroughly studied, and its limitations rather clearly defined. A method of assay is being perfected so that it appears likely that the product will shortly be made generally available to the medical profession. Improperly used, results may occur of such seriousness as to interfere greatly with establishing the true worth of the product. To secure proper results, a knowledge of scientific dietetics is necessary, and carefully controlled laboratory observations are important. Physicians who plan to use the remedy must inform themselves fully of its potency, the symptoms of danger, the proper methods of administration, the proper methods of antidoting unfavorable effects, and the correct manner of evaluating results. If these precautions are observed, there seems to be no reason why any well trained physician should not be able to use the remedy satisfactorily.

BIBLIOGRAPHY

- Banting, F. G., and Best, C. H.: The Internal Secretion of the Pancreas, *J. Lab. & Clin. Med.* **7**: 251 (Feb.) 1922.
Banting, F. G., and Best, C. H.: Communication to the Academy of Medicine, Feb. 7, 1922.
Banting, F. G., and Best, C. H.: Pancreatic Extracts, *J. Lab. & Clin. Med.* **7**: 464 (May) 1922.
Banting, F. G.; Best, C. H.; Collip, J. B.; Campbell, W. R., and Fletcher, A. A.: Pancreatic Extracts in the Treatment of Diabetes Mellitus, *Canadian M. A. J.* **12**: 141 (March) 1922.
Banting, F. G.; Best, C. H.; Collip, J. B., and Macleod, J. J. R.: Preliminary Studies on the Physiologic Effects of Insulin, *Tr. Roy. Soc. Canada, Series 3*, **16**, Sec. V, 1912.
Macleod, J. J. R.: Pancreatic Extract and Diabetes, *Canadian M. A. J.* **12**: 423, 1922.
Banting, F. G.; Best, C. H.; Collip, J. B.; Macleod, J. J. R., and Noble, E. C.: The Effect of Pancreatic Extract on Normal Rabbits, *Am. J. Physiol.* **62**: 162 (Sept.) 1922.
Hepburn, J., and Litchford, J. K.: Effect of Insulin on the Sugar Consumption on the Isolated Surviving Rabbit Heart, *Am. J. Physiol.* **62**: 177 (Sept.) 1922.
Jackson, Slater: The Islands of Langerhans in Elasmobranch and Teleostean Fishes, *J. Metabol. Res.* **2**: 141 (Aug.) 1922.
Macleod, J. J. R.: The Source of Insulin, *J. Metabol. Res.* **2**: 149 (Aug.) 1922.
Macleod, J. J. R.: Insulin and Diabetes, *Brit. M. J.* **2**: 833 (Nov. 4) 1922.
Banting, F. G.; Campbell, W. R., and Fletcher, A. A.: Further Clinical Experience with Insulin, *Brit. M. J.* **1**: 8 (Jan. 6) 1923.
Moore, H. F.: Insulin and Diabetes, *Lancet* **1**: 714 (April 7) 1923.
Forrest, W. D.; Smith, W., and Winter, L. B.: Change in the Nature of the Blood Sugar of Diabetics Caused by Insulin, *J. Physiol.* **57**: 224 (March) 1923.
McCormick, N. A.; Macleod, J. J. R.; Noble, E. C., and O'Brien, K.: The Influence of the Nutritional Condition of the Animal on the Hypoglycemia Produced by Insulin, *J. Physiol.* **57**: 234 (March) 1923.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - "Medic, Chicago"

Subscription price - - - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, APRIL 28, 1923

STATISTICS OF THE STATE BOARD EXAMINATIONS

This week, for the twentieth consecutive year, THE JOURNAL publishes statistics based on official reports of examinations conducted by state medical boards, and of registrations by reciprocity and other methods. During these twenty years the work has received increasing support and cooperation from the secretaries of state licensing boards, who have furnished reports of their examinations. The reports have been checked with alumnus lists furnished by the deans of medical colleges, and by this cross-checking, errors have been corrected and the state boards have been notified. Thus, the statistics are made accurate and reliable and state board records have been corrected. We express our acknowledgments for the cooperation of the officers of state licensing boards and medical colleges, which made possible the publication of these statistics.

These statistics are of great importance as they relate to medical education and to medical licensure. For each state they show the number and qualifications of physicians admitted to examinations; the character of the colleges from which they graduated; the numbers registered and rejected, and the percentages. The material is so arranged that the facts regarding any one college or state can be compared with other colleges or states. The statistics show that in some states people are well protected against illiterate and incompetent physicians, while in others, in varying degrees, the opposite situation prevails.

CONNECTICUT AND ARKANSAS

Two glaring instances in which the people are not protected are found in Connecticut and Arkansas. In these states, although reasonably high standards are enforced by the regular medical boards, an open door for those with inferior qualifications is provided by separate boards of eclectic medical examiners. In Connecticut last year the eclectic board licensed seventy-nine physicians, thirty-nine of whom graduated from low-grade medical colleges, and for eighteen no data are found in the official files of medical colleges to show that they

graduated anywhere. The eclectic board not only examined the graduates of eclectic schools, but evidently admitted all others who applied, the Connecticut law to the contrary notwithstanding. Of the seventy-nine licensed, thirty-one were graduates who supposedly should have applied to the regular medical board. This group included eleven who graduated from the St. Louis College of Physicians and Surgeons, four from the Kansas City University of Physicians and Surgeons, and one from the College of Physicians and Surgeons of Boston, all of which are nominally regular medical schools and are reported as not recognized by the Connecticut (Regular) Medical Board and by the licensing boards of forty-five other states.

In Arkansas, out of eighteen candidates licensed by the eclectic board, seventeen were graduates of low-grade medical schools. Fourteen of these were from the Kansas City College of Medicine and Surgery, a nominally eclectic institution, reported not recognized by the licensing boards of forty-two states. It is high time Connecticut and Arkansas abolished these eclectic boards, which are making them a literal dumping ground for graduates of inferior medical schools.

THE LICENSING OF OSTEOPATHS

During the last six years, a few boards have admitted osteopaths to their examinations, and have licensed many of them as "physicians and surgeons." The objection to this is not that these candidates are osteopaths but that they are not required to present educational qualifications equal to those demanded of physicians. Inspection shows that osteopathic colleges lack properly equipped laboratories; they lack expert, well trained instructors in the fundamental medical sciences; they seriously lack clinical facilities, and in the instruction the osteopathic idea is so emphasized that the many other valuable therapeutic measures are neglected. Despite these serious deficiencies in instruction, seventy-four osteopaths were licensed last year as physicians—forty-eight in California, thirteen in Massachusetts, eight in Colorado, and five in Texas.

QUALIFICATIONS OF PHYSICIANS LICENSED

Special attention is called to Table J,¹ which shows the classification of the medical colleges from which the physicians licensed in each state were graduated during the last six years. A review of this table shows that California licensed 405 graduates of low-grade medical colleges, the largest number licensed in any state during the six years. The next largest numbers licensed were 177 in Illinois, 150 in Arkansas, 149 in Connecticut, 146 in Massachusetts, 141 in Missouri, and 120 in Colorado. In Missouri, the number of such graduates licensed during the last four years greatly diminished, and, fortunately, the word "reputable" has recently been restored to the medical practice act² so that these small numbers may be still further reduced.

1. Page 1233.

2. Medical Licensure in Missouri, Current Comment, J. A. M. A. 50:923 (March 31) 1923.

An encouraging fact shown in this table is that of the 29,338 physicians licensed whose qualifications were obtained in classified colleges, 23,234, or 79.2 per cent., were from Class A medical schools, while only 4,202, or 16.7 per cent., were from Class B schools, and 1,902, or 4.1 per cent., were from Class C schools. What is still more encouraging is that the percentage of those rated in Class A colleges is increasing each year, while the percentages of those from Class B and Class C colleges are decreasing.

EFFECTS OF PUBLICITY

The effectiveness of publicity in medical licensure may be noted in Table N. Higher standards of preliminary education have been adopted; all states but Colorado require that applicants must have graduated from a medical school; all states now require an examination of all applicants; forty-seven states have obtained and are using the authority to refuse recognition of low-grade medical colleges; forty-four states have established reciprocal relations with other states; ten states require a hospital internship as an essential for the license, and all but two states—Arkansas and Connecticut—have abolished their separate boards of eclectic medical examiners or have limited their authority—and the facts just presented show how important it is that these two states take similar action.

On medical education the effect of these statistics has been even more pronounced. The publicity regarding the failures of graduates at state licensing examinations and with respect to the nonrecognition of various colleges (Table D) has impelled medical schools to improve greatly their facilities for teaching. Such improvements are evidenced by the larger number of colleges which are now recognized in all states as compared to five years ago. Also, as shown in Table A, of the seventy-nine colleges in the United States and Canada that had graduates examined, fifty-nine, or 74.7 per cent., had less than 10 per cent. of failures.

Briefly, to each medical school these statistics show what improvements are essential if its graduates are to succeed in state board examinations; what state boards are requiring as a minimum of preliminary education, and in what states the boards are refusing to examine its graduates. To each state board these statistics show the qualifications of the physicians licensed as compared with those licensed in other states, and the further improvements which are needed in its educational standards and methods of examination. Owing to political conditions and other factors, standards in certain states fluctuate considerably; but, on the whole, there has been decided progress. Continuous publicity has led to a general improvement and a greater uniformity in the methods of examination; there has been a lessened confusion in the licensing of physicians throughout the country, and correspondingly better safeguards for the public against the licensing of those who are incompetent.

HIGH FAT DIETS IN DIABETES MELLITUS

In considering the progress made by the medical profession in the treatment of diabetes mellitus up to the present time, two factors appear of major significance: (1) the discovery that the disease is definitely related to the pancreas and the islands of Langerhans within the pancreas, and (2) the fact that the disease may be controlled through proper adjustment of the diet. Of these two factors, until the recent discovery by Banting, the dietetic control has been the more important. Even with the use of "insulin," however, diet adjustment is a matter of major consideration. As pointed out by Newburgh and Marsh,¹ it was customary at first to use a liberal protein fat diet in the treatment of diabetes mellitus. In 1914, Allen introduced the principle of undernutrition with the object of relieving the strain on the pancreas and of stopping the progress of the disease. Following the leadership of Joslin, who based his regimen on the experimental work of Allen, Woodyatt and others, it has been customary to begin the treatment with a period of fasting, following which the diet is built up, protein, fat and carbohydrate being added within the limits of the patient's tolerance. It has been usual to limit greatly the amount of fat, and it is Newburgh's contention that such limitation frequently results in undernutrition. During the last two years, Drs. Newburgh and Marsh have used diets containing larger amounts of fat than are customary in the practice of most clinicians, and they now publish a final statement which seems to go far toward establishing the soundness of the principles they advocate.

In the system of control which Newburgh and Marsh have adopted in 190 patients, whose records are now analyzed, the preliminary fasts or gradation of diets are discarded and the patients are served with the high fat diet from the day of their entrance into the hospital. After the patient is desugarized, his diet is increased by steps until he is receiving 0.67 gm. of protein and from 30 to 40 calories per kilogram of body weight. In no case is the daily carbohydrate allowance greater than 35 gm., and it is argued that the high fat diet throws into the metabolism much less glucose in proportion to its caloric content than do other types of diet. Furthermore, the records of the cases reported by Newburgh and Marsh indicate that a low protein, low carbohydrate, high fat regimen has produced and maintained in their patients an aglycosuric state; that its use has not been attended by acidosis and, in fact, caused its disappearance when present (short of coma) at the beginning of treatment; that it maintained nitrogen balance; that it did not cause a hyperlipoidemia; that it supplied sufficient energy and, finally, that it permitted activity compatible with earning a livelihood without being attended by downward progress in uncomplicated cases.

1. Newburgh, L. H., and Marsh, P. L.: Use of a High Fat Diet in the Treatment of Diabetes Mellitus: First Paper, *Arch. Int. Med.* **26**: 647 (Nov.) 1920; Second Paper, Blood Sugar, *Ibid.* **27**: 699 (May) 1921; Third Paper, Further Observations on the Use of a High Fat Diet in the Treatment of Diabetes Mellitus, *ibid.* **31**: 455 (April) 1923.

As the authors of this new contribution to the study of the metabolism in diabetes are themselves careful to indicate, statistics as applied to the control of diabetes deal with so many variables that are difficult to control that one must be extremely guarded in drawing conclusions from the results in any series of cases. These variables concern such factors as indiscretions in diet, of which diabetics may be guilty when not under direct control; complications, such as coincident infections, surgical operations and coma; efficiency of the treatment before the patient undertakes a new regimen; duration of the disease; social status and mental habits of the patient, and, finally, variability in individual physicians. With these variables in mind, critical observers hesitate to make any positive assertions as to the importance or the value of the principles which the authors recommend on the basis of their study. However, since Newburgh and Marsh have taken these factors particularly into account in drawing their conclusions, their results merit careful consideration. Even with the introduction into general use of the new pancreatic extract elaborated by the Toronto investigators, the problem of metabolism in this disease will perhaps require as extended and careful attention as has been given heretofore.²

EDUCATION OF THE NEGRO PHYSICIAN

In planning for the protection and promotion of the health of the negro population of the United States, the entire country has a deep concern. Statistics show the excessive morbidity and mortality that handicaps the negro race in this country; they prove, further, that no inconsiderable part of the excess is due to diseases communicable without respect to race, and justify the inference that no small part is due to lack of knowledge and to inadequate medical and surgical care. In outlining plans for negro health betterment, no factor is of greater importance than the part the negro himself will play, and particularly the part that will be played by the negro physician.

When the negro physician enters the home of his colored patient or meets him in the dispensary or the hospital ward, he greets him as one of his own people, adapts himself to the needs of the situation, and carries to his patient, and to the home, lessons of sanitation and health that he can enforce to a degree hardly practicable otherwise. That is, he does so if he has been properly trained and has been imbued with a conception of the responsibility of his mission to his race and to the community; not otherwise. To train colored physicians adequately and in sufficient numbers is, therefore, an important part of the service our medical schools owe to the public, and a task demanding the serious consideration of our medical educators.

Among the eighty-one medical schools in the United States, only two in Class A are devoted entirely to the

training of colored students. Both of these schools are striving hard to keep pace with the advances of medical education. Both are handicapped by lack of financial support. One, because of lack of such support and because of its unwillingness to accept students in excess of the number that can be properly taught with its limited laboratory facilities and teaching staff, has restricted its classes to fifty students. In consequence, it is turning from its doors applicants fully qualified, according to accepted standards, for the study of medicine. The latest figures available show only 379 students in attendance at these two schools, and the last graduating class of both together numbered but fifty. White physicians will continue for an indefinite time to treat colored patients; but the inadequacy of an annual output of only fifty colored physicians is apparent when it is borne in mind that our colored population exceeds ten million. In the development of educational facilities for the training of colored physicians there is, therefore, a field that may well be cultivated by those prepared to give financial aid to medical education.

Current Comment

NEW YORK GOVERNOR ADOPTS RATIONAL PLAN FOR HEALTH CONTROL

Governor Smith of New York recently set a commendable example in his approach to the health problems of his administration. Recognizing that disease is not a respecter of persons and that the prevention of disease and the promotion of health are not party issues, he sought counsel where it could best be obtained, and called into conference representatives of the state medical society. Personally, and through the state health commissioner and others, he submitted to the conference four of his most important health problems—control of narcotic drugs and addicts, medical service for sparsely settled rural districts, enforcement of the medical practice act, and promotion of medical research. Open discussion was followed by the appointment of a committee to draw up a statement of the conclusions agreed on, and to formulate plans to carry them into effect. After consideration of the findings and plans submitted, the governor sent to the legislature a message covering the two most urgent matters, narcotic drug control and medical service for sparsely settled districts, with recommendations for appropriate legislation. Certainly, added weight is given to the measures proposed by the governor, because of the method by which they were formulated, and the burden of the legislature is lightened by the reduction and simplification of the controversial questions, resulting from the same cause. These circumstances should go far toward bringing favorable action on the governor's recommendations. But whether they are or are not favorably acted on by the legislature, the governor is to be commended for the course he has pursued. The state medical society is entitled to credit for the part it played in the development of the situation and for its generous acceptance of the responsibility placed on it

² The Status of Insulin, Special Article, this issue, p. 1238.

by the governor. The transfer of the scene of activities from the executive to the legislative chamber, however, imposes on the society new responsibilities, and on the wisdom with which it steers its course will depend very largely whether future governors of New York and the governors of other states adopt the policy so ably laid down by Governor Smith.

WHAT LOS ANGELES THINKS OF THE ABRAMS CULT

In the *Bulletin* of the Los Angeles County Medical Association, published April 5, 1923, there appeared this item:

The following resolution was adopted at the meeting of the Board of Councilors held March 12, 1923: "It shall be the sense of the Council that Abrams' method of diagnosis is a fraud. Any physician practicing this method is ineligible to membership. If a member, he shall immediately cease this method of practice or charges of unethical conduct shall be preferred against him."

If more medical societies would take this action, the activities of those now exploiting the Abrams nonsense¹—diagnosing syphilis in healthy persons and professing to cure cancer by means of the "Oscilloclast"—would be confined to those "drugless healers" and "advertising specialists" who already form so large a part of Abrams' disciples.

THE NATIONAL BOARD OF MEDICAL EXAMINERS

With the state board statistics published this week appear also statistics² showing the results of examinations held by the National Board of Medical Examiners. During the first six years of its existence, the National Board held eleven examinations. Each was held in a large city, and those wishing to take the examination, unless they happened to live in that particular city, were required to travel long distances in order to take the examination. As a consequence, only 325 candidates were examined and 268 certificates issued—an average of forty-five each year. At the beginning of the board's activities, in an editorial comment,³ *THE JOURNAL* urged the adoption of an arrangement whereby the examinations could be held simultaneously in different cities, so that candidates would not need to spend so much time and money to take them. During 1921, therefore, the plan was adopted whereby the examination was divided into three parts, or three examinations, one at the end of the second year, one at the end of the fourth year and one after the graduate has completed his internship. An arrangement was made also whereby the first two examinations could be taken in any Class A medical school, and the third examination, which is entirely clinical and practical in its nature, could be taken in any one of fifteen large cities distributed in various parts of the country. The new plan has been a great success, as shown by the fact that in the first year 412 candidates were examined, eighty-seven more than were examined in all six previous years. It is

interesting to note that the examinations held by the National Board are now widely recognized by state licensing boards. As noted in the statistics, holders of the certificate are now eligible for registration without further examination in twenty-three states, and it is only a matter of time when the certificate will be recognized by all state boards. It is already being regarded as an evidence of excellent qualifications both in this country and abroad. The certificate, therefore, even now, has a value far greater than the money and time required by the student to take the examination.

Association News

THE SAN FRANCISCO SESSION

Alpha Kappa Kappa Banquet

The Alpha Kappa Kappa fraternity has arranged for a banquet to be held on the evening of June 28. All members attending the annual session are strongly urged to communicate with the chairman of the banquet committee at 100 Judah Street, San Francisco. Sigma chapter's new home at this address will be open to all members, and opportunity will be afforded them to register as soon as they arrive. Dr. Louis W. Achenbach is secretary of the chapter.

Bring Your Blue Fellowship Card

Registration will be made much easier for Fellows and for the Registration Bureau at San Francisco if each Fellow will bring his Fellowship card for 1923, and present it when registering. Complete instructions about registration will appear in the San Francisco Number of *THE JOURNAL*, to be issued during the month of May. All Fellows who have been reported to the American Medical Association for enrolment as members of constituent state medical associations and who have paid their Fellowship dues have had 1923 blue Fellowship pocket cards sent them.

Meeting of the Medical Veterans of the World War

There will be a meeting of the Medical Veterans of the World War at 2:30 p. m., Tuesday, June 26, at the Civic Auditorium in San Francisco. Licut.-Col. Bertram F. Alden, San Francisco, is the chairman of the local committee of arrangements of this organization, and Dr. Arthur T. McCormack of Louisville, Ky., is president of the Medical Veterans.

Invitation to Members of Section on Ophthalmology and Section on Laryngology, Otology and Rhinology

Members of the Section on Ophthalmology and of the Section on Laryngology, Otology and Rhinology are extended a most cordial invitation to stop off at Omaha, on their way to San Francisco to attend the annual session of the American Medical Association, to play golf. Dr. Clarence Rubendall, Brandeis Theater Building, Omaha, will advise those interested concerning arrangements that have been made for their convenience.

Golf and Country Club Entertainment

An attractive program, including two tournaments, has been arranged for golf enthusiasts. Through the activities of Dr. James Eaves, chairman of the Committee on Golf and Country Clubs, the cooperation of all golf and country clubs throughout California has been obtained. Fellows visiting San Francisco during the session will receive any desired information relative to golf by communicating with the chairman or any member of the golf committee at headquarters or at the Civic Auditorium.

Tournaments are arranged for Fellows of the American Medical Golfing Association, and also a tournament for Fellows not members of this organization at the San Francisco Golf and Country Club and at the Lakeside Golf and

1. A reprint of the Abrams vagaries will be sent on receipt of four cents in stamps.

2. See page 1236.

3. National Board of Medical Examiners, Current Comment, *J. A. M. A.* 66:745 (March 4) 1916.

Country Club, respectively, Monday, June 25. Other tournaments will also take place during the week of the session, in and around San Francisco and various parts of the state. All Fellows, and particularly those members of the American Medical Golf Association who desire to take part in the tournament, are requested to communicate with the chairman, Dr. Eaves, 808 Balboa Building, San Francisco, as soon as possible.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Concluded from page 1154)

PUBLIC HEALTH

MARCH 7—AFTERNOON

Report of Conference on "The Education of Sanitarians and the Future of Public Health in the United States"

DR. HUGH S. CUMMING, Washington, D. C.: There is a dearth of persons properly qualified to fill the various positions in public health activity, ranging from state and city health officers to county medical officers, inspectors and public health nurses. There are many important public health positions now filled by untrained or incompetent persons, and by men trained in the expensive school of experience. The importance of the conservation both of the life and of the healthfulness of the individual is more fully appreciated now by all classes of people in this country than ever before. This general interest is realized by the professional politician and by professional uplifters and agitators, and it is realized also by that not inconsiderable number of selfish, sordid interests that thrive on ignorance and necessity, especially in the rural regions of our country. The medical profession has been backward in realizing the significance of this movement, and when it has proved evident in part to them they have too often developed a defense reaction, manifested in various degrees from open antagonism to indifference toward public health movements.

Early in 1922, I issued a call for a conference on "The Education of Sanitarians and the Future of Public Health in the United States." This conference was held in Washington, March 14 and 15. For the first time, presidents of universities and deans of medical schools came together with leaders in the field of public health to discuss this important subject of common interest.

The addresses of the conference and subsequent studies have revealed in a striking manner the present dearth of health officers, and the lack of training on the part of many now holding positions in public health work. Although there are approximately 10,000 public health workers of various kinds now engaged on a full-time basis by official health organizations, there will be required, according to John A. Ferrell, a force of approximately 30,000 within the next twenty years, in addition to those needed by private health agencies. Furthermore, while there are now 11,000 public health nurses in all types of health work, there is need, according to the recent report of the Committee for the Study of Nursing Education, for approximately 50,000 to serve the present population of the United States. Public health work has become differentiated into many more kinds of occupations than physicians or even sanitarians generally realize. There are various types of administrative work in rural, municipal, state and federal agencies, and in dispensaries, industrial health service and school health work; there are sanitary engineering; public health laboratory work (including bacteriology, entomology and chemistry); vital statistics; dispensary medical practice; dispensary dentistry; psychiatry and psychology, physical training, public health nursing and hospital social work; nutrition work; inspection work; popular health education; public health law, and research. One or more of these occupations are now to be found in the fields of general public health, tuberculosis work, social hygiene, mental hygiene, cardiac disease work and child hygiene.

Partially as a result of this attitude, there were graduated from nine universities with various kinds of public health degrees only 106 persons in 1921, of whom only twenty-one were doctors of public health, although the number of graduates from medical schools the same year was approximately 3,200.

Report of Activities Carried On by the Public Health Service Subsequent to the March, 1922, Conference on the Education of Sanitarians

DR. W. F. DRAPER, Washington, D. C.: From the various medical schools and universities, considerable information has been obtained regarding facilities offered for the education of sanitarians. It appears that there are at least eleven well established schools and departments of hygiene and public health in the universities of the United States, and other universities offer a large number of public health courses. While the University of Chicago has no separately organized school of public health, it offers approximately thirty-five courses in public health subjects. A new interest has been manifested during the last twelve months in the development of public health courses.

Considerable data have been collected from city and state departments of health and from other sources regarding the problem of salaries and tenure. The tenure situation needs to be corrected. Too frequently, well qualified health officers are displaced wholly for political reasons. On the other hand, it is believed that the salary problem is a more fundamental one. When higher salaries are paid and full-time health officers with proper training are employed, they should be able so to win the support of the people that heads of municipalities and states will have neither the desire nor the temerity to request their resignations. Special efforts must be made to establish higher standards of training in the employment of city and state health officers, and to bring about the payment of higher salaries so that well trained persons may be attracted to these positions. In an effort to win the support of mayors, governors, members of city councils and state legislatures and similar persons to the establishment of such standards, the service is planning to distribute among these officials a booklet setting forth the importance of well organized public health work. A preliminary draft of this publication has already been prepared.

As a result of communications with a few universities and colleges in the eastern part of the country, the service has found that there is a demand for lectures on the subject of public health work as a life career, and, consequently, a schedule of addresses is now being arranged for approximately fifteen universities and colleges in New England, New York and New Jersey. Preliminary steps have been taken to establish a clearing house for schools of public health and health departments.

On the recommendation of a subcommittee which met last July at Columbia University, and on the endorsement of the Advisory Committee, the Public Health Service is about to print and distribute among universities and colleges a report recommending the incorporation in the college curriculum of public health courses for all students. It is recommended that a one or two semester course in personal and community hygiene of approximately three hours be required of all first year students. The report recognizes that the selection of courses by those students planning to enter public health work as physicians or sanitary engineers will be determined by the requirements of schools of medicine, public health and engineering, but it also takes cognizance of the fact that an increasing number of students are entering public health work without a medical or engineering degree.

The Recruiting of Sanitarians for the Future Service of the State

DR. C. E. A. WINSLOW, New Haven, Conn.: The recruitment of leaders of sound training and high natural capacity is the crux of the public health movement of the present day, and the discussion of this problem, which has been stimulated during the past year by General Cumming and his associates of the Public Health Service, is fraught with

the deepest importance for the future of the movement which we have at heart.

The demand for qualified sanitarians is increasing year by year, and for the moment at least this demand is far in excess of the supply. We hear much about meager remuneration and insecurity of tenure. Yet from my experience of nearly twenty-five years in the training of public health workers I can quote the conclusion of the psalmist that in his field "I have not seen the righteous forsaken nor his seed begging bread." When a health officer with proper qualifications loses his position, it is nine times out of ten as a result of temperamental characteristics which disqualify him for the successful execution of his task; and for every man who is hampered by political pressure there are a dozen other men crying out for his expert direction.

The recruitment of the best type of young medical graduates as the leaders of the public health movement of the future is a primary essential for the success of our cause.

The first essential factor in this problem is the question of the place and the content of a course in public health in the undergraduate medical curriculum. It was clear to us from the beginning that the second year was no place for such a course unless the subject was to be regarded as an accidental and unimportant offshoot from bacteriology. For some time we placed the course in the third year; but we found that here it came into serious conflict with the clinical work of the students, just admitted to the wards of the hospital, naturally and properly preoccupied with the fascinating problems of disease in the individual human body. We have now transferred our course to the first half of the fourth year, where it is allowed ninety hours of lectures, discussion and field work. By the fourth year the student has sufficient medical knowledge to realize what the modern public health campaign really may mean; and our effort is to include in the course a summary and a synopsis of the broader community applications of all that he has learned during his preceding three years, and to bring them into proper relation to the movement as a whole.

The Steps Already Taken in the Standardization of Public Health Training

DR. A. J. McLAUGHLIN, New York: Annually, for several years, the Council on Medical Education and Hospitals of the American Medical Association has presented partial data on the institutions giving courses leading to public health degrees. The first real effort at standardization of these degrees was made at a conference held at Yale University early in 1919.

The next step was the appointment of a committee of sixteen in November, 1919, by the American Public Health Association on the Standardization of Public Health Training.

Of the many degrees which have been offered, the Certificate of Public Health (C.P.H.) has been given to the largest number of students. The next largest number of students have received the Bachelor of Science degree in Hygiene or Public Health. The C.P.H. and the Master's degree are given by several schools on the completion of one or two years of special study following either graduation in medicine or graduation from a college or a university. The course is never completed in less than one year for either medical or college graduates, and the latter usually require at least two years unless their undergraduate preparation in bacteriology, anatomy, histology, embryology, physics and chemistry has been unusually complete. The Bachelor's degree in Public Health is given by several schools which have the facilities for placing a broad fundamental public health training in the curriculum of regular four year courses. It would be undesirable completely to regulate or standardize the courses of study for these or any other degrees in a relatively young and rapidly growing profession like public health. It is desirable and important that the student may secure a proper perspective for public health work, and in the interest of unity and perspective it is in many ways desirable that certain fundamental lecture courses should be continued throughout the year. Laboratory courses may profitably be given intensively, but to turn over the students to one specialist after another in rapid succession

would result in giving them solid blocks of highly specialized information which they could adapt to their own professional work only with great difficulty.

The number of graduates obtaining the Doctor of Public Health degree is increasing. In the majority of schools, but not in all, graduation in medicine is a prerequisite. In no case is the Dr.P.H. degree offered to a candidate who has not either the medical degree or the Bachelor's degree, and in no case is it possible to secure the Dr.P.H. degree with less than seven years of study following high school graduation. The Doctor of Science and Doctor of Philosophy degrees in Public Health are given on the same basis as in other fields.

DISCUSSION

DR. RAY LYMAN WILBUR, Stanford University, Calif.: In the curriculum committee of the Association of American Medical Colleges we have been making a steady endeavor to increase the number of hours that can be used for public health training and for training in hygiene. The courses in medical schools on public health and hygiene have, speaking in a broad way, been given by some one whom they wanted to give an easy and agreeable job. As I become associated more and more with educational institutions, I have become "course shy." Courses, courses—it seems to me, I live in an atmosphere of courses, and I am thoroughly tired and sick! When a man tells me he has given the same courses for twenty years, I say, "For goodness sake, why does not the Lord get busy!" When I talk of introducing more time into the curriculum for hygiene and public health, I fear it may take the form of some lecture courses that will be given in a stereotyped form year after year without any vitalizing effect. These courses can be given in a live way. We are training students so that they learn by doing, not by hearing, and public health instruction in a medical school must be organized on that basis. Students must go out and do the work. In the standardization of public health courses do not forget that we are trying to get over the standardization of medical courses. Give the individual institution and the individual man a chance to develop in their own way as much as you can, and also keep character and personality in the subject because, if you do, it will develop leadership just as it should in medical education.

DR. JOHN SUNDWALL, Ann Arbor, Mich.: At the University of Michigan we are attempting to stimulate interest in and to recruit workers for the public health field. In addition to the required courses in hygiene and public health in the schools of medicine, dentistry and pharmacy, all entering freshmen are required to take six lectures on the fundamentals of health promotion and disease prevention. At the conclusion of these lectures, the students are made acquainted with and urged to elect later a course included in the regular college curriculum. About 200 college students elect this course each year. Besides the aims, interests and activities of public health agencies, official and voluntary, the students' attention is called to the opportunities for those trained for public health work. In this way, all students are made acquainted with the machinery of public health, through the medium of the six required lectures. More than 500 students, annually, by means of the elective courses in the college or the required courses in medicine, dentistry and pharmacy, are made familiar with the opportunities that public health in the future will have to offer as careers. We are only in the second year of this attempt to stimulate interest in public health as a profession, and there is already abundant evidence that our efforts are bearing fruit. Public health directors should be trained in those larger universities where there are schools of medicine, engineering and education, in association with the college and the graduate school. At the University of Michigan, two programs of study are offered in the graduate school: one of one year's duration leading to the degree of Master of Science in Public Health; the other of two years' extent leading to the degree of Doctor of Public Health. The demand for trained workers in various fields of public health is even now much greater than the supply. We know of no profession which offers better opportunities to college women. The demand for trained workers in these fields will be second only to that of the teaching

profession. Programs of study in the college leading toward public health work will contribute largely to this demand on the part of college women. Vital statisticians, laboratorians, sanitary inspectors, school health supervisors, public health educationalists and medicosocial workers are among the special positions in health work that should appeal to college women and for which special training courses are being arranged at the University of Michigan. The first two years of a four year program of study leading to public health work will be based on a liberal education. Psychology, biology, sociology and chemistry should be included in these first two years. The second two years will include subjects of cultural value and, in addition, special courses bearing directly on public health specialties. It will be proposed that the degree of Bachelor of Science in Hygiene be given on the satisfactory completion of these programs of study. The nurse's relationship to public health is proving to be similar to that of the physician. It is not possible, nor is it desirable, that a physician should be at the head of all public health activities, although for certain phases of the work, the physician's services are indispensable. This situation is true also for the nurse, whose services in certain fields are indispensable. As the pioneer of public health, the public health nurse is rendering invaluable service. Her untiring labors in the counties and rural districts deserve the highest commendation. They are serving well in capacities of school and industrial nursing.

DR. EDWIN O. JORDAN, Chicago: Two assumptions underlie largely a discussion of public health education. The first and most fundamental question is, Are we getting the right type of man in the work? I agree with Dr. Winslow that we should not lay too much emphasis on the financial aspects of the matter. The first consideration of the poet, the artist, the man of science is not the financial rewards; oftentimes he is working at a great financial sacrifice. Hundreds of public health workers are carrying on their work at great personal and financial sacrifice. That is the type of man we should watch for; and what General Cumming is doing in trying to interest and select the right type of man is fundamental. The right man may be trusted to work out his own education if given reasonable opportunity. First of all, we must have the man. The second assumption is that the fundamental education is what it should be. We are loading up students not only in medical courses but also in our fundamental instruction in secondary schools and colleges, with the result that spontaneity of the student is often entirely smothered by a plethora of courses, as Dr. Wilbur has pointed out. The public health official ought to be allowed to keep his mind elastic, ready to receive new impressions, to act on new information, and to abandon outworn creeds. Having got the right type of man, we should not smother him entirely in our fundamental requirements.

The Education of the Partially Trained Sanitarian Now Employed

DR. FREDERICK W. SEARS, Syracuse, N. Y.: This article will appear in full in *THE JOURNAL*.

DISCUSSION

DR. RAY LYMAN WILBUR, Stanford University, Calif.: The great danger of the health officer is to have large authority and too little information. Partially trained sanitarians are in that danger a good deal of the time. The plan suggested by Dr. Sears seems to be the practical and right one—to teach these men something they want to know. At the same time, if you can develop their social sense, they may become satisfactory health officers in their communities.

DR. W. S. RANKIN, Raleigh, N. C.: I have been impressed by what has been said with respect to the personal and educational qualifications of men entering public health. Public health work in this country has reached a place at which it is not so much a matter of money as it is of getting the right sort of people to engage in public health work. In some places they are limiting the requests for appropriation by the available supply of personnel; therefore the question of personnel is of great importance. From my experience of fourteen years in employing health officers and nurses,

personal qualifications are most important. I have seen many men promoted in the country on account of their personal qualifications. I do not recall a single person demoted who had the right qualifications.

DR. HAVEN EMERSON, New York: In the main, except in the federal Public Health Service and in the army and navy, accident and opportunity have been the chief factors in the selection of the present personnel of health departments and private health agencies. This situation has resulted from the astonishing rapidity with which public demand and private interest in health service have followed the interpretation of preventive medicine to the public, and because more of the educational institutions of the country did not realize the public needs until after popular interest had resulted in a tremendous expansion in the appropriations, the authority, the personnel and functions of health service. Since 1907, the number of public health nurses has increased from 119 to 12,000, and well organized courses for nurses in the theory and practice of disease control and health development have been in operation for many years. As long as there is so much uncertainty in the permanence of tenure and such inadequacy in the financial returns, it will be largely a waste of time and effort to erect great educational structures primarily for the training of men and women for professional careers in preventive medicine. I would put under three professional groupings the hospital administrator, the public health nurse and the industrial hygienist, reasonably well paid in return for the time spent in acquiring an education. Beyond that, we have the other groups: health officers, medical school inspectors, and assistants in the field of public health administration; sanitary inspectors and engineers, vital statistics, preventable disease control, laboratories, foods, and practical instruction in child hygiene and education. These are the fundamental bureaus which are now employing assistants in public health. Before the end of the present year, at the College of Physicians and Surgeons of Columbia University, one half of the fourth year class will begin an elective course of eight weeks in the practice of preventive medicine, with half a day spent in such subjects as public health, medical school inspection, examination of schoolchildren, psychiatric work, psychiatric examination in schools and prenatal supervision.

DR. OLIVER W. H. MITCHELL, Syracuse, N. Y.: We cannot all do as much as some large universities are doing unless we have the facilities and the money to work with. That situation was what confronted us in central New York. The health council of the state fixed certain requirements for health officers, and we felt we should cooperate in every possible way, to train these men along the lines laid down. We instituted a short course for women and men, some of them already occupying positions as health officers. With this course we did very well as compared with the regular course in public health; nevertheless, there is still need for such instruction, and it is up to many institutions, like Syracuse, or perhaps institutions not having as many facilities as Syracuse, to offer such help to the men in the field. As far as medical students are concerned, we have felt it unwise to teach them hygiene without practical demonstrations, so we keep the teaching of hygiene in the medical school closely tied up with what is going on in the city.

DR. ARTHUR T. MCCORMACK, Louisville, Ky.: We have had some public health expositions that have been of tremendous educational value to both sanitarians and physicians. In Louisville, 110,000 people came to see the public health exposition, which was so conducted that 12,000 different people took part in either the exhibits or the program. Demonstrations were made of modern public health machinery, and each man who was put on a demonstration had the chance to find out what people thought of his method of education. It was extremely interesting also to college professors, university men, and representatives of commercial activities, who offered for sale things that promote people's health and happiness. It has been of great value in these expositions that several hundred physicians took part in the exposition and learned to talk to people regarding the common problems in public health.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Tropical Disease Clinic for American Medical Association.—The medical staff of the Navy Hospital, Balboa Park, will give a clinic on tropical diseases for the Fellows of the American Medical Association, July 3.

Bill to Protect the Public.—A bill making it unlawful for any person who professes to treat the sick to use the words, letters, or title of doctor, or physician and surgeon, on doors, windows, signs, and other places unless such letters or titles are accompanied by the degree on which his title is based, with the name of the school that conferred it, has passed the senate and assembly.

CONNECTICUT

Yale University School of Nursing.—President Angell announced, April 24, the establishment at Yale University, New Haven, of the first university undergraduate school of nursing in the United States, the funds for which will be provided by the Rockefeller Foundation. The school will have its own dean, its own faculty, buildings and budget, and will not be dependent on medical schools and hospitals. The Yale school will break away from the apprenticeship system of nurse training and will attempt to develop an educational program closely related to and dependent on the practical work; in focusing attention on the educational training of the student, many routine tasks which contribute little to this training will be eliminated and the period of preparation thus shortened. About twenty-eight months will be required for the course. A high school course or its equivalent will be required for admission. The most significant feature of the school will be the character of the training. All factors will be presented which contribute to the diagnosis, care and treatment of disease, and which relate to the conservation of health. Patients will not be considered as hospital "cases" only, but such factors as heredity, environment, child development, psychology, economics, sociology, industry and public health will be presented in their bearing on each problem studied. Properly to develop such conception of disease, the new school will embrace field work and community nursing as part of the basic training.

DELAWARE

Physicians Protest Treatment by Legislators.—Physicians of the Newcastle County Medical Society are reported as indignant at the treatment accorded the legislative committee of the society by the temperance committee of the Delaware House of Representatives. The legislative committee requested a hearing on a pending bill permitting the distribution of alcoholic preparations for medicinal use under certain restrictions, but its request was refused under conditions that seemed to reflect on the dignity of the society and of the committee.

DISTRICT OF COLUMBIA

Lectures on Anthropology.—Dr. Ales Hrdlicka, Washington, is giving a course of lectures on anthropology, with special reference to Czechoslovakia, at the Prague Medical Faculty. Dr. Hrdlicka was born in Bohemia.

GEORGIA

Hospital News.—Plans have been completed for the erection of the Albert Steiner Memorial Hospital at Atlanta at a cost of about \$300,000. This institution, which will be operated in conjunction with the Grady Memorial Hospital, will be for the free treatment of cancer. It will be maintained largely from income from the Steiner estate. Radium valued at \$75,000 will be provided for the institution. Plans for the proposed half million dollar State Tuberculosis Sanatorium at Alto have been published. They include administration buildings, two infirmaries, a power plant, and laundry. The legislature will be asked to appropriate \$250,000 for the buildings, the counties to pay the remainder.

ILLINOIS

Personal.—Dr. James T. Jenkins, Carthage, was recently elected president of the Hancock County Medical Society.—Dr. John A. Wheeler, former state senator from the Springfield district, has been appointed superintendent of the Lincoln State School and Colony to succeed the late Dr. Samuel A. Graham, of Clinton.

Hospital News.—The new \$300,000 Victory Memorial Hospital, Waukegan, will be dedicated, Memorial Day, May 30, and opened to patients a few days later.—The cornerstone of the new building for the Palmer Tuberculosis Sanatorium, Springfield, will be laid in June on the tenth anniversary of the establishment of the institution.

Physicians Fined.—It is reported that Drs. John R. Thompson and John F. Shrader of Bridgeport, and Arthur R. Lindsay of Pinkstaff, pleaded guilty recently to violating the vital statistics law which requires registration of births within ten days, and were fined the minimum fine of \$5 and costs. The complaints were filed by a special agent of the department of public health.

Tuberculosis Sanatorium Survey.—The state department of public health has recently completed a survey of the eleven county tuberculosis sanatoriums in operation in Illinois. There is a maximum capacity of 400 beds; the average number of patients cared for was 331; the average cost of maintenance each month for all the sanatoriums is \$25,300, or slightly more than \$76 a month for each patient. The survey showed that four sanatoriums hold diagnostic clinics; eight conduct dispensary service, and seven conduct, in some measure, county tuberculosis and public health work. The lowest appropriation for any of the sanatoriums for 1923 is \$10,000, but a contract with the U. S. government to care for tuberculous ex-service men makes the total amount available in that instance nearly \$30,000. Nine sanatoriums have appropriations ranging from \$25,000 to \$40,800 for maintenance; another has an \$18,000 budget.

County Hearing Boards.—Plans for establishing a hearing board for every county in the state have been worked out by the state department of public health. The purpose of the boards is to give physicians, local registrars, midwives and others who are charged with violations of the vital statistics or other laws and regulations, an opportunity to state their cases to show cause why they should not be prosecuted in the courts. It is planned to request court action in only those instances in which circumstances indicate wilful and repeated violations, the aim of the hearing boards being to stimulate friendly cooperation through education. According to plans, the boards will consist of the local state's attorney, the local health officer and the district health superintendent, or a member of the state department of public health from Springfield. Such a board recently heard in Carroll County the case of the Lanark health officer charged with failing to quarantine and report cases of communicable diseases. Another sat in Lee County, where a physician was charged with failure to report smallpox. In both instances, the charges were dismissed on promises to observe the laws in the future.

Chicago

Joint Medical Meeting.—The Chicago Ophthalmological Society held a joint clinical meeting with the Chicago Otolaryngological Society, April 16-17. Dr. William L. Benedict of Rochester, Minn., read a paper on "Serous Tenonitis."

Personal.—Dr. Albert H. Andrews has been elected professor of otolaryngology of the Chicago Eye, Ear, Nose and Throat College.—Dr. Daniel N. Eisendrath gave a Mayo Foundation lecture at the Mayo Clinic, Rochester, Minn., April 26, on "The Clinical Importance of Renal and Ureteral Anomalies."—Dr. Carl Beck, Chicago, spoke on "Surgical Diagnosis," before the Elgin Physicians' Club, April 9.

Professions Hold Legislative Conference.—A dinner was held at the Hotel Morrison, April 23, at which nine hundred leaders of the medical, dental and pharmaceutical professions of Chicago and down state, together with members of the state legislature, outlined plans to push legislation to protect their professions and the public. They urged an amendment to the law which would transfer the appointment of examining boards from the director of the department of registration and education to the governor; that the examiners be appointed for terms of five years and that licenses be signed by the president and secretary of the board as well as by the director.—This conference was the result of the recent conviction of W. H. Miller, director of the department of registration and education, for irregularities in licensing men not qualified.

INDIANA

Illegal Practitioner Arrested.—Minnie L. Priepke, a mechanotherapy practitioner of Goshen, according to reports, was arrested on a charge of practicing medicine without a license on complaint of the secretary of the state board of medical registration and examination, April 13.

Personal.—Dr. William F. King has been appointed state health commissioner for a regular term of four years. Dr. King was first appointed to this position in August for the unexpired term of Dr. John N. Hurty, who resigned.—Dr. Carleton B. McCulloch, Indianapolis, will go to Europe as representative of the American Legion, to invite certain distinguished guests to the American Legion national convention in San Francisco, October 15-20, it was announced, March 19.—Dr. Frederick G. Banting of the University of Toronto, Canada, addressed the Indianapolis Medical Society, April 10, on diabetes and insulin. Dr. Banting stated, it is reported, there are now 3,000 patients under treatment with insulin.

IOWA

Measles Epidemic.—Seventeen new cases of measles in the epidemic at Waterloo were reported, April 9. This was the largest number reported in any one day, although the disease had been prevalent for two weeks. All parts of the city are affected, but the cases seem mild.

Personal.—Dr. Benjamin Courshon has been appointed city physician of Sioux City to succeed Dr. Max A. Helfgott, who resigned.—Dr. H. Hauneder of Vienna arrived in the United States from Austria, March 6, and will locate in New Hampton.—Dr. A. C. Conaway of Marshalltown was elected mayor of that city recently.—Drs. Raleigh A. Buckmaster, Dunkerton, and James R. Thompson, Waterloo, were elected president and secretary, respectively, of the Blackhawk County Medical Society at the annual meeting, April 4.

KANSAS

State Medical Meeting.—The fifty-seventh annual meeting of the Kansas Medical Society will be held at Kansas City, May 2-4, under the presidency of Dr. Middleton L. Perry, Topeka. Drs. William A. Pusey, George J. Musgrave, and T. Howard Plank, all of Chicago, will be the principal visiting speakers.

KENTUCKY

Health Survey.—L. K. Hospins of the U. S. Public Health Service and F. C. Dugan, sanitary engineer of the state board of health, will make a health survey in northern Kentucky to determine the cause of the prevalence of typhoid in Covington and adjacent territory.

MAINE

University News.—The governor has signed the bill appropriating \$895,000 for the University of Maine for each of the fiscal years ending in 1924 and 1925. Of this amount, \$170,000 will be expended for an arts and science building.

MARYLAND

Permanent Health Exhibit Planned.—Activities of the Maryland Department of Health in combating disease will be shown in a permanent exhibit to be placed in the Smithsonian Institute, Washington. Dr. John S. Fulton, director of health, and Dr. John Collinson, assistant chief of the bureau of communicable diseases, are arranging the material.

Hospital News.—The West Baltimore Medical Association has purchased the property formerly used as the Hebrew Orphan Asylum. After improvements have been made, the new hospital will accommodate 140 patients. All except contagious diseases will be treated. The hospital which will be nonsectarian, will be formally opened in the fall.—A special medical meeting in which the Maryland Psychiatric Society and the Washington Psychiatric Society participated, was held at the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, April 18, to celebrate the tenth anniversary of the opening of the clinic.

MASSACHUSETTS

Exchange Professorships.—Sir Harold Jalland Stiles, professor of surgery at the University of Edinburgh, and former president of the Association of Surgeons of Great Britain and Ireland, arrived in New York, April 6. He will occupy the

chair of Dr. Harvey Cushing of Harvard University, Boston, for one week; then spend a week at Johns Hopkins University, Baltimore. Last year Dr. Cushing acted for two weeks as director of the surgical unit at St. Bartholomew's Hospital, London.

MICHIGAN

Bill for Homeopathic School Killed in Committee.—The Senate State Affairs Committee voted, April 10, not to report out Senator Whiteley's resolution directing the regents of the University of Michigan to reestablish the Homeopathic College apart from the regular medical school, with which it was merged two years ago.

Society News.—Dr. Frederick C. Warnshuis, Grand Rapids, presented a paper on "Our Present Attitude to Gallbladder Disease," before the Kent County Medical Society, April 11.—At the annual election of officers for the medical section of the Wayne County Medical Society in Detroit, April 9, Dr. Robert C. Moehlig was elected chairman, and Dr. George P. McNaughton, secretary, for the ensuing year.

Bill to Regulate Fees.—If a bill recently introduced in the legislature is enacted, the state of Michigan will be divided into districts, and the maximum charge that may be made under any oral or implied agreement for hospital and medical services by any physician or hospital within each district will be fixed by law. If a physician charges more than the amount stated in the proposed law, his license may be revoked.

MINNESOTA

The Cancer Institute.—Further details of the gift of \$250,000 for a cancer institute in connection with the University of Minnesota General Hospital (THE JOURNAL, April 21, p. 1155) have been received. The donation was made by the Citizens Aid Society of Minneapolis, established in 1916 by the late George H. Christian; \$200,000 will be expended in the construction of a suitable building; and the remainder, on radium and roentgen-ray equipment. The institute will have a capacity of fifty beds and will operate on a self-supporting basis. Construction work will start at once.

Physiologists Meet at Rochester.—In order to correlate further the teaching of physiology and its clinical application, physiologists from nearby medical schools met at the Mayo Foundation, Rochester, April 9-11. The following were present: Dr. Frank C. Becht, Northwestern University; Prof. Charles W. Greene, University of Missouri; Prof. August E. Guenther, University of Nebraska; Dr. Don. R. Joseph, St. Louis University; Dr. Arno B. Luckhardt, University of Chicago; Drs. Elias P. Lyon, George E. Fahr, and Prof. Jesse F. McClendon, University of Minnesota; Dr. John T. McClintock, University of Iowa; Dr. James F. McDonald, Creighton University; Prof. W. J. Meek, University of Wisconsin, and Prof. Percy F. Swindle, Marquette University.

MISSOURI

Medical Society to Aid Cripples.—The St. Louis Medical Society recently passed a resolution to repeat last year's survey in order to ascertain how many crippled children in and about St. Louis are not receiving corrective treatment because of the inability of their parents to pay, and to renew its offer to provide free medical, surgical, hospital or appliance treatment for those children. Last year the society received the names of crippled children from seven states outside Missouri. The committee on public health and instruction of the medical society inquires into the cases reported and the parents of the children are notified to present them at a three-day clinic at the medical society's offices in St. Louis.

MONTANA

Volunteers for Spotted Fever Serum.—It is reported that nine Japanese of Missoula responded to a call for volunteers for trying out the immune serum recently produced by Dr. Hideyo Noguchi for the treatment of Rocky Mountain Spotted Fever (THE JOURNAL, April 21, 1923, p. 1146). A second injection of serum was administered, April 12.

NEVADA

Hospital News.—It is planned to erect a new ward for the Nevada Hospital for Mental Diseases, Reno, at a cost of approximately \$40,000.—Dr. Claude H. Church, Tonopah, has been appointed medical director and superintendent of

the Ross Sanatorium, Ross, Marin County, Calif.—A new eighteen bed hospital will be erected in Central City at a cost of \$35,000.

NEW JERSEY

Chiropractor Fined.—The state board of medical examiners reports that Roy H. Langley, chiropractor, of Bound Brook, was fined \$200 and costs, following conviction on the charge of practicing medicine without a license.

NEW YORK

Women's State Medical Society Meeting.—The Women's Medical Society of New York State will hold its eighteenth annual convention in New York City, May 21, just preceding the meeting of the Medical Society of the State of New York.

Hospital News.—An addition will be erected to the Niagara Falls Memorial Hospital at a cost of \$250,000.—The South Side Hospital, Babylon, will move into its new \$300,000 building, May 31.—The cornerstone of the new \$500,000 wing of the Jewish Hospital, Brooklyn, to be known as the Abraham Memorial, was laid, March 24. The hospital has taken title to sixteen lots adjoining the new wing; these will be transformed into a playground and recreation park.

New York City

Roentgen-Ray Society Organized.—The Manhattan Roentgen-Ray Society was organized, March 28. The following officers were elected: Dr. Charles Gottlieb, president; Drs. Jose S. Smul and Harry Reinstein, vice presidents; Dr. Louis Greenwald, secretary; Dr. Lessof, treasurer; Dr. Michael Spinrad, historian; Drs. Max Beegel, Benjamin Goldstein, Tobias Weinberg, Samuel Gellert and Jacob Abowitz, executive committee.

Auditorium for Hospital.—An auditorium for free lectures on hygiene, sanitation and the prevention of disease, will be part of the equipment of the new Beth Israel Hospital, at Sixteenth Street and Livingston Place. For this purpose the Federation for the Support of Jewish Philanthropies has increased the budget allowance for this hospital by \$15,000. The new building will have six floors of private rooms for adult patients and a children's ward containing 104 separate glass-walled compartments.

Floating Hospital Begins Treating Tuberculous Children.—Bellevue Hospital has begun the treatment of fifty schoolchildren on a boat in the East River off Twenty-Eighth Street. Physicians from the hospital and two teachers from the public schools have been detailed to the craft. The children report at 9 o'clock in the morning and receive breakfast and dinner on board. A roentgen-ray department and a surgical dressing room have been provided. It is intended to establish a nursery, and a department for tuberculous men and women on board. Dr. James Alexander Miller is director of the work.

Course in Child Conservation.—Child conservation will be stressed at the Columbia University Summer Session. Under the direction of Dr. Haven Emerson, instruction in the principles and practice of medical inspection of schools and schoolchildren will be provided for physicians daily for six weeks from 10 a. m. to 12 noon, at the School of Medicine. Public health and standards of living will be discussed in a sociologic course directed by Professor Chaddock, the emphasis being placed on measures to promote infant and child welfare, to improve the health of schoolchildren and to protect, at all stages of their industrial life, the workers in industries. Prof. W. H. Woglom will direct a course in cancer research at the Crocker Laboratory, 1445 Amsterdam Avenue.

OHIO

Chiropractor Convicted.—J. H. Cramblett, chiropractor of Newark, recently convicted on a charge of practicing medicine without a license, was committed to the county jail, April 6, in lieu of paying a fine of \$25 and costs, it is reported.

Discharge of Patients Defended.—In a report recently submitted to the state welfare director by the acting superintendent of the Dayton State Hospital, the actions of superintendents of the various state hospitals for the insane, in discharging patients who have been cured, was defended. The report stated that if the officers of state institutions were compelled to refrain from discharging all patients who have threatened homicide or suicide during an attack of mental trouble, double the number of state hospitals would be needed.

Cornerstone of Medical School Laid.—The cornerstone of the new Western Reserve University Medical School, Cleveland, was laid on the site of the new "health" group on Euclid Avenue, April 18, by Dr. Carl A. Hamann, dean of the school of medicine. Prof. William T. Corlett, London, England, and James D. Williamson, acting president of the university, gave addresses. The school of medicine, which will be a four-story building, is expected to be ready for occupancy, Feb. 1, 1924. It is the gift of Samuel Mather, who donated for this purpose \$2,500,000.

"Mentally Defective" Defined.—A bill recently introduced in the general assembly authorizes boards of education to arrange for special school classes for mentally defective and feeble-minded children and children with speech defects, and to report their names annually. These boards would enter into an agreement with the Bureau of Special Education, Miami University, or any state supported teachers' college, to examine and classify the children, and would empower the director of education to contract with these colleges to inspect and supervise the equipment, appointments and instructional forces of all special classes. These classes would be formed in districts in which ten or more mentally defective children reside; twenty or more border-line and delinquent children, or fifty or more children with speech defects. Expenses would be met from the state school equalization fund. For the first time, the *Ohio State Medical Journal* states, a legislative proposal attempts to define what constitutes a mentally defective child:

Children of school age who are subject to a serious and permanent condition of arrested brain development and of defective intelligence dating from birth or from early life, by reason of which even the highest grades of those thus affected are rarely able to do satisfactory all-round third grade work, and rarely reach an intelligence development beyond 9 years, and rarely acquire sufficient judgment and competency to lead an independent existence in society or to manage for themselves or their affairs, without the need of external guidance, supervision or support, and who ordinarily constitute less than 1 per cent. of the pupils enrolled in the elementary grades.

OREGON

Personal.—Dr. and Mrs. Horace P. Belknap, Prineville, who recently celebrated their thirty-fifth wedding anniversary, have three sons, Drs. Horace P. Belknap, Nampa, Idaho, and Leland V. and Wilford Belknap, of Portland, practicing physicians. A fourth son, Hobart, is a junior medical student in the University of Oregon.—The French Medaille d'Honneur des Epidémies has been awarded to Dr. Frank R. Mount of Oregon City, for services in France during the World War.

PENNSYLVANIA

The Bedford Lectures.—The Pittsburgh College of Physicians held its annual dinner, at which the second Bedford lecture was given, April 26. Dr. Sydney R. Miller, Baltimore, spoke on "The Future of Our Profession." Dr. Hunter H. Turner presided.

Allegheny County Medical Society.—At the annual meeting and banquet of this society at Pittsburgh, April 10, Dr. Ernest W. Willetts was elected president; Dr. Evan W. Meredith, first vice president; Dr. William H. Mayer, secretary, and Dr. Elmer E. Wible, treasurer. Dr. Charles H. Miner, state health officer, stated that it was hoped at the next legislative session to pass a measure reorganizing the health administration of third class cities, so the law will require boards of health to employ physicians as health officers. Dr. Lawrence Litchfield and Dr. Howard C. Frontz, president and president-elect, respectively, of the state medical society, gave addresses.

Philadelphia

Research Institute Opens.—The formal opening of the laboratories of the Research Institute of Cutaneous Medicine was held, April 26, with Dr. David Riesman presiding. Dr. Udo J. Wile of the University of Michigan gave the opening address. Dr. Jay Frank Schamberg is director of the institute.

John Scott Medal Awards.—The John Scott Medal Awards were presented at a special meeting of the American Philosophical Society, April 10, as follows: Dr. C. Eijkman of the University of Utrecht, for research on dietary diseases; Arthur Louis Day, Ph.D., Carnegie Institution, Washington, D. C., for research on optical glass; Sir Joseph Thomson, master of Trinity College, Cambridge, for research on the physics of the electron, and Francis William Aston, F.R.S., of Trinity College, Cambridge, for his development of the mass-spectrograph. Dr. Hobart A. Hare represented the board. These awards are made annually by the city of Philadelphia, from the income of the John Scott fund, on recom-

mentation of a committee of five, consisting of representatives from the National Academy of Science, the American Philosophical Society, and the University of Pennsylvania.

RHODE ISLAND

Medical Meetings.—At the annual banquet and meeting of the Pawtucket Medical Association, March 15, Dr. Frank E. Peckham, Providence, president of the Rhode Island Medical Association, was the principal speaker. The following officers were elected: president, Dr. Stanley Sprague; vice president, Dr. Edward Duffee, and secretary, Dr. George E. Rönne.—Dr. Donald A. Farnum of the Boston Psychopathic Hospital spoke on "Mental Hygiene and Adolescence" before the Rhode Island Mental Hygiene Association and the Rhode Island Congress of Mothers, at Providence, March 22.

TENNESSEE

Personal.—Dr. James H. McCall, Huntingdon, has been appointed instructor in the medical department of the University of Tennessee, Memphis.—Dr. W. S. Quinland, head of the department of pathology, Meharry Medical College, Nashville, has been elected a member of the American Association of Pathologists and Bacteriologists.

State Medical Meeting.—At the ninetieth annual meeting of the Tennessee State Medical Association, held in Nashville, April 10-12, under the presidency of Dr. Holland M. Tigert, Nashville, the following officers were elected for the ensuing year: president, Dr. Hampton L. Fancher, Chattanooga; treasurer, Dr. J. Owsley Manier, Nashville, and secretary, Dr. Joseph F. Gallagher, Nashville. Knoxville was selected for the next annual meeting.

TEXAS

Child Guidance Clinic.—More than 300 persons attended the first reception to the public, held by the Dallas Child Guidance Clinic, April 5. This is the third of eight demonstration clinics to be established in various parts of the country by the Commonwealth Fund of New York in cooperation with the National Committee for Mental Hygiene for the study of juvenile delinquency. The Commonwealth Fund bears the expense for the first six months, following which the service will be continued under local direction.

UTAH

Limitation of Medical Fees.—A new schedule of medical and surgical fees, and rules governing them, was promulgated by the Utah State Industrial Commission to take effect April 1. The schedule presents the maximum fees that are ordinarily allowed by the commission, but on satisfactory evidence of extraordinary difficulties the commission may allow higher fees. Regardless of the maximum established by the regulations, all fees are to be limited to the prevailing charges in the community where the service is being performed, for similar treatment of injured persons of like standards of living. One of the rules relating to fees to be paid for operations provides that if the case terminates fatally within seven days after the operation, only one-half of the fee will be allowed.

WEST VIRGINIA

Personal.—Dr. George E. Mills, Hopemount, has been appointed resident physician of the Irene Byron Tuberculosis Sanatorium at Fort Wayne, Ind., to succeed Dr. Doster Buckner, who will resign, May 1, to resume private practice.

WYOMING

New State Health Officer.—Dr. George M. Anderson, Casper, has been appointed state health officer and secretary of the Wyoming State Board of Health to succeed Dr. Albert B. Tonkin of Cheyenne who resigned recently.

CANADA

Personal.—Dr. Frederick G. Banting, Toronto, will be appointed to a chair in medicine at the University of Toronto if plans of the university and the provincial government materialize. An annual allowance of \$10,000 accompanies the appointment, \$6,000 being for salary, and the remainder for supplies, assistants, and other expenses.

Public Health News.—The epidemic of typhoid fever which has been spreading over northern Ontario during the past few

weeks has reached a critical point. To date 750 have been reported, with twenty-four deaths. New cases are being reported at the rate of five a day. The cause of the outbreak, polluted water, at Cochrane, Ont., where the majority of cases have occurred, has been eliminated, and a rapid decrease in the number of cases is expected. At present there are fifty graduate nurses from Toronto in Cochrane, and also a number of nonresident physicians. The town of Cobalt, Ont., recently made a grant of \$1,000 to be spent in combating the epidemic in Cochrane.—An outbreak of smallpox has been reported from North Sydney, N. S., thirty cases being recorded. The spread of the disease is said to be due to the lack of proper medical supplies, the district being isolated.—Application has been made to the Ontario Medical Association by about 260 Ontario physicians for admittance to the insulin clinics in the Toronto (Ont.) General Hospital. These physicians will be given, in groups of twenty, two days of observation and instruction. It is thought that one of the results of this plan will be that diabetic patients will not be obliged to remain for as lengthy periods at the Toronto General Hospital. The local practitioners will be enabled to administer insulin after leaving the hospital.

GENERAL

Swindler Apprehended.—F. S. Miller, whose plan to obtain money from leading surgeons in several cities was noted in THE JOURNAL, Feb. 24, 1923, p. 563, was taken into custody in Dubois, Pa., on a charge of forgery. He obtained \$250 from the Braddock National Bank. Miller operated, it is said, in York and Braddock, Pa.; South Bend, Mishawaka and Huntington, Ind.; Louisville, Ky.; Alliance, Ohio, and other places.

Northern Tri-State Medical Association.—The fifteenth anniversary of the Tri-State Medical Association (Michigan, Indiana and Ohio) was held in Cleveland, April 10-11, under the presidency of Dr. G. M. Livingston, Detroit. The following officers were elected for the ensuing year: president, Dr. Harry F. Mitchell, South Bend, Ind.; vice president, Dr. C. W. Waggoner, Toledo, Ohio; treasurer, Dr. A. Joseph Weitz, Montpelier, Ohio, and secretary, Dr. Charles W. Haywood, Elkhart, Ind.

Epidemic Encephalitis.—A total of 575 cases of epidemic (lethargic) encephalitis was reported to the U. S. Public Health Service during the first three months of 1923. The disease was most prevalent in the week ending, March 3, when sixty-nine cases were reported. The total for the week of March 31 was thirty-seven. Public health officials said these figures were not exact since physicians in many cases have confused epidemic encephalitis with meningitis and other diseases. One case recently reported proved to be coma due to a mastoid infection.

FOREIGN

Plague in India.—According to reports, plague is prevalent in nearly all the provinces of British India. For the week ending March 24, 9,000 new cases were reported with 8,000 deaths. The death rate is especially heavy in the central provinces, the United Provinces, Bombay Presidency, the Punjab, and Delhi.

Campaign Against Syphilis in Belgium.—The propaganda against syphilis in Belgium has assumed the proportions of a crusade. The king and queen head a list of subscriptions for funds for carrying out propaganda and establishing laboratories all over the country. The fund started two years ago now amounts to 400,000 francs. During the war, it is said, syphilis assumed alarming proportions in Belgium, but a diminution in the amount of syphilis can already be noted.

Hospitals for the Slightly Sick.—The *Deutsche medizinische Wochenschrift* reports that the new arrangement of hospitals for persons that are not seriously ill is proving extremely satisfactory. A number of sanatoriums are being converted into these *leichtkrankenhäuser*, the maintenance of which is much less expensive than the general hospitals. Some are arranged for men, some for women and some for children. The arrangement relieves the general hospitals and the institutions for children. The Blankenburg sanatorium has been transformed to an institution for children with chronic affections.

Medical News from Siam.—Dr. M. E. Barnes, director for Siam for the International Health Board of the Rockefeller Foundation, writes that 332,076 treatments were given in the antihookworm campaigns recently conducted by the Interna-

tional Health Board and the Siamese Red Cross Society.—At a conference of Red Cross Societies, recently held in Bangkok, Siam, delegates were present from the British, American, Japanese, Chinese, French, Philippines, Dutch East Indies and Siamese Red Cross societies, the League of Nations, the International Committee of Red Cross Societies, the British Colonial Office, the Rockefeller Foundation, the China Council of Health Education and the Department of Public Health of Siam. A health exhibition of two weeks' duration followed the conference.—The Rockefeller Foundation is providing the following fellowships for candidates from Siam: public health, one physician studying at Johns Hopkins School of Hygiene and Public Health, Baltimore; nursing, one candidate in Peking Union Medical College School of Nursing; leprosy, one physician studying in the Philippines.—A recent survey showed that there are approximately 8,000 cases of leprosy in the kingdom of Siam. The infirmary conducted in Chiangmai by Dr. J. W. McKean, now receives a subsidy from the government, and another leprosarium, under construction near Bangkok, will be opened in April, under the auspices of the Siamese Red Cross Society.—The Siam Medical Association, enrolling 300 physicians, held its second annual session in January.—The following American physicians working in Siam have received decorations from the Siamese government for special services rendered: Ira Ayer, adviser to the department of public health; R. W. Mendelson, medical officer of health, Bangkok, and M. E. Barnes.

Deaths in Other Countries

Dr. J. Llewellyn Rees of Pontardawe, March 4, aged 58.
—Dr. H. W. McCauly Hayes of Madras, recently.

Government Services

Public Health Service Extends Radio Activities

Since March 15, the number of radio stations cooperating with the U. S. Public Health Service has trebled. There is now scarcely a section of the country that is not within range of at least one broadcasting station which releases health bulletins furnished by the federal service. During the first six months of its existence it is estimated that this service reached 27,000,000 people in the United States alone. There are more than 2,000,000 radio receiving sets within range of stations releasing these health bulletins. The Public Health Service has the distinction of being the first government agency in the world to inaugurate an education-by-radio service.

Hospitals Authorized

Pursuant to instructions of the Secretary of War the organization of General Hospital No. 27, organized reserves (School of Medicine, University of Pittsburgh Unit, Pittsburgh), and of Veterinary Station Hospital No. 2 (Seventh Corps Area Unit), has been authorized.

Hospital Train Authorized

Pursuant to instructions of the Secretary of War, the organization of a hospital train, to be known as Hospital Train No. 4 (Alabama State Unit), has been authorized.

U. S. Public Health Service News

Dr. Boyd R. Sayers, surgeon, U. S. Public Health Service, has been directed to proceed to Melbourne, Australia, to attend the meeting of the Pan-Pacific Scientific Congress to be held in Melbourne in August. He will then proceed to Johannesburg, South Africa, to study phthisis problems on the Rand, returning via London, England, for conference with experts in London and at the British mine rescue stations.—Dr. Louis L. Williams, Jr., surgeon, U. S. Public Health Service, has been directed to proceed, about May 1, to Rome, Italy, and other points in that country, for duty in connection with field investigations of malaria.—Dr. Dana E. Robinson, surgeon, U. S. Public Health Service, has been relieved from duty at the Immigration Station, Philadelphia, and assigned to the Quarantine Station, San Juan, Porto Rico.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 2, 1923.

Criminal Responsibility

As shown in previous letters the question of criminal responsibility is in a very unsatisfactory state and is constantly giving rise to difficulties in the administration of the law. Three months ago, a committee appointed by the Medico-Psychological Association, consisting of leading psychiatrists, particularly those experienced in prison service, began work on the question of responsibility of criminals. It has issued an important report, which has been sent to a committee of judges appointed by the lord chancellor to consider whether any change should be made in the law relating to criminal trials when the plea of insanity is raised. The committee has unanimously concluded that: 1. The criteria of responsibility expressed in the rules in M'Naghten's case should be abrogated, and the responsibility should be left as a question of fact to be determined by the jury. 2. In every trial in which the prisoner's mental condition is at issue, the judge should direct the jury to answer the questions (a) Did the prisoner commit the act alleged? (b) If he did, was he at the time insane? (c) If he was insane, has it been proved that his crime was unrelated to his mental disorder? 3. When a prisoner is found unfit to plead, the trial, on the facts, should be allowed to proceed. 4. The verdict "guilty but insane" should rank as a conviction for purposes of appeal. 5. A panel of experts should be appointed, any of whom can be called to give evidence when insanity is raised as a defense.

The M'Naghten rules are declared not wrong in holding that irresponsibility was only an inference that might or might not be drawn from insanity. Where they erred was in attempting to define precisely the conditions under which the inference was legitimate. They identified responsibility with knowing and reasoning; whereas, any physician with experience of the insane must know many persons as to whose insanity (and irresponsibility) there could be no possible doubt, who had realized the nature and quality of their act, had known that it was contrary to law, human and divine, and had shown remarkable cleverness in carrying out their object. Since 1843 (when the M'Naghten rules were propounded), there has been a definite change in the medical view as to what constituted insanity. Unsoundness of mind is no longer regarded as in essence a disorder of the intellectual faculties. The modern view is that it is something much more profoundly related to the whole organism—a morbid change in the emotional and instinctive activities with or without intellectual derangement. Long before a patient manifests delusions or other signs of obvious insanity, he may suffer from purely subjective symptoms. These are now recognized to be no less valid and of no less importance than the more manifest signs of the fully developed disorder, which may take the form of delusions, mania, melancholia or dementia. The law should be so framed as to allow the medical witness to make it clear that the facts observed by himself, supplemented by other evidence before the court, formed in his mind a coherent picture of mental disorder; and he should be in a position to state that the prisoner's act was symptomatic of such a condition, or at least consistent with it. His evidence should enable the jury to find that, even if there should be no logical connection between the mental derangement and the crime, it was reasonable to conclude that both formed part of the mental unsoundness,

and it was important that the evidence be placed before the jury as fully as possible.

The Rockefeller Gift

Presiding at the annual meeting of the Corporation of University College Hospital, Sir Ernest Hatch referred to the munificent gift of the Rockefeller Foundation of \$6,000,000 for a scheme of extension, in order to provide additional clinical material for educational purposes. In view of the international character of this gift and the importance of its object—to improve medical education in the capital of the country—the king and queen will lay the foundation stones of the new hospital buildings presented by the Rockefeller Foundation, at the end of May.

William Pearson

Though some other countries may have surpassed this in the size or in the organization of their industries, probably there is none which can compare with it in the production of highly skilled craftsmen. One such was William Pearson, formerly prosector of the museum of the Royal College of Surgeons, who has passed away at the age of 83 years. He worked there for almost fifty-eight years, and made preparations which are known all over the world for their unique excellence. He was the third in the line of grandfather, father, and son who served the museum for 153 years. As a boy of 15, he entered the institution as an attendant. He served in turn under the conservators Owen, Quekett, Flower, Stewart and Keith, under thirty-three presidents, respected by all not only for his skill but also for his character. His great success was due not only to high manual dexterity but to a thorough knowledge of anatomy, human and comparative, which he acquired in his work. He was indeed an artist.

Abolition of Cocain

In a letter to the *Times*, Prof. W. W. Bayliss and Dr. C. W. Saleeby state that the abolition of the use of cocain by international action is the only effective means of ending the evils to which the drug gives rise, and that this is now feasible without detriment to surgery. All methods of control have failed everywhere. So long as the drug is manufactured, it will be misused. According to leading dental surgeons, cocain is no longer needed in dentistry, completely effective substitutes, such as procain, being available. A new synthetic substitute known as butyn has also been widely tested with good results. Like procain, it has no action on the central nervous system. International action should therefore be taken to end the present manufacture of cocain in Germany and Switzerland, and the cultivation of the coca plant in Peru, Java and Bolivia. The best instrument for such action, given an instructed and active public opinion in the various countries concerned, is the Opium Committee of the League of Nations. Though neither the United States nor Germany is as yet a member of the league, both countries are represented on the Opium Committee.

Lord Byron's Lameness

Perhaps the two persons in the modern world whose lives have attracted the greatest interest are Napoleon and Lord Byron, and this is not the only link connecting these great men, for the poet in some of his best known verses described the downfall of Waterloo and was, as he tells us, dubbed "the grand Napoleon of the realms of rhyme." At the Royal Society of Medicine, Dr. H. C. Cameron delivered a most interesting address on Byron's lameness, showing that it was not due to clubfoot, as is commonly supposed. By the kindness of Mr. John Murray, the present head of the firm which published Byron's works, he exhibited two surgical boots worn by Byron when a boy. They were both made for the right foot. They showed that this foot was long and slender,

and in no way resembled a clubfoot. The lasts on which his shoes were made are in the Nottingham Museum; they show feet which were symmetrical and well formed.

In 1858, Trelawny published "Recollections of the Last Days of Shelley and Byron." He had been a friend and companion of Byron, who wrote of him that he could not tell the truth to save his life. After Byron's death, he examined his feet and described them as clubbed and his legs withered to the knee. But when, in his eighty-sixth year, he republished the book, he replaced that description by this: It was caused by the contraction of the back sinews, which physicians call the Achilles tendon, which prevented his heels touching on the ground and compelled him to walk on the fore part of his feet; except for this, his feet were perfect. Dr. Cameron thought that the first description was what the public expected and wanted to hear, but that as Trelawny drew near death he did not like to go down to his grave with the lie unwithdrawn. Dr. Cameron concluded that Byron's lameness was due to Little's disease. This is borne out by Trelawny's description: "To hide his lameness, he always entered a room quickly, running rather than walking. In the streets he moved with a peculiar sliding gait—with the gait of a person walking on the balls and toes of the feet." Finally, sufferers from Little's disease are prone to convulsive seizures like those of epilepsy, and Byron toward the close of his life had such attacks.

Reform of Mental Treatment

At the annual meeting of the Mental After-Care Association, the lord chancellor, Lord Cave, said that few things were more pathetic than the position of one who had suffered from a mental disease, had been cured, and was sent out into the world without relatives or friends. The position of those who needed mental treatment, or who were recovering from mental affliction, had been engaging the special attention of the government. Better machinery for the mental treatment of those cases which were still of a doubtful character and which might be easily curable was required before resort was had to the machinery of the law. Proposals would shortly be made under which treatment could be given without certification.

Treatment of Venereal Diseases

The Public Health Committee of the London County Council announces that the new cases dealt with at the clinics last year numbered 17,762, as compared with 19,368 in 1921, and 24,454 in 1920, while the total number of attendances was 527,635, as against 496,209 in the previous year. The committee is of opinion that the decrease by 1,379 in the number of new cases of syphilis may be attributed in no small measure to the work of the clinics. The steady and great increase in the number of attendances is regarded as striking. It shows an increased disposition of the patients to continue attendance for the treatment which they are advised is necessary.

The Panel System

As shown in previous letters, there is considerable friction between the friendly societies and the panel physicians. The insurance act has turned out very different from what was anticipated. In a statement to the *Times*, Sir Kingsley Wood, a representative of the societies, has put forward their case. The fact that they have been called on to make further contributions from their funds has created a new situation. At the end of the year, the agreement with the physicians comes under review and the societies naturally have a considerable interest in the revised terms. The medical profession has indicated that it will not meet the societies to discuss terms; it will confer only with the government. The minister of health has stated that he will not conclude any agreement

without consulting the societies. The circumstances appear to call for a conference between officers of the health ministry and representatives of the panel physicians and of the societies. Sir Kingsley Wood holds that, while the majority of physicians are carrying out their duties in the spirit of the regulations, there is much complaint as regards some of them. In too many cases, a panel patient is treated differently from a private one, although the medical regulations contemplate no distinction. Cases constantly arise in which the panel patient is unable to get in touch with physicians, especially in the case of those who provide "lock-up surgeries" (offices). There are also complaints of inadequate waiting-room accommodations.

The question of provision for surgical operations is bound up with the hospital question. To a large extent, the hospitals are solving the problem on their own account. A large number of persons now contribute to the hospitals, and many of them become paying patients. The exact position of the hospitals under the insurance act remains to be determined. There was not much possibility that the medical profession would go back to the condition obtaining before passage of the act, when the societies made their own arrangements with the physicians. Improvement of the panel service was the best course.

PARIS

(From Our Regular Correspondent)

March 30, 1923.

The Milk Consumed in Paris

The veterinary inspection service of Paris and the department of the Seine has just published a report on the milk consumed in Paris. The first point worthy of note is the frequency of tuberculosis in milch cows. Of 15,637 milch cows subjected to the tuberculin test in recent years, 5,375, or 34.35 per cent., gave a positive reaction. The percentage of tuberculous cows varies considerably from year to year, but no frank tendency toward a decrease can be noted as yet.

The bacterial count in the milk examined gives startling results. In fifty-nine specimens examined, the bacterial count resulted as follows: Forty-two, or 75 per cent., contained more than 10,000 bacteria per cubic centimeter; thirty-five, or 62 per cent., contained 50,000 bacteria per cubic centimeter; twenty-nine, or 52 per cent., 100,000 bacteria per cubic centimeter; twelve, or 21 per cent., 500,000 bacteria, and four, or 7 per cent., contained more than one million bacteria per cubic centimeter. If we recall that hygienists regard as bad, or im potable, water that contains more than 10,000 bacteria per cubic centimeter, it will be observed that 75 per cent. of the milk examined came under this head.

M. Chrétien, chief of the milk inspecting service, has endeavored to evaluate not only the number of bacteria but also the apparent cleanliness of the milk inspected. The impurities are estimated by a special filtration procedure, and the specimens are divided into four categories: clean milk, fairly clean milk, dirty milk and very dirty milk, this classification being made on a somewhat arbitrary basis, as far as any fixed standard is concerned. Out of 111 specimens so examined, ten, or 9 per cent., were found clean; twenty-seven, or 24.32 per cent., fairly clean; forty-six, or 41.44 per cent., dirty, and twenty-eight, or 25.22 per cent., very dirty.

The Fight Against Tuberculosis

The annual general meeting of the Comité national de défense contre la tuberculose, at the head of which is M. Léon Bourgeois, was just held under the chairmanship of M. Paul Strauss, minister of hygiene, public charity and social welfare. Prof. Léon Bernard traced, in an address, the history of the antituberculosis movement in France, which controls at present 420 dispensaries, located in seventy-

three different departments. The American Red Cross and the Rockefeller Foundation have, in recent years, given this movement most active and generous aid. The Comité national has decided, with the aid of educational propaganda, to undertake the creation of new dispensaries and the recruiting of visiting social welfare workers, who are the chief reliance of organizations of this character. I will mention, in this connection, that the minister of public health had been authorized by the council of ministers (the French cabinet) to present to the chamber of deputies proposed legislation providing for the rendering of state aid to preventoriums for the purpose of checking the spread of tuberculosis among children under 16 years of age.

The Law Against Abortion

A law modifying Article 317 of the Penal Code, with a view to increasing the penalties against abortion, has recently been promulgated. The new law imposes the following penalties:

1. Whoever shall be found guilty of causing abortion, or endeavoring to cause abortion, in a pregnant woman, shall be amenable to imprisonment for from one to five years, and to the payment of a fine of from 500 to 10,000 francs.

2. Any woman who shall have brought about abortion in herself shall be punishable by imprisonment for from six months to two years, and by the payment of a fine of from 100 to 2,000 francs.

3. Physicians, public health officers, midwives, dental surgeons, pharmacists; likewise students or pharmaceutical employees, herbalists or dealers in surgical supplies and instruments, who shall have pointed out, recommended or practiced means of abortion shall suffer the penalties imposed in Section 1. Furthermore, the court may, at its discretion, suspend temporarily or deprive permanently any such offenders of the right to practice their calling or profession.

The Colonial Laboratories

The Comité de propagande de l'institut colonial français, of which M. René Besnard, senator and former minister for the colonies, is the chairman, has, at the suggestion of M. Georges Barthélémy, member of the chamber of deputies, and of Dr. Nattan-Larrier, professor at the Collège de France, called the attention of the minister for the colonies and the head of public instruction to the precarious situation of the colonial laboratories, and, more particularly, of the laboratories for microbiology and colonial hygiene, and has expressed the hope that, if funds and subscriptions are collected in aid of the laboratories of France, a portion of such funds may be reserved for the colonial laboratories.

Defense of Wine as a Beverage

Those who, as Dr. Linossier characterized this class recently, "have been reared from childhood with the false idea that wine is a generator of energy and strength quite indispensable to manual laborers and mental workers alike" (THE JOURNAL, Feb. 17, 1923, p. 490), cannot rest content merely to crack their little jokes on the subject of prohibition in the United States. Dr. C. Chauveau, senator from Côte-d'Or, a department well known for its wines, has therefore felt constrained to publish two articles in defense of wine as a beverage, to which he has affixed the title, *Pro Vino*. In the *Concours médical*, Dr. J. Noir endorses Chauveau's pleading and expresses himself thus: "At a time like this, when the United States of America is rigorously closing its borders to all fermented beverages, including the good wines of France, we are justified in taking up the defense of wine." In presenting his defense, he invoked the antiquity of wine as a beverage—the place it has held in both legendary and religious history—the cult of Dionysus, etc. His arguments have all about as little force as the affirmation of Dr. J. Guyot, who states that he is "profoundly convinced that the wines of France are the primary cause for the liberty-loving nature, the generosity and the moral worth of the French people."

Now for the "therapeutic" argument. Noir even feels called upon to employ a word taken from the Greek to

designate the therapeutic use of wine: *oinotherapy*. Fortunately, he disclaims any intention of making of oinothrapy any general therapeutic system, with which to cure all forms of disease. But, he adds, in view of the fact that the physicians in bath resorts famous for their mineral springs have succeeded in making a veritable science out of hydrology, why shouldn't the practitioners of regions famous for their viniculture do as much for oinothrapy? Verily, all things are provable from analogy.

Scottish Students in Paris

Sixty-one Scottish students, forty-six men and fifteen women, have recently come to Paris to pursue courses in obstetrics. They were welcomed at the Faculté de médecine by Dean Roger, together with three professors of clinical obstetrics—Couvelaire, Brindeau and Jeannin. The day following, the medical section of the general association of students organized a reception in honor of the Scottish contingent. At this reception, the dean of the medical faculty presided, aided by the aforementioned professors of clinical obstetrics; likewise the heads of the clinic, and the interns and externs of the obstetric services. The dean, in his welcoming address, expressed his satisfaction at having received from the University of Edinburgh the title of doctor *honoris causa*. He gave word also to his appreciation of the warm welcome the students of the University of Edinburgh accorded last July to the visiting French professors and students.

Another Victim of Roentgen Rays

Dr. Soret, a roentgenologist in Havre, aged 69, was one of the first to use roentgen rays. In May, 1914, he had to undergo an operation on the left hand, and recently he suffered the amputation of the right index finger.

Death of Dr. Toubin

Dr. Toubin, the oldest physician in France, has just died at Salins-du-Jura, at the age of 97.

BUDAPEST

(From Our Regular Correspondent)

March 20, 1923.

Compulsory Vaccination in Hungary

The supreme court of justice of Hungary last month handed down a decision in a case that had been appealed from the Budapest court respecting a ship's officer on a Danubian steamer, who refused to be vaccinated, when coming from a Roumanian port during an outbreak of smallpox. The refusal was based on the ground that the operation, compulsorily enforced, was an infringement of personal liberty. The supreme court denied the appeal and affirmed the judgment of the lower court. The judge in giving the decision said that society based on the rule that each one was a law unto himself would soon be confronted with anarchy. Real liberty could not exist under the operation of a principle that recognizes the right of each individual to use his own will in respect to his person or property, regardless of the injury that may be done to others. It is the acknowledged power of a local community to protect itself against an epidemic threatening the safety of all, and to exercise that right in particular circumstances and in reference to particular persons.

Annual Report on the Health of the City of Budapest

The statistical bureau has just issued a report for the year 1922. The population of the city is 1,113,468, a density of 39.07 per acre. The birth rate was 21.42, and the death rate 18.04. About one in every four deaths was of a child under 1 year, or 125 for each thousand births. The zymotic death rate was 1.14 per thousand. The birth rate affords little reason for gratification; it has been heavily falling since

1901, when it was 28.89 per thousand, and at present it is lower than in any of the large cities of central Europe. To compensate for this, the low annual death rate constitutes a record in the annals of the city. The age distribution of the deaths was much the same as in former years. On the whole, the city has been comparatively free from serious zymotic diseases, but whooping cough and diphtheria have been more prevalent and attended with a greater mortality than in the previous year or two. Deaths from tuberculosis show a slight but definite decline. Deaths from cancer remain fairly stationary. During the last six years, the number of cases was 2,143, of which 57 per cent. occurred in women. More than a third of all deaths from cancer occurred from cancer of the esophagus, stomach, intestine or rectum. Cancer of the liver accounted for 213 deaths; of the breast, 189, and of the face and neck, 218. Of the last two mentioned, women predominated in the former in the ratio of 186 to 3, men in the latter in the ratio of 167 to 51.

Bilateral Herpes Zoster

Dr. Konrad, at a medical meeting in Szolno, exhibited a boy, aged 11, seen, February 17, who five days previously had had an eruption of herpes on his face, preceded by some neuralgia. The patches of herpes covered the submaxillary regions on both sides; the auricles were red, and a few herpetic vesicles were present along the margins of the right pinna and tragus. There was slight enlargement of the lymphatic glands beneath the chin. Exceptions to the unilateral distribution of herpes zoster are distinctly rare. The peculiarity of this case was its abundant distribution over symmetrical parts of the two sides of the face. About the ears there was definite inflammatory reaction. No lesions were seen on the buccal mucous membrane.

Menstrual Jaundice

Dr. Konrad also related a history of a case of menstrual jaundice. A healthy woman, aged 43, shortly before the commencement of a menstrual period regularly became jaundiced. Dr. Konrad discussed the connection between menstruation and jaundice, and pointed out that latent gall-stone trouble would react with an attack during menstruation; in the case presented there was no evidence of gall-stones. Senator, in explanation of his cases, assumed a hyperemia of the liver causing pressure on the bile ducts, with consequent stasis of bile. Others who had encountered such cases thought it was a functional disturbance of the liver cells. Dr. Konrad concluded that, in his case, the jaundice was caused by reflex contraction of the bile ducts.

BERLIN

(From Our Regular Correspondent)

March 17, 1923.

Study of the Brains of Eminent Scientists, Musicians, Statesmen and Scholars

Professor Maurer, the anatomist, of Jena, has described in an interesting article the brains of eminent men and women. Maurer, by reason of previous investigations, is especially well qualified for such researches. In a former letter I gave an account of his researches on the brain of Haeckel, which he described in the *Deutsche medizinische Wochenschrift*. Maurer emphasizes that the first point to which importance attaches in the appreciation of the brains of great geniuses is weight, and, for this reason, many data have been published on brain weights, and some surprise and disappointment has, at times, been felt over the results—quite unwarrantedly, it would seem. Centers that serve bodily functions, if they are strongly developed, may help to produce a heavy brain, though the intellectual centers may be poorly developed. On the other hand, alongside highly developed

intellectual centers there may be poorly developed centers for the bodily functions, which will explain why the brain of an eminent man may not have the weight that would naturally be expected. A heavy brain may be the result of hyperdevelopment of the neuroglia. Next after the weight, the most important consideration is the surface of the brain. It is a generally accepted hypothesis that in men of exceptional intelligence the surface of the hemispheres of the cerebrum has more numerous convolutions and deeper furrows between them than are found in ordinary brains. For intellectual work, these considerations are of importance: (1) the whole frontal lobe of the cerebrum; (2) the marginal and angular gyri of the parietal lobe; (3) to a certain extent, the upper portion of the temporal convolution, and (4) the precuneus on the inner surface of the cerebrum. According to recent investigations, the precuneus plays a part in the formation of space concepts.

Eminent men may be divided into two groups, which must be taken into consideration in the appreciation of their brains: (1) geniuses who, in addition to their special gifts, possess remarkable all-round ability, and (2) persons with quite one-sided gifts. In Group 2 may be classed famous musicians who, from their youth, have devoted themselves entirely to music; also many mathematicians belong to this group. The brains of these persons with one-sided gifts present, however, a special interest. The average weight of the brain in the male of the 30 to 40 age group is about 1,375 gm.; that of the female, of the same age group, is about 1,245 gm. Of the brains of eminent men of former times only the weight is known, and the data on even this point are not incontestable. The weight of Cromwell's brain is given as 2,233 gm., and that of Byron's brain as 1,807 gm., but Rudolf Wagner, one of the most versatile investigators on the brain, declares that these figures are too high; he likewise questions the reputed weight of the brain of Cuvier, which is given as 1,861 gm. Other reported brain weights are: Gauss, 1,492 gm. (age at death, 78); Liebig, 1,352 gm. (age 70); Bunsen, 1,295 gm. (age 88); Menzel, 1,298 gm. (age 89); Mommsen, 1,425 gm. (age 86); Helmholtz, 1,420 gm. (age 73). In recent decades, the brains of many eminent men have been examined. David von Hansemann examined the brains of Helmholtz, Mommsen, Menzel and Bunsen. Gustav Retzius examined the brains of a considerable number of distinguished Swedes of widely different callings; among others, that of the woman mathematician Sonja Kowalewska. In the brains of all the men mentioned, the convolutions of the frontal lobe were significantly well marked. But also certain other portions of the brain were well developed; for example, in the brain of Gauss the anterior portion of the lower frontal gyrus was highly developed, and in Helmholtz' brain, the precuneus. In the brain of Gambetta, the gyrus of Broca, the speech center in the inferior frontal gyrus, is said to have undergone a double development. In the brains of mathematicians, attention is called to the fact that the lateral portions of the frontal lobe show an especially marked furrowing. This was the case in the brains of Gylden and of Sonja Kowalewska (who, in other respects, had a typical female brain, with quite ordinary fissures). Researches on the brains of many famous musicians have been made, and according to the interesting study by Dr. Klose, who examined the brain of the eminent pianist Sokeland, who died at an early age, certain portions of the brain of musicians are highly developed; namely, the superior temporal gyrus, the inferior parietal lobule (the supramarginal gyrus) and the anterior and posterior central gyri. All these data seem to have little value when we learn that the brains of many men who have never become distinguished may present just as highly developed a structure as the brains of men who have been eminent. However, if the results of scientific researches

are viewed rightly, their value will be understood and appreciated. "If one were to present to me the brain of an unknown person with the request that I state what the possessor accomplished in his lifetime, I would reject the inquiry as presumptuous. If, however, I take up the examination of the brain of a person whose career is familiar to me, I shall know to what regions of the brain, on the basis of previous experiences, I must pay particular attention, and I am sure not to be disappointed. I have gained this conviction from my study of the brains of Ernst Haeckel, Ernst Abbe and Ernst Stahl." Modern science has pointed out new avenues of approach that seem destined to prove significant for the examination of the brains of outstanding leaders. Through the researches of Brodman, we have learned that the finer structure of the cerebral cortex varies in the different regions of the cerebrum. For this reason, an estimation of the special significance of various portions of the brain, on the basis of anatomic facts, is quite possible. Brodman has prepared a brain chart, on which are designated many different characteristic divisions, some of which are sharply differentiated and some of which overlap each other, to a certain extent. Unfortunately, these new criteria cannot be applied to the brains that have been examined in the past; but, in the future, these microscopic researches are sure to acquire great significance along with the microscopic findings.

Personal

Professor Salkowski, for many years director of the chemical laboratory of the Pathologic Institute in Berlin, died, March 10, at the age of 78. His service in the institute extends back to the time when Virchow was the director. The numerous valuable researches of Salkowski were mainly in the fields of physiologic and pathologic chemistry, but they deal also, in part, with pharmacology and hygiene. We are indebted to him especially for excellent treatises on the effects of putrefying proteins. One of his first articles was on leukemia. His treatises on the formation of sugar in yeast are also noteworthy. He has written also on auto-digestion of organs and the quantitative distribution of oxidative ferment in the organs, the demonstration of peptone in the urine, the estimation of oxalic acid in the urine; peptotoxin, casein, etc. He discovered also the pentoses in the urine. Through his findings of phylosterin in vegetable fats, Salkowski established a new method for the discovery of the frequent adulteration of animal fats with vegetable fats. Two of his compendiums have had a wide sale: "Die Lehre vom Harn" (urology) and "Parktikum der physiologischen und pathologischen Chemie."

Geheimer Medizinal-Rat Scheube died recently in Greiz at the age of 71. He served for a long period as medical commissioner in the principality of Reuss. From 1877 to 1881 he was professor in the Kyoto (Japan) Medical College. He was privatdozent for internal medicine in Leipzig from 1883 to 1885. He was thoroughly familiar with tropical diseases by reason of his travels in the tropical countries of Asia. He was the author of the work, "Die Krankheiten der warmen Länder," which has passed through several editions.

Marriages

WILLIAM HARVEY WHITMORE, lieutenant, M. C., U. S. Navy, Lynchburg, Va., to Miss Harriet Weiss Angeny of Philadelphia, April 5, at Pensacola, Fla.

LAUREN HOLMES GOLDSMITH, Atlanta, Ga., to Miss Margaret Mason Rowe of Athens, April 9.

ROY DECK to Miss Mabel Rice, both of Lancaster, Pa., February 6, at Oak Lane.

Deaths

Justin Edwards Emerson ♂ Newark, N. Y.; Medical School of Harvard University, Boston, 1868; formerly clinical professor of neurology at the Detroit College of Medicine, Detroit; member of the Michigan State Medical Society; the Detroit Society of Neurology and Psychiatry, the American Medico-Psychological Association and the American Psychiatric Association; fellow and past president of the American Academy of Medicine; at one time assistant physician to the Michigan Insane Asylum, Kalamazoo, consulting neurologist to the Children's Free and Harper hospitals, Detroit, and attending physician to St. Joseph's Retreat, Dearborn, Mich.; aged 82; died, April 8, at Clifton Springs.

Thomas Warloe, Chicago; Rush Medical College, Chicago, 1891; member of the Illinois State Medical Society; attending obstetrician to the Norwegian-American Hospital, attending physician to the Norwegian Lutheran-Bethesda Home and consulting physician to the Norwegian Old People's Home; aged 56; died, April 18, of heart disease.

Thomas Milton Fleming, Mount Pleasant, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1891; member of the State Medical Association of Texas; past president of the Titus County Medical Society; president of the State National Bank; aged 55; died, April 4, of cerebral hemorrhage.

William Winston Snead, Grays Knob, Ky.; University of Virginia Department of Medicine, Charlottesville, 1906; member of the Kentucky State Medical Association; aged 44; died, March 21, at the Norton Infirmary, Louisville, of pneumonia, following an operation on the gallbladder.

Hubert Perry Butts, Los Angeles; Medical Department University of Louisville, Louisville, Ky., 1895; formerly a practitioner in Indiana and Kentucky; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 49; died, April 8, of cerebral hemorrhage.

Erving Melville Howard, Camden, N. J.; Hahnemann Medical College of Philadelphia, 1877; emeritus professor of materia medica at his alma mater; founder, and formerly on the staff, of the West Jersey Homeopathic Hospital; aged 75; died, April 13, following a long illness.

Harry Gilbert Fleming ♂ Anderson, Ind.; Medical College of Indiana, Indianapolis, 1905; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 44; died, April 6, of a fractured skull, the result of an automobile accident.

Emil Charles Luks, New York; Philadelphia University of Medicine and Surgery, Philadelphia, 1868; University of Vermont College of Medicine, Burlington, 1885; also a druggist; formerly coroner of Schuylkill (Pa.) County; aged 91; died, April 4, of senility.

Augustus Koenig, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1894; member of the Medical Society of the State of Pennsylvania; formerly lecturer and instructor at his alma mater; aged 52; died, April 4.

John Franklin Uren, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1890; Victoria University Medical Department, Toronto, 1890; on the staff of St. Michael's Hospital; aged 60; died, March 1, of influenza.

Dwight Satterlee, Los Angeles; Berkshire Medical College, Pittsfield, Mass., 1862; also a druggist; Civil War veteran; formerly division surgeon for the Chicago and Northwestern Railroad; aged 86; died, March 21, of senility.

Robert Wilson Forrest, Toronto, Ont., Canada; University of Nashville Medical Department, Nashville, Tenn., 1865; University of Toronto Faculty of Medicine, Toronto, 1872; aged 83; died, February 23, of senility.

James P. Way ♂ Chicago; College of Physicians and Surgeons, Chicago, 1887; surgeon to the Chicago and Eastern Illinois, and the Baltimore and Ohio railroads; aged 60; died, April 21, of myocarditis.

Clifford Nathan Thomas Barnett, Deatsville, Ala.; Medical Department of the University of Alabama, Tuscaloosa, 1905; member of the Medical Association of the State of Alabama; aged 46; died, April 2.

Alexander Blake Ford, Oshawa, Ont., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1897; aged 52; died, March 2, at the Toronto General Hospital, Toronto, of septicemia.

Albert S. Bower, Los Angeles; Jefferson Medical College of Philadelphia, 1882; formerly a practitioner in Salt Lake City; aged 67; died, March 31, of acute nephritis and septicemia.

Joseph B. MacNaughton, Waupaca, Wis.; University of Glasgow, Scotland, 1883; also a druggist; formerly health officer and city physician; aged 66; died, April 3, of pneumonia.

Mann W. McGown, Hemphill, Texas; Gate City Medical College, Texarkana, 1904; member of the State Medical Association of Texas; aged 45; was shot and killed, April 6.

Benjamin J. McConnell, Winnipeg, Manit., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1881; provincial coroner for Manitoba; aged 61; died, February 14.

Tillman E. McMurtry, Chicago; Rush Medical College, Chicago, 1899; member of the Illinois State Medical Society; aged 55; died, April 22, of tuberculosis of the kidney.

James Robert Black, Marked Tree, Ark.; Memphis Hospital Medical College, Memphis, Tenn., 1893; also a druggist; aged 64; died suddenly, March 30, of heart disease.

Daniel Henry Jenkins, Scranton, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1893; aged 60; died, March 8, of acute dilatation of the heart.

Charles Lovett Randall, Dansville, Mich.; Long Island College Hospital, Brooklyn, 1864; Civil War veteran; aged 82; died, March 29, of cerebral hemorrhage.

Calvin Suerill Case, Kenilworth, Ill.; University of Michigan Medical School, Ann Arbor, 1884; also a dentist; aged 76; died, April 16, following an operation.

Stanton Emmett Deeley, Mount Vernon, Ohio; Cleveland University of Medicine and Surgery, Cleveland, 1896; aged 49; died, February 21, of heart disease.

Jacob Margulis, New York; Columbia University College of Physicians and Surgeons, New York, 1900; aged 49; died, February 25, of edema of the lungs.

William T. Greenwood, St. Catharines, Ont., Canada, McGill University Faculty of Medicine, Montreal, Que., 1904; aged 41; died, February 25.

Granville M. Walker, Chicago (licensed, Illinois, 1878); Civil War veteran; aged 85; died, April 9, of skull fracture, when he fell from a window.

George N. Hutcheson, Arlington, Texas; Cincinnati College of Medicine and Surgery, 1874; aged 76; died, March 31, following a long illness.

Birckner H. Pasley, Decatur, Ill.; Starling Medical College, Columbus, Ohio, 1865; Civil War veteran; aged 84; died, April 4, of senility.

Joseph L. Dorris, Banklick, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1894; aged 65; died, April 8, of diabetes mellitus.

Alexander Smith Truman, Chicago; University of Michigan Medical School, Ann Arbor, 1872; aged 80; died, April 6, of chronic nephritis.

Charles Walden Thompson, Clinton, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1893; aged 58; died, February 18.

Richard J. Wilson, Salem, Ind.; Miami Medical College, Cincinnati, 1874; president of the Citizens' State Bank; aged 76; died, April 10.

Marcus U. Nix, Atlanta, Ga.; University of Georgia Medical Department, August, 1892; aged 66; died, February 1, of heart disease.

Mandren M. Bailey ♂ Loveland, Colo.; Denver College of Medicine, Denver, 1884; aged 68; died, March 10, of pneumonia.

Carl Layfield Oatman, Collinsville, Ill.; Barnes Medical College, St. Louis, 1896; aged 45; died, April 3, of chronic nephritis.

Charles Austin Allen, Clayton, Ind. (licensed, years of practice); Civil War veteran; aged 81; died in April, of senility.

Charles Chittick ♂ Frankfort, Ind.; Medical College of Ohio, Cincinnati, 1876; aged 74; died, April 7, of heart disease.

David R. Summy, Columbus, Ohio; Jefferson Medical College of Philadelphia, 1883; aged 69; died, February 18.

William T. George, Mantee, Miss. (licensed, Mississippi, 1889); aged 62; died in March, of heart disease.

Joseph Amsel, Milwaukee; University of Warsaw, Poland, 1867; aged 76; died suddenly, March 29.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

HERRADORA SPECIALTIES NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.
W. A. PUCKNER, Secretary.

Early in 1922 the Scientific Chemical Co., New York (Marcus Aurelio Herradora, M.D., President) requested the Council to consider its intravenous preparations. The firm sent the proof of a proposed booklet which contained extravagant claims for intravenous therapy in general and for the Herradora specialties in particular, and also a typewritten manuscript, "Digitalis Compound (Herradora) for Intravenous Use," with a request that anything therein which conflicted with the rules of the Council be brought to its attention. The firm also sent specimens of the following preparations:

Herradora's Arsenic Compound for Intravenous Use, Nos. 1 to 6.
Herradora's Arsenic and Hypophosphites for Intravenous Use.
Herradora's Arsenic and Iron Compound for Intravenous Use.
Herradora's Calcium Compound for Intravenous Use.
Herradora's Calcium-Sodium-Glycerophosphate Compound for Intravenous Use.
Herradora's Chlorids Compound for Intravenous Use.
Herradora's Chlorids with Iron Compound for Intravenous Use.
Herradora's Creosote Compound for Intravenous Use, Nos. 1 and 2.
Herradora's Digitalin Compound.
Herradora's Glycerophosphate-Iron and Nickel Compound for Intravenous Use.
Herradora's Guaiacol Compound for Intravenous Use.
Herradora's Iodids Compounds for Intravenous Use.
Herradora's Hexamethylenamine and Guaiacol Compound for Intravenous Use.
Herradora's Iron, Manganese and Nickel Compound for Intravenous Use.
Herradora's Mercury Compound for Intravenous Use.
Herradora's Quinine Compound for Intravenous Use, Nos. 1 and 2.
Herradora's Sodium Iodid for Intravenous Use.
Herradora's Sodium Iodid-Salicylate-Guaiacol Compound for Intravenous Use.

These, in addition to the names of the preparations and the "formulas," bore—with a few exceptions—the following ambiguous and questionable statement:

"Special aseptic, sterilized and antiseptic bland mutual dissolvent to make 20 Cc. Drugs herein contained have been modified perfecting their purity to regulate toxicity, thus insuring safe and higher efficiency."

The proposed advertising was apparently written by one whose knowledge of therapeutics was a mixture of the latest enthusiasm for intravenous therapy and the most archaic pharmacologic tenets. Its style was bombastic and pseudo-scientific. The material abounded in unwarranted and unsubstantiated statements in favor of intravenous administration of drugs and for the use of complex mixtures of drugs. The preparations bore, in many cases, a striking resemblance to "intravenous" preparations which had been previously reported on unfavorably. In view of this fact and the firm's statement that it desired to remove any claims objectionable to the Council, the objections to the advertising were pointed out in a general way, and the firm was supplied with reports of the Council dealing with similar preparations.¹ Since some of the products contained hypophosphites and glycerophosphates,² Council reports which set forth the lack of evidence for the therapeutic use of these were also sent.

In September, the firm sent a revision of parts of the booklet and of the whole manuscript on "Digitalis Compound

(Herradora) for Intravenous Use." This revision was not satisfactory. As before, this advertising made claims for intravenous medication that are fundamentally opposed to modern therapeutic teachings. The tenor of the entire matter was to discredit the oral administration of drugs and to substitute intravenous medication as a routine. The fundamental objections to it with specific illustrations of unwarranted statements were a second time brought to the attention of the firm. Since then the firm has not supplied the Council with any evidence to indicate that a genuine effort is being made to remove the objections.

On the other hand, the Council learned that the firm was making efforts to secure the use of its preparations by physicians and in hospitals. On December 20, 1922, a physician received advertising from the firm which was almost a verbatim copy of parts of the booklet originally submitted. This advertising is evidently a reprint with minor changes which do not alter the original meaning.

SOME RECENT CLAIMS

The following, quoted from the present advertising circular "Syphilis, Its Treatment" illustrates the character of the claims advanced for the Herradora specialties:

"The arsenic compound presented here has been completely dimethylized, readily diffusible, while its organic structure is still retained. As such it may be described as a harmonized chemical medium between the plain cacodylate and dioxi-diamino type of arsenicals. It is prepared in six ascending strengths which will be hereafter described. It has been prepared for the treatment of syphilis or any other *trypanosome disease* where the maximum dose of arsenic is required. These arsenic compounds which I have prepared are regarded as superior to any other form of organic arsenic for the treatment of syphilis now in use."

According to the label on the specimens sent to the Council, Herradora's Arsenic Compound for Intravenous Use, No. 1 contains: "Arsenic-Organic Compound, Equivalent to Sodium Dimethylarsenate (As 1½ grains) 5 grains; Mercuric Iodid, ⅛ grain; Arsenic Iodid, ⅓ grain." The other forms, Nos. 2 to 6 inclusive, are claimed to contain the same amounts of mercuric iodid and of arsenic iodid but progressively increasing amounts of the "arsenic-organic compound; equivalent to sodium dimethylarsenate," the arsenic element of which, according to the formulas, varies from 30 per cent. to 34.84 per cent. So far as the statements go, the character and the composition of the "arsenic-organic compound" are not declared and the preparations may be regarded as secret in composition. The language of the advertising, however (particularly the claimed freedom from untoward effects), the amount of drug in a dose, and the chemical behavior of the solutions strongly suggest that in Herradora's Arsenic Compounds we have another sodium cacodylate preparation patterned after Venarsen,³ on which the Council reported in 1915 and which has been a pattern⁴ for similar products put out by firms specializing in intravenous therapy.

If the "arsenic-organic compound" in Herradora's Arsenic Compound is sodium cacodylate (sodium dimethylarsenate), then the claims for its efficacy are unacceptable, for sodium cacodylate has been found without effect on experimental trypanosomiasis and inefficient in the treatment of syphilis.⁵ If the "arsenic-organic compound" is *not* sodium cacodylate then the claims are unacceptable because they are made for a compound of secret composition for which there is no evidence of therapeutic worth other than the assertions of the manufacturer. In any case, it is irrational to administer an organic arsenic compound in combination with mercuric iodid and an inorganic arsenic compound. It should be mentioned in passing, that while the preparation is claimed to contain arsenic iodid, this compound (AsI₃) does not exist, and arsenous iodid (AsI₂) is decomposed in aqueous solution into arsenous acid and hence arsenic iodid is probably not contained in the solution.

3. Venarsen, Report Council Pharm. & Chem., J. A. M. A. 64: 1780 (May 22) 1915.

4. "Arsenoven S. S." and "Arseno-Meth-Hyd," Report Council Pharm. & Chem., J. A. M. A., 73: 353 (Aug. 2) 1919.

5. Cole, H. N.: A Study of Sodium Cacodylate in the Treatment of Syphilis, J. A. M. A. 67: 2012 (Dec. 30) 1916; Sodium Cacodylate in the Treatment of Syphilis, Correspondence, J. A. M. A. 68: 390 (Feb. 3) 1917; Sodium Cacodylate in the Treatment of Syphilis, Correspondence, J. A. M. A. 68: 566 (Feb. 17) 1917; Pharmacology of Arsenicals, Current Comment, J. A. M. A. 76: 595 (Feb. 26) 1921; Mon-Arsone Not Admitted to N. N. R., Report Council Pharm. & Chem., J. A. M. A. 76: 1781 (June 18) 1921.

1. Venarsen, Report Council Pharm. & Chem., J. A. M. A. 64: 1780 (May 22) 1915; Venosal, Report Council Pharm. & Chem., J. A. M. A. 70: 48 (Jan. 5) 1918; Some of Loeser's Intravenous Solutions, Report Council Pharm. & Chem., J. A. M. A. 76: 1120 (April 16) 1921.

2. The Therapeutic Value of Glycerophosphates, Report Council Pharm. & Chem., J. A. M. A. 67: 1033 (Sept. 30) 1916; The Hypophosphite Fallacy, Report Council Pharm. & Chem., J. A. M. A. 67: 760 (Sept. 2) 1916.

INADMISSIBLE TO N. N. R.

The Herradora Intravenous Specialties of the Scientific Chemical Co. are inadmissible to New and Nonofficial Remedies for the following reasons:

1. The therapeutic claims advanced for them are unwarranted and exaggerated, and there is no evidence to warrant the intravenous administration of them.

2. With one exception ("Herradora's Sodium Iodid for Intravenous Use") the preparations are mixtures of drugs, the administration of which is not in the interest of sound therapy, particularly when these preparations are intended for intravenous use.

3. Herradora's Sodium Iodid for Intravenous Use is marketed with unwarranted therapeutic claims, such as:

"As prepared sterile by me, the sodium iodid molecule has been subjected to a process which renders it easier for the iodine atom to free itself in the tissues much more rapidly than in ordinary sodium iodid."

In reporting on Venodine,⁶ a sodium iodid preparation, the Council held that, since iodids are easily absorbed from the mucous membrane of the gastro-intestinal tract and are usually well tolerated by the stomach, there is no reason for resorting to intravenous administration. This view the Council subsequently reiterated.⁷

4. With the exception of Herradora's Sodium Iodid, Calcium Compound, and Iodids Compound, all of the Herradora specialties are claimed to contain ingredients, the identity and the uniformity of which are not insured by their inclusion in the U. S. Pharmacopeia, National Formulary, or by their admission to New and Nonofficial Remedies. Were the Herradora preparations which contain such unstandardized constituents acceptable otherwise, it would be necessary that these constituents be examined as to their composition, as to the methods employed to insure their identity and uniformity and to determine that these constituents were of therapeutic worth. The following are the unacceptable constituents which are contained in one or more of the Herradora mixtures: "Arsenic-Organic Compound" (if the Scientific Chemical Co. admitted that this is sodium cacodylate, then the firm would be required to substantiate the highly improbable claims of superiority), Ferric Dimethylarsenate,⁸ "Arsenic-Mercuric-Organic Compound," Lithium Chlorid, "Guaiacol-Glycerol Ester," "Digitalin" (the term is without meaning unless it is specified whether "German," "French" or "True" is used), Convallamarin,⁹ Adonidin, Nickel Bromid, Lithium Benzoate, Manganese Citrate, Manganese Glycophosphate, Sodium Lactate and "Mercuric-Organic Compound."

The facts presented in the preceding report were sent the Scientific Chemical Co. In reply the company assured the Council that its "literature and compounds" were being changed "to conform to Handbook of Therapy American Medical Association" and requested further postponement of the consideration of its products.

FUNDAMENTALLY IRRATIONAL

The preparations of the Scientific Chemical Co. are fundamentally irrational and by no effort could they be made eligible for admission to New and Nonofficial Remedies. The Council, however, wished to give the company every opportunity to bring the preparations into conformity so far as possible with the rules that govern the Council in the consideration of articles, and for this reason the Council has postponed definite action for nearly a year.

Advertising matter mailed to a physician in February, 1923, illustrates the methods followed by the Scientific Chemical Co. in the exploitation of its preparations. One of these circulars, entitled "Influenza and Pneumonia, Its Treatment" begins with a number of trite sayings, thus predisposing the reader to agree with its author. Then follows a rather bold statement that the author is not in accord with the manner in which the diseases are often treated and he proceeds to give

details of the treatment of influenza and of pneumonia. The discussion contains much that is misleading if not definitely false. Thus the author speaks of coal-tar antipyretics being more or less hemolytic. It is true that they are capable of producing hemolysis when used in excessive doses but they are not dangerous when used properly.

It would be profitless to follow the maze of polypharmacy expounded in this circular through all of its ramifications. It suffices to illustrate the absurdity of the advice offered by stating that its author recommends a succession of twelve substances or mixtures containing a total of thirty-nine drugs in the treatment of influenza! A like number (including repetitions) are recommended for the treatment of pneumonia. Some of the preparations recommended contain no less than six different drugs, the combined action of which no human being can possibly foresee.

Not only does the circular recommend an extraordinary number of substances to be administered intravenously in these conditions, but it recommends many that, though once popular, have been shown to be devoid of any therapeutic value in the treatment of any disease. An example of this is found in the recommendation of hypophosphites as represented by "Arsenic-Hypophosphite Compound."

Another circular is entitled "The Treatment of Arteriosclerosis and High Blood Pressure" with the subtitle "Arteriosclerotic Serum (Herradora) for Intramuscular Use." This begins with a discussion of the cause of arteriosclerosis followed by the recommendation that the condition be treated by the usual measures including restricted diet, by purgation and then with the "Herradora Serum." The latter is sometimes referred to as a solution and sometimes as a serum. It is admitted to be nothing more than a solution of the iodid, sulphate, phosphate and carbonate of sodium.

A perusal of the "literature" issued by the Scientific Chemical Co. leads to the belief that the firm is much more interested in persuading the unthinking to use its specialties than it is in scientific therapy. It is an affront to rational therapy to have these mixtures which are reminiscent of the old days of polypharmacy exploited in the treatment of such serious diseases as pneumonia and influenza. Medicine continues to have its disappointments with whatever therapeutic measures are followed in the treatment of pneumonia, which is one of the most baffling of diseases, but there is no possibility of progress while following such crude and unscientific measures as those advocated by the Scientific Chemical Company.

The Council is convinced that the propaganda contained in the advertising matter issued by the Scientific Chemical Co. is detrimental to the rational practice of medicine and the public welfare. Therefore it has authorized publication of this report.

Correspondence

"ORIENTAL SORE (CUTANEOUS LEISHMANIASIS) IN THE UNITED STATES"

To the Editor:—The illustrations in Dr. Lambert's paper on Oriental Sore (THE JOURNAL, April 7, p. 986) show very well the location of the lesions on the back of the elbow and ankle in certain types of the sore. Curiously, these are the favorite sites of the bites of *Stegomyia fasciatus* (*Aedes argenteus*), and it is not unlikely that *Stegomyia* may under certain circumstances impart this infection when infected with a flagellate of this class (*Herpetomonas*). The diagnosis of dermal leishmaniasis in America is usually confined to communities in which laboratories for diagnosis are available and routine examinations with the microscope practiced. No doubt this infection will be encountered in the warmer southern tier of states when it is thoroughly searched for.

The nature of the lesion—its specific character—has been overlooked because of its polymorphous appearance. Aleppo button is perhaps the classical type, but lesions spreading

6. Articles Refused Recognition (Venodine; Standard Radium Solution for Intravenous Use), Report Council Pharm. & Chem., J. A. M. A., 64: 2155 (June 26) 1915.

7. Some of Loeser's Intravenous Solutions, Report Council Pharm. & Chem., J. A. M. A. 76: 1120 (April 16) 1921.

8. Ferric Cacodylate Omitted from New and Nonofficial Remedies, 1920, p. 62.

9. Marvin, H. N., and White, Paul D.: Clinical Studies of Drugs of the "Digitalis Series," J. A. M. A. 77: 1865 (Dec. 10) 1921.

like lupus, or exfoliative in appearance, are seen. Small ulcerating papules are less common than the large, solitary, circular ulcer. Lesions like yaws and ringworm are seen in the South American forms. Smears from all doubtful skin lesions, and when involving the nose, of the nasal septum as well, should be stained with a polychrome blue and eosin stain (Hastings, Wright or Leishman). Parasites are very sparse and often degenerated in the granulomatous area in the floor of the ulcer. The margin of the ulcer usually contains more endothelial cells invaded with the protozoon.

It should not be forgotten that the type of the disease common in South America and that likely to be encountered in Americans and others returning from the interior of Brazil is not self-limited, but recurs in the form of a serious and sometimes fatal ulceration of the nasopharynx and larynx which may appear years after the occurrence of the primary ulcer or lesions on the skin.

SAMUEL T. DARLING, M.D., Leesburg, Ga.

"CAUTION IN USE OF MERCUROCHROME-220 SOLUBLE"

To the Editor:—The communication of Dr. Stolz (*THE JOURNAL*, April 7) seems to call for comment. The salts of organic bases generally exhibit an acid reaction in solution because of a greater or less degree of hydrolysis. It might, therefore, be expected that those salts, when brought into contact with the sodium salt of a comparatively weak organic acid, such as the soluble form of mercurochrome, would act like any other acid and precipitate the dye. I mixed equal volumes of 5 per cent. procain (a hydrochlorid of an organic base) and 2 per cent. mercurochrome-220 soluble. A red precipitate, which soon became gummy, was formed at once, and practically all the dye was thrown out of solution, as indicated by the faint color of the supernatant liquid. Precipitation of mercurochrome was also brought about by cocain hydrochlorid and codein sulphate. As it was thought possible that mercurochrome might be acting as an alkaloid precipitant, another experiment was made with a saturated solution of codein base, this being chosen because it is fairly soluble in water. In this case there was no reaction with 2 per cent. mercurochrome solution, thus showing the essential part played by the acid part of the alkaloid salt.

Dr. Stolz's note of caution is, indeed, timely, and will doubtless be the means of preventing repetitions of his unpleasant experience by other physicians. However, the case described should place emphasis on the incompatibility of mercurochrome solutions with solutions of alkaloid salts, such as those of procain and cocain, and it should be clearly borne in mind that the precipitation of mercurochrome is *not* a thing that may occur fortuitously, but may with certainty be avoided by refraining from using simultaneously drugs of an acid character. Boric acid is an exception; it is so feebly acid that a saturated solution does not precipitate mercurochrome.

Silver nitrate and zinc sulphate, both of which are used in the genito-urinary tract, produce precipitate with mercurochrome. They may be alternated with the dye, but should not be used concurrently with it. In general, salts of heavy metals will precipitate mercurochrome.

It is suggested that when it is desired to use a local anesthetic with mercurochrome-220 soluble, a 2 per cent. solution of benzyl alcohol be employed. This has been found to be compatible with the dye.

EDWIN C. WHITE, PH.D., Baltimore.

[The incompatibility of mercurochrome-220 soluble with local anesthetics was the subject of a report from the A. M. A. Chemical Laboratory in *THE JOURNAL*, April 14, 1923, p. 1091.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BILIRUBIN ESTIMATION TEST

To the Editor:—Please give the details of the bilirubin colorimetric estimation test of Meulengracht, referred to in the *Archives of Dermatology and Syphilology*, April, 1923, p. 496.

G. H. J. PEARSON, M.D., Ottawa, Canada.

ANSWER.—From a brachial vein, about 3 c.c. of blood is collected in a small test tube, into which have been placed 2 drops of a 3 per cent. sodium oxalate solution to prevent coagulation. The test tube is shaken gently a few times and let stand for twenty-four hours. If the estimation is desired at once, the centrifuge may be used. After standing, 0.5 c.c. of the plasma is transferred with a pipet to a test tube graduated to 0.5 c.c., and the transferred plasma is diluted with physiologic sodium chlorid solution until its color is identical to that of the standard solution. The height of the diluted plasma, as shown on the graduated test tube, gives the bilirubin index. If the index is greater than 15, as is true in deep jaundice, the plasma must first be diluted and the index then found, multiplied by the degree of dilution. The standard solution is made of 0.05 part of potassium bichromate, 500 parts of distilled water, and 2 drops of sulphuric acid. It has the color of a pure bilirubin solution, and is stable.

It is most important in performing this test that no hemolysis occur. Venous blood, therefore, not capillary, must be used. Meulengracht procures blood by means of the curved cannula of L. Nielson. Any substance that causes hemolysis, e. g., water, ether, alcohol or acid, must be entirely removed from the glassware used. The test tube for the standard solution and that for the plasma must be of the same quality of uncolored glass.

The strength of the standard solution is arbitrary. The standard solution is clear, while the plasma is opalescent, owing to blood platelets and fat. Although a slight opalescence is no hindrance to the test, it is best to collect the specimen of blood while the patient is fasting or before meals to avoid much fat.

In normal persons, the bilirubin index ranges from 1 to 5. Any index above 5 indicates a pathologic condition: from 5 to 10, a low grade jaundice not noticeable in the skin; from 30 to 50, a medium jaundice, and from 50 to 100, a marked jaundice.

This test is practical in doubtful cases of gallstones, and in hemolytic anemias. It is also useful to determine whether jaundice is growing lighter or deeper.

LETHAL DOSE OF PHENOBARBITAL (LUMINAL)

To the Editor:—What do you consider to be a lethal dose of luminal, the symptoms of poisoning, and treatment. A woman aged 60, took with suicidal intent about fifteen 1½ grain luminal tablets. When I saw her, about six hours later, I was unable to arouse her; the pulse was 114, the respiration 22 and the temperature 98.6; the reflexes were absent except for pain; there was no cyanosis. I saw her again twenty-four hours after she had taken the tablets; she was still comatose, but at times voluntarily moved both arms and both legs. The temperature was 98.6; pulse, 114, and respiration, 26; there was no cyanosis. The patient was gradually becoming unable to swallow even water. When I was called again thirty-six hours after the tablets were taken, she was cyanotic; the temperature was 99.6; pulse, 124, and respiration 30 and shallow; the lungs were full of coarse, mucous râles; the reflexes were absent even for pain stimulus. The patient never regained consciousness, and died about forty hours after taking the tablets. No necropsy was performed. For about four years she had been sick with headaches and general pain. The systolic blood pressure was 200; diastolic, 140. The urine was negative for albumin and casts. The patient had been blind since 13 years of age, so the pupils showed nothing.

C. L. WHITE, M.D., Pittsburg, Kan.

ANSWER.—The lethal dose of phenobarbital (luminal) in man is not known. In animals, the toxic and fatal doses are close together (*New and Nonofficial Remedies*, 1923, page 62). An article on phenobarbital poisoning by John Phillips appeared in *THE JOURNAL*, April 22, 1922, page 1199, wherein the symptoms were reported and the literature reviewed. The treatment of phenobarbital poisoning is essentially the same as that for chloral.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.
 FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
 GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.
 IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
 KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
 MASSACHUSETTS: Boston, May 8-10. Sec., Dr. Charles E. Prior, State House, Boston.
 MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
 MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.
 NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.
 NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.
 NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.
 OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

SOME NEEDED REVISIONS IN MEDICAL LICENSURE IN ACCORDANCE WITH PRESENT DAY MEDICAL EDUCATION*

KENDRIC C. BABCOCK, PH.D.
 Provost, University of Illinois
 URBANA, ILL.

A layman's study of the abstracts of laws and state board rulings regulating the practice of medicine in the United States, as revised to March, 1922, leads straight to the conclusion that most of these laws and regulations have failed to take into account in any really adequate fashion the great changes in the scope and organization of schools of medicine of the present time. Iowa, for example, is operating under a practice act of 1886, amended last in 1909; Texas follows the schedule of the act of 1907; the requirements of the boards in California and Michigan bear evidence of having been formulated in the pre-Carnegie, or paleozoic, period of medical education. Certain other states, such as Massachusetts, Maine, Missouri, Nebraska and Idaho, have taken large cognizance of changed conditions, and have modified their regulations accordingly.

In the earlier period just mentioned, no real standardization of medical schools or medical education in this country had been attempted. Men sitting in this hall today will recall the amazement and alarm which they experienced as they considered the results of the first general investigations of medical education about 1906. Under the conditions existing up to that time, licensing bodies had no alternative to writing very detailed and exacting prescriptions for their would-be brethren who desired to come up for examination for admission to the profession of medicine. Between the Harvard Medical School and the office of Dr. Buchanan was a wide and varied stretch of country out of which almost any sort of man might emerge and ask for a license. Small wonder or regret that the boards, representing the better sentiment of the profession, elaborated specifications as to education, time to be spent, and subjects to be covered. Even with these specifications it was hard to sift out the grains of wheat from the chaff which the cheap, private, money-making medical schools thrust into the market place. But

The old order changeth, yielding place to new,
 And God fulfils Himself in many ways
 Lest one good custom should corrupt the world.

* Read before the Annual Congress on Medical Licensure, Public Health and Hospitals, Chicago, March 5, 1923.

PROGRESS OF MEDICAL EDUCATION

The progress of medical education during the last fifteen years is the most outstanding single feature in the history of professional education in the United States. The raising of standards of admission to medical colleges to a well-enforced requirement of two years of sound college work including certain prescribed sciences has been definitely accomplished, and the organization and administration of the medical colleges and of the institutions offering premedical training have made adjustment to the new requirements without serious complaint. Within the medical colleges themselves the reorganization of methods of instruction, the elaboration of the curriculum, the introduction of full-time specially trained instructors for at least half of the curriculum, and the cooperative enforcement of sound standards through the Council on Medical Education and Hospitals of the American Medical Association have given the Class A medical schools a recognized status and an efficiency quite undreamed of at the beginning of the investigations which resulted in the great report on medical education published by the Carnegie Foundation for the Advancement of Teaching in 1910.

FAILURE OF MACHINERY OF LICENSURE TO KEEP PACE

With this progress in medical education, the machinery of licensure seems to a layman hardly to have kept pace. The scheme of prescribed state examinations for all applicants for licensure, except as modified by principles of reciprocity with other states, the National Board of Medical Examiners or similar bodies, is in full operation and is likely to continue. Quite possibly, some further elevation of the plane of these examinations may be achieved by cooperative measures, through the National Board, some regional boards, or some further evolution of the organization of the Council on Medical Education and Hospitals. The figures for the examinations of the National Board give vitality to this possibility. For the last year the number of those taking the National Board's examinations was 194 for Parts I and II and 870 candidates are registered for examination.

Recent sorry and disheartening experiences in Illinois, in which is one of the great productive centers of medical education, might well dictate a general review of the present system of prescribed examinations and licensure. But this is not the time or place to undertake such a review. The drifting, unsuccessful practitioner of uncertain antecedents, the man trained in schools outside the United States, the man who belongs to a new medical cult but who is willing to yield a minimum of understanding of medical science for the sake of a license—these may well be put through severe and exacting examinations, whatever happens to the men trained under conditions such as now exist in Johns Hopkins, Cornell, Rush, or Stanford.

HAMPERING RESTRICTIONS

The restrictions and detailed specifications fixed by many of the state boards at the present time for admission to the examination and to licensure unquestionably operate to hamper quite unnecessarily both applicants and medical schools. Regulations which were good in the era of expansive and irresponsible medical education may become positively harmful in a succeeding generation when medical education, "lock, stock and barrel," is built on a different plan and shaped up under a different sense of responsibility. The words of the Texas statute of 1907, "Such schools shall be considered reputable within the meaning of this act whose entrance requirements and course of instruction are as high as those adopted by the better class of medical schools of the United States," may be set over against the simple summary of the requirements of the Nebraska board: "The board recognizes only those medical colleges which are rated in Classes A

and B by the Council on Medical Education of the American Medical Association," and the similar statement for the state of Montana, "No applicant who graduated subsequent to July, 1917, will be admitted to the examination unless graduated from a medical school rated in Class A by the Council on Medical Education and Hospitals of the American Medical Association. All applicants who graduated from foreign medical schools subsequent to April 4, 1916, must have attended at least one full course of study in a medical school of the United States rated in Class A by the Council."

Another form of the holdover regulations, or restrictions, from the era of go-as-you-please is the prescription of varying minimum totals of hours for the medical course; for example, 3,600 hours in Colorado and Texas, 4,000 hours in Michigan and California, 4,180 in Iowa, and 4,480 in Pennsylvania, and, in the case of states like California and Iowa, a practically hard and fast distribution of these hours among the subjects in the medical curriculum—chemistry, 320 hours in California, 340 in Iowa, and 360 in Michigan, with some possible variation in the last state; pharmacology, 105 hours in California and sixty in Iowa; anatomy, histology, embryology, etc., 775 hours in California, 690 in Iowa, and 720 in Michigan. One practical difficulty that arises in medical schools that attempt to prepare students for a wide market, like those of Chicago, Philadelphia and New York, is the necessity for complying with the various requirements of the state boards by setting their number of hours in a given subject high enough to meet the highest demand of any state. A thoroughgoing and conscientious attempt to build up a curriculum on this principle would lead to the elimination of most of the opportunities which students might claim to make electives according to interest in subjects or according to enthusiasm for a great teacher or research worker.

In the same category of hampering restrictions are those which set up minimum standards of hours a week, weeks a year, and years for the completion of the curriculum. As illustrations: Pennsylvania requires that an acceptable medical college, recognized by its bureau of medical education and licensure, shall give "four courses of at least thirty-two weeks each of thirty-five hours per week of actual work in didactic and clinical study"; Georgia requires four courses amounting to at least 120 weeks, exclusive of holidays, of at least forty hours each week, attendance of at least 80 per cent. of each course, and a grade of 75 per cent. in all college examinations; Connecticut prescribes "four graded courses of instruction, the aggregate of which amounts to at least 104 weeks of at least thirty-six hours each; and at least forty-two months must have elapsed between the beginning of the student's first course of medical lectures and the date of his graduation"; Illinois requires that each term shall consist of not less than 1,020 hours of work, with a maximum of permissible absences of 20 per cent.; and in the case of Colorado the medical course must consist of a minimum term of four years in four separate years of nine months each, with a total of at least 3,600 hours. All these provisions hark back to the time when there was no general and acceptable agency for standardizing—which, by the way, does not mean, and ought not to mean, the enforcement of a rigid and cramping uniformity—and for publishing authoritatively the results of its standardization, for the benefit of the profession and of that vast and vitally interested public which the profession sets itself to serve.

RATING BY THE COUNCIL

The rating of the medical colleges of the country by the Council on Medical Education and Hospitals, though without statutory backing or authority of any sort, has been so thoroughly consistent, courageous, intelligent and considerate, so steadily cooperative with the universities and col-

leges with which the medical schools have been connected, on the one hand, and so wisely supported by the medical profession, on the other hand, that the judgments of the Council as expressed in its published classification of medical colleges, year by year, are accepted practically without question, save perhaps by those persons and institutions whose merits the Council failed to appraise according to expectations. Very largely through the work of the Council, and with the sure endorsement of an aroused public opinion, the medical school organized on a proprietary basis, and conducted for profit, died.

SOUNDNESS OF CLASS A SCHOOLS

In every way the tendency for medical schools to seek affiliation with, or absorption by, a strong and vigorous university, or for new schools of recent origin to appear as integral parts of an institution of recognized high standards, like the University of Rochester, has operated with unmeasured benefit to medical education. Great institutions whose faithfulness to sound educational standards may not for a moment be called into question, institutions like Cornell University, the University of Chicago, the University of Minnesota, and Stanford University, both institutions on private foundation and those supported by the states, stand sponsor in a wholly new way in the last twenty years for medical education. The confidence of the public, of great educational and philanthropic foundations, and of benevolent men of wealth, as evidenced by the great gifts to medical education during the period just mentioned, all bear convincing testimony to the soundness and progressiveness of the Class A medical schools as a whole, even though there remain differences of magnitude and considerable range between the strongest and the weakest of the probationers on the list. The standards of the universities and the ratings of the Council on Medical Education and Hospitals furnish a safe and tried reliance for anybody wishing to judge medical education. No other agencies than these, save perhaps the New York Regents, are even remotely considered in this connection. Not a single state board is in position to do anything comparable with what the Council has done, nor is it likely to be.

A school in Class A should be judged as a whole—organization, organic institutional relations, faculty, curriculum, equipment and hospital connections; it must also be judged by its output, year after year, its normal finished product, just as the great graduate schools and research organizations are judging the institutions from which their supplies of new men regularly come. When a school has thus attained to the distinction of Class A by the rating of the Council, it seems to a layman entirely clear that state boards must in the long run rely on its honesty, integrity, sound judgment and professional loyalty, and accept its product for immediate examination without questioning meticulously the processes by which its graduates have been guided to their degrees. The judgment of the medical college faculties as to the scientific attainments, the personal trustworthiness and the presumption of success on the part of candidates for degrees is no whit less professional, responsible and public-spirited than that of any board made up of busy practitioners, no matter how distinguished. It is probably within the prerogative of almost every board to approve or not to approve any particular school or all the schools of the Council's Class A or Classes A and B; but having so approved a school or group of schools, there ought to be no further question, and no detailed prescription, as to the exact proportions of the curriculum, or as to the year, whether of thirty or thirty-two weeks, whether it is divided into semesters, terms or quarters, and whether the total accomplishment was spread over fifty months or forty-two months, or thirty-

six months. Attainment on entering the examination is the thing to be assured. On the results of the examinations, year by year, examinations honestly and wisely conducted, perhaps by sections, like the New England states, or the Lake Michigan states, instead of six separate New England examining bodies, or four Midwest bodies, the school must stand or fall. It has more at stake than any board. It must find its faults or weaknesses or vagaries as a part of a greater institution, and take prompt measures to remedy them.

INJUSTICE OF HAMPERING STUDENTS BY DETAILED REQUIREMENTS

The quality of the men and women who are now going into the medical colleges justifies such a proposal of freedom from detailed requirements by boards more perfectly than at any previous time. The process of sifting this mass of students to ascertain its adaptability to the severe discipline of the medical curriculum goes on two years before it gets into the medical hopper, and a good deal of elimination takes place. Not a medical college in Class A would go back to mere high school requirements for admission if it could. On the other hand, with better material to work on, with some momentum in scientific matters and some development of technic at the outset, the school may properly claim the right to work with considerable flexibility of program, with differentiation and even with some specialization of curriculum to meet the needs of groups of students here and there.

For a decade the medical colleges have found it safe to accept from the colleges throughout the country without examination hundreds of freshmen who have stalked into the medical curriculum and have carried their work successfully. These students have satisfied the minimum requirements in science, English and foreign languages, and the colleges have been trusted to make up the balance of the sixty hours with good stuff and not with mere easy fillers. The student, in similar fashion, may pass from the first two years of his medical curriculum in a two-year medical school into the second half of the four-year medical college curriculum, without too elaborate detailed requirements or extensive examinations.

SAVING TIME BY A FLEXIBLE CURRICULUM

Much has been said during recent years of the urgent need to get men into their professional practice at an earlier age. These meetings have heard many addresses on this subject and on the rising cost to the student of his six or seven years of preparation for the practice of medicine after he has graduated from the high school. Scarcely one of these discussions has suggested such a modification of the old-fashioned calendar of the medical curriculum as would assure any saving of time or expense to the student. While colleges and universities have increased their utilization of their plants by adopting a four-quarter year, and while they have enabled many students who have superior ability, especially fine training, and a high enthusiasm for professional achievement, to move more rapidly through the curriculum as a whole, the medical colleges have stood pat for the old-fashioned seven, eight, nine months year. The present rigid prescription or time-lock set by state boards makes impossible the saving of any time by the most brilliant and capable of students. Four calendar years are four calendar years, and the most robust, determined and superbly prepared student may not march through his curriculum, if his destination is Connecticut, in less than forty-two months. He may have taken his physiologic chemistry, bacteriology, histology, embryology, and the like, under the finest masters in a great university in an extra year, an extra semester or in summer sessions, but he may not thereby shorten the sacred period of forty-two months.

It would be entirely feasible for certain medical colleges, perhaps not for all, so to organize their work by rotation, and repetition, just as engineering schools and law schools organize their work, that students might finish the prescribed medical curriculum exclusive of the internship in three, three and one-fourth or three and one-half years. While this probably would not be done by the average student or by many students in every institution, the number capable of such saving, and in justice entitled to make it, would undoubtedly be considerable and worth while, and likely to increase. This would result in saving money for the student as well as time; it would thus reduce the handicap of the strong, capable, but necessarily self-supporting student, the young man who comes up through his high school and premedical curriculum by his own efforts, in contrast with his more fortunate fellow student whose family is able without hardship to provide him with a full medical education. The difference of \$1,000 in the debt which a student would incur in getting his professional education is not infrequently a determining factor, and the medical profession just now needs to look to the matter of supply of raw material of the right sort.

FREEDOM AND RESPONSIBILITY OF COLLEGES UNDER THE NEW CONDITIONS

Until state boards relax the present outgrown, unnecessary and harmful prescriptions as to the details discussed, the medical colleges and the medical students must follow in the lock-step to their common disadvantage. Freedom and responsibility, under the new conditions in medical education, belong to the medical colleges far more vitally and permanently than to the mere examining boards of forty-eight states. Progress and professional spirit in the coming generations of doctors of medicine depend on the full exercise of these two functions by the medical colleges, almost wholly apart from detailed prescriptions by state statute, regulation or board. Cooperation among the states, the medical school and the Council is more active and cordial than ever before. The present roll of Class A medical colleges shows about 40 per cent. to be vital organs of state governments, and as such they are even more responsible to the state than are the state boards of examiners. The regulations of the boards in twenty-three states now give official sanction to the ratings of the Council. But so long as any considerable number of states insist on continuance of the old order of specifications, restrictions and minute regulations of what belongs properly to college administration, there will be a lowered efficiency in the colleges, and a handicapping of some of the most promising students.

Connecticut July Examination

Dr. Edwin C. M. Hall, secretary, Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, July 11, 1922. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. One candidate took the examination and passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital of Chicago...	(1922)		84
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
N. Y. Homeo. Med. Coll. and Flower Hosp. (1882)*,	(1921)		New York
* Licensed on diploma.			

Connecticut November Examination

Dr. Edwin C. M. Hall, secretary, Connecticut Homeopathic Medical Examining Board, reports that one candidate, a graduate of the Hahnemann Medical College and Hospital of Chicago in 1898, received a license by reciprocity with the state of Illinois at the meeting held at New Haven, Nov. 14, 1922.

Book Notices

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES EMBRACING THE ENTIRE RANGE OF SCIENTIFIC AND PRACTICAL MEDICINE AND APPLIED SCIENCE. By Various Writers. Fourth edition edited by Thomas Lathrop Stedman, A.M., M.D. Complete in eight volumes. Cloth. Price, \$10 per volume (in sets only). New York: William Wood & Co., 1923.

To call this vast accumulation of medical data and information a handbook is in the nature of an anomaly. Within its eight stately volumes are included nearly 4,000 articles, contributed by 445 contributors. There are more than 5,000 small illustrations and some sixty-four full page illustrations in photogravure and in colors. The aim of the work is obviously encyclopedic, and it is probably unique among such works.

The third edition was completed in 1917. Because of the rapid progress in the medical sciences brought about by the war as well as by the extensive researches now being made in many parts of the world, textbooks and reference works pass quickly out of date; constant revisions are necessary if they are to depict accurately the present status of the subjects of which they treat. Because of the great scope of this exceedingly useful reference work, a complete resetting and reprinting would be prohibitive. The changes that have been made, therefore, have been inserted into space made by cutting and condensing material in the third edition, and by adding greatly to the last volume.

Among the new subjects that have been included in the fourth edition are articles on asthma, war neurosis, gunshot wounds, the Schick test, epidemic (lethargic) encephalitis, malarial fever, light therapy, basal metabolism and the treatment of wounds. New minor articles deal with new drugs, including barbital, butyn, benzyl benzoate, and nonspecific proteins, and with such new tests as the Sachs-Georgi reaction, the sigma reaction and the colloidal gold reaction. There are, moreover, biographic sketches of Dr. Albert H. Buck, editor of the first two editions of this work, and Drs. Abraham Jacobi, Theodore Janeway, George M. Gould, Sir William Osler and Stephen Smith. The publisher calls special attention to the fact that the materia medica articles have been revised to conform with the latest editions of the pharmacopeia and national formulary. In articles on climatology, the 1920 statistics have been incorporated.

The effort to keep this extensive work up to date is praiseworthy, particularly as it has involved considerable editorial ingenuity to maintain the alphabetical arrangement, and not to make the appendix unduly burdensome as a cross index and reference. As it is, this appendix serves to some extent as a measure of the progress made in the period it covers. Of course, the recent work on ethylene and insulin has been too rapid a development to permit its inclusion in this series.

The list of collaborators includes men who are known for authoritative dicta on the subjects about which they write. For the practitioner far removed from the usual sources of medical reference, for the physician who wishes to be able to consult promptly a reliable general statement on almost any subject in general medical science, and for the literary research worker who wishes a well selected beginning list of references, this encyclopedia is especially commendable.

L'INFECTION BACILLAIRE ET LA TUBERCULOSE CHEZ L'HOMME ET CHEZ LES ANIMAUX. Processus d'infection et de Défense Étude Biologique et Expérimentale. Par A. Calmette. Second edition. Paper. Price, 50 francs net. Pp. 644, with 56 illustrations. Paris: Masson et Cie, 1922.

The second edition differs little from the first. A chapter has been added on chemotherapy, and recent contributions in other fields are briefly described, such as the auto-urine reaction of Wildbolz. For the benefit of those who have not read the first edition, it may be said that this is a high-grade, comprehensive treatment of the nature of tuberculosis, as seen by one who is essentially an investigator and a laboratory man, and one who is particularly interested in the problems of resistance to the infection. Several well written chapters are given to the natural means of defense within the body, and the last quarter of the book is devoted entirely to the

subject of immunity. Calmette's own researches in the field of experimental immunization are too well known to require comment. It is worthy of note that he does not stress them in this book to the exclusion of other important investigations. It is to be regretted that a number of important American contributions to this field in recent years fail to receive notice. There are chapters on the mode of action of tuberculin, including an interesting catalogue of tuberculins. A concise statistical study of racial susceptibility to tuberculosis is presented. The new chapter on chemotherapy takes up rather briefly the various groups of chemicals which have been investigated as to their therapeutic action. While Calmette feels that the results are to date virtually negative, he believes that there is no reason for discouragement, for several suggestive leads have been obtained. Particularly the results with iodine warrant the continuation of this line of investigation. Good colored plates are included, and the press work is excellent. The value of the book as a good reference monograph is distinctly impaired, however, by the absence of an index.

MENTAL DEFICIENCY (AMENTIA). By A. F. Tredgold, M.D., M.R.C.P., F.R.S.Ed., Lecturer on Mental Deficiency at London University. Fourth edition. Cloth. Price, \$6. Pp. 564, with illustrations. New York: William Wood & Co., 1922.

The fourth edition of this well and favorably known textbook fully maintains the high standards of its predecessors. The changes that have been made are quite extensive, and serve to bring the text fully up to date. The chapters on defective delinquency have been entirely rewritten, and there is an excellent discussion of the advantages of the British Mental Deficiency Act of 1913. The author has also included his schematic outline of mental evolution, which should be found of considerable value in analyzing cases that come under observation. The chapters dealing with clinical examinations and mental tests have also been rewritten with admirable clearness. The subject of mental deficiency is rapidly coming to take the prominent place it deserves in social health problems, and there is great need for conservative and authoritative information. These are nowhere so well presented as in this book. Dr. Tredgold's style is clear and concise, the volume is well printed and admirably illustrated, and the book can be heartily recommended for all who are interested. It cannot be equaled, at least in English, for the use of medical students and practitioners.

THYROID AND THYMUS. By André Crotti, M.D., F.A.C.S., LL.D. Second edition. Half morocco. Price, \$15. Pp. 774, with 144 illustrations. Philadelphia: Lea & Febiger, 1922.

The first edition of Dr. Crotti's opus appeared in 1918. In the author's preface, it is stated that the second edition consists of a complete revision of the material in the first edition, including practically a rewriting of many chapters. Mrs. Crotti is given credit for writing the chapter on the etiology of simple goiter. The book represents an accumulation of a vast amount of literature on the thyroid, beautifully illustrated, but selected rather indiscriminately and without special critical elimination. One of the most valuable sections of the work is the accumulation of statistical material regarding the distribution of goiter throughout the world. As was pointed out in our previous review, the publishers seem to have gone to undue expense in order to issue a beautiful volume. The book is printed on large sheets of enameled stock; it is profusely illustrated and bound in three-quarters red morocco leather with a red cover. It has a gold leaf top and contains even a red silk ribbon for marking the pages. These are certainly unusual features for a scientific volume.

THE ANATOMY OF THE FEMALE PELVIS, DESCRIPTIVE AND APPLIED. By F. A. Maguire, D.S.O., M.B., Ch.M., Honorary Assistant Gynaecological Surgeon, Royal Prince Alfred Hospital. Paper. Price, 6 shillings. Pp. 115, with 4 illustrations. Sydney: Angus & Robertson, Ltd., 1922.

Thirty-three pages of this pocket manual are devoted to applied anatomy and the technic of physical examination. It is evidently intended to be used in preparation for examination rather than in connection with any thorough study of anatomy.

Medicolegal

Killing Child to Save Suffering—Motives—Petit Mal Defense—Mental Age Theory

(*State v. Ehlers (N. J.), 119 Atl. R. 15*)

The Court of Errors and Appeals of New Jersey, in affirming a judgment of conviction of murder in the first degree of the defendant, a laborer, 28 years old, for killing his son, aged 6 or 7 years, holds that proof of motive is not essential to support a conviction of murder in the first degree. If the killing is wilful and the result of premeditation and deliberation, it is murder in the first degree, no matter what the defendant's motive may have been, or if he had no motive (used in the sense of self-serving reason) whatsoever. A man, unless not sufficiently sane to know the quality and nature of the act, or that it is wrong, who kills his child to save it from anticipated future suffering and unhappiness, is guilty of murder in the first degree, if the killing is wilful, premeditated and deliberate, although actuated only by motives of pure, even if mistaken, love and kindness.

When, in answer to clear, direct and uncontradicted proof of a wilful, premeditated, deliberate killing, the defense of an epileptic seizure of the petit mal type at the time of the crime, is set up, and the other evidence thereof is of so unconvincing a character as to have little, if any, weight, the mere absence of proof of motive will not suffice to justify a setting aside, as against the weight of the evidence, of a jury's verdict of murder in the first degree. Here the species of alleged epilepsy from which the defendant's expert thought he was suffering was the convenient kind which exhibits no outward telltale symptoms, such as fits or convulsions which accompany the grand mal type, and involves only a temporary secret loss of memory and will power responsibility for a few seconds or a few moments. But the expert said there must be absolute loss of memory during this time, whether short or long, else there is no epilepsy. This being so, there was an absolute explosion of the epilepsy theory, because, according to witnesses, the defendant did remember, only three hours after the shooting, all the details which took place while he was claimed to have been suffering from petit mal.

Expert testimony that an adult defendant in a trial for murder is of the mental age of 12 years, coupled with the further testimony by the same expert that 12 years was the average mental age of our American soldiers in the World War, and that the mental age theory "does not amount to shucks" so far as adults are concerned, the court views as tending to demonstrate that the mental age theory of the medical experts is, at least as applied to adults, based on so arbitrary and unnatural a scale of years as a standard as to be misleading to a layman, and useless, if not actually harmful. In other words, this expert clearly demonstrated, as he frankly admitted, what has been the observation of practically all our judges, that the so-called mental age theory of the experts, at least as applied to adults, is based on so arbitrary and unnatural a scale of ages as to be utterly misleading to a layman and practically useless, if not actually harmful, in the administration of justice by trial by jury.

The Real Question When Defense Is Insanity

(*Thomas v. Commonwealth (Ky.), 245 S. W. R. 164*)

The Court of Appeals of Kentucky, in affirming a judgment of conviction of murder, says that it must be borne in mind that, to excuse homicide on the ground of insanity, the evidence must be such as to establish the fact that the accused was without sufficient reason at the time to know what he was doing, or to know right from wrong; or that as a result of mental disease he did not, at the time of the homicide, have sufficient power of will to control his actions, and was moved by an insane impulse which he could not resist. The real question in a trial in which the defense is insanity is not whether the mind is unsound, but whether it is unsound to the extent of being unable to determine right from wrong; or whether, if able to determine right from

wrong, the accused was unable to resist the impulse to commit the act. If such were not the test, with the many opinions which may be indulged with regard to the soundness or unsoundness of mind, the punishment of criminals would be rendered almost an impossibility. Usually, in a case in which there is no other hope of escape from the enormity of a crime, insanity is put forward as a forlorn hope, and many persons indulge the conclusion that, because a crime is committed from a motive which they may regard as insufficient to justify such an action, the action of the party arises from mental diseases. Insanity is not, however, proved by evidence that the slayer entertained no ill will that was known of by other; by the enormity of the crime; by the barbarous manner in which it was committed, or by the fact that there was no apparent provocation. Testimony that one is of a violent, overbearing and quarrelsome disposition when drunk cannot be said to be evidence of such unsoundness of mind as will excuse crime.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.
- American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
- American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.
- American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
- American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
- American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otolological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
- American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
- American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
- American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
- American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
- American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
- American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
- Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
- California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
- Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Georgia, Medical Association of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
- Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
- Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
- Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
- Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
- Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dyc, Clarksdale, Secretary.
- Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York.
- Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Hampshire Medical Society, Concord, May 22-23. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
- New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
- North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
- Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
- Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
- Rhode Island Medical Society, Providence, June 7. Dr. I. W. Lcech, 369 Broad Street, Providence, Secretary.
- Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
- Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
- West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
- Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Surgery, Chicago

March, 1923, 6, No. 2

- *Benign and Malignant Growths of Nasopharynx and Their Treatment with Radium. S. J. Crowe, J. W. Baylor, Baltimore.—p. 429.
Studies in Exhaustion: IV. Physical Trauma. G. W. Crile, Cleveland.—p. 489.
*Etiology of Urinary Lithiasis: Experimental Study. L. D. Keyser, Rochester, Minn.—p. 525.
*Nature of Cranial Hyperostosis Overlying Endothelioma of Meninges. D. B. Phemister, Chicago.—p. 554.
*Osteoma of Skull. C. W. Rand, Los Angeles.—p. 573.
Alterations in Currents and Absorption of Cerebrospinal Fluid Following Salt Administration. F. E. B. Foley, St. Paul.—p. 587.
Relation Between Oblique Inguinal Hernia and Workmen's Compensation Laws. J. M. Wainwright, Scranton, Pa.—p. 605.
Pathogenic Ptosis of Right Colon. E. P. Quain, Bismarck, N. D.—p. 638.
*Carcinoma of Appendix. A. S. Jackson, Rochester, Minn.—p. 653.

Radium Therapy of Growths of Nasopharynx.—In none of the forty-nine cases of carcinoma of the nasopharynx reported by Crowe and Baylor has a cure been effected; but, in many cases, the symptoms have been ameliorated. In some instances, the rapid decrease in size of the primary growth leads the authors to believe that the unfavorable outcome is due to the fact that these patients do not apply for treatment until metastases have occurred. It is important for the medical profession to know that tumors in the posterior part of the nose and in the nasopharynx are not uncommon, and that the earliest symptoms may be referable to the ear, the eye, the glands of the neck or to the area of distribution of some branch of the trigeminal nerve.

Etiology of Urinary Lithiasis.—The commoner theories of calculus formation are discussed by Keyser on the basis, in most instances, of experimental results. He studied the effect on the crystalline content of the urine of: a high calcium diet; forced administration of oxalic acid and its derivatives; administration of butyl oxalate; placing an organic nucleus in the renal pelvis of the rabbit; the formation of oxamid calculi; anatomic or mechanical factors in the production of oxamid calculi; the introduction of inflammatory exudates into the urinary stream by means of experimental renal infection; the influence of such exudates on the deposition of calcium oxalate and the production of small concretions by such methods; the production of a minute concrement by means of trauma and infection. The difficulty with which calcium salts, oxalates, urates, and other normal crystalline deposits of the urine are increased to any appreciable degree by various methods of administration is pointed out. The only marked increase in visible crystals has been attained by feeding oxamid, a material foreign to the urine of animals. From this it would seem that an exogenous or dietary increase in crystalline materials does not produce a corresponding pathologic increase of these materials in the urine. On this basis, oxalurias, phosphaturias, xanthinurias, cystinurias, and excessive uric acid output must be more of endogenous than of exogenous origin. Some defect of metabolism is at work by which the colloidal content or the hydrogen ion concentration of the urine is altered, rather than a defect of diet. Of the four methods by which artificial concretions have been obtained, only feeding with oxamid gave consistent results. There were features in connection with the other experiments which pointed to the action of an abnormal precipitation mechanism. Oxamid, a crystalloid foreign to the urinary tract, on being excreted, meets no mechanism to keep its crystals separate as morphologic entities. It is precipitated with the colloidal material of normal urine in such a way that fusion of crystals and concrement formation ensue. Mechanical factors are effective, at least, in the case of oxamid, in promoting retention of crystals and growth of the stones; but they are not essential to the process. This work suggests the possible existence of a protective mechanism against stone formation: a natural defense against excessive concentration of urinary crystal-

loids; protective colloids; precipitation of crystals as isolated units; the form and activity of the urinary tract. Keyser says that there seems to be no other reasonable explanation than that the formation of calculi is due to disturbance of the normal colloidal mechanism of the urine, either in holding water insoluble materials in solution or in precipitating crystals as isolated entities. This disturbance may be due to quantitative or qualitative change in the colloids normally present, or to the entrance of abnormal colloids into the urine, either from the blood stream or as products of local disease in the kidney. The latter origin seems most likely. The fact that pus and exudates of bacterial origin, aside from nephritis, are the most common known sources of pathologic colloidal material in the urine, makes it seem likely that these constitute the factors by which the normal urinary precipitation mechanism is most frequently upset. There is also a possibility that calculi are occasionally due to non-infectious colloidal changes. In stasis, surface duplication, organic nuclei, and diverticula are seen conditions which do not cause stone but which, if the cause of stone is present will greatly favor its growth. This has been demonstrated to be the rôle of mechanical factors in the case of oxamid, and all clinical evidence supports such a view for calculi in human beings. Certain physical, climatic, geographic or physiologic differences, however at times lower the resistance to stone forming infections.

Nature of Cranial Hyperostoses Overlying Endothelioma of Meninges.—Phemister asserts that the hyperostosis which develops over a considerable proportion of meningeal endotheliomas results from penetration of the dura and direct invasion of the skull by the tumor. The tumor permeates the skull, rarefies slightly the inner and outer tables and stimulates new bone formation, usually from both the internal and external surfaces. Tumor cells are found in varying numbers throughout the cancellous spaces of the hyperostosis. The new bone is not tumorous in nature, and is merely ossified stroma of the invading endothelioma. Its spongy or radiating arrangement is similar to that which is seen in the ossification occurring in other types of tumor regardless of whether primary or secondary in bone and whether the new bone itself is of tumorous or nontumorous nature.

Osteoma of Skull.—Two cases are presented by Rand as being representative of types of hyperostosis of the skull. The first case was accompanied by an underlying endothelioma which filled and grew from both sides of the longitudinal sinus. The second case was a simple osteoma of the skull not associated with any true intracranial growth.

Carcinoma of Appendix.—Sixty-four cases are analyzed by Jackson. Operation resulted in cure of the malignant condition in 100 per cent. of the thirty-seven patients (out of sixty-four) traced. In only five of a series of twenty-four cases was a positive surgical diagnosis of carcinoma made, although the lesion was suspected in four other cases. In the whole series of sixty-four cases, one specimen was diagnosed colloid carcinoma; the remaining cases may be classified in the so-called spheroidal group. Adenocarcinoma was not found. The influence of chronic appendicitis as a factor in the production of carcinoma is evident from the appearance of the lumen and the number of twists and kinks in the region of the tumor. Jackson urges that the appendix should be examined carefully in every laparotomy, when possible, and should be removed if any abnormality is present. A pre-operative diagnosis of carcinoma of the appendix is impossible because of the absence of distinguishing clinical signs. Obliterated appendixes should be examined carefully for signs of malignancy.

Boston Medical and Surgical Journal

March 29, 1923, 188, No. 13

- Thrombo-Angiitis Obliterans. H. C. Bean, Boston.—p. 427.
Relation of Urologist to Cancer. J. D. Barney, Boston.—p. 431.
*Indications from Experience of Framingham Tuberculosis Treatment. D. B. Armstrong, Framingham, Mass.—p. 433.
Complications Occurring in Gonorrheal Urethritis. A. H. Crosbie, Boston.—p. 435.

Results of Framingham Tuberculosis Experiment.—The more important results of the work done at Framingham, as given by Armstrong, are: (1) The ratio of known active

tuberculosis cases to tuberculosis deaths was increased during the first year of the demonstration from three to one to nine to one, thereby indicating that in many of our communities from one half to two thirds of the active cases are undetected and not under medical control. (2) The cooperation given by the local physicians increased the average annual number of tuberculosis cases reported from 13 to 39 during the first three years of the demonstration. (3) The increased effectiveness of the medical machinery, especially through the aid of the consultation service, increased the percentage of early cases discovered from 45 to 83 per cent. in the first three or four years of the demonstration. (4) Through the increased popularization of adequate treatment facilities, the percentage of cases being sent away to hospitals or sanatoriums for shorter or longer periods, increased during the first three years from 15 per cent. to 42 per cent. (5) As to the effect on mortality, the results to date have been very encouraging. The tuberculosis death rate for 1921, the fifth year of the demonstration, represented a reduction as compared with the predemonstration decade average, of 67 per cent. (the figures being corrected for residence and certification errors). This improvement is to be compared with a percentage of improvement of 18 per cent. for similar towns in Massachusetts. Further, if the last three years of the demonstration (1919-1921) are averaged and compared with the preceding decade, the Framingham improvement is 46 per cent. as compared with 3 per cent. for the comparative so-called "control" towns. (6) Finally, as to cost: Framingham was spending approximately 40 cents per capita per year for health work at the time of the demonstration's initiation. By the gradual assumption of additional expense, the community, either through public or private funds, is now carrying a health expenditure of about \$2.30.

Endocrinology, Los Angeles

January, 1923, 7, No. 1

*New Experimental Data on Question of Seat of Endocrine Function of Testicle. A. Lipschutz, Esthonia.—p. 1.

*Selective Tuberculous Involvement of Endocrine Glands. T. H. Coffen, Portland, Ore.—p. 19.

*Endocrine Therapy in Mental Deficiency. H. W. Potter, Thiells, N. Y.—p. 25.

Experimental Investigation of Value of Various Commercial Ovarian Extracts. S. H. Geist and W. Harris, New York.—p. 41.

*Relation of Onset of Menstruation to Environment. W. Lintz and H. Markow, New York.—p. 57.

Regeneration and Transplantation of Thyroid. M. M. Hoskins, Little Rock, Ark.—p. 61.

Effect of Ablation of Superior Cervical Sympathetic Ganglia on Continuance of Life. M. L. Montgomery, Berkeley, Calif.—p. 74.

Epinephrin Content of Commercial Suprarenal "Cortex" Preparations. E. J. Baumann, New York.—p. 81.

*Case of Raynaud's Disease, Recovered. J. C. Klecan, Portland, Ore.—p. 84.

Seat of Endocrine Function of Testicle.—Lipschutz presents a review of the experiments performed by himself and his co-workers on the interstitial cells of the mammalian testis. Various data are adduced which have not been published previously. It is held that a normal condition of hormonal activity of the testis of mammals is not possible without fully developed interstitial cells. A testis with spermatozoa, but with underdeveloped interstitial cells, cannot perform its normal endocrine function. Completion of spermatogenesis is not necessary for the performance of the endocrine function. Normal endocrine function is possible even when no other generative cells than the cells of Sertoli and spermatogonia are present in the tubules. The hypertrophy of the remaining testis in unilateral castration is not compensatory since small testicular fragments do not hypertrophy and, furthermore, the sex characters can be developed normally when a fragment of only about 1 per cent. is present in the body. The increase of the generative tissue in the testis after unilateral castration has nothing to do with the endocrine function of the testis. It is highly probable that the interstitial cells are producers of sexual hormones; it may be that in extra-uterine life they receive some impulse from the developing generative cells, like the granulosa and the theca interna of the ovary.

Selective Tuberculous Involvement of Endocrine Glands.—The case reported by Coffen is unique in that there was a

clinical history of disturbed function of the thyroid, pancreas, suprarenals and probably the hypophysis. Necropsy showed caseous tuberculosis limited to all the endocrine glands. The following points stand out: In a man of large frame (suggesting gigantism) and with marked hirsutism, a tuberculous hypophysis was found. Peculiar bronzing of the hands and wrists and the pigmentation of the buccal mucosa, suggesting Addison's disease, was associated with caseous tuberculosis of the suprarenals. Glycosuria was definitely present more than three years before death; caseous tuberculosis of the pancreas was found at necropsy. A colloid goiter was removed six years before death; caseous tuberculosis of the remaining portions of the thyroid was found at necropsy. A hydrocele operation had been performed ten years before death. Necropsy showed caseous tuberculosis of the right epididymis and prostate.

Endocrine Therapy in Mental Deficiency.—The cases chosen by Potter for glandular treatment belonged to three endocrinopathic groups, namely, the status thymicolymphaticus, the hypothyroid, and the dyspituitary. Immediately before instituting treatment, these patients were examined for height, weight, blood pressure and blood sugar content. Their intelligence was measured by the Terman scale. Symptoms referable to glandular disturbance were observed. Desiccated thyroid and whole gland pituitary substance were given by mouth. Of fifty-two patients, fifteen showed definite improvement. This improvement consisted of an increase of from four to nineteen months as determined by the Terman scale over what could have been predicted considering their rate of progress prior to instituting glandular therapy. The aggregate net gain made by these fifteen patients amounted to 126 months, or an average of 8.4 months for each patient. Close correlation was found between the mental and physical improvement. In every case but one, an improvement in the general physical condition, blood pressure, blood sugar content, or net increase in height and weight was found. Potter warns against drawing hard and fast conclusions. In closing he says: "Let it suffice to say, for those who may be inclined to apply this report too generally, that endocrinology may at some time in the future explain the origin and offer a promise of a certain amount of improvement in only a selected small percentage of our mental defectives. Finally, to regard endocrine therapy as a panacea for mental deficiency would curtail what legitimate use it may subserve."

Relation of Onset of Menstruation to Environment.—The data presented by Lintz and Markow show that, regardless of the size of the town or city, the environment, economic status and occupation, the average age at onset of menstruation remains approximately the same—13½ years.

Recovery from Raynaud's Disease.—In February, 1921, Klecan's patient began to experience an itching pain in both hands. In June both hands became hyperemic—dark purple. In August, the left third finger broke down and later the right thumb. He came under Klecan's care in September, 1921. Both hands were then markedly hyperemic, the fingers almost black purple. The third left finger and right thumb were necrotic (dry necrosis). No distinct demarcation line was present. The Wassermann test was negative. Later a demarcation line became pronounced. Intense pain persisted. At this time Klecan decided to administer anterior pituitary substance. He gave 2 grains (0.12 gm.), three times daily. In a few days the pain decreased to such an extent that the patient remained without morphin for days at a time. The patient gained in appetite and craved bread particularly; one-fourth grain (0.015 gm.) of desiccated thyroid was added during the fourth week. All the fingers revived. The right thumb proved to be necrotic only as far as the soft parts were concerned and healed completely during the fifth week in the hospital. Necrosis of the third left finger involved the bone. The patient left the hospital after two months, having gained 20 pounds in weight. He was free from pain. In January, 1922, his condition, with the exception of the third left finger, was perfect. In March, 1922, the third left finger also healed, being shorter by about one third of the terminal phalanx. At the present time the patient is in perfect physical condition, has a constant weight, is working actively and enjoying life generally.

Indiana State Medical Association Journal, Ft. Wayne

March, 1923, 16, No. 3

- In Memoriam of Dr. Albert Carl Kimberlin and Dr. Frank Barbour Wynn. W. N. Wishard, Indianapolis.—p. 75.
Cataract Extraction and Complications. W. F. Hughes, Indianapolis.—p. 79.
Reconstruction of Perineal Genito-Urinary Childbirth Injuries. F. C. Walker, Indianapolis.—p. 84.
Essentials in Diagnosis and Treatment of Pulmonary Tuberculosis. J. H. Stygal, Indianapolis.—p. 89.
Diseases and Injuries of Hip Joint. G. D. Marshall, Kokomo.—p. 92.
*Sugar in Cerebrospinal Fluid. Preliminary Report on Quantitative Estimation of Sugar in Cerebrospinal Fluid: Referable Especially to Epilepsy. C. D. Humes, Indianapolis.—p. 94.
Administration of Neo-Arsphenamin Without Presence of Third Party. F. W. Cregor and F. M. Gastineau, Indianapolis.—p. 95.

Sugar in Cerebrospinal Fluid in Epilepsy.—Humes has noted that there was an absence of Fehling's reduction in the nonconvalescent state of epilepsy. This suggests to him the possibility that the cerebrospinal fluid has a physiologic as well as a mechanical function. The following questions are under investigation now: If the cerebrospinal fluid is to be considered a filtrate, why is there not a more consistent relation between the quantity of sugar in the blood and spinal fluid? Is there a distinct cerebral metabolism? If normal cerebrospinal fluid carries glucose as a natural constituent, what is the significance of its persistent absence in the non-convulsive stage of epilepsy? What is the quantitative relation between sugar in spinal fluid and blood in health? A further report is promised.

Johns Hopkins Hospital Bulletin, Baltimore

March, 1923, 34, No. 385

- *Studies of Diabetes Mellitus. I. Respiratory Exchange Following Ingestion of Glucose, Glycerol, Calcium Hexose Phosphate and Calcium Glycerophosphate. W. S. McCann and R. R. Hannon, Baltimore.—p. 73.
Existence of More Than Four Isoagglutinin Groups in Human Blood. Part II. C. G. Guthrie and J. G. Huck, Baltimore.—p. 80. (To be concluded.)
*Influence of Pregnancy in Syphilis. I. Course of Syphilitic Infection in Pregnant Women. J. E. Moore, Baltimore.—p. 89.
Spinal Arachnoid Granulations with Especial Reference to Cerebrospinal Fluid. R. Elman, Baltimore.—p. 99.
*Blood Chemistry in Allergy. R. H. Major, Kansas City, Kan.—p. 104.

Effects of Glucose Ingestion on Respiratory Exchange of Diabetic Subjects.—In a study of the effects of glucose ingestion on the respiratory exchange of diabetic subjects, two types of response were encountered by McCann and Hannon. In the first type of subject, ingestion of glucose resulted in a diminished rate of carbohydrate oxidation. These subjects all improved greatly under treatment, with the development of good carbohydrate tolerance and improved ability to oxidize glucose. A second type of patient, with severe diabetes, was encountered in whom the ingestion of glucose produced a rise of respiratory quotients at a rate similar to that of normal subjects. These subjects were not responsive to treatment with a maintenance diet, low in protein, and balanced as regards ketogenic and antiketogenic factors. The changes in respiratory quotients of diabetic subjects who ingested glycerol were parallel to those produced by the ingestion of glucose in the same subjects. In normal subjects there was no parallelism between the effects of glycerol and glucose. The specific dynamic action of glycerol was negligible in all but one experiment. In this one case an increase in total metabolism of 20 per cent. was observed coincidentally with a decrease in respiratory quotient. The differences in the effects of glucose ingestion on the respiratory exchange of patients with severe diabetes mellitus, the authors believe, supports the concept that there are different types of the disease corresponding to faults in different mechanisms. In subjects with impaired ability to oxidize glucose, hexose phosphate entered more readily into oxidation than did glucose alone.

Influence of Pregnancy in Syphilis.—The clinical data supplied by a study of 178 pregnant women with positive blood Wassermann reactions and twenty-two nonpregnant mothers of syphilitic children, Moore says, support the belief that, in all probability, neither Colles' law nor the theory of the paternal transmission of syphilis directly to the fetus are valid. In only 21.5 per cent. of the total 200 cases were all

evidences of syphilis (except a positive blood Wassermann) lacking. This study also demonstrated that the factor of pregnancy may cause striking deviations from the usual course of syphilitic infection. If impregnation and infection approximately coincide, or if infection occurs during the course of pregnancy, the patient may develop the usual early manifestations of syphilis which are, however, much milder than if she is infected independently of pregnancy. Of those pregnant patients in whom the probable date of infection could be compared with the type of lesions present, approximately one half behaved toward infection in this manner. A slightly larger proportion of women, if infected with syphilis at about the time of impregnation, fail to develop any of the usual early lesions of syphilis. Under these circumstances, Moore says, it is fair to assume that pregnancy is the factor which suppresses the lesions of the disease. The protection against the early lesions of syphilis afforded by pregnancy may persist over a long period of years, and possibly for a lifetime. Spontaneous cure of syphilis seems, in a few instances, to have been the ultimate result. In those women of this series who developed late syphilis, the viscera, and particularly the cardiovascular apparatus, were especially prone to involvement; whereas tertiary lesions of the skin or bones and neurosyphilis, either clinical or asymptomatic, were rare. In 10 per cent. of the pregnant women with secondary syphilis, the Wassermann reaction was negative. In the women with latent syphilis, it was prone to vacillate markedly without treatment; and in a number of cases, a negative or positive reaction during pregnancy spontaneously changed to the reverse after delivery. The factors possibly responsible for this condition are briefly considered. The nature of the mechanism by which pregnancy causes these alterations in the course of syphilitic infection is unknown. Various possibilities are mentioned.

Blood Chemistry in Allergy.—Horse serum was administered by Major to rabbits to produce an allergic state. Repeated injections produced marked changes from the normal blood chemistry. These changes were more marked when the animal was on a deficiency diet. The blood non-protein nitrogen, urea and creatinin were increased; the blood chlorids were usually diminished. Urinary studies show that there is usually a diminution in the nitrogen and chlorid excretion and an increase in creatinin on the day following anaphylactic shock. There is evidence that these changes are due both to a renal and an extrarenal factor.

Journal of General Physiology, Baltimore

March, 1923, 5, No. 4

- Circus Movements of Limulus and Tropism Theory. W. H. Cole, Lake Forest, Ill.—p. 417.
Behavior of Chlorids in Cell Sap of Nitella. M. Irwin, Cambridge.—p. 427.
New Viscometer. P. L. du Noüy, New York.—p. 429.
*Rate of Decline of Milk Secretion with Advance of Period of Lactation. S. Brody, A. C. Ragsdale and C. W. Turner, Columbia, Mo.—p. 441.
Rate of Growth of Dairy Cow. II. Growth in Weight After Age of Two Years. S. Brody, A. C. Ragsdale and C. W. Turner, Columbia, Mo.—p. 445.
Reaction of Nereis Virens to Unilateral Tension of Its Musculature. A. R. Moore, New Brunswick, N. Y.—p. 451.
Selective Absorption of Potassium by Animal Cells. III. Effect of Hydrogen Ion Concentration on Retention of Potassium. R. E. Stanton, Providence, R. I.—p. 461.
Comparative Studies on Respiration. XXIV. Effects of Chloroform on Respiration of Dead and of Living Tissue. G. B. Ray, Cambridge, Mass.—p. 469.
Stability of Suspensions of Solid Particles of Proteins and Protective Action of Colloids. J. Loeb, New York.—p. 479.
Membrane Potentials and Cataphoretic Potentials of Proteins. J. Loeb, New York.—p. 505.

Rate of Decline of Milk Secretion During Lactation.—It is shown by Brody, Ragsdale and Turner, that the course of decline of milk secretion with the advance of the period of lactation may be expressed by the equation of a monomolecular chemical reaction; that is, the percentage decline of milk secretion with the advance of the stage of lactation is constant. This substantiates the idea that milk secretion is limited by a chemical reaction, and, in general, brings lactation into the class of processes the speed of which is determined by the concentration of a limiting substance.

Journal of Metabolic Research, Morristown, N. J.

September, 1922, 2, No. 3

- *Arthritis: Blood Gases and Blood Flow. R. Pemberton, B. M. Hendrix and C. Y. Crouter, Philadelphia.—p. 301.
- *Influence of Glands with Internal Secretion on Respiratory Exchange: VII. Possible Influence of Suprarenal Involution in Newly Born Infants on Heat Production. D. Marine, B. H. Lowe and A. Cipra, New York.—p. 329.
- *Effect of Splenectomy on Respiratory Exchange in Rabbits. D. Marine and E. J. Baumann, New York.—p. 341.
- *Animal Experiments on Certain Phases of Lyon-Meltzer Method of Biliary Drainage. J. Friedenwald, J. W. Martindale and F. X. Kearney, Baltimore.—p. 349.
- *Vitamin Potency of Cod Liver Oils. III. Potency of Pollock Liver Oil—Early Summer Oils. A. D. Holmes, Boston.—p. 361.
- *Quantitative and Qualitative Changes in Islands of Langerhans in Diabetes Mellitus. M. J. Conroy, New Haven, Conn.—p. 367.
- *Effects of Insulin on Diabetic Dogs. S. W. Bliss, Morristown, N. J.—p. 385.

Arthritis: Blood Gases and Blood Flow.—Observations have been conducted by Pemberton, Hendrix and Crouter on seventy-seven arthritics and about forty other cases representing apparent health and various types of disease. The methods of analysis employed consisted chiefly in the study of the oxygen content and capacity of the venous blood; the carbon dioxide content; the dissociation curves for oxygen and carbon dioxide; the sugar tolerance; and the rate of blood flow in the hands. These were utilized in connection with fasting, resting subjects and also in connection with the influence of food, exercise, external heat, drugs and other factors. The high incidence of a lowered sugar tolerance in cases of arthritis at large, especially in the more active stage as already described is corroborated. Observations on the blood gases during the condition of such a test and after making brief preliminary use of the tourniquet show that there tends to be a rise in the percentage saturation of the blood for oxygen, if the tolerance for glucose is lowered. The average under these conditions of all percentage saturation points in the thirteen arthritics with a low sugar tolerance was 78.37 per cent.; of the eight arthritics with normal sugar tolerance, 64.06 per cent.; and for the three normal persons with a normal sugar tolerance, 41.81 per cent. Under the conditions of the experiment, the average percentage saturation for the group of seventy-seven fasting arthritics at all stages of the disease, including advanced convalescence, was higher than it was for twelve fasting normals, in the ratio of from 53.68 to 41.71 per cent. In some arthritics the saturation figures reached very high values. The range was from 26 to 97 per cent. for arthritics and from 27 to 51 per cent. for normals. The interpretation made of these findings is that the percentage of oxygen in the peripheral venous blood of fasting arthritics, under the conditions described, is on the average slightly higher and may be very much higher than in fasting normals. The tentative conclusion is advanced that it tends to return to normal with convalescence or recovery in some cases. Attempts to correlate a high percentage saturation of oxygen in the venous blood of the arthritic, with changes in the rate of blood flow have not yet substantiated such a relation.

Influence of Glands with Internal Secretion on Respiratory Exchange.—The Haldane open circuit apparatus was used by Marine, Lowe and Cipra for accurately measuring the respiratory exchange in newly born infants. The average daily heat production for a given normal baby was found to remain fairly constant from the second to the eighth day of life. During the second week of life there is a rise in heat production associated often with the other signs of increased tissue activity. It is suggested that the rise in heat production beginning in the second week of life may be related in some way to the normal destruction of the reticular and fascicular layers of the suprarenal cortex which also begins at this time.

Effect of Splenectomy on Respiratory Exchange.—Rabbits were used by Marine and Baumann in this experimental study. Uncomplicated splenectomy caused a significant rise in heat production in four of fourteen rabbits. The authors do not feel justified at present in assuming the presence of an antagonistic action of the thyroid and spleen.

Animal Experiments with Lyon-Meltzer Method.—Friedenwald, Martindale and Kearney tried to estimate quantita-

tively the flow of bile (and duodenal contents from a given sector of the duodenum) when stimulated by magnesium sulphate. An anterior gastro-enterostomy was performed on a large dog. A small rubber tube was inserted into the duodenum directly opposite the ampulla of Vater. The intestine was then tied off on each side as close as possible to the tube, leaving a closed pouch of intestine about 2½ inches long. The duodenal contents were then collected at hourly intervals. It was found that magnesium sulphate quantitatively increases the flow of bile when applied locally to the duodenal mucous membrane near the gallbladder opening. The bile flow is produced not by a central action but definitely by a local mechanism. The total intestinal secretion is increased either by central or local action following the instillation of magnesium sulphate, a curve which the bile flow itself does not follow. Contraction of the gallbladder, although carefully watched for, was never noted.

Vitamin Potency of Pollock Liver Oil.—It appears from the data presented by Holmes that the potency of pollock liver oil is slightly greater than that of cod liver oil obtained from codfish of similar physical condition.

Changes in Islands of Langerhans in Diabetes Mellitus.—A thorough study was made by Conroy of all parts of the pancreas in twelve cases of diabetes and twelve controls of similar age, and a less thorough study of ninety-five routine necropsies on nondiabetics. In the diabetic group enumeration of the islands in sections from serial blocks of tissue through the entire organ showed a reduction of about 150 per cent. in the amount of insular tissue. In every case of diabetes there were more or less qualitative changes in the islands, chiefly hyalinization and fibrosis, the latter lesion being quite widespread in some cases. Hyalinization of the islands was seen in only two cases of the nondiabetic group, and in these it was not so marked as in the majority of the diabetic cases. Definite hydropic degeneration of the islands was observed in only one of the diabetic cases and in none of the controls. Changes involving the acinous tissue, particularly interacinous and interlobular fibrosis were seen in both series but were more marked in the diabetic cases. From this study it is concluded that both quantitative and qualitative changes are operative in leading to a functional insufficiency of the insular tissue as manifested by clinical diabetes.

Effects of Insulin on Diabetic Dogs.—The report of Banting and Best concerning the effect of pancreatic extract on totally depancreatized dogs is confirmed by Bliss. Also the observations on the occurrence and symptoms of hypoglycemic collapse following overdosage of insulin, and the susceptibility of depancreatized dogs to this condition. Heavy glycosuria and hyperglycemia were abolished in a partially depancreatized dog by 5 units of insulin. A partially depancreatized dog dying of diabetic coma was not saved by the injection of 16 units of insulin, though the blood sugar was reduced nearly to normal, the acetone nearly disappeared, and no chemical reason for death was apparent. The plasma bicarbonate fell progressively to death and was entirely independent of the acetone values, the insulin injections, and the blood sugar changes. Traces of glycogen were found almost equally in the liver, heart and skeletal muscle at necropsy. It is assumed that the insulin treatment fails in advanced coma because unknown secondary changes prove fatal in spite of the clearing up of the primary diabetic disorder.

Kansas Medical Society Journal, Topeka

March, 1923, 23, No. 3

- Use of Bone Plates and Nails in Treatment of Fractures of Femur and Joint Fractures. E. E. Morrison, Great Bend.—p. 57.
- Usual and Unusual Cases of Angina Pectoris. J. A. Buchanan, Pueblo, Colo.—p. 59.
- Antigenic Differences of Bacillus Typhosus and Their Relation to Widal Test and Vaccination. C. M. Downs, Lawrence.—p. 63.
- Some Aspects of Endocrinology. C. I. Reed, Lawrence.—p. 65.
- Raw Serum Wassermann in Small Laboratory. W. E. Burns, Chanute.—p. 67.

New Jersey Medical Society Journal, Orange

March, 1923, 20, No. 3

- Modern Views on Blood Pressure. F. A. Faught, Philadelphia.—p. 73.
- Chest Surgery. R. H. Dieffenbach, Newark.—p. 80.

Contemporary Aspects of Medical Ethics. E. J. Marsh, Paterson.—p. 86.
The Feeble-minded. E. R. Johnstone, Vineland.—p. 89.
Secondary Low Blood Pressure of an Insidious Type. L. F. Bishop, New York.—p. 93.
Acute Pulmonary Tuberculosis. D. Delfino, Somerville.—p. 94.

Rhode Island Medical Journal, Providence

March, 1923, 6, No. 3

Twelve Cases of Postoperative Abscess of Lung and Two Cases of Postoperative Pneumonia. H. L. Barnes, Wallum Lake.—p. 35.
Radium Therapy in Cancer, at Institute of Radium, Paris. M. W. Thewlis, Providence.—p. 39.

Southern Medical Journal, Birmingham, Ala.

March, 1923, 16, No. 3

Medicine. M. L. Graves, Galveston, Texas.—p. 151.
Riddle of Uremia. D. Riesman, Philadelphia.—p. 160.
*Diet in Chronic Nephritis. J. S. McLester, Birmingham.—p. 167.
*Relation of Acidosis to Nitrogen Retention in Experimental Nephritis. D. VanderHoof and C. C. Haskell, Richmond.—p. 170.
Atrophic Conditions Contrasted with Muscular Wasting from Emaciation. B. R. Tucker, Richmond.—p. 176.
Program of Rural Health Work. W. F. Draper, Washington, D. C.—p. 181.
Ten Minutes with Vital Statistics. J. H. Florence, Austin, Texas.—p. 186.
*Experimental Intraperitoneal Division of One Ureter. W. C. Jones, Birmingham, Ala.—p. 188.
Synergistic Analgesia. G. T. Tyler, Jr., Greenville, S. C.—p. 199.
Uterus in Malposition. F. Reder, St. Louis.—p. 202.
Comparative Study of Neisserian Infections in Male and Female Urethra. H. W. McKay and L. C. Todd, Charlotte, N. C.—p. 209.
So-Called Railway Spine. F. W. Carruthers, Little Rock, Ark.—p. 216.
Eye Lesions of Nasal Origin. J. D. Heitger, Louisville.—p. 218.
Technic of Radical Mastoid. F. E. Hasty, Nashville.—p. 227.

Diet in Chronic Nephritis.—To secure maximum nutritive efficiency, McLester says the digestive organs should be protected against abuse. The food should be simple. Pies and other pastries, fried food, all complex, highly seasoned "made dishes," should be interdicted. It is advisable that constipation be prevented and for this reason the diet should include always a sufficient amount of honey, fruits, vegetables, bran and other laxative foods. It seems best to advise a moderate fluid intake of from three to five pints daily, the amount depending somewhat on the climate and the resulting loss of fluid through the skin.

Relation of Acidosis to Nitrogen Retention in Experimental Nephritis.—Van der Hoof and Haskell feel that it cannot be too strongly stressed that alkali administration in supposed cases of acidosis should be resorted to only when it has been definitely shown that there is reduction of reserve alkali of the plasma even then, oral or rectal administration should be preferred to injection of the solution intravenously.

Experimental Division of One Ureter.—Forty animals were used by Jones in his experimental work. The mortality was 75 per cent. It is evident, therefore, that complete division of the ureter is an exceedingly grave occurrence, but not necessarily fatal. As compared with ureteral obstruction, it is decidedly more serious. The added danger from an opened ureter is due mostly to the toxemia from absorption of decomposed urine from the tissues outside the urinary tract. The most striking feature of these experiments as well as those of other investigators, is the activity of the tissues in the vicinity of the severed ureter in preventing the spread of the escaping urine. In some instances the reaction is so prompt that the ureteral opening is sealed at once. More frequently a urinary sac is formed by adhesions between the intestine, omentum, bladder and body wall. This urinary cavity may contract and be obliterated or may remain unchanged indefinitely, or may increase in size; also secondary sacs may develop from the original sac. Limiting adhesions occurred in all but one of the animals. The amount of infection in the peritoneum (21 per cent.), retroperitoneal tissues (13 per cent.) and abdominal wound (15 per cent.) was surprisingly small. The effects of this operation on the kidney and the ureter are the same as those of complete ureteral obstruction if the animal lives long enough, except that the results develop more slowly in the former; also in ureteral division there is the added feature, in about 50 per cent. of the animals, of the formation of a urinary cavity at the point of division of the ureter. During the first two or three months after complete severing of a ureter it

gradually dilates and the kidney suffers cystic enlargement. After three or four months, dilatation still continues in more than half the number of animals, while about 44 per cent. of the specimens show more or less marked general renal atrophy (decrease in size) on the operated side.

Tennessee State Medical Association Journal, Nashville

March, 1923, 15, No. 11

Surgical Control of Exophthalmic Goiter. B. I. Harrison, Knoxville.—p. 473.
Art and Science of Diagnosis. R. L. Motley, Dyersburg.—p. 476.
Common Diseases of Thyroid. J. B. Haskins, Chattanooga.—p. 481.
Treatment of Compound Fractures of Tibia; Report of Three Cases. W. F. Clary, Memphis.—p. 484.
Desensitization After Previous Injections of Serums (Antitoxins, Etc.). J. H. Litterer, Nashville.—p. 485.
Case of Nonpurulent Sinusitis Associated with Chorioretinitis. C. D. Blassingame, Memphis.—p. 493.

Texas State Journal of Medicine, Fort Worth

February, 1923, 13, No. 10

Determination of Cardiac Efficiency. D. W. Carter, Jr., Dallas.—p. 498.
Determination of Kidney Efficiency. K. M. Lynch, Dallas.—p. 501.
Cardiovascular-Renal Disease: Clinical Considerations. R. B. McBride, Dallas.—p. 505.
Cardiovascular-Renal Disease. J. E. Daniel, Wichita Falls.—p. 507.
Effect of Arspenamin Treatment in Cardiovascular Syphilis in Negroes. M. D. Levy, Houston.—p. 509.
Early Diagnosis of Diabetes. H. J. John, Cleveland, Ohio.—p. 512.
Dietary Treatment of Diabetes. W. E. Nesbit, San Antonio.—p. 516.
Renal Glycosuria; Report of Case. C. T. Stone, Galveston.—p. 518.
Parasitism of Fat. K. H. Beall, Fort Worth.—p. 520.

March, 1923, 18, No. 11

Value of Abdominal Measurements in Recognizing the Size and Maturity of Fetus. C. R. Hannah, Dallas.—p. 543.
*Interstitial Pregnancy. T. C. Gilbert, Dallas.—p. 546.
Cesarean Section. H. H. Ogilvie, San Antonio.—p. 548.
Nitrous Oxid in Obstetrics. J. R. Worley, Dallas.—p. 551.
Spinal Anesthesia in Gynecology. W. R. Cooke, Galveston.—p. 554.

Interstitial Pregnancy.—Gilbert records the case of a woman, aged 26, who became aware of a second pregnancy ten months after the birth of her first child. The fetus was expelled, at the end of the fourth month. For three months previously the patient had experienced fulness and distress in the right ovarian region, with more or less pain from time to time, these symptoms gradually increasing in intensity. Gradually, a "cake" appeared in the right flank. The patient had some cramps in the abdomen and marked diarrhea, accompanied by fainting when she attempted to sit up in bed. She showed marked anemia and an unusually dark, muddy and mottled skin, symptoms no doubt, due to an intraperitoneal hemorrhage. About two months later, she felt the tension in her side relax, and the "cake," suddenly went down and there was an escape, according to her estimation, of from a quart to one-half gallon of water. Bimanual examination revealed a large, fixed, boggy uterus, slightly smaller than a four-months' pregnancy. There was a definite tumor mass extending upward and to the right. It was firm in consistency, but did not give the impression of a fibroid. Interstitial pregnancy was diagnosed but the expectant course was pursued. The amount of blood lost was only moderate. The patient experienced intermittent pains, resembling those of labor, and two days later a four-months' fetus was expelled through the uterus. The placenta and membranes, however, did not follow after six hours. The cord was traced to the right cornu, where it was thought it could be felt leaving the uterine cavity, thus confirming the diagnosis of interstitial pregnancy. Notwithstanding this fact, it was decided to temporize still further, and the uterus was packed with iodoform gauze, with the hope that the placenta and membranes would come away upon the removal of the gauze. The gauze was removed after twenty-four hours, without results. The next day the patient became pale, weak and faint, experiencing at the same time some pain. Within a short time her condition became worse, marked pallor, air hunger and shock rapidly supervening. A supravaginal hysterectomy was done, and a large amount of blood was removed from the abdomen. The patient never regained consciousness and died of shock. The gravid tumor had attached itself to the pelvic wall, just to the right of the bladder. The membranes and placenta were definitely within the extra-uterine sac; the cord extended into the uterus.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

December, 1922, 45, Parts 3 and 4

*Two Cases of Syringomyelia and Syringobulbia, Observed Clinically Over Many Years, and Examined Pathologically. J. Taylor, J. G. Greenfield and J. P. Martin.—p. 323.

Study of Cerebral Fiber Systems by Means of New Modification of Anatomic Methods. Lateral Wall of Thalamus and Sagittal Portion of Its Cerebral Fiber System. J. Rosett.—p. 357.

*New Conception of Elements of Sensation. J. S. B. Stopford.—p. 386.

Toxic Polyneuritis. W. Harris.—p. 415.

Muscle Tonus. De Boer's Experiment on Frog. J. W. Langelaan.—p. 434.

Central Connections of Vestibular Nuclei with Corpus Striatum, and Their Significance for Ocular Movements and for Locomotion. L. J. J. Muskens.—p. 455.

Syringomyelia and Syringobulbia.—Two cases of syringomyelia and syringobulbia are reported by Taylor, Greenfield and Martin. They were unusual because of the long periods during which it was possible to observe them carefully. They also have a special interest because of the striking manner in which the clinical course differed in the two cases. In the first patient the condition underwent no change of consequence during the long period of twenty-four years in which one of the authors had him under almost continuous observation; in the second case, which was under observation for nineteen years, there was, on the contrary, a slow but steady deterioration in physical condition with gradual spread of muscular weakness and sensory change, the result no doubt of corresponding changes in the condition of the spinal cord. The morbid changes in the spinal cords, details of which are given, explain to some extent this difference.

New Conception of Elements of Sensation.—In concluding his discussion of this subject, Stopford stresses the following points: It seems clear that no nerve of sufficient size to be of clinical importance, or to be selected for experimental work on sensation, is distributed exclusively to the skin. Consequently, after section of any nerve trunk, even in the distal part of a limb, there is bound to be some disturbance of so-called deep sensibility, and it seems quite impracticable to divide sensation into superficial and deep. The various forms of sensation included under the division of deep sensibility may be dissociated. Observations on the recovery of deep sensibility demonstrate several striking and significant features. What has been regarded as deep sensibility ought to have been subdivided, just as cutaneous sensation has been divided, into an epicritic and a protopathic type. Results of clinical observation suggest that, at the periphery, both in cutaneous and deep tissues, there are cortical and thalamic aspects of sensation.

British Medical Journal, London

March 10, 1923, 1, No. 3245

Psychology and Medicine. F. W. Mott.—p. 403.

*Outlook of Nephritis in Children. H. T. Ashby.—p. 408.

Ionic Medication. D. Campbell.—p. 409.

*Rheumatoid Arthritis Treated Intravenously with Colon Bacillus Vaccine. R. J. Perkins and G. B. White.—p. 411.

Foreign Bodies in Air and Food Passages. Report of Five Cases. C. A. S. Ridout.—p. 413.

"Lung Splinting" in Treatment of Pulmonary Tuberculosis. S. H. Stewart.—p. 414.

Outlook of Nephritis in Children.—The occurrence of nephritis after scarlet fever, Ashby says, varies in different epidemics, but it may be estimated at about 10 per cent. The outlook is usually good, and it is rare for the nephritis to become chronic. The amount of albumin in the urine does not seem to alter the outlook, for a patient with a large amount may get quite well while one with only a small amount may do badly. The worst cases are those which have remained untreated for some days and those in which there is suppression of urine, as uremia is liable to occur. The preventive treatment consists in great care during the two and three weeks after the onset of the scarlet fever, especially as regards catching cold. In cases of acute nephritis, the outlook is mostly bad. They run a course of, perhaps, from three months to two years, but complete restoration to

health does not often occur. The child may get fairly well, but he is liable to further attacks which damage the kidneys still more, till he grows waterlogged and dies. Toward the end very little urine is passed, and dyspnea becomes a marked feature, so that the patient has to be propped up in bed. Uremic convulsions are also common.

Rheumatoid Arthritis Treated with Colon Bacillus Vaccine.—Frequently, the focus of infection in rheumatoid arthritis is difficult to locate, and, it was in these cases that the protein shock method by the intravenous use of *Bacillus coli* vaccine was employed by Perkins and White. This particular vaccine was used because it is convenient to administer, and the material for its preparation is always easily obtainable. The vaccine was given intravenously in doses varying from 50 to 200 millions for a first dose; the patient was admitted to hospital for twenty-four hours, as it was considered that the reaction was too severe for him safely to remain an outpatient while it was in progress. The initial dose should be as large as possible. The reaction usually consisted of a rise of temperature a few hours after the injection, the temperature varying from 100 to 103 F., and frequently accompanied by a rigor. Nausea and vomiting may also occur. The duration of the reaction varies from twelve hours to two days. If any improvement as a result of the treatment is to take place, it does so rapidly, as a rule, within two days. Cases with severe reaction showed the best results.

March 17, 1923, 1, No. 3246

Man's Posture: Its Evolution and Disorders. A. Keith.—p. 451.

*Nature of Arteriosclerosis. G. Evans.—p. 454.

Trephination of Living Human Skull in Prehistoric Times. T. W. Parry.—p. 457.

Value of Laboratory Tests in Diseases of Liver and Pancreas. W. L. Brown.—p. 461.

*Use of Radium in Treatment of Disease. D. Turner.—p. 464.

*Sudden Death from Anaphylactic Shock. F. W. Sumner.—p. 465.

Amputation at Shoulder. F. R. Parakh.—p. 467.

Nature of Arteriosclerosis.—The main feature of diffuse hyperplastic sclerosis, as described by Evans, is a thickening of the intima, accompanied sometimes by hypertrophy of the media. The intimal changes are the essential lesion. Activity of the endothelial cells is largely responsible for the intimal thickening. In this thickening the process of degeneration plays a secondary part; it is only certainly present in the terminal arterioles of the kidney and the smallest vessels of the other organs. The characteristic feature of the lesion is intense tissue activity, the antithesis of a process of decay.

Indications for Use of Radium in Treatment of Disease.—Of malignant affections: rodent ulcers, epithelioma, lymphosarcoma, spindle cell sarcoma, malignant disease of the cervix, sarcoma of the nasal passages; and of nonmalignant affections: exophthalmic goiter, early keloids and certain nevi are, in Turner's experience, very amenable to radium treatment. They might be termed first class subjects, because, under favorable conditions, they admit of actual cure. Under second class subjects—meaning thereby conditions which may be ameliorated but in which cure can rarely be expected—might be placed carcinoma, lymphadenoma, and splenomedullary leukemia. In the treatment of exophthalmic goiter and of nevi in children by radiation, Turner asserts that radium has the following advantages as compared with the rays: (1) Absolutely constant emission of rays, and, therefore, exact dosage possible. (2) Greater penetration of its rays, so that the deeper parts are reached. (3) Saving of time, as the radiation is maintained night and day until the necessary dose has been administered. (4) No noisy, exciting apparatus, so that the treatment can be applied at the bedside without in any way alarming or disturbing the patient.

Sudden Death from Anaphylactic Shock Following Injection of Diphtheria Antitoxin.—In the case cited by Sumner, anaphylaxis followed injection of a prophylactic dose of 1,000 units of antitoxin. The girl had had no previous injection of any sort. None of the ten other girls had any anaphylactic symptoms, nor had the diphtheria patient, who was given a large curative dose. Death occurred within five minutes after the injection. Subsequent investigation disclosed the likelihood of a condition of "status lymphaticus" with probable enlargement of the tonsils, and adenoids, and a persistent thymus.

Calcutta Medical Journal

December, 1922, 17, No. 6

- Complications After Some Cataract Operations. S. K. Ganguly.—p. 249.
Eclampsia. S. K. Gupta.—p. 262.
Case of Persistent Thymus. A. Chakraverti.—p. 280.
Leprosy. Early Lesions and Development and Incidence of Leprosy in Children of Lepers. D. Banerji.—p. 282.

Lancet, London

March 10, 1923, 1, No. 5193

- *Therapeutic Inoculation. Part III. L. Colebrook, E. J. Storer and A. E. Wright.—p. 473.
*Artificial Pneumothorax: Its Application to Cases Other Than Those of Pulmonary Tuberculosis. J. J. Perkins and L. S. T. Burrell.—p. 478.
*Fatal Case of Prerenal Toxemia. Showing Clinical Signs of Chronic Parenchymatous Nephritis. W. N. Goldschmidt.—p. 480.
*Effect of Histamin on Human Gastric Secretion. A. R. Matheson and S. E. Ammon.—p. 482.
*Fatal Case of Acute Intestinal Obstruction, Resulting from Traumatic Diaphragmatic Hernia. B. H. Slater and C. Mackenzie.—p. 484.
Operative Treatment of Septic Meningitis. H. L. Martyn.—p. 485.
*Suppurative Arthritis Simulating Acute Appendicitis. J. A. Berry.—p. 486.

Therapeutic Inoculation.—In concluding this series of articles, Wright and his associates emphasize two points. The first has reference to the question of the therapeutic prospects opened up. Experiments have brought into prominence the fact that, in immunization, quantitative considerations dominate the situation. When it is desired to evoke immunizing response in the blood one must employ one particular range of doses. And when it is desired to ascertain what has been achieved, one must again employ one particular range of doses. In the experiments incorporated in this paper the increased antibacterial power engendered runs, as calculation shows, generally into the killing of several additional hundreds or exceptionally several additional thousands of staphylococci per cubic centimeter. These figures give upper and lower limits. Within that range there is much useful therapeutic work to be accomplished. But just as there is an assaying dose of living microbes which no immunized blood can contend against, so there must be a definite limit to the volume of infection which intravenous inoculation of vaccines, or immunotransfusion can cope with. And in computing that volume of infection one must take into reckoning not only the microbes actually circulating in the blood, but the total bacterial population in the internal organs, which may run into indefinite millions. The second point made is that in every code of principles there are tenets based only on inference as well as tenets based on direct experiment. But in every succeeding code those elements which rest on inference grow less and less, and those which rest directly on fact—those which are established by laboratory methods—grow more and more. So that in the end, in every science, enduring principles will be reached.

Artificial Pneumothorax for Nontuberculosis Cases.—Perkins and Burrell cite cases to show that artificial pneumothorax may be of value in cases of abscess of the lung, bronchiectasis, hemoptysis of unknown origin, and recurrent pleural effusion. In abscess of the lung, the success of artificial pneumothorax evidently depends on the presence or absence of adhesions. When these are absent artificial pneumothorax is sufficient to effect a cure and render a severer operation unnecessary. Considering the uncertainty of discovering the abscess cavity it is certainly to be preferred to drainage. When the abscess is superficial, the presence of adhesions may lead, under pneumothorax, to its intrapleural rupture necessitating drainage of the pleura. If the adhesions are widespread they may stand in the way of complete collapse and prevent success, necessitating thoracoplasty. But even so, the authors advocate artificial pneumothorax as a routine procedure on the ground that it may be sufficient in itself and, when not, that the symptoms are relieved and the general condition of the patient improved, enabling him better to face the severer operation. Success in bronchiectasis, as in abscess of the lung, depends on adhesions. In the cases of recurrent hemoptysis and chronic effusion success was striking.

Fatal Case of Prerenal Toxemia.—Goldschmidt relates the case of a man who died from an illness the symptoms of

which were typically those which have been attributed to "chronic parenchymatous nephritis"; but his kidneys were found at the postmortem examination to be normal macroscopically, and virtually normal microscopically. The heart was very small and in a condition of brown atrophy—always looked on as a secondary phenomenon, not as a primary morbus cordis—but the heart actually showed considerably more evidence of disease than the kidneys. Incidentally, there were no signs of renal inefficiency during the earlier and greater part of the illness, except oliguria, albuminuria and diminished excretion of chlorids. It is of great importance to note that, although toward the end of the illness the kidneys were only slightly, or possibly not at all, damaged, the blood urea rose, so that an abnormally large amount of urea may be present in the blood with slight or no changes in the kidneys. It, therefore, seems as if this man's illness was due to some prerenal poison which caused exudation into the tissues, and incidentally damaged some of the tubules of the right kidney; but the latter had recovered by the time the man died.

Effect of Histamin on Human Gastric Secretion.—Matheson and Ammon state that histamin in small doses given subcutaneously excites in man a flow of gastric juice. The peptic activity increases after the injection and reaches its maximum, usually in from five to fifteen minutes. Both total and free hydrochloric acid increase in amounts attaining the maximum shortly after the pepsin maximum is registered. The secretory rate follows a similar course, and usually attains its maximum last of all. It seems possible to the authors that histamin may be employed as a means of investigating the state of gastric secretory function and, perhaps, as a therapeutic agent.

Fatal Case of Acute Intestinal Obstruction.—The patient whose case is reported by Slater and Mackenzie suffered a war wound of the diaphragm in 1917, that did not heal. His perfect health and perfect digestion for three years after receiving the wound suggests that up to 1921 no abdominal viscus herniated through the hole. Operation for acute intestinal obstruction in 1921 showed that only a small portion of the transverse colon was obstructed, but empyema resulted from infection from the obstructed part of the colon. The probable result of the empyema was to enlarge the hole in the diaphragm. The man was readmitted to hospital in 1922, with a provisional diagnosis of ptomaine poisoning. Death occurred suddenly four days later. The necropsy disclosed that the cardiac end of the stomach and the transverse colon had herniated through the hole, and were adherent to the posterior wall of the thorax. The lower lobe of the left lung was collapsed and universally adherent. The small intestines were slightly distended and congested. All other organs appeared to be healthy.

Suppurative Arthritis Simulating Acute Appendicitis.—In Berry's case a suppurative arthritis of the eleventh right costovertebral joint simulated acute appendicitis.

Medical Journal of Australia, Sydney

1: 169-196 (Feb. 17) 1923

- Puerperal Sepsis. T. W. Lipscomb.—p. 169.
Some Relations of Climate, Weather and Fat Covering to Metabolism. C. E. Corlette.—p. 172.
Vesicovaginal Fistula. G. Armstrong.—p. 182.

1: 197-220 (Feb. 24) 1923

- Case of Peri-Arteritis Nodosa. J. B. Cleland.—p. 197.
Interim Report on Results of Deep Roentgen-Ray Treatment. H. Flecker.—p. 201.
Gynecologic Experiences in Southern Manchuria. A. N. Krakowsky.—p. 204.
Vitamins. S. Harrison.—p. 206.

Medical Journal of South Africa, Johannesburg

18: 163-186 (Feb.) 1923

- Hospital Control. R. P. Mackenzie.—p. 164.
Postpartum Hemorrhage. A. Abelheim.—p. 167.
Estimation of Malnutrition in Children. C. L. Leipoldt.—p. 170.
Uterine Displacements. O. J. Currie.—p. 175.

South African Medical Record, Cape Town

21: 73-96 (Feb. 24) 1923

- Widal versus Complement Fixation. A. Pijper.—p. 74.
Treatment and Prevention of Malaria. H. A. Spencer.—p. 84.

Gynécologie et Obstétrique, Paris

January, 1923, 7, No. 1

*Action of Roentgen Rays on the Oöcytes. A. Lacassagne and H. Coutard.—p. 1.

Cysts of the Labia Minora. H. Mondor and P. Huet.—p. 26.

Conservative Treatment of Inversion of Uterus. Miginiac.—p. 37.

*Pulse in Retroplacental Hemorrhage. Levant and L. Portes.—p. 43.

**Uteroplacental Apoplexy." L. Portes.—p. 56.

Influence of Irradiation of Ovary on Subsequent Fecundation and Pregnancies.—Lacassagne and Coutard irradiated the ovaries of rabbits and studied the after-effects. They found that even a single and weak irradiation influences the subsequent faculty of procreation very unfavorably. These results are important with regard to the treatment of young women for hemorrhages. It is impossible to stop them without hurting the procreative function.

The Pulse in Retroplacental Hemorrhage.—Levant and Portes found that the pulse with retroplacental hemorrhages is not always very rapid. Other factors (toxemia) influence the rhythm and the frequency of the pulse, so that no direct conclusions are possible as to the part played by the hemorrhage. Yet this does not change the indications for treatment which should consist in the evacuation of the uterus.

Uteroplacental Hemorrhage.—Portes deals with the etiology and treatment of this condition, when the hemorrhage is not only behind the placenta but also in the wall of the uterus. He believes in the toxic origin. It is theoretically impossible to differentiate this condition from a simple retroplacental hemorrhage. Yet in practice we diagnose it if such symptoms are accompanied by very pronounced toxemia, a shock, or tetanus of the uterus. The treatment of choice is abdominal cesarean section with extirpation of the uterus, except where the lesions are very small or when the uterus contracts normally after evacuation.

Revue Médicale de la Suisse Romande, Geneva

January, 1923, 43, No. 1

*Sequelae of Epidemic Encephalitis. F. Nayville.—p. 1.

*Multiple Sclerosis and Its Etiology. E. Long.—p. 27.

*Semeiology of Heart Disease in Children. E. Thomas.—p. 37.

Transmission to Auricle of Mitral Murmur. M. Roch.—p. 44.

Post Partum Paralytic Ileus. Picot and Francken.—p. 46.

Traumatic Phlebitis. N. Betchov.—p. 48.

Epidemic Encephalitis.—Nayville estimates that there must have been from 150 to 200 cases of encephalitis at Geneva during the epidemic of 1918 to 1921, and 43 of the patients are known to have probably permanent sequelae. He encountered also 11 others with a history of encephalitis elsewhere, a total of 54 cases. His conclusions harmonize with those of others who have reported that from 15 to 20 per cent. die during the acute phase, and complete recovery follows in only 30 to 40 per cent. of the well defined cases. Whenever parkinsonian symptoms are observed outside of the first stage of the disease, it is almost certain to entail disability. Notwithstanding the great diversity in the clinical picture of the disease at first, there is a great sameness in the sequelae. They are either of the parkinsonian type, with contracture, or there is a psychomotor and mental inertia, without contracture. This latter type is twice as common as the parkinsonian form, and the outlook for recovery is graver. In children, the prognosis of the mental disturbances cannot be determined as yet. In 5 children the sequelae were of the parkinsonian type; in 4 others, of the insomnia-excitement type. Nayville reiterates that the sequelae of epidemic encephalitis are absolutely pathognomonic. They form new clinical pictures not known before.

Multiple Sclerosis.—This article is an introduction to the collective inquiry in regard to multiple sclerosis, which is now under way in Switzerland as mentioned recently in the News department. Long comments on the meager results from treatment, even with sodium cacodylate in large doses, while arsphenamin has proved even more disappointing.

The Heart in Children.—Thomas analyzes the 8 cases of organic heart disease he discovered in a medical inspection of 747 boys and 757 girls. He found functional murmurs in 4 per cent. of the girls but in none of the boys. The non-organic murmurs usually subsided under the oculocardiac

reflex, but this did not modify the organic murmurs. The latter persisted in 3 of the children; they became exaggerated in 2, and attenuated in 3, but never disappeared entirely. The nonorganic murmurs disappeared in 18 cases; became attenuated in 8, and dubious in one case. They persisted in only one of the total 28 cases.

Archivio Italiano di Chirurgia, Bologna

January, 1923, 6, No. 6

*Hernia of the Bladder in Children. C. Oliva.—p. 533.

*Ligation of Plantar Arch. G. B. Macaggi.—p. 565.

*Cancer Secondary to Lymphogranuloma. V. Ferrero.—p. 577.

*Lipoma of the Intestine. C. Vaccari.—p. 589.

*Cancer of Rectum and Prostate. G. D'Agata.—p. 602.

*Purulent Pericarditis in Child. C. Gamberini.—p. 619.

Transactions of 1922 Italian Surgical Congress.—p. 637.

Idem Orthopedic Congress.—p. 706.

Idem Urologic Congress.—p. 715.

Hernia of the Bladder in Children.—Oliva gives the details of sixteen cases of hernia in children under 12 with the bladder included in the hernial sac, published by Pott in 1790 and others since. The hernia in these cases was inguinal. He then describes two cases in his own practice in a girl of 10 and a boy of 8. The hernia was of the femoral type. All the eighteen children recovered after the operation. In all but two of the cases the hernia was on the right side, and the patients were all boys but one. He warns that when a toughness of the tissues or a lipoma is found deep in the hernia, the possibility of involvement of the bladder should be borne in mind, especially when traction on the hernial sac induces a desire to urinate.

Ligation of the Plantar Arch.—Macaggi describes, with illustrations, the simple technic for ligation of the arch formed by the external plantar artery and the dorsalis pedis through the second interosseous space, reaching it through the dorsum of the foot. He has previously described a similar technic for ligating the palmar arch through the dorsum of the hand, in the second and third interosseous spaces.

Multiple Blastoma of the Lymph Glands.—The retrospective diagnosis in the case reported by Ferrero was that the malignant disease had developed from lymphogranuloma, and had spread to involve a large part of the lymphatic system. The patient was a man aged 32 whose brother is said to have died from sarcoma of the lymph glands. Sarcomatous tissue was evident at various points in Ferrero's case.

Lipoma of the Intestine.—Vaccari adds one more case to the total of sixty-nine he has compiled from the literature. In his case there was both a subserous and a submucous lipoma.

Cancer of Rectum Involving Tuberculous Prostate.—D'Agata describes the technic with which he resected the rectum and removed the prostate and the seminal vesicles. The prostate and vesicles showed advanced tuberculous lesions evidently preceding the encroachment of the adenocarcinoma in the rectum. The man aged 57 is now, nearly a year later, in good health; the anus is continent.

Pericardiotomy for Purulent Pericarditis.—Gamberini relates the case of a boy aged 7 brought to the hospital with high fever, general cyanosis, extreme dyspnea and tachycardia. Puncture in the precordial area released pus but this did not give much relief. Then the pericardium was incised, and 300 c.c. of pus escaped. The main symptoms subsided, but the fever persisted. Sixteen days later the sternum was resected and the multiple purulent foci in the pericardium were cleared out and drained both from front and back. Fistulas and fever persisted for five or six months and the child was wasted to a skeleton, but then all symptoms disappeared and he is now, four years later, in florid health.

Revista Española de Medicina y Cirugía, Barcelona

January, 1923, 6, No. 55

*Surgical Treatment of Cholecystitis. E. Ribas Ribas.—p. 1.

*Complications of Chronic Mastoiditis. J. Vila de Abadal.—p. 18.

Surgical Treatment of Cholecystitis.—Ribas advised operative treatment in 56 of his 64 cases of gallbladder disease in the last two years, but only 41 consented. Colic in the liver region signifies migration of gallstones, but liver colic can occur in the absence of calculi, as a reaction from the gall-

bladder. On the other hand, cholecystitis may develop without liver colic. Incipient gallbladder disease may induce a set of vague symptoms, predominantly gastric. As the general health soon suffers, tuberculosis may be suspected. Ribas declares that no one should die in consequence of cholelithiasis, but the death rate is still high as the disturbances are not traced to the gallbladder until irreparable damage has been done. To wait for complications is to invite disaster. In 2 of his cases, gastric hemorrhage, and in one case intestinal hemorrhage, were cured by removal of the gallbladder. In one woman, aged 35, the pains and hemorrhages had persisted after gastro-enterostomy, but were cured by cholecystectomy. Ribas reiterates that jaundice is not a symptom of gallstone disease; it represents a complication. When it appears, there is danger. In 4 of his cases the gallbladder was of the "strawberry" type. The pains were severe although there were no gallstones, adhesions or distension. He gives colored plates of the findings in this group. In his 2 cases of gallstone obstruction of the common bile duct, the emaciation had progressed so rapidly that the operation had been deferred at first on the assumption of malignant disease. In 5 cases of typical liver colic, the operation failed to reveal either gallstones or cholecystitis. The stagnation of the bile had distended the gallbladder and entailed obstruction of the cystic duct. Complete cure was realized after removal of the gallbladder. His experience with 200 gallstone cholecystitis cases has confirmed the wisdom of reducing the intoxication, flushing the organism with water and giving tonics and stimulants to get the patient into a better condition before operating.

Frequency of Intracranial Complications of Chronic Mastoiditis.—Vila de Abadal summarizes the details of nineteen cases of chronic suppurative otitis in the last two years in which intracranial complications developed. In three other cases the clinical picture seemed to indicate intracranial complications, but the course revealed that the disturbances were due to influenza with neuralgia in the skull, ears and teeth, with pulmonary and pleural complications. All recovered.

Archiv für Verdauungs-Krankheiten, Berlin

January, 1923, 30, No. 5-6

- *Anacidity. E. Schütz.—p. 233.
- *Sounds in the Stomach. G. Ganter.—p. 251.
- *Hyperacidity and Duodenal Ulcer. I. Boas.—p. 257.
- *Peptic Ulcer and Exclusion of the Pylorus. Haberer.—p. 275.
- Pathology of Vegetative Nervous System in Severe Colitis. F. Kleeblatt.—p. 287.
- *Excretion of Dyes Through the Stomach. R. Finkelstein.—p. 299.
- *Idem Through the Pancreas. Giichiro.—p. 302.
- Carcinomatous Duodenal Ulcer. L. Disqué Jun.—p. 306.
- *Total Chlorin of Gastric Juice. H. Wiener.—p. 309.

Gastric Anacidity.—Schütz comments on the uncertainties as to the etiology of anacidity. He does not consider it an early sign of carcinoma.

Origin and Treatment of Noises in the Stomach.—Ganter's case of aerophagia presented at times a spastic hour-glass shape of the stomach. The play of the diaphragm during abdominal breathing pressed the air through the narrow space and caused loud sounds. They did not occur when the patient changed the type of breathing from abdominal to thoracic. By this simple means the annoying borborygmus was abolished.

Subjective Disturbances from Hyperacidity and Parapyloric Ulcer.—Boas declares that the finding of an ulcer scar cannot be regarded as proof that the ulcer was the cause of the pains; only florid ulcers testify to this. Gastralgic hyperacidity and the clinical picture of parapyloric ulcer present much the same set of symptoms, but they can usually be differentiated by the following signs: The gastralgic form of hyperacidity does not influence the whole organism unfavorably, even when it persists for years. The character and duration of the pains do not change with simple hyperacidity, while with an ulcer the attacks grow longer and longer until the pain is almost continuous. The night pains are especially constant. Elimination of coffee, tobacco, salts, spices and condiments, and restricting the diet to milk and vegetables arrest the pains with hyperacidity, but not in cases of ulcer. The importance of distinguishing between a

duodenal ulcer and a gastric ulcer near the pylorus is largely overestimated.

Peptic Jejunal Ulcer and Exclusion of the Pylorus.—Haberer reiterates his opinion that exclusion of all the pyloric glands does not prevent peptic ulceration in the jejunum. This may occur after any and every method of exclusion of the pylorus.

Excretion of Dyes Through the Stomach.—Finkelstein tested gastric excretion with various dyes on dogs with a Pawlow fistula. Of the eight dyes tested, neutral red was the only one that was excreted in the stomach. Phenol-tetrachlorophthalein did not appear. The excretion of the neutral red became evident twenty-five minutes after a subcutaneous injection of 50 mg. of the stain. The other dyes did not appear in the stomach contents even when the stomach had been irritated by hypertonic solutions.

Excretion of Dyes Through the Pancreas.—Giichiro tested the pancreatic excretion of dyes in a dog with a permanent fistula of the lower pancreatic duct (Pawlow's method). Nine dyes were thus tested, but methylene blue was the only one that appeared in the pancreatic juice, and this only in traces. The excretion began in about forty minutes and persisted for 150 minutes.

Total Chlorin of the Gastric Contents as Aid in Differential Diagnosis.—Wiener examined the gastric juice from thirty-three patients in the usual way and also determined the total chlorin content. His data confirm Reissner's findings that a high chlorin content (0.34 to 0.58 per cent. in six cancer cases) with low acidity testifies to malignant disease and against simple achylia (0.03 to 0.14 per cent. in eight simple achylia cases). This high chlorin content is not due to neutralization of excreted hydrochloric acid by products of the cancer, as some authors have suggested. In simple achylia, ingested hydrochloric acid is neutralized in exactly the same way.

Deutsche Zeitschrift für Chirurgie, Leipzig

January, 1923, 177, No. 1-2

- *Surgery of Gastric and Duodenal Ulcers. T. Beer.—p. 1.
- *Testicle Grafting. H. Burckhardt and F. C. Hilgenberg.—p. 43.
- *Treatment of Old Empyema. Esau.—p. 55.
- *Treatment of Injuries of Male Urethra. M. Jastram.—p. 70.
- *Ischemic Contracture of Muscles. R. Göbell.—p. 106.
- *Early Diagnosis of Acute Pancreatitis. E. Glass.—p. 123.
- Recklinghausen's Disease Involving the Bladder. Steden.—p. 137.

Surgery of Gastric and Duodenal Ulcers and Their Complications.—Beer reviews the ultimate outcome in a large proportion of 146 cases given operative treatment from 1912 to 1920. He concludes from study of the six cases of post-operative peptic ulcer in the jejunum, that the location of the ulcer in the duodenum is the essential factor. The irritation from the duodenal ulcer left in the organism stimulates excessive secretion in the stomach. In the cases of so-called cicatricial stenosis of the pylorus, some ulcerative process in the duodenum was probably the primary lesion. This was probably the case in three of his postoperative peptic ulcer cases, and in the other three there had been a frank duodenal ulcer. Radical resection of the duodenal ulcer is prophylaxis against peptic ulcer. His extensive research on the "gastric channel" that is, the short cut from cardia to pylorus, failed to confirm this as the main route of transport. Hence there is no reason for assuming that lesions predisposing to ulcer develop particularly in this region. The narrower portions of the stomach, such as the isthmus and pylorus, are the predisposed regions, and removal of them is treatment of the cause.

Experimental Testis Grafting.—The work was done on rats at the surgical clinic at Marburg. The results were very variable, but the paucity of results on the whole was striking. In the entire eight series of experiments nearly the whole of the testis graft was destroyed. The only practical conclusion the authors draw is that homoplastic transplantation of testes can be safely attempted in man, but the results are those to which we were accustomed before the Steinach era. In case of total castration on account of tuberculosis, it might be advisable to transplant elsewhere in the body apparently healthy portions of the removed testes. But even under these conditions, functional success is by no means certain.

Treatment of Old Empyema.—Esau clears out the cavity and lines it with a skin-muscle flap from near by, after resection of ribs. He asserts that an empyema fistula should never be left to heal spontaneously.

Treatment of Injury of Male Urethra.—Jastram gives details of twenty-one severe cases and principles for treatment. He advises cautious introduction of a soft catheter at once, leaving it for a retention catheter if infection is not present. With severe infection cystostomy should precede this. The retention catheter should be used after external urethrotomy, preferably with an arrangement for aspiration.

Ischemic Contracture of Muscles.—Göbell advocates free transplantation of muscle in treatment of ischemic contracture. His eighteen illustrations show the technic and the excellent results realized in the three cases described.

Early Diagnosis of Acute Pancreatitis.—Glass here reports his third case of acute hemorrhagic pancreatitis with fat tissue necrosis and recovery after drainage of the pancreas and small pelvis, without slitting the pancreas capsule. He ascribes his success to early diagnosis. It was based on the important symptom of persistent pain in the upper abdomen, increasing in intensity every fifteen minutes or less but never subsiding completely. The right upper rectus was taut, and a transverse, tender, tumor-like resistance could be felt above the umbilicus, corresponding to the site of the pancreas.

Klinische Wochenschrift, Berlin

Jan. 22, 1923, 2, No. 4

- *Profession, Standard of Living and Nutrition. O. Kestner.—p. 150.
- Distribution of Roentgen Rays in the Depths. H. Holfelder.—p. 154.
- *Anesthesia by Acetylene. Gauss and Wieland.—p. 158. Conc'n.
- *Misleading Shape of Stomach in Roentgenoscopy. A. Dienstfertig.—p. 162.
- Spasmophilia. P. Reyher.—p. 163. Conc'n No. 5.
- *Thyroid and Erythropoiesis. Unverricht.—p. 166.
- *Clinical Significance of Experiments on Testes. H. F. O. Haberland.—p. 167.
- Formation of Gallstones. W. Bauermeister.—p. 168.
- "Glucose Infusions in Heart Disease." Büdingen.—p. 169. Reply. Klewitz.—p. 170.
- *Xanthidrol Test for Urea in Kidney. K. Walter.—p. 170.
- Blood Concentration After Roentgen Rays. F. Klewitz.—p. 171.
- Protein Treatment in Ophthalmology. R. Cords.—p. 171.
- *Predisposition to Disease in Schoolchildren. A. Lewandowski.—p. 174.
- The Optic Sense of Plants. E. G. Pringsheim.—p. 175.

Profession, Standard of Living and Nutrition.—Kestner reviews the quantitative and qualitative side of the nutrition.

Anesthesia by Acetylene.—Gauss and Wieland report excellent results with the use of acetylene for narcosis. Its action resembles the action of nitrous oxid, which inhibits processes depending on oxygen. They say that acetylene has the same properties, and the further advantage of possibility of a prolonged anesthesia if oxygen is added. The breathing and circulation are not interfered with; the return to consciousness is rapid.

The Outline of the Stomach in Roentgenography.—Dienstfertig emphasizes the necessity of examining the patient from several different directions.

The Thyroid and the Production of Erythrocytes.—Unverricht observed cases of severe simple anemia (chiefly in tuberculous patients) in which arsenic was without therapeutic action. These patients also presented signs of hypothyroidism (dry rough skin, slow psychic action, etc.). The condition improved under thyroid treatment so that arsenic then became effective.

Clinical Significance of Experiments on Testes.—Haberland reports on fifty-six testis grafts in animals. He failed with different methods to obtain a permanent survival of transplanted testes, even when they had been taken from the same animal, and believes that the favorable results reported in men are due to suggestion.

Xanthidrol Reaction in Microchemical Tests for Urea in Kidneys.—Walter injected the kidneys from the aorta with a solution of xanthidrol in glacial acetic acid. The crystals of dioxanthylurea were found lodged not only in the lumen of the tubules, but also in the cells of the glomeruli and tubules.

Influence of War on Predisposition to Disease in Schoolchildren.—Lewandowski shows that schoolchildren born dur-

ing the war (1915 and 1916) suffer much less from infectious diseases than their predecessors.

Jan. 29, 1923, 2, No. 5

- Extra-Pyramidal Motor System. F. H. Lewy.—p. 189.
- *Slow Cholangitis. F. E. R. Loewenhardt.—p. 192.
- *Experiments on Eosinophilia. E. Liebreich.—p. 194.
- *Spasmophilia. P. Reyher.—p. 198. Conc'n.
- *Calcium Retention and Calcification of Vessels. Rabl.—p. 202.
- *Kidney Function Test with Thiosulphate. W. Nyiri.—p. 204.
- *Changes of Bacilli in Gases. F. H. Lorentz.—p. 206.
- "Liver Function Test." H. Wörner.—p. 208.
- "Intravenous Needle Electrodes for Electrocardiography." H. Sachs.—p. 209.
- *Physical Chemistry of Phagocytosis. R. Höber and Kanai.—p. 209.
- *Determination of Uric Acid in Blood Serum. K. Harpuder.—p. 209.
- Experimental Research on Changes in Digestion After Operations on Stomach and Intestines. Enderlen et al.—p. 210.
- Tuberculosis of Portio Vaginalis. W. Vogel.—p. 211.
- Exanthem After Phenobarbital Treatment. R. Herrmann.—p. 212.
- Undernutrition in Treatment of Diabetes. S. Isaac.—p. 212.
- Milk Hygiene. E. Friedberger.—p. 215.
- Metabolism of Cholesterol and Its Clinical Import. Gross.—p. 217.

Slow Cholangitis.—Loewenhardt separates infectious cholangitis from the large group of slow septicemias. The history of the patients points usually to a previous hematogenous infection. The disease starts without severe general symptoms. The patient feels weak; has sometimes intestinal trouble; the skin and scleras are subicteric; the fever is remittent or intermittent, and chills occur frequently. The liver is swollen, and a soft enlargement of the spleen is an important sign. The bacteria practically always can be cultivated from the blood, if the attempt is repeated often enough. The treatment consists in drainage of the common bile duct.

Experiments on Eosinophilia.—Liebreich observed an extreme accumulation of eosinophils in one phase of blood coagulation. He gives details of his difficult technic. Charcot-Leyden crystals appear also among the cells. He recalls the fact that the homologous granules are crystalloid in some species, and believes there is a relation of the granule substance to fibrin.

Spasmophilia.—Reyher contends that a disease exists in Germany which is identical with beriberi in infants and the spasmophilic dyspepsia described by Japanese authors. He explains it as a food disorder inducing a tendency to convulsions, and considers it as the basis of so-called spasmophilia. He does not regard the increased mechanical and electric irritability of the nerves as an essential part of the syndrome, but attributes this symptom to loss or lack of calcium (usually due to rachitis). He believes that the hemorrhages in the parathyroids, found sometimes in this condition, are only a manifestation of a general tendency to hemorrhage, similar to the petechiae found in beriberi. Large amounts of vitamin B influence the condition favorably in a short time. He calls it *spasmogene Nährschaden*.

Calcium Retention, Calcification of Vessels, and Function of Kidneys.—Rabl added phosphoric acid to the food of white mice for two days, alternating with alkaline phosphates and some sodium acetate, keeping this up for two or three weeks. The food contained in addition considerable calcium. All the animals showed extensive calcification in the kidneys, heart and stomach. Half of them had similar changes in the lungs and large arteries. The liver, spleen, pancreas and intestine were intact. Animals which received the phosphoric acid alone, had calcification only in the heart and lungs. He concludes, therefore, that the important factors in the genesis of "calcium gout" are changes in the acid and alkali equilibrium during a simultaneous, large calcium intake (by mouth or from the bones). The typical experimental "calcium metastasis" in toxic (sublimite) nephritis could be explained by the lowered ability of such kidneys to maintain the acid-alkali equilibrium. The calcification of the arteries shows that it need not be localized in degenerated parts of arteries. Some renal phosphate calculi may be due to similar conditions.

Kidney Function Test with Thiosulphate.—Nyiri found that a healthy kidney excreted within two or three hours 30 to 40 per cent. of 10 c.c. of a 10 per cent. solution (1 gm. of substance) of sodium thiosulphate injected intravenously. In diseases of the kidneys he found between 0 and 23 per cent.

Changes of Bacilli in Gases.—Lorentz found that oxygen increases the production of toxin by diphtheria bacilli, and inhibits their growth. Carbon dioxide acts in the opposite way. It seems that it increases also the number of positive results of diagnostic cultures.

Physical Chemistry of Phagocytosis.—Höber and Kanai consider the opsonic phenomena more or less as the action of globulins. An increase in the amounts of globulins represents promotion of phagocytosis.

Quantitative Determination of Uric Acid in Blood Serum.—Harpuder's method aims to avoid the errors due to adsorption of uric acid to the blood proteins.

Medizinische Klinik, Berlin

Jan. 21, 1923, 19, No. 3

- *Hemorrhagic Diatheses. P. Morawitz.—p. 71.
- Metabolism and Dermatology. E. Pulay.—p. 77.
- *Toxic Exanthems and Prognosis of Syphilis. G. Stümpke.—p. 80.
- *Extracardiac Murmurs. A. Arnstein.—p. 81.
- *Malaria in Berlin. E. Schiff.—p. 84.
- *Blood Grouping. K. Meyer and H. Ziskoven.—p. 87.
- Disease of Bladder. E. Portner.—p. 89.
- Survey of Progress in Roentgen-Ray Diagnosis. L. Freund.—p. 91.

Hemorrhagic Diatheses.—Morawitz emphasizes the need to gather more exactly examined material for the future. The history of the case is very important for the diagnosis of scurvy, in addition to the bleeding gums and the lack of any characteristic changes in the morphology and chemistry of the blood. The curative action of the antiscorbutic diet confirms the diagnosis. The characteristic symptom in hemophilia is the protracted time of coagulation of the blood. The elements of the blood, especially the blood platelets, are normal. The cases with lack of fibrinogen should not be confounded with the pure pathologic entity of hemophilia. The typical heredity is an aid to diagnosis, though there are other hereditary instances of hemorrhagic diatheses with a low number of blood platelets. Critical study reveals that of 300 hemophilic families on which reports have been published, hemophilia is certain in only about forty. The term Werlhof's disease should be reserved for purpuras with abnormally small numbers of blood platelets. While the hemorrhages are restricted to the extremities in a simple purpura, these patients bleed also from the mouth, intestines and kidneys. The critical number of blood platelets seems to be 30,000. Yet the changes in the endothelial cells of the capillaries are also important. It is possible that the spleen has an influence on them, since splenectomy is followed only by a passing increase in blood platelets, but the tendency to hemorrhage may be definitely arrested. Other cases with thrombopenia do not bleed. In all conditions with low numbers of platelets the blood clot does not retract. The simple (or rheumatic) purpura gives the impression of an infectious disease. These hemorrhages are complicated with erythemas, urticaria and transient edemas which, together with the pains in the joints, resemble the symptoms of serum sickness. Actual hemorrhagic nephritis may occur, while there is only a simple bleeding from the kidneys in the thrombopenia purpura. The hemorrhages in infectious diseases do not fit well into the present general outline.

Toxic Exanthems and Prognosis of Syphilis.—Stümpke found recurrence of symptoms of syphilis in seven cases out of eleven that presented an arsphenamin dermatitis. It is, therefore, prognostically not favorable, as was assumed at one time.

Extracardiac Murmurs, Especially from Lung Vessels.—Arnstein publishes a case of a murmur due to a small aneurysm of a branch of the pulmonary artery in bronchiectasia. The patient had a subphrenic abscess, which had perforated a bronchus.

Tropical Malaria in Berlin.—Schiff reports four further cases of tropical malaria. Three of them were probably, one certainly, infected in Berlin. Two of them were syphilitics being treated with arsphenamin.

Blood Grouping.—Meyer and Ziskoven review the question of blood grouping and its practical importance in blood transfusions and transplantations of skin. Since Eden found

changes in the iso-agglutinins after different drugs (quinin, calcium lactate, antipyrin, arsenic, ether, chloroform and roentgen rays) they tested this action on twenty-three cases. They did not find any changes, and believe that Eden's findings were due to a mistake with sedimentation of corpuscles.

Jan. 28, 1923, 19, No. 4

- Dementia Praecox. H. Berger.—p. 101.
- *Antistreptococcus Serums. F. Meyer and K. Joseph.—p. 103.
- Metabolism and Dermatology. E. Pulay.—p. 108. Cont'n.
- *Paravertebral Dulness from Enlarged Auricle. A. Leimdörfer.—p. 111.
- Severe Case of Botulinus Poisoning. W. Seidelmann.—p. 113.
- *Hemophilia and Pituitary Extract. H. Neumann.—p. 115.
- Specific Gravity of Small Amounts of Urine. A. Jolles.—p. 115.
- Official Estimation of Disability. Wulsten.—p. 116.
- *Fight Against Tuberculosis. F. Jessen.—p. 117.
- Cheaper Prescriptions. R. Kayser.—p. 120.
- Diseases of Bladder. E. Portner.—p. 121.
- Present Conceptions of Pain in Muscles and Nerves. K. Singer.—p. 123.

Streptococcus Infection and Antistreptococcus Serums.—Meyer and Joseph confirm five serologically different groups of streptococci. It is evident that a general specific action cannot be expected from univalent serums. The serums have to be repeatedly tested with new strains. Some streptococci produce hemotoxins, which however cannot be kept for more than three days. These toxins are identical in all groups. They do not kill the animal immediately, but cause severe anemia and death within a few weeks. In spite of many difficulties, they were able to produce serums which act not only against the cocci, but also against these toxins. These serums have a curative effect in animals. Colloidal solutions diminish the activity of the toxins.

Paravertebral Dulness from Enlarged Auricle.—Leimdörfer has been studying paravertebral dulness due to enlargement of the left auricle in forty patients. The dulness is marked, especially in decompensated mitral stenosis, and may cover the left interscapular area from the fifth to the ninth thoracic vertebrae. Enlarged lymphatic glands cause usually bilateral areas of dulness and other symptoms. Dilatation and aneurysm of the aorta also have to be excluded.

Hemophilia and Pituitary Extracts.—Neumann reports a case of probable hemophilia. The bleeding from the nose stopped after one local and one subcutaneous application of pituitary extract.

Fight Against Tuberculosis.—Jessen sees in the early diagnosis and treatment of children the safest way to fight tuberculosis. The physician should not wait to make a diagnosis until he finds bacilli. A slight blepharitis, enlarged cervical or peribronchial glands, atrophy of the trapezius, even flushing of one half of the face, or one dilated pupil are signs of beginning tuberculosis if the rectal temperature exceeds 37.2 C. at noon (typical maximum in tuberculosis). Changes of acidity in the gastric juice may be due to pressure from enlarged bronchial glands on the pneumogastric nerve. Lack of progress in school, apparent laziness, may be manifestations of tuberculous intoxication. The paralytic thorax is a sign of tuberculosis, not of a predisposition to it.

Monatsschrift für Geb. und Gynäkologie, Berlin

October, 1922, 60. G. Winter Festschrift

- *Treatment of Placenta Praevia. M. Hofmeier.—p. 3.
- *Cervical Implantation of Placenta. Zangemeister and Schilling.—p. 15.
- *Practical Importance of Fever at Childbirth. M. Henkel.—p. 58.
- The Outlook for Combating Infection. Hammerschlag.—p. 80.
- *Bladder Impeding Delivery. E. Sachs.—p. 88.
- *Diagnostic Import of Varices in Bladder. P. Rosenstein.—p. 106.
- *Pregnancy Pyelitis. B. Rosinski.—p. 116.
- *Operative Treatment of Urinary Fistulas. E. Schroeder.—p. 124.
- *Cancer of Sigmoid Flexure. Schütze.—p. 130.
- *Ventrifixation of the Uterus. H. Fuchs.—p. 133.
- The Vagitus Question. C. U. von Klein.—p. 154.
- *Experimental Roentgen Injury of Ovaries. F. Unterberger.—p. 164.
- *Nonencapsulated Peritonitis in Parturients. W. Benthin.—p. 171.
- Genital Tuberculosis. K. Riediger.—p. 225.
- *Kidney Findings in Pregnancy. K. Fink.—p. 229.
- Internal Examination by Midwives. C. Ahernetty.—p. 243.
- *Diagnosis of Twin Pregnancy. W. Offermann.—p. 259.
- *Intraperitoneal Injections of Ether. H. Naujoks.—p. 265.
- Jaundice in the New-Born. Lepehne.—p. 277.
- Otitis Media in Pregnancy. A. Blohmke.—p. 291.
- Calcified Myoma in Uterus. T. Cohn.—p. 308.
- Operative Treatment for Cancer of Uterine Cervix. Gaydoul and Schmitt.—p. 317.

Fetal Movements as for Respiration. W. Walz.—p. 331.

Etiology of Congenital Atresia of Small Intestine. Hennig.—p. 342.

Treatment of General Puerperal Infection. E. Henrard.—p. 347.

*Provocative Procedures in Gonorrhea. E. Müller and C. Richter.—p. 355.

Early Diagnosis of Congenital Heart Defects. H. Wüsthoff.—p. 365.

Works of Prof. G. Winter.—p. 376.

Placenta Praevia.—Hofmeier relates that he has had one case of placenta praevia in each 79 obstetric cases in the last ten years. The death rate was 7.5 per cent. in the total 218 cases. Cesarean section was done in 14, with 21.4 per cent. mortality; embolism in the third week was responsible for one death, and preceding hemorrhages for another. The third fatality might have been averted if supravaginal amputation had followed at once. This should be the routine procedure when the placenta is embedded in the lower segment of the uterus. Generally, the primary embedding is above this segment, and the placenta merely extends down into the lower passage. The danger of fatal hemorrhage with placenta praevia is not so great as usually assumed.

Cervical Implantation of Placenta.—When the placenta develops partially or entirely in the cervix, the vaginal portion of the uterus, or at least one lip of the portio, appears swollen, or one wall of the cervix feels as if it contained a tumor. In multiparas the portio seems abnormally short and varicose veins may be visible. Even a placenta entirely in the cervix does not always present as placenta praevia. The head was sometimes found movable high above the pelvis. The mishaps with cervical placenta have generally been due to the fact that it was not recognized in time. If the bleeding continues, Zangemeister and Schilling advise removing the uterus without delay, as also when infection is suspected. The numerous manipulations usually entail infection.

Practical Import of Fever at Childbirth.—Henkel summarizes his experience in the warning that fever is not an indication to hasten delivery but rather a contraindication. If delivery is hastened, there is need for extra caution to avoid lacerations or contusions.

Bladder Impeding Delivery.—Sachs discusses displacement of the bladder between the uterine ligaments, a lateral cystocele. This must not be mistaken for a cystic tumor. The bladder in this position is also liable to injury in vaginal operations.

Varices in the Bladder.—Rosenstein describes a case in which constipation from a stricture of the anus had caused a puzzling clinical picture and such congestion in the pelvic vessels that varices in the bladder were nearly mistaken for metastases of an intestinal cancer that had been successfully removed. After the stricture had been corrected, the varices in the bladder disappeared. He reports a number of other instances of misleading varices in the bladder.

Pregnancy Pyelitis.—Rosinski's experience demonstrates that women who have had pregnancy pyelitis must be kept under supervision until kidney functioning has returned completely to normal. Evacuation of the uterus is more effective in the severer cases even than nephrotomy. The kidney has been known to recuperate, he adds, after evacuation of 17 liters of contents.

Urinary Fistulas.—Schroeder gives details of nineteen operative cases of vesicovaginal fistulas. He utilized the uterus in closing the gap in six instances.

Cancer of Sigmoid Flexure.—The cancer and stenosis had simulated a tumor in the adnexa in the case reported by Schütze. The woman, aged 38, recovered completely after resection of the intestine with primary suture.

Ventrifixation of the Uterus.—In Fuchs' series of 218 vesicoventrifixations, 37 women subsequently had a total of 47 pregnancies. Delivery was normal and spontaneous in 24; in 4 the placenta had to be detached by hand, and there was transverse presentation in 2. Abortion occurred in 5 cases—about the usual average. Fuchs remarks that even if the fixation was responsible for these anomalies—which is scarcely probable—they are too few to discredit ventrifixation.

Experimental Roentgen Injury of Ovaries.—Unterberger exposed the ovaries of butterflies to the roentgen rays, and noted a decidedly deleterious action on the offspring. They

were all abnormally small, and differed in other ways from the standard. He warns of the danger of even mild roentgen irradiation of the ovaries in girls and young women.

Diffuse Peritonitis in Gynecologic and Obstetric Cases.—Bentlin presents arguments in favor of local ether treatment, and urges early diagnosis by puncture. The routine procedure, he states, should be simple incision and drainage, without irrigation or mechanical removal of pus or adhesions. With peritonitis from abortion, he insists that no attempt should be made to remove the relics of the ovum; they will be spontaneously expelled. After-treatment is extremely important and includes regulating the fluid intake, the breathing, the heart action, and peristalsis. He gives details of twenty-six cases in which 50 or 100 gm. of ether was injected in prophylaxis. The results indicate, he says, that this is the best method of treatment known to date. The main thing is early diagnosis.

Pregnancy Kidney.—Fink explains that pregnancy albuminuria is merely the expression of instability and irritability of the epithelium. When there is no rise in blood pressure and no edema, it is harmless, and does not require treatment. With pregnancy nephropathy, there is a tendency to stagnation of water throughout the tissues. The kidney parenchyma merely shares in this. Treatment must aim to reduce the retention of water by rest and reduction of the intake of water and salt. If the blood pressure rises, eclampsia may occur. Acute nephritis may develop in the pregnant and require the same treatment as in other conditions. Chronic nephritis may make interruption of the pregnancy necessary if the symptoms become alarming.

Diagnosis of Twin Pregnancy.—Offermann regards difference in the distinctness with which the fetal heart sounds are perceived as a sure sign of twin pregnancy. The heart sounds seem to spread from a single center, but they are like two clocks beating together; one will lag behind the other at times, like the hoof beats of two galloping horses. He calls this the *differenzunreinheit* sign. Another sign is the presence of the umbilical cord murmur at two different points when the heart sounds are heard. The umbilical cord murmur seems to have its origin in the heart.

Experimental Intraperitoneal Injection of Ether.—Naujoks experimented on rabbits. The findings confirm the beneficial action of ether in peritonitis, although it is impossible to apply the findings in these small animals directly to man.

Provocative Procedures in Gonorrhea.—Müller and Richter describe experiences with intravenous injection of glucose solution. It should be supplemented by local measures. This combination proved most effective.

Wiener klinische Wochenschrift, Vienna

Jan. 25, 1923, 36, No. 4

*Treatment of Sterility in Women. E. Graff.—p. 61.

"Causal" and Teleologic Views in Pathology. R. Meyer.—p. 64.

Determination of the Amount of Blood in Man. I. Piticariu.—p. 68.

Instrument for Lavage of the Bladder. M. Oppenheim.—p. 69.

Treatment of Tuberculosis. J. B. Andreotti.—p. 69. Conc'n.

*Alcohol and School. H. Reichel.—p. 72.

Rokitansky and Scientific Societies. M. Zeissl.—p. 74.

Treatment of Sterility in Women.—Graff prefers examining the sperm from the vagina to the usual condom method. Primary sterility is usually associated with hypoplastic conditions in the sex organs. The only manifestation of this may be irregular menstruation. All surgical measures are useless in these cases. Retroflexion and retroversion of the uterus may be the cause of sterility, though their influence is largely overestimated. Inflammatory conditions in the sex organs must be treated. Gonorrhea is a frequent cause. Rubin's test for permeability of the tubes is very useful. No operation for sterility should be performed without this test. He believes there is an immunity against sperm, and does not consider dyspareunia a cause of sterility.

Alcohol and School.—Reichel deals with the difficulties of antialcohol education. It is not sufficient to teach abstinence; the teacher must show that life is improved by it. The hygienic, economic and moral evils of alcohol should be explained.

Zeitschrift für urologische Chirurgie, BerlinFeb. 17, 1923, **12**, No. 1-2

- *The Accessory Sex Glands. D. Ohmori.—p. 1.
- *The Ejaculatory Duct After Prostatectomy. R. Lichtenstern.—p. 32.
- *The Technic for Nephrotomy. E. Hagenbach.—p. 40.
- Plastic Operations on the Urethra. I. Deutsch.—p. 47.
- Hydronephrosis from Developmental Anomalies. W. Tinnemeyer.—p. 50.

Mutual Relations Between Prostate and Seminal Vesicles.

—Ohmori analyzes the microscopic and macroscopic findings at necropsy of thirty-three persons succumbing to a variety of diseases. The prostate was found normal in only 21.22 per cent. and the seminal vesicles in only 33.34 per cent. while in 69.6 per cent. of all cases, there never had been any symptoms attracting attention to the accessory sex glands. The prostate after the age of 40 is thus abnormal more frequently than hitherto supposed.

The Ejaculatory Duct After Prostatectomy.—Lichtenstern reports the results of anatomic and clinical research on the behavior of the ejaculatory duct after suprapubic prostatectomy.

Technic of Nephrotomy.—Hagenbach brings the lips of the incision in the kidney together by long suture threads passed directly through the kidney from side to side, tied over a solid support on each side. He uses three such mattress sutures of catgut; the solid supports on each side of the kidney are fat from the kidney or fragments of muscle. This method has been applied in nine cases and there has been no tendency to hemorrhage. The article is illustrated.

Zentralblatt für Chirurgie, LeipzigFeb. 24, 1923, **50**, No. 8

- *Duodenal Ulcer in Relation to Icterus. H. Zoepffel.—p. 297.
- Effusion of Chyle into Peritoneal Cavity. G. Golm.—p. 300.
- Injuries of Intestinal Wall Caused Presumably by Ascaris Lumbricoides. K. Anrassy and K. Himmelreicher.—p. 302.
- Incarcerated Hernia of Intersigmoid Fossa. F. Erkes.—p. 306.
- Ossification Disturbances of the Calcaneum. A. Blencke.—p. 308.
- Periarterial Sympathectomy in Arteriosclerotic Gangrene. H. Matheis.—p. 309.
- Static Coxa Vara. G. Riedel.—p. 312.

Duodenal Ulcer in Relation to Inflammation and Icterus.

—Leaving out of consideration the cases in which a gallstone affection coincides with a duodenal ulcer, the appearance of jaundice caused directly by a duodenal ulcer is very rare. The origin of the jaundice is, of course, clear in cases in which an ulcer is located directly at the site of Vater's papilla, or when dense adhesions arising from an ulcer compress the lumen of the common bile duct. In such cases, however, the jaundice will usually be permanent. It is the cases of transient jaundice associated with duodenal ulcer that are obscure. Zoepffel cites three cases in point, from which he concludes that occasionally there occur acute, inflammatory manifestations in chronic peptic ulcers of the stomach and duodenum, which, owing to their seat near the common bile duct may obstruct and cause stagnation of bile and hence jaundice, through blocking of Vater's papilla by edematous swelling. Sometimes, though not necessarily, this is attended by a secondary cholangitis. In many cases, therefore, the duodenal ulcer must be held directly responsible for the bile stasis. Those cases in which adhesions apparently have existed for some time, but in which icterus appears only occasionally, prove that the jaundice was not caused by them but by temporary blocking of the common bile duct from an acute exacerbation of the chronic ulcer.

Zentralblatt für innere Medizin, LeipzigJan. 20, 1923, **44**, No. 3

- *Treatment of Chronic Constipation. G. Rosenfeld.—p. 34.

Treatment of Chronic Constipation.—Rosenfeld believes that every chronic constipation is due to a spastic condition in the intestines. His treatment consists of foods, such as oat meal, chocolate, etc. This diet improved the constipation even in a patient who was suffering from a carcinoma of the sigmoid flexure. The foods are of the constipating type.

Jan. 27, 1923, **44**, No. 4

- *Heredity in Dupuytren's Contracture. J. Löwy.—p. 51.

Heredity in Dupuytren's Contracture.—Löwy has traced this in four generations. Occupation may have an influence on

the form of the contracture, and the patient be able to continue his work in spite of the deformity.

Casopis Lekaruv Ceskych, PragueJan. 20, 1923, **62**, No. 3

- Louis Pasteur. J. Hlava.—p. 53. Idem. K. Weigner.—p. 58.
- *"Spontaneous Generation of Microbes." Andrijevski and Vanicek.—p. 60.
- *Biochemical Properties of Colon Bacilli. Pirc I.—p. 60.
- *Adenoma in Sheep's Lungs Due to Parasites. V. Hofman.—p. 65.

A New Alleged Proof of Spontaneous Generation of Microbes.—Andrijevski and Vanicek found that Sakharoff's alleged "globules colloïdes" are artifacts, and that his alleged proof of spontaneous generation of bacilli is due to lack of asepsis in his research.

Biochemical Properties of Colon Bacilli and Their Relation to Specific Antigenic Reactions.—Pirc finds that the chemical actions of the colon bacillus (fermentation of milk sugar, gas formation from glucose and reduction of neutral red) are more important than its antigenic properties. Attempts to differentiate colon bacilli from other similar micro-organisms by means of agglutination and complement fixation did not give satisfactory results.

Adenoma in Sheep's Lung Due to Parasites.—Hofman surveys the significance of parasites for the formation of tumors, and publishes a description and pictures of an adenoma from the lung of a sheep, which was apparently due to infection by strongyloides.

Jan. 27, 1923, **62**, No. 4

- *Persistent Fistular Voice. M. Seemann.—p. 81.
- Two Cases of Neurosyphilis. A. Mazacová.—p. 88.
- *Three Severe Cases of Inguinal Hernia. Polák.—p. 90.
- *Tubercle of Optic Disk and Choroid. J. Janku.—p. 93. Conc'n.

Persistent Fistular Voice.—Seemann publishes the histories of three patients, who retained after puberty the high pitched fistular voice. In all he found marked hypoplasia of the posterior part of the upper opening of the larynx, especially of the aryepiglottic bands. The constitutional factor was demonstrated by the coincidence of the affection in two brothers. Phonetic exercises taught the patients in a few weeks to use the deep pectoral voice.

Three Severe Cases of Inguinal Hernia.—Polák publishes three cases of inguinal hernias with complications. He emphasizes the predominance of the right side in similar conditions, due to the later descent of the right testis.

Tubercle of Optic Disk and Choroid.—Janku completes a study of tubercles of the fundus of the eye, and publishes ten colored illustrations. The chronic affection is comparatively mild but recurs easily, even after specific treatment.

Nederlandsch Tijdschrift v. Geneeskunde, AmsterdamFeb. 17, 1923, **1**, No. 7

- *Radiotherapy of Ocular Tuberculosis. C. A. Krull.—p. 630.
- *Myoclonic Reflexes as Basis for Epileptic Myoclonus. L. J. J. Muskens.—p. 642.
- *Tracheal Cannula from Physiologic Standpoint. P. J. Mink.—p. 650.
- *Serodiagnosis of Syphilis. J. van der Hoeden.—p. 655.
- *Present Status of Insulin in Treatment of Diabetes. A. Grevenstuk.—p. 665.

Radiotherapy of Ocular Tuberculosis.—Krull asserts that clinical experience has apparently established that the roentgen and radium rays, applied near or to the eye itself, in proper doses, do not injure the eye. Axenfeld has published cases of sarcoma or epithelioma of the interior of the eye which retrogressed under roentgen-ray treatment without serious injury to the choroid or retina, except that cataract developed later. But the cataract was easily removed when the proper time came. Krull gives details of 30 cases of tuberculous processes in the eyes with systematic roentgen-ray treatment at the Amsterdam University eye clinic. In 50 per cent. the effect was favorable, although recurrence of the tuberculous affection was not uncommon. In 2 other cases the progressive disease seemed to have its course slowed; in 5 other cases the effect of the treatment was dubious, and in 8 others no modification was apparent. No injurious by-effects were evident in any instance. The benefit was striking in one case of blepharospasm and tuberculous conjunctivitis of the eyelid, but suggestion may have contributed to the prompt effect. Superficial tuberculous proc-

esses in the choroid responded very favorably to irradiation, as also 4 of the 28 cases of tuberculous iritis. In one case a very superficial necrosis of the cornea followed the exposures, but it soon healed. Radiotherapy seems to be most promising in tuberculous keratoscleritis, indolent tubercle of the iris, and cyclochoroiditis when the affection is stationary or progressing. With 2 or 3 Holzknecht units, repeated at three week intervals, no injury has ever been observed, while the results were often encouraging. The age of Krull's patients ranged from 12 to 57.

Myoclonic Reflexes in Relation to Epilepsy.—Muskens here presents his second report on research with cats. It has demonstrated that we can induce in these animals, by toxic influence, myoclonic and regional spasms which apparently resemble in every respect similar epileptic myoclonic and regional convulsions in man. He used camphor bromid and absinthe for the purpose, and states that we have by this means a simple and easy method for physiologic research on epilepsy. Certain lesions of the central nervous system modified the reaction.

Tracheal Cannula from the Physiologic Aspect.—Mink remarks that when the tracheal cannula is only for temporary use, the physiologic aspect need scarcely be considered. But when it is to be worn a long time, this is very important, and he explains why the usual custom of using as wide a cannula as possible impairs the breathing capacity. In normal conditions, he says, the intratracheal pressure averages 25 mm. of water, but in mouth-breathers, the pressure is only 15 mm. This is one of the reasons why mouth-breathing is so deleterious. A broad tracheal cannula transforms conditions to the mouth-breathing type, a pressure of only 15 mm. or below. There is a kind of valve action in the nose as air enters, and a similar valve action at the vocal cords during expiration. Something of the kind should be provided for intratracheal respiration when it is to be long continued.

Serodiagnosis of Syphilis.—This communication from the central laboratory of the public health service at Utrecht reports the parallel application of three or four serodiagnostic tests to 1,800 serums. The Meinicke turbidity reaction with cholesterol proved more sensitive than any of the others, and seemed to be specific in higher degree. The tenacity with which it persisted under treatment was remarkable. The technic is simple, convenient and often does not take more than an hour. The response is particularly clear as both turbidity and flocculation are involved.

Treatment of Diabetes with Pancreas Extract.—In concluding this long account of the research on insulin and its results, Grevenstuk states that the islands of Langerhans, and not the acini of the pancreas are responsible for the disturbance in sugar metabolism.

Feb. 24, 1923, 1, No. 8

*Writing Medical Articles. G. van Rijnberk.—p. 742. Conc'n No. 10.

*Prophylaxis of Puerperal Fever. K. de Snoo.—p. 746.

*Nose, Throat and Ears in the Tuberculous. Siemens.—p. 764.

Oat Flakes and Oatmeal in Diabetic Diet. N. Keulemans.—p. 769.

Calcified Hydatid Cyst in Liver. S. J. van Wijhe and E. Hammer.—p. 771.

Case of Epidemic Encephalitis. P. Tak.—p. 773.

Trichlorethylene in Treatment of Trigeminal Neuralgia. E. Laqueur.—p. 775.

Writing Medical Articles.—Van Rijnberk is editor of the *Tijdschrift*, and he says, among other things, that every communication deserves publication which presents a new idea or a new fact or a fact new to the country or race. Dividing the value of the contents of the article by its length, gives the specific gravity of the article. "Too often," he exclaims, "the quotient proves to be less than 1." In the clinical history, he advises striking out every particular which the writer did not make use of himself in his diagnosis, treatment or prognosis. He pleads further that bibliographic references should be given by titles. In conclusion he ventures the statement that what is needed is a better comprehension of the facts already known, instead of piling up more. He says we are being crushed and suffocated with dry single facts. "What a blessing it would be if all the journals of the world would agree not to publish any new facts for ten years, and devote their pages to collective reviews and monographs on the facts already known."

Prophylaxis of Puerperal Fever.—De Snoo is director of the national midwifery college in the Netherlands, and he presents an array of arguments to show that puerperal infection has other origins than those generally accepted, and that the chief danger is from other parturients with puerperal fever. It seems as if a special strain of cocci is developed by passage through other parturients. Women with chronic gonorrhea would theoretically seem to be peculiarly exposed to danger of secondary infection yet he has had no death from puerperal fever in 5,000 obstetric cases in which the shape of the pelvis and the presentation was normal or nearly so, and delivery proceeded spontaneously; and yet many of them had chronic gonorrhea and chronic suppuration from other causes. The danger from these is thus comparatively negligible. Autoinfection from bacteria already present, lurking possibly for years in the genitalia, certainly can occur, but it is exceptional. His tables show that the proportion of cases with fever after internal examination was twice as large when the interval between the internal examination and delivery had been from two to six days (33.3 per cent.) than when the interval had been shorter. Only 6 of the 827 cases with interval of less than twelve hours were pathologic. In 91 cases of placenta praevia, the same influence of the interval was apparent. The only 2 deaths were in women who had been examined internally from two to six days before delivery, and the pathologic cases were far more numerous than in the other group. The only reason why certain careless obstetricians in private practice are liable to have a good record is because their patients are not exposed to contagion from other parturients as they would be in institutions.

Ear, Nose and Throat Affections in the Tuberculous.—Siemens gives a table of data from 1,457 tuberculous inmates of a sanatorium, including 552 men, 667 women and 238 children. Fully 20 per cent. had some existing affection or anomaly in nose, throat or ear; 7 per cent. chronic otitis media.

Acta Chirurgica Scandinavica, Stockholm

1922. Supplement I

*The Elimination of Ether. K. Gramén.—pp. 1-146.

Ether in Blood, Milk, Urine and Breath After Ether Anesthesia.—The first supplement to the *Acta Chirurgica Scandinavica*, 1922, is devoted to Gramén's extensive research in this line and on the acidosis which follows general anesthesia. He worked out a special method for determining the percentage of ether in 1 c.c. of body fluids and in the breath, and tabulates the findings from 700 tests. The child born after the mother has been given ether may show the effect of it. This should be borne in mind in treating the new-born. His experiments further confirmed the decidedly favorable effects of refraining from purgation and reducing the intake of food preliminary to the operation, while at the same time supplying fluids in abundance and warding off anesthesia acidosis by giving glucose and bicarbonate. The vomit after ether anesthesia indicates that there is achylia. The kidneys may show acute damage from the ether; in one fatal case it amounted to intense nephrosis. This may be the explanation of certain tardy fatalities after general anesthesia.

Hospitalstidende, Copenhagen

Feb. 14, 1923, 66, No. 7

*Transmission of Multiple Sclerosis to Guinea-Pigs. V. Jensen and G. E. Schrøder.—p. 133.

Electrocoagulation for Lupus in Nose and Throat. Vibede.—p. 140.

Experimental Multiple Sclerosis.—Jensen and Schrøder injected nine rabbits and twenty guinea-pigs with blood and spinal fluid from seven patients with multiple sclerosis. The results were constantly negative, except in one case in which spirochetes were found in the spinal cord. Of the six animals injected with these spirochetes, one developed paralysis, and the brain and spinal cord showed lesions resembling those of multiple sclerosis, but no spirochetes could be found in the animal. This one instance confirms the assumption of an infectious etiology, or, at least, that what we call multiple sclerosis may not always have the same origin.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 18

CHICAGO, ILLINOIS

MAY 5, 1923

MYOSITIS OSSIFICANS*

DEAN LEWIS, M.D.
CHICAGO

Cases of circumscribed myositis ossificans have been reported with increasing frequency during the last few years. It is probable that the condition is more common than even the large number of reported cases would indicate, for when ossification is not extensive and not in such a position that the motion of a joint is limited or a definite disability occurs, a physician is not consulted. The circumscribed form of myositis ossificans is of special interest to the surgeon because of its association with dislocations and fractures; because of the difficulties sometimes encountered in making a differential diagnosis, and because of the relation of periosteal stripping and displacement to heterologous bone formation.

Three forms of circumscribed myositis are recognized:-

1. The traumatic:

- (a) Occupational myositis ossifications due as a rule to repeated injuries.
- (b) Myositis ossificans due to repeated injuries not sustained in pursuit of an occupation.
- (c) Myositis ossificans due to a single severe injury.

2. The nontraumatic form, in which even single or repeated injuries can be excluded.

3. The neurotic form, usually associated with arthropathies or fractures occurring in tabes, dementia or syringomyelia.

Circumscribed myositis ossificans developing in clean incised abdominal wounds forms an interesting study. In some of these cases, there is no possibility of periosteal injury or displacement, and therefore the bone must have formed as the result of metaplasia of connective tissue cells. In an article published by Küttner in 1910, dealing with circumscribed ossifying myositis, but five cases are recorded in which the lesion developed in a wound caused by a sharp instrument producing a clean incised or punctured wound. Most of the cases develop after a severe injury caused by blunt force in which considerable laceration of muscle fibers associated with hematoma formation occurs.

Bender reports a case in which bone developed in the biceps brachii following a punctured wound from a darning needle; Schwarz, one in which bone developed in the glutei muscles after they were cut with glass, particles of which were found imbedded in the bone. Werner has described an ossifying process in the biceps brachii after a punctured wound. Cranwell has described two cases in which bone developed in muscles

following incised wounds. In one of these, the patient was whittling, when the knife slipped and pierced the inner part of the thigh, passing through the adductor muscles. Considerable hemorrhage occurred, but the wound healed rapidly. After some months, a piece of bone of considerable size developed in the adductor muscles. This was removed later. The second case, reported by Cranwell, occurred in a man, aged 22. Three months before he was operated on, he sustained a stab wound of the left thigh, with considerable hemorrhage. The wound suppurated, and healed slowly. Soon a painful mass developed along the track of the stab wound. This mass, which proved to be bone, was later removed. It was attached to the femur by a broad base. These cases indicate that circumscribed myositis may, but rarely does, occur after clean incised wounds.

MYOSITIS OSSIFICANS IN THE ABDOMINAL WALL

I have observed two cases in which bone developed in incisions of the abdominal wall:

CASE 1.—A man, aged 27, for over a year before he was admitted to the hospital, had experienced from time to time an aching pain in the epigastrium. This pain usually developed early in the evening and lasted half an hour or somewhat longer. At times, the pain would come on at 1 or 2 o'clock in the morning and last two or three hours. Nausea was not associated with the pain and no vomiting had occurred. At first, bismuth relieved the pain. A few weeks before the patient entered the hospital, the pains were experienced during the day. Of late, the pain and distress had been almost continuous but had varied in intensity. The distress could be controlled to a considerable degree by a liquid diet. During the year, the patient had had several attacks of acute arthritis.

The general examination was negative except as regards the heart. The apex beat was in the seventh intercostal space, two finger breadths external to the nipple line. The impulse was heaving. A loud diastolic murmur was heard over the base, which was transmitted to the apex. The patient had aortic regurgitation, but compensation was good.

A test meal revealed no food retention. The total acidity was 95, free hydrochloric acid, 50. Occult blood had been found in the stool from time to time. June 1, 1917, a diagnosis of duodenal ulcer having been made, a posterior no-loop gastro-enterostomy was performed, the pylorus being temporarily occluded by plication with two silk sutures. The postoperative course was uncomplicated, no vomiting or distress being noted. There was some fever, the temperature reaching 102 F. on the third day. It subsided quickly and did not recur. During this rise in temperature, there was no inflammatory reaction in the incision. The fever was thought to be due to bronchitis, never severe, from which the patient suffered at this time.

The patient left the hospital thirteen days after the operation, much relieved, the pain and distress following the taking of food having completely disappeared. After his return home a cough developed which bothered him considerably.

* Read before the Western Surgical Association, Dec. 8, 1922.

Three weeks after the operation, he noticed some tenderness in the scar, so marked that he could not wear a belt without considerable distress.

Seven weeks after the operation, a definite mass measuring a finger's breadth or more in width could be felt the entire length of the scar. This mass was of the consistency of bone, and in the roentgen ray cast a definite shadow. This mass was not removed, and naturally the criticism may be made that we cannot consider it as bone without a histologic examination; but it had all the characteristics of bone on physical examination. The patient was finally lost sight of, and the final outcome cannot be given. The mass was decreasing in size.

CASE 2.—*Myositis ossificans developing in the muscles of the lower abdomen following a suprapubic prostatectomy.* A man, aged 70, admitted to Dr. Bevan's service, Aug. 18, 1914, had had bladder trouble for four years, and complained of frequent and painful urination associated with retention. During the preceding April, the trouble had become aggravated, urination being extremely difficult, with only a few

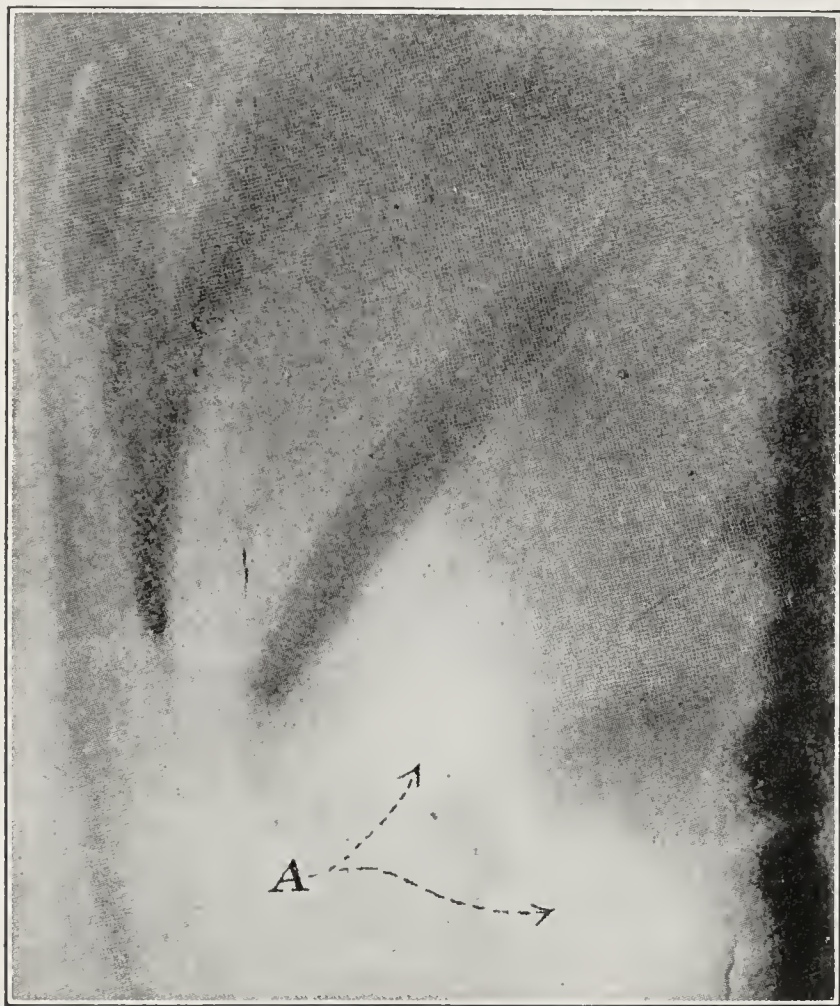


Fig. 1 (Case 1).—Appearance of bone developing in a clean incised wound of the abdomen. A gastro-enterostomy was performed for duodenal ulcer.

drops voided at a time. Soon after admission to the hospital, a suprapubic prostatectomy was performed. The suprapubic wound healed within a month without complications. Shortly after the wound healed, the patient noticed a mass which was not painful and gradually increased in size. The patient was well, but was troubled from time to time by painful urination. A cystoscopic examination, Aug. 29, 1915, revealed two small stones in the bladder and no projection into the cavity of the anterior bladder wall. The mass described above was apparently in the abdominal wall and did not involve the bladder.

Sept. 2, 1915, this mass, which proved to be bone to which was attached degenerating fat and muscle, was removed. Ossification had occurred in the tissues of the abdominal wall following healing of the suprapubic wound.

Cases of myositis ossificans developing in abdominal wounds have been reported by Rubesch, Röpke, Hannes, Legene, Sabjaknia, Capelle, Jones, Coenen-Wollenburg, Benelli, Merendorf and Strassberg. In seven of the eleven cases reported, an operation was

performed for gastric ulcer, two of which had perforated. Some of the incisions were closed with silk and some with catgut, and the wounds in most cases, one excepted, healed by first intention.

In a case observed by Jones, a man, aged 30, was operated on for a right inguinal hernia, which had developed, apparently, as the result of jumping. The wound healed by primary intention, the patient remaining in bed sixteen days. Five months after the operation, a mass developed under the scar, which was painful and not attached. Eleven months after this mass was first noted, it was removed. On histologic examination, it proved to be bone.

Jones believes that at the first operation the pubic bone was injured by the needle; that a few osteoblasts were carried into the soft tissues, and that these found a good culture medium, perhaps in a blood clot, giving rise to bone formation in the hernial scar.

These cases of myositis ossificans occurring in clean incised wounds of the abdomen are of unusual interest, because they would seem to indicate that bone can form as the result of metaplasia of connective tissues containing no osteogenic elements. It is stated by some that in these cases there is always the possibility of periosteal injury associated with displacement of periosteal strips or osteoblasts, but in both of the cases observed by me such injury could be definitely excluded. In the myositis developing after a gastro-enterostomy, a linea transversa was incised. This is the remains of a rib that at one time extended toward the median line, but we do not know whether or not the lineae transversae contain osteogenic elements. The effect of acid secretion on fascia and muscle and its relation to bone formation is raised by the second case in which bone developed in the suprapubic wound. It has been frequently demonstrated by Phemister and Strauss that free facial transplants used to repair defects in the urinary bladder and stomach or in the ureter become transformed into bone, a metaplasia of connective tissue occurring. Bone probably formed in the suprapubic wound as the result of the action of acid urine on fascia. It is surprising that the greater number of cases of myositis ossificans in abdominal wounds have developed after gastro-enterostomies or stomach resections, and the relation of acid secretion to bone-forming myositis is naturally suggested. It is difficult, however, to see how any great amount of gastric juice could come in contact with such a wound during the performance of gastro-enterostomy.

Although the factors concerned in the development of myositis ossificans in clean incised abdominal wounds cannot be determined, such cases do indicate that bone can be formed as the result of the metaplasia of connective tissues, no osteogenic tissue being present.

Strauss' statistics dealing with 127 cases of traumatic myositis ossificans show the following anatomic distribution: sixty-four of these occurred in the flexor muscles of the upper arm, the brachialis anticus being the one most frequently affected; forty-three occurred in the quadriceps femoris; thirteen, in the adductor muscles of the thigh; two, in the gluteal muscles; one, in the muscles of the ball of the thumb, and one in the temporal muscle.

MYOSITIS OSSIFICANS FOLLOWING POSTERIOR DISLOCATIONS OF THE ELBOW

Myositis ossificans following injuries about the elbow develops most frequently after posterior dislocations.

CASE 3.—F. W., a man, aged 36, admitted to the Presbyterian Hospital, May 16, 1910, had had a fall, Sept. 10, 1909,

after which he was mentally deranged, until the middle of the subsequent December. During this time, he complained of pain in the right arm. No definite history of the way in which he was injured could be elicited because of his mental state. When he became mentally clear, it was discovered that he could not bring his hand to his mouth or flex the forearm fully. The elbow caused no especial pain, but was

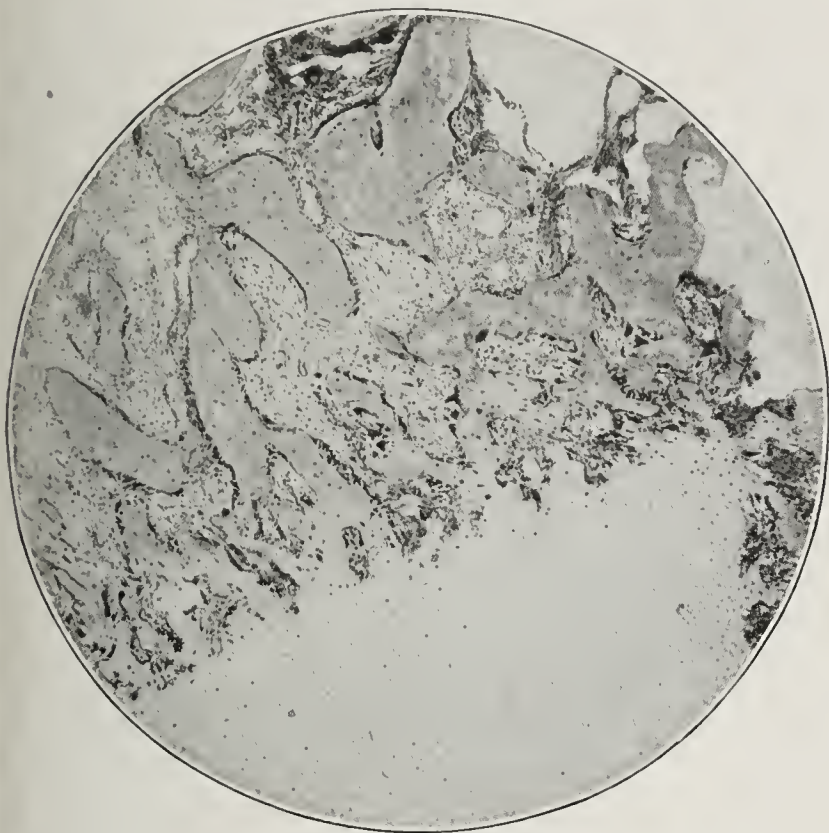


Fig. 2 (Case 2).—Section of bone which developed in suprapubic wound following suprapubic prostatectomy. The relation of acid secretions and excretions to bone formation in fascia and muscle must be taken into consideration in this case.

stiff. The right forearm could not be flexed beyond an angle of 120 degrees. A roentgen-ray examination made at this time revealed a shadow anterior to the elbow joint and the lower third of the humerus that was suggestive of myositis ossificans. An operation was performed, May 16, 1910. An incision was made between the brachioradialis and the brachialis anticus. The musculospiral nerve was exposed and retracted. The fibers of the brachialis were separated, and a bony mass, which was rather closely related to the humerus, was removed from its substance.

CASE 4.—W. B., a man, aged 28, admitted to the Presbyterian Hospital, April 28, 1913, had fallen 20 feet, May 26, 1912, and sustained a fracture of the head of the right radius. According to his statement, he was operated on, May 28, at which time three pieces of bone were removed. A plaster-of-Paris cast was applied, and was worn for three weeks. Splints were then worn for two weeks. After the splints were removed, massage and osteopathic treatment were employed twice a week until the patient entered the hospital. During March, a month before he entered the hospital, an anesthetic was administered three times and attempts were made to break up the adhesions. Impairment of motion at the elbow became more marked at each attempt.

A roentgen-ray examination made when the patient entered the hospital revealed a shadow in the brachialis anticus muscle; one in the olecranon fossa, and one over the olecranon process. A hard mass of the consistency of bone could be felt in the antecubital fossa.

An operation was performed, April 28, 1913. One incision was made in the right antecubital fossa and another posteriorly over the olecranon process. The capsule of the joint was exposed, and the bone and exostoses were removed.

CASE 5.—M. H., a girl, aged 12, admitted to the Presbyterian Hospital, April 3, 1910, had fallen and struck on the left elbow, three months before. A physician who was called said that the elbow had been dislocated. After some manipulation, the dislocation was reduced, and a sling, which was worn for one week, was applied. The patient did not regain full use of the elbow, and after six weeks she visited

the Central Free Dispensary, complaining of inability to flex or extend the forearm. In addition to the dislocation, this patient had sustained, as the roentgen-ray examination revealed, a fracture of the coronoid process. An operation was performed, April 14. An incision was made between the brachioradialis and the biceps tendon. The musculospiral nerve was exposed and retracted. The fibers of the brachialis anticus were separated, and a mass the size of a walnut was removed from its substance.

CASE 6.—W. Q., a man, aged 26, admitted to the Presbyterian Hospital, March 8, 1915, for observation, had sustained an injury to the elbow, some weeks before, which, from the description, was probably a posterior dislocation of both bones. The dislocation had been reduced, but subsequently considerable limitation of motion was noted at the elbow-joint. After the accident occurred, considerable discoloration of the skin about the elbow was noted.

Examination disclosed that the motions at the left elbow joint were considerably limited. The bony relations of the joint were normal. A mass could be felt in the upper part of the antecubital fossa. This mass was hard, apparently fixed, and seemed to be surrounded by indurated tissue. A roentgen-ray examination revealed a definite mass. This was apparently not attached to the bone, although there was a small shadow more deeply situated which resembled somewhat a pedicle and might connect the larger shadow with the shaft of the bone. This patient was not operated on, as he was apparently improving. He has moved, so that the later history of the case cannot be given.

Myositis ossificans has been observed after dislocations of the clavicle, shoulder and elbow. Strauss has observed myositis ossificans of the subclavian muscle after a supra-acromial dislocation of the clavicle; Regnier, ossification of the subscapular muscle after dislocation of the shoulder. This lesion is much more frequently observed after dislocation of both bones of the forearm backward than with any other type of dislocation. The localization of the process is quite

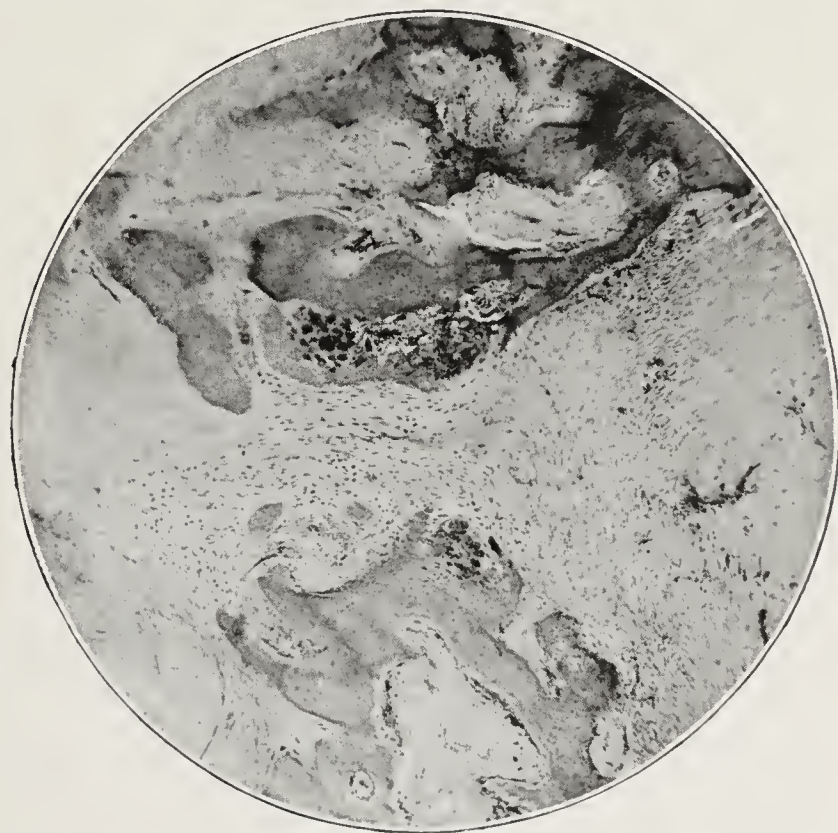


Fig. 3.—Section of bone found in the brachialis anticus following an injury of the elbow.

constant when occurring after dislocation backward of both bones of the forearm. There can be scarcely a doubt that, if more intensive studies were made of other dislocations, myositis ossificans would be more frequently found. The process is so situated after posterior dislocations of the elbow that it causes considerable disability, seriously interfering with flexion

and extension of the forearm. These cases are, therefore, more carefully studied, attention being directed early to the joint, with the view of determining the cause of the disability.

It is interesting to note that ossifying myositis occurring after this injury develops almost exclusively in those cases in which an early and satisfactory reduction has been made. It has been stated that it does not



Fig. 4.—Shadow in brachialis anticus which followed an injury to the elbow.

occur in old, unreduced dislocations. This statement is, however, apparently incorrect, for Frangenheim mentions two cases of old dislocations in which, when an open reduction was attempted, bone was found in the brachialis anticus.

Periosteal stripping with displacement undoubtedly plays an important rôle in the development of this parosteal callus or ossifying myositis. The formation of bone in definite positions is noted with a certain degree of regularity after posterior dislocations of both bones of the forearm. In the majority of cases, the bone is not formed in sufficient amounts to cause disability and is, therefore, not recognized. Sudeck found in experiments performed on cadavers that, in the backward dislocations, injury of the capsule associated with periosteal stripping is rather constant. Stripping of periosteum usually occurs at four points, over the internal and external condyles, over the posterior surface of the humerus above the olecranon fossa, and above the supratrochlear fossa.

After such an injury, there develops with some regularity, on one or more of these areas, callus which varies in size and relation to the humerus, depending on the amount of periosteum stripped and the accuracy with which it is replaced when the dislocation is reduced. After reduction, the callus developing over the external and internal condyles is not usually large and is not much out of position, for the stripped periosteum is not widely displaced. Neither is the subtricipital callus as a rule large. Usually, it does not extend far from the shaft. In most cases, the anterior parosteal callus is not large, and frequently it is closely applied to the shaft of the humerus at the upper limit of the elbow joint or lower down, near the ulna. The stripped periosteum may, however, be considerably displaced anteriorly into the ruptured and infiltrated fibers of the brachialis, and when the growth process instituted by the trauma continues, a lesion causing marked

disability seriously interfering with the motions of the elbow joint develops. The development of the lesion in this position gives rise to marked disability and roentgen-ray findings such as have been described in the cases cited above.

Bone often develops rapidly in muscle the seat of ossifying myositis. The shadow cast in roentgen-ray examination varies according to the age of the process. In from three to four weeks, in cases of myositis ossificans following posterior dislocations of the elbow, the shadow occupies the space in front of the proximal part of the elbow joint and extends down through the soft parts toward and near to the bone. The shadow may be indistinct and diffused. This shadow gradually becomes denser and smaller, and on the average attains a greater density after six weeks; but the density and form which are final are not attained until some weeks later. The shadow may apparently change its position, for as a rule, in the early cases, the shadow may be found in the brachialis anticus at the upper part of the joint, and as the shadow increases in density and assumes its definite form, it may take a position more distalward.

The shadow in the early stages is not homogeneous, for lighter and darker areas are found. Machol has spoken of the shadow as resembling a dotted veil. As ossification occurs, lines varying in width form which, passing transversely and obliquely, bound and separate the darker areas. As the density of the shadow increases, definite connection with the bone may be seen, the density of this connecting shadow usually corresponding with that of the soft parts. The bony trabeculae which may be seen in the later stages when the shadow has reached its definitive density correspond, as a rule, to the direction of the muscle fibers.



Fig. 5.—Appearance of bone developing in the brachialis anticus following posterior dislocation of the elbow. This shadow has gradually increased in density and decreased in size. There is some evidence of periosteal stripping in this case, for the deeper shadow which is apparently part of the more superficial one is attached to the bone.

In some of the cases, the shadow remains stationary, but usually there occurs a still further reduction in the size of the shadow with the passage of time. It seems, so to speak, as if the shadow were gradually com-

pressed. The long time required for the final changes to occur in the shadow and the slowness with which its definitive form and density are attained are in marked contrast to the rapidity with which the shadow forms. In the majority of cases, the shadow in the



Fig. 6 (Case 7).—Myositis ossificans of crureus muscle of left thigh, with no history of trauma or infection. Periosteal change is peculiar and difficult of explanation. It may be due to pull of muscle fibers. Myositis ossificans is liable to develop in those positions in which the muscle has wide origin or insertion, periosteal injury in these cases being due to incoordinate muscular contraction. Recovery in this case occurred after extirpation of involved muscle.

muscle seems to be separated from the shaft of the bone. This does not necessarily mean that there is no connection between the mass in the muscle and the shaft of the bone; for the bony process connecting the two may be so porous that no definite and clear shadow permitting of the interpretation of such connection is present.

The symptoms associated with such an injury consist usually of considerable discoloration in the skin about the elbow and in the gradual development of an indurated and painful swelling over the anterior surface of the elbow, which gradually becomes harder as the swelling decreases in size with the conversion of the densely infiltrated muscle into bone.

In some cases of myositis ossificans, considerable difficulties are encountered in making a differential diagnosis and the etiologic factor is difficult to determine. These difficulties were encountered in the following case:

CASE 7.—J. P., aged 18, admitted to the Presbyterian Hospital, July 19, 1922, some nine months before admission had noticed a swelling on the anterior surface of the left thigh just above the junction of the middle and upper thirds. At the beginning, some spontaneous pain was noted. This lasted about two months, and gradually subsided. For the last few months, the pain had been almost negligible and had not been a prominent symptom. The mass in the thigh had grown larger, but the growth had been very slow. Three months

before admission, the patient began to have difficulty in flexing the thigh. This difficulty has become more and more pronounced, until at present flexion of the thigh is markedly limited.

Repeated attempts were made to elicit a history of trauma, but the patient denied that any trauma had been sustained. There was no history of any inflammatory trouble of any kind and no history of any febrile disease.

The physical examination revealed a hard fusiform mass measuring $3\frac{1}{2}$ inches (9 cm.) in length and 1 inch (2.5 cm.) in width on the anterior surface of the left thigh at the junction of the middle and upper thirds, just internal to the medial border of the rectus muscle. This mass was tender, somewhat irregular in outline, and fixed, appearing to be attached to the bone. The lower extremity of the mass seemed, however, to be movable from side to side. The muscles could be moved over it. They were somewhat atrophied. The thigh could not be flexed to more than 20 degrees; flexion of the knee was limited to about 35 degrees.

A roentgen-ray examination revealed a definite roughening on the outer side of the femur. This roughening resembled somewhat a well accentuated muscle attachment, being, however, very pronounced. There were no medullary changes and no destruction of the cortex. Some small irregular shadows, one of which was very well marked, were seen. These were apparently in the soft tissues and did not seem to be attached to the diaphysis or connected with it in any way.

A definite diagnosis was not made at this time. The increase in size of the mass, its apparent attachment to the bone and the roentgen-ray findings, led me to suspect a sarcoma of bone. I must admit, however, that the roentgen-ray findings would hardly justify such a diagnosis.

An operation was performed, July 21. An incision was made over the mass parallel to the long axis of the thigh. As the medial border of the rectus was retracted outward, it was found that the mass was in the substance of the crureus muscle. This mass contained several islands of bone scattered among degenerated muscle fibers which were infiltrated with old degenerating blood and calcium salts. A probable diagnosis of myositis ossificans involving the crureus muscle was made. The etiology in this case could not be determined; nor the



Fig. 7 (Case 7).—Section of tissue removed. Cartilage and bone were distributed throughout the upper part of the crureus muscle, which was infiltrated with blood and undergoing degeneration.

relation of the process to the periosteal change on the outer side of the femur. The process in the crureus muscle seemed to have no definite anatomic relation to the change in the femur.

The histologic changes found in the tissues removed were those of myositis ossificans.

This case is interesting in that no history of trauma could be elicited. Some slight trauma could be easily overlooked and forgotten. No history of any infectious process or febrile disease could be elicited.

Some cases of myositis ossificans are undoubtedly secondary to some infectious process in the muscle, a degenerating myositis being followed by calcification and bone formation. In the cases reported by Salman and Peiser, fixation of the hip in flexion, adduction and outward rotation occurred without injury or known cause. Salman found extensive degeneration of the iliopsoas muscle with bone formation in his patient, aged 13, while Peiser found an extensive tumor-like formation of bone in his case. Some infectious

with broad origins are not infrequently the seat of myositis ossificans, the periosteal stripping in these cases being due to incoordinated muscular contractions. The history of an injury cannot be elicited in such cases.

CASE 8.—A youth, aged 19, was injured, Nov. 25, 1922, while playing football. He received a heavy blow on the outer side of the left thigh, which, according to his statement, was delivered by another player's fist. He finished the game, although the thigh was tender and caused him considerable pain. He played another game of football five days later. The pain became so much worse after this game that he was sent to the school infirmary by the physician. He remained in bed four days. He then got up and went about, feeling no pain or discomfort. After a few days, he experienced pain in the thigh again when walking, and limped considerably. During the Christmas vacation, he walked but little. The physician whom he consulted advised that arnica be rubbed on the thigh. When school opened after the holidays, he tried to play basketball, but was unable to do so because of the pain caused by running. January 20, 1923, a roentgenogram (Fig. 8) revealed a shadow suggestive of myositis ossificans. This diagnosis was later verified by operation. I am indebted to Dr. Donald Macrae, Jr., of Council Bluffs, Iowa, for the history of this case and the roentgenogram.

MYOSITIS OSSIFICANS OF THE TENSOR FASCIAE FEMORIS

CASE 9.—J. R., aged 33, a Russian, admitted to the Presbyterian Hospital, Jan. 4, 1914, complained of a swelling on the anterior and lateral aspect of the left thigh about 2 inches (5 cm.) below the anterior superior spine of the ilium, which, according to the patient's statement, had been there about five weeks. He stated that the mass was of about the same size when first noticed and had not changed any recently.

Nothing could be elicited which had any bearing on the development of this mass. The patient had pneumonia two years before admission to the hospital, but recovered without any complications.

Physical examination revealed a hard mass on the antero-lateral aspect of the upper part of the left thigh. This mass measured about 2 inches (5 cm.) in diameter and was situated about 2 inches below the anterior superior spine of the ilium. It had the consistency of cartilage, and was irregular in outline, freely movable and not attached to the skin.

January 5, this mass was removed through a 4-inch incision from the substance of the tensor fasciae femoris. A small mass the size of a peanut, not attached to the main mass, was later removed through the upper part of the incision. These masses on examination proved to be bone developing in degenerating and infiltrated muscles.

Myositis ossificans must be differentiated from a number of different lesions such as hematoma in muscle and muscle callus, an interstitial syphilitic process involving muscle, different forms of tumors of muscles, exostoses and separation with displacement anteriorly of the articular cartilage of the capitellum, in this type of fracture, which is rare.

It is especially important to differentiate between malignant growths of bone and myositis ossificans; for in some instances the benign process of myositis ossificans has been regarded as a malignant growth, and amputations have been performed. The periosteal sarcoma is the only bone tumor that could be confused with myositis ossificans; for the central giant cell sarcoma is so characteristic and so different from myositis ossificans in roentgen-ray appearance that no question should arise concerning the differential diagnosis of these lesions.

It may be difficult to differentiate between a periosteal sarcoma and myositis ossificans clinically, for a history of trauma may be elicited in each; both occur

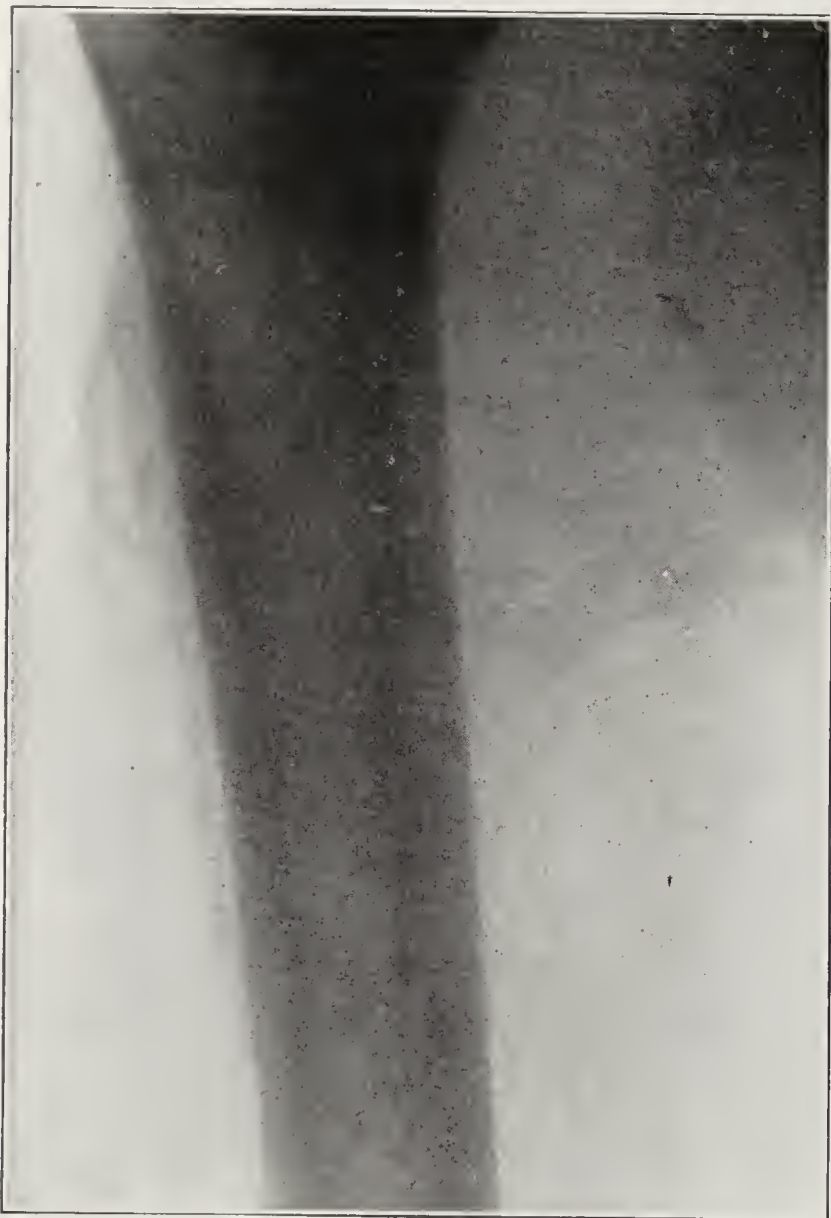


Fig. 8 (Case 8).—Myositis ossificans following a blow on the thigh during a football game. Injury occurred Nov. 25, 1922; roentgenogram taken Jan. 25, 1923. No change in periosteum is noted. The shadow is not continuous with the periosteum at each extremity and there is no involvement of periosteum beyond the shadow. (Roentgenogram furnished by Donald Macrae, Jr., Council Bluffs, Iowa.)

processes seem to have played a rôle in the cases described by DeWitt, Itzerott and Roskowski. In Itzerott's case, bone developed in the glossy edematous brachialis anticus, some fever and pain accompanying the process. In Roskowski's case, extensive ossification occurred in the flexor and extensor muscles of the forearm after a severe phlegmon.

Although no history of trauma could be elicited in the case cited above, I do not believe that one is justified in placing it in the nontraumatic group of myositis ossificans, for no history suggesting an infectious process leading to a degenerating myositis could be elicited. It is possible that the periosteal change in this case was due to muscular contraction. Muscles

in young people, and the consistency may be the same. In some cases, the differential diagnosis cannot be made by the history and physical findings. The roentgen-ray findings are usually, however, so typical that a differential diagnosis can be made. In periosteal sarcoma, the cortex of bone is usually eroded or irregular, and the stalactite processes that are formed in the osteogenic periosteal sarcomas are laid down more or less at right angles to the shaft. The fusiform extension of both ends of the shadow onto the shaft is also indicative of a sarcoma. The shadow in myositis ossificans has a peculiar appearance, being laid down in lines which may be parallel to the shaft and crossed by other shadows at more or less of a right angle. The characteristics of this shadow are beautifully shown in a specimen prepared and studied by Phemister. This specimen illustrates the character of the shadow of myositis ossificans. The process has apparently extended along the septums between the different muscle bundles.

The differential diagnosis can usually be made on the history and the roentgen-ray findings, but if there is any doubt a histologic examination of the tissue should be made. Amputation should not be considered in any case in which there is any doubt as to the diag-



Fig. 9 (Case studied by Dr. D. B. Phemister).—Characteristics of the shadow in myositis ossificans. The shadow at either extremity is separated from rather than continuous with the periosteum, and is parallel with the shaft of the bone. In osteogenic sarcoma, the stalactite processes are usually at right angles to the shaft of the bone. The shadow has the peculiar dotted veil appearance referred to in the text, which is characteristic of myositis ossificans and should enable one to differentiate between this process and osteogenic periosteal sarcoma.

nosis, until a histologic examination has been made.

The rate and subsidence of growth are of importance in differential diagnosis. Myositis ossificans attains its maximum size early and remains stationary for some time, or diminishes in size; while the osteogenic sarcomas which offer the greatest difficulties in differential diagnosis have a progressive, rapid growth, without any tendency to remain stationary.

The tendency of myositis ossificans is to recede after attaining its maximum size. Therefore, manipulative movements to increase the range of motion when myositis ossificans is present, for example after posterior dislocations of the elbow, should not be made until the process has sub-

sided; for the injury to the tissues will merely increase the extent of the process. As the bone tends to diminish in size or disappear, there may be no necessity of

removing it. If it causes disability, it should not be removed until its definitive form and density have been approximately reached.

In the etiology of myositis ossificans, different factors play a rôle. No one theory will explain all cases. Myositis ossificans developing in the abdominal wall in clean incised wounds, where there is no possibility of any injury to periosteum or bone, is due to the metaplasia of connective tissue. Fascia and muscle in contact with acid secretions become converted into bone. It is striking how many cases of myositis ossificans in the abdominal wall have followed operations on the stomach, either a gastro-enterostomy or resection.

Myositis ossificans developing after dislocations is apparently due to periosteal stripping and displacement.

The ossifying myositis occurring in fractures associated with considerable movement of the fragments, such as the pathologic fractures occurring in tabes, demonstrate better than any other lesion the rôle played by periosteal stripping and displacement in myositis ossificans.

952 South Michigan Avenue.

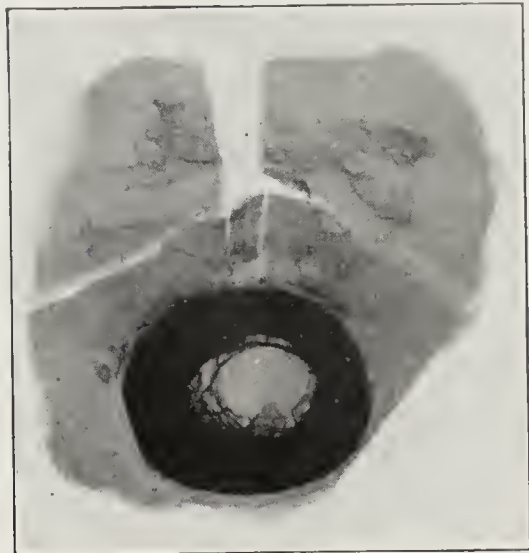


Fig. 10.—Transverse section of specimen, the roentgenogram of which is reproduced in Figure 9, showing ossification of the trabeculae in the muscles of the thigh; the relation of this process to the shaft of the femur, and no periosteal stripping.

HEMOPERITONEUM FROM RUPTURED CORPUS LUTEUM*

ABRAHAM STRAUSS, M.D.

CLEVELAND

It is now a well established fact that hemorrhage occurs more frequently from the ovary than from any other abdominal organ. In 1845, Scanzoni reported a case of fatal hemorrhage from the ovary at menstruation in a girl of 18, and the condition was referred to by earlier writers as apoplexy of the ovary.

Novak¹ has described fully the types of ovarian hematomas, and has shown their relation to the graafian follicle. The forms of ovarian hematoma he divided into (1) follicular (graafian follicle and atretic follicle); (2) corpus luteum, and (3) stromal hematomas.

Authors in the past have not seen fit to distinguish carefully between follicular and corpus luteum hemorrhages. Thus Moore, the most recent, has included both kinds in his table, compiling the cases reported in the literature, while he reported a case belonging to Class 2.

Those seen at operation generally belong to Group 1, and it has been more common to see those in Group 2 in

* From the Surgical Service of Mount Sinai Hospital.

1. Novak, Emil: The Corpus Luteum: Its Life Cycle and Its Rôle in Menstrual Disorders, *J. A. M. A.* **67**: 1285 (Oct. 28) 1916; Hematoma of the Ovary, Including Corpus Luteum Cysts, *Bull. Johns Hopkins Hosp.* **28**: 349 (Nov.) 1917; Abdominal Hemorrhage of Ovarian Origin, *J. A. M. A.* **68**: 1160 (April 21) 1917.

the form of ruptured lutein cysts than ruptured corpus luteum, as the case reported below.

Sampson² has directed attention to another form of hemorrhage in the ovary which produces a cyst with quite a different clinical picture. These cysts are related to adenomas of endometrial type. When operated on, the content of these cysts is found to be a chocolate colored fluid, the result of old hemorrhage,



Fig. 1.—Ovary: A, point of hemorrhage.

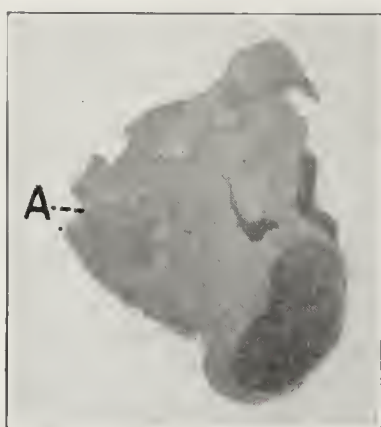


Fig. 2.—Ovary sectioned: A, corpus luteum and point of rupture.

although occasionally there is also some recent red blood in them. Sampson speculates as to their origin, saying that "they may have been endometrial cysts at the start; or they may have resulted from . . . a hematoma in a graafian or atretic follicle; or possibly an abnormal corpus luteum developed." Clinically, the cases are of chronic nature.

It is of some interest to speculate as to the cause of these hemorrhages. Meyer and Ruge³ divided the life history of the corpus luteum into four stages: (1) the stage of hyperemia and proliferation occurring between the eighth and twelfth day after menstruation; (2) vascularization between the fourteenth and sixteenth day; (3) florescence, between the seventeenth and twenty-eighth day; (4) regression for eight days following menstruation. Novak leads us to believe that bleeding may occur during the stage of vascularization (or hyperemia) when the vessels in the theca become large and more numerous and form a line between the granulosa and the theca. From this wreath of vessels spring new capillaries which supply the granulosa cells till they become lutein cells. After this the vessels become less conspicuous, but the thecal vessels remain until well into the period of retrogression. The discharge of the ovum occurs without loss of blood, and the cavity of the follicle immediately thereafter contains no blood. But bleeding usually occurs in the hyperemic stage of the corpus luteum, and undoubtedly from the vessels described above. There is no sharp line of demarcation between a physiologic and a pathologic hemorrhage. The hemorrhage may be excessive and thus form a cyst. It may exceed the strength of the cyst wall and rupture into the substance of the ovary, and thus form a stromal hemorrhage, or it may rupture through the free wall of the cyst and cause a dangerous or even fatal hemoperitoneum; or, as in the case reported here, the corpus luteum vessels rupture directly into the peritoneal cavity without forming any cyst.

Smith reported his case before a meeting of gynecologists, and in the discussion that followed it was evident that many surgeons had encountered similar cases but had not reported them. The result is that today the investigator believes it is a rare condition because of the few cases in the literature and the brief mention of it in the gynecologies, whereas follicular or corpus luteum hemorrhage should really be considered not uncommon.

It is with this in mind that I report this case.

REPORT OF CASE

History.—A married woman, aged 30, was admitted to Mount Sinai Hospital, November 14, complaining of severe pain in the abdomen. Her health had always been good. She had had three children and no miscarriages. The menses had been regular every four weeks, the flow being from three to five days, of moderate amount, and always accompanied by pain in the lower abdomen and back and by frequency of urination. The last period began, Nov. 1, 1922, lasted three days, and was normal. November 14, she was awakened at 5:30 a. m. with excruciating pain in the lower left abdomen. She ate some breakfast, and although not feeling well went to work and remained until 3 p. m. During this time she was nauseated, but did not vomit. When she returned home she went to bed. The pain increased. She had been very constipated, and had had a small bowel movement in the morning. She now took a cathartic. The pain became generalized over the whole abdomen. On admission to the hospital, she complained that she could not get her breath if she lay flat, and that she had severe pain in her back.

Examination.—The patient lay in a half sitting position, holding her abdomen, complaining of severe pain there and in her back. She was dyspneic and had a marked pallor. The abdomen was rigid and tender everywhere. No masses could be felt. There was definite shifting dullness in the flanks. The vagina was too tender to allow an examination. The temperature was 100; pulse, 100; respiration, 28. The urine was normal. The leukocytes numbered 10,000. The

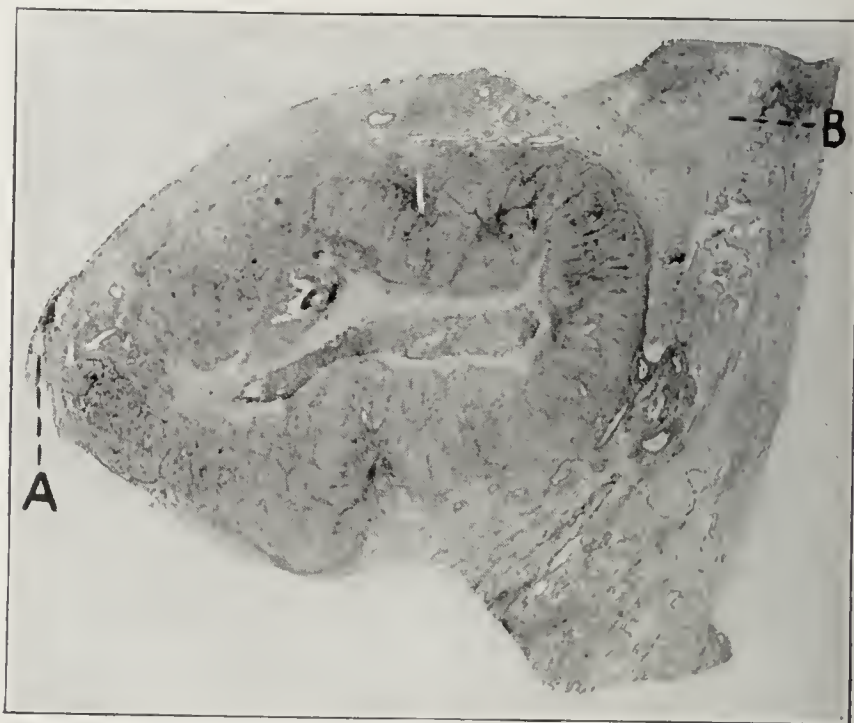


Fig. 3.—Corpus luteum, magnified about 5 diameters; the central blood clot, by shrinking, causes infolding of lutein cells; A, hemorrhage; B, corpus albicans.

rest of the examination was negative. There was no blue discoloration about the umbilicus as described by Cullen in cases of hemoperitoneum.

Operation.—Left salpingo-oophorectomy was performed under nitrous oxid anesthesia. The duration was forty minutes. A right rectus incision was employed. A dark mass in the abdominal cavity was seen through the peritoneum. The peritoneum was opened, followed by a flow of dark blood and clots, amounting to about 1 liter. The patient was put

2. Sampson, J. A.: Perforating Hemorrhagic Cysts of the Ovary, *Arch. Surg.* 3: 245 (Sept.) 1921.

3. Meyer and Ruge: Ueber Corpus Luteum-Bildung und Menstruation in ihrer zeitlichen Zusammengehörigkeit, *Zentralbl. f. Gynäk.* 27: 50, 1913.

in the Trendelenburg position. The uterus and adnexa were delivered. The right tube and ovary were normal. Active bleeding was found to come from a rough spot on the left ovary. The left tube and ovary were removed. Closure was performed in the usual manner.

Pathologic Examination.—The fallopian tube was normal throughout. The ovary measured 4 by 3 by 3 cm. (Fig. 1). It was of normal consistency and its surface was free from adhesions and inflammation. At one spot was a small, everted, rough surface 6 mm. in diameter, from which the blood was seen spurting at operation. On section through this spot (Fig. 2) a corpus luteum was bisected. The corpus luteum was regular in outline except at the point of rupture. The rest of the ovary was normal.

Microscopic examination showed a fresh corpus luteum with much extravasation of blood into the space outlined by the decidua-like lutein cells. These were arranged in an

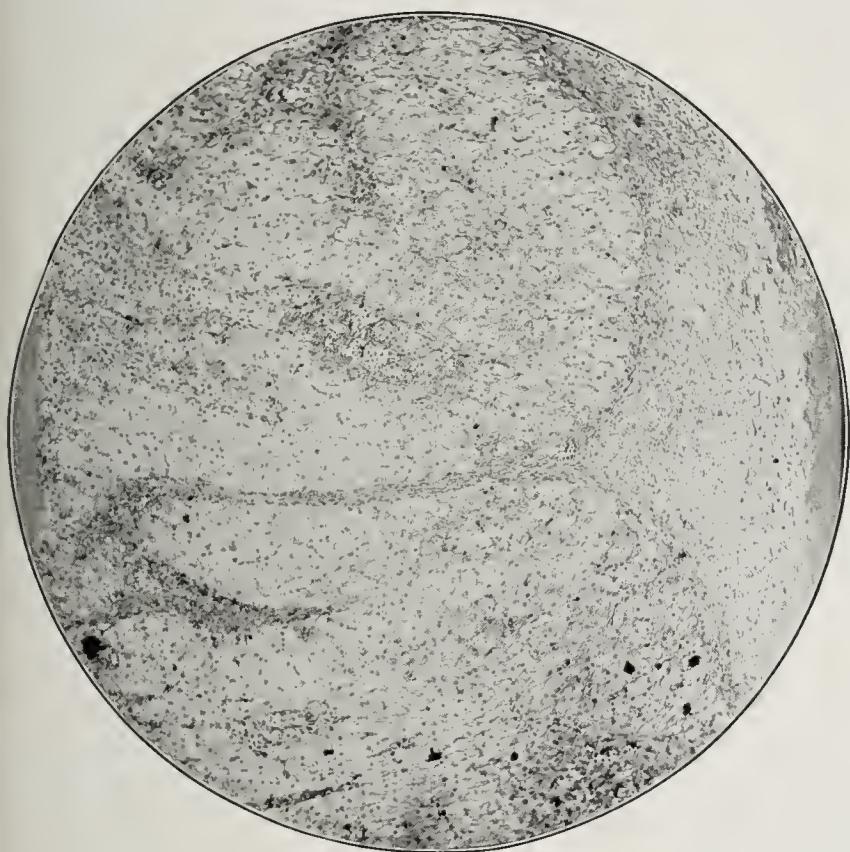


Fig. 4.—Low power: at right, clot undergoing organization; at left, lutein cells with congested capillaries and hemorrhage.

irregular, wavelike band, forming an ellipse, and between them and the hemorrhage, organization of the clot was going on. Among the lutein cells and out into the surrounding stromal cells of the ovary was considerable hemorrhage. The blood could be traced from the center of the corpus luteum to the surface of the ovary. The vessels between the lutein cells and the theca interna were markedly congested. Congested capillaries were numerous. The rest of the ovary was normal, showing no cysts and no inflammation. It will be readily seen from Figure 3 that this corpus luteum is in the second stage as shown by W. Blair Bell.⁴ Figure 4, a high power view of a part of the same section, shows well the lutein cells, the vascularity, hemorrhage and beginning organization of the central clot.

Course.—Except for stimulation required on the third day after operation, the patient's convalescence was uneventful. November 17, the hemoglobin was 40 per cent.; erythrocytes, 2,930,000; leukocytes, 11,200. December 2, the hemoglobin was 60 per cent.; erythrocytes, 3,370,000. The wound healed by first intention, and the patient was discharged from the hospital, December 3. When seen, March 2, 1923, she was well; she had had two menstrual periods since the operation.

COMMENT

As in all similar cases reported, the diagnosis was not made preoperatively. On account of the extreme pallor and abdominal signs, a ruptured ectopic pregnancy was

first considered. This was rejected because of the menstrual history, although it is well known that these sometimes occur without the patient's missing a period. Therefore, considering the abdominal signs with free fluid, the low fever and low white count and pallor, the diagnosis of fulminating peritonitis with the patient in shock was made.

It is interesting to note that this hemorrhage occurred thirteen days after the last menstruation, or in the stage of hyperemia of the corpus luteum. There is nothing characteristic about this lesion that will allow of differentiation from appendicitis and ruptured ectopic pregnancies. And yet, given such a case of severe shock, pallor and extreme abdominal rigidity and severe pain in the back without having missed a menstruation, a ruptured follicular cyst or corpus luteum must be thought of. Fortunately, the indication is the same: operation without delay.

At the operation it was thought that the hemorrhage was due to a ruptured ovarian pregnancy, and therefore the whole ovary was removed. But had it been recognized, at that time, that the hemorrhage was from a ruptured corpus luteum, it might have been unwise to resect the ovary and to leave part of this apparently healthy ovary, because of the experience of Gordon Taylor, who did a right salpingo-oophorectomy for hemorrhage from a ruptured lutein cyst, and eighteen months later had to remove the left ovary for the same cause. Thus there may be something distinctly pathologic in the structure of such ovaries.

1020 Huron Road.

DEPRESSION OF CARDIAC CONDUCTIVITY DURING QUINIDIN THERAPY

SUDDEN ATTACK OF UNCONSCIOUSNESS AND AURICULOVENTRICULAR DISSOCIATION *

C. C. WOLFERTH, M.D.

PHILADELPHIA

Serious accidents during the course of treatment with quinidin, such as sudden collapse, unconsciousness and even death, although not common, have occurred often enough to be considered important, especially since the use of quinidin is becoming more widespread. Little is known with respect to the cause of these accidents; most of them have been attributed to such conditions as embolism of the brain, sudden respiratory paralysis, or some profound disturbance in cardiac mechanism.

The disturbances in cardiac mechanism under suspicion are paroxysmal ventricular tachycardia, ventricular fibrillation, failure of stimulus production, and heart block. Of these, paroxysmal ventricular tachycardia has been recorded electrocardiographically by a number of observers, and ventricular fibrillation at least once.¹ The literature thus far affords some suggestive evidence, but, so far as I am aware, no clear proof that either failure in stimulus production or complete heart block has resulted from therapeutic doses of quinidin. The case here reported shows clearly the occurrence of heart block during the administration of quinidin, and also a sudden attack of unconsciousness

* From the Medical Division, University Hospital, and the William Pepper Laboratory of Clinical Medicine, University of Pennsylvania School of Medicine.

1. Kerr and Bender: Paroxysmal Ventricular Fibrillation with Cardiac Recovery in a Case of Auricular Fibrillation and Complete Heart Block While Under Quinidine Sulphate Therapy, *Heart* 9: 269 (Dec. 27) 1922.

which, judging from the clinical phenomena, appeared to be due to difficulty in the assumption of automaticity below the level of the block.

REPORT OF CASE

C. B., a white man, aged 36, was admitted to the Medical Division of the University Hospital, Jan. 10, 1922, in a state of extreme cardiac failure. A history was obtained of three attacks of chorea between the ages of 13 and 15, and ever since that time breathlessness and palpitation on exertion. However, he had lived a normal life, taken part in sports except the most strenuous ones, and worked in an electrical shop, where he sometimes had to lift heavy weights. He had continued his work until eighteen days before admission, when he was forced to stop on account of breathlessness, which had begun to trouble him seriously about two months before. In spite of medical treatment, he had continued to grow worse, and for a few days before admission had been almost continuously gasping for breath.

On examination, he was observed to be very restless, extremely orthopneic, and cyanotic. There were present marked cardiac enlargement, definite signs of mitral stenosis and regurgitation, auricular fibrillation with a ventricular rate of approximately 160, and a large pulse deficit. There were numerous moist râles in the lungs, enlargement of the liver, and edema of the legs up to the knees.

The blood count showed a slight leukocytosis of 13,000, but was otherwise normal. The Wassermann reaction was negative. The urine contained a cloud of albumin and a few casts, and the specific gravity was 1.025.

As emergency measures shortly after admission, 180 c.c. of blood was removed by venesection; 0.25 mg. of strophanthin was injected intravenously, and 0.065 gm. of digitan and 0.011 gm. of morphin sulphate hypodermically. Within a few hours he felt comparatively comfortable, although he was still somewhat orthopneic. The medicinal treatment during the next two weeks consisted of digitan, 0.1 gm., three times a day, for ten days, and twice a day for four days. By this time (January 24) the evidences of passive congestion had cleared up, the ventricular rate ranged between 70 and 80, and the pulse deficit was abolished. The patient felt quite comfortable, and was able to walk about the ward without becoming breathless.

It was then decided to attempt the restoration of normal rhythm by quinidin. After two preliminary doses of 0.2 gm. of quinidin sulphate, he received 0.4 gm. twice a day for two days and then three times a day for two days. The treatment was unsuccessful and was discontinued for three days. February 3, quinidin was again given but in the larger dosage of 0.6 gm. three times a day. On the morning of February 5, it was observed that the ventricular rate had slowed to 60, but the action was still quite irregular. In the afternoon, there was a seizure which was observed by the intern in the ward, who thus described it:

"At 5:30 p. m., just before supper, the patient had a sudden attack of unconsciousness lasting about ten minutes. The eyes were fixed and the head thrown from side to side. He then gradually became conscious of his surroundings, at first talking at random, but in about one half to three quarters of an hour, he was himself again. During the attack, the pulse was weak and could not be counted, and the heart was beating very slowly and irregularly. Two hours after the attack, the heart action was regular and slow. Transitory numbness of arms and headache were complained of. There were no paralyses."

The next morning, the ventricular rhythm was still perfectly regular and the patient felt comfortable. It was thought that normal rhythm had been restored until an electrocardiogram was taken, which showed regular ventricular rhythm with a rate of 60, but the auricles were found to be fibrillating. The following day (February 7), the mechanism was the same but the ventricular rate had slowed to 48. February 8, the dominant ventricular rate was 34, but was interrupted by occasional ventricular extrasystoles. The hypodermic injection of 2 mg. of atropin sulphate exerted no appreciable effect on the ventricular action. The slow rate was not accompanied by any subjective symptoms; in fact, the patient

stated that he was feeling better every day. February 9, total arrhythmia returned, but the ventricular rate still remained under 35. It gradually increased, and by February 12 ranged between 60 and 70. On that date the patient left the hospital to return to the care of his family physician.

COMMENT

In this case, the interpretation of the electrocardiograms (shown in the accompanying tracing) offer no especial difficulty. The occurrence of regular ventricular action during auricular fibrillation has been regarded as evidencing complete dissociation between auricles and ventricles. The soundness of this view has recently been demonstrated by Lewis,² who treated a patient exhibiting such a cardiac mechanism with quinidin. The auricular action was restored to normal, whereupon dissociation between auricles and ventricles was apparent.

Our case presents two points of clinical interest. These are (1) the rôle of quinidin in the production of complete dissociation, and (2) the cause of the sudden attack of unconsciousness.

It has been shown by a number of experimenters that quinidin exerts a depressant action on auriculoventricular conduction. Lewis, Drury, Wedd and Iliescu³ have demonstrated that it also causes paresis of vagus action; hence its effect in depressing conduction is due to direct effect on the muscle itself. Schott,⁴ by giving very large doses to guinea-pigs, was able to bring about extraordinarily high grade incomplete block but not complete dissociation. His failure to produce the latter he attributed to depression of stimulus production by the drug below the level of the block, preventing the assumption of idioventricular rhythm. On the other hand, Boden and Neukirch,⁵ under highly artificial experimental conditions, were able to produce ventricular autonomy.

Many clinical workers have noted that immediately after the restoration of normal rhythm by quinidin, auriculoventricular conduction time is slightly prolonged, but within a day or two returns to normal. A clear-cut instance of this delay in conduction was also noted in a case with preexisting delay in conduction reported from this clinic.⁶ The patient had auricular fibrillation with a ventricular rate ranging between 60 and 80, while no drugs were being taken. Immediately after the restoration of normal rhythm by quinidin, the P-R interval was 0.32 second, but within a few days dropped to 0.23 second. Numerous tracings made afterward, over a period of many months, exhibited P-R intervals never exceeding 0.26 second.

Two cases have been reported by Hewlett and Sweeney,⁷ in which, under combined treatment with digitalis and quinidin, complete dissociation developed. In one of these, attacks of the nature of Stokes-Adams' syndrome are stated to have occurred. These observers are of the opinion that quinidin played a part in the production of the block. De Massary⁸ has reported a

2. Lewis, Thomas: Actions of Atropine and Quinidine in Fibrillation of the Auricles, *Am. J. M. Sc.* **164**:1 (July) 1922.

3. Lewis, Drury, Wedd and Iliescu: Observations on the Action of Certain Drugs on Fibrillation of the Auricles, *Heart* **9**:207 (April 30) 1922.

4. Schott, E.: Zur Frage der Chinidin Therapie., *Deutsch. Arch. f. klin. Med.* **134**:208 (Nov. 23) 1920.

5. Boden, E., and Neukirch, P.: Klinische und experimentelle Beobachtungen über die Herzwirkung des Chinidins, *Deutsch. Arch. f. klin. Med.* **136**:181 (June 7) 1921.

6. Wolferth, C. C.: Observations on the Treatment of Auricular Fibrillation by Quinidin Sulphate (Figure 4, Case 6), *Am. J. M. Sc.* **162**:812 (Dec.) 1921.

7. Hewlett, A. W., and Sweeney, J. P.: Quinidin Treatment of Auricular Fibrillation, *J. A. M. A.* **77**:1793 (Dec. 3) 1921.

8. De Massary: Discussion on paper of Lian, C., and Robin, V.: Traitement de l'rythmie complète par le sulfate de quinidin, *Bull. et mém. Soc. méd. d. hôp. de Paris* **46**:23 (Jan. 13) 1922.

case in which, under the influence of quinidin, the rhythm changed from a rapid, irregular action to a regular bradycardia. During the latter there were a number of "epileptiform crises," but when it disappeared and rapid arrhythmia recurred, there were no more seizures. In the discussion of this case, it was suggested that the regular bradycardia was the result of complete dissociation, and the so-called epileptiform seizures were, in reality, Stokes-Adams attacks.

In the oft-quoted case of Haass⁹ in which sudden cardiac arrest and syncope occurred, followed by the resumption of cardiac activity with presumably normal mechanism, the suggestion has been made by other writers that heart block may have occurred. The case was reported with insufficient data to permit of a definite conclusion. The clinical manifestations could be satisfactorily accounted for simply by delay in the resumption of function by the pacemaker, following the interruption of fibrillation.

In our case, it is necessary to consider, as possible factors in the production of block, (1) preexisting defect in conduction due to disease in the auriculoventricular bundle, and (2) the effect of the digitalis which had been taken prior to quinidin. The former is rendered unlikely by the fact that, on admission, the ventricular rate during auricular fibrillation was 160, which is pretty good evidence that auriculoventricular conduction must have been little, if at all, impaired. With regard to the effect of digitalis, it is to be noted that the complete dissociation did not occur until twelve days after digitalis had been discontinued. Moreover, during the height of digitalis action, no unusual degree of auriculoventricular block was exhibited, the ventricular rate varying between 60 and 80. On the other hand, the block occurred at a time when approximately the maximum concentration of quinidin in the body must have been reached, 5.4 gm. having been taken within a period of fifty-six hours. The conclusion appears justified that the dissociation was due principally to quinidin, and that while the effect of digitalis as a contributing factor cannot be excluded entirely, its rôle must have been a minor one. It would appear that auriculoventricular conduction in this case was peculiarly vulnerable to quinidin, being affected far out of proportion to what usually occurs.

Another unusual effect of quinidin on the heart muscle was manifested by the marked prolongation of the ventricular complexes of the electrocardiographic curves. At the height of digitalis effect when the ventricular rate was 74, the duration of the ventricular

complex in Lead II was 0.36 second; but after the development of complete dissociation with a ventricular rate of 60, the duration of the ventricular complex lengthened out to 0.56 second. This increase is far more than could be accounted for by the comparatively slight change in rate. We have frequently observed moderate prolongation under the influence of quinidin, but never such an extreme degree.

It is of interest that atropin in dosage as high as 2 mg. subcutaneously exhibited no obvious effect on the block. This may be explained on the basis of the demonstration by Lewis and his co-workers that quinidin causes a paresis of the vagus and depresses conduction by acting directly on the muscle of the conducting tissue, a state of affairs that would tend to nullify the effect of atropin.

In regard to the cause of the sudden attack of unconsciousness, there is no adequate explanation except the peculiar action of the heart at that time. The slow, irregular ventricular action might have been due either to high grade incomplete heart block, similar

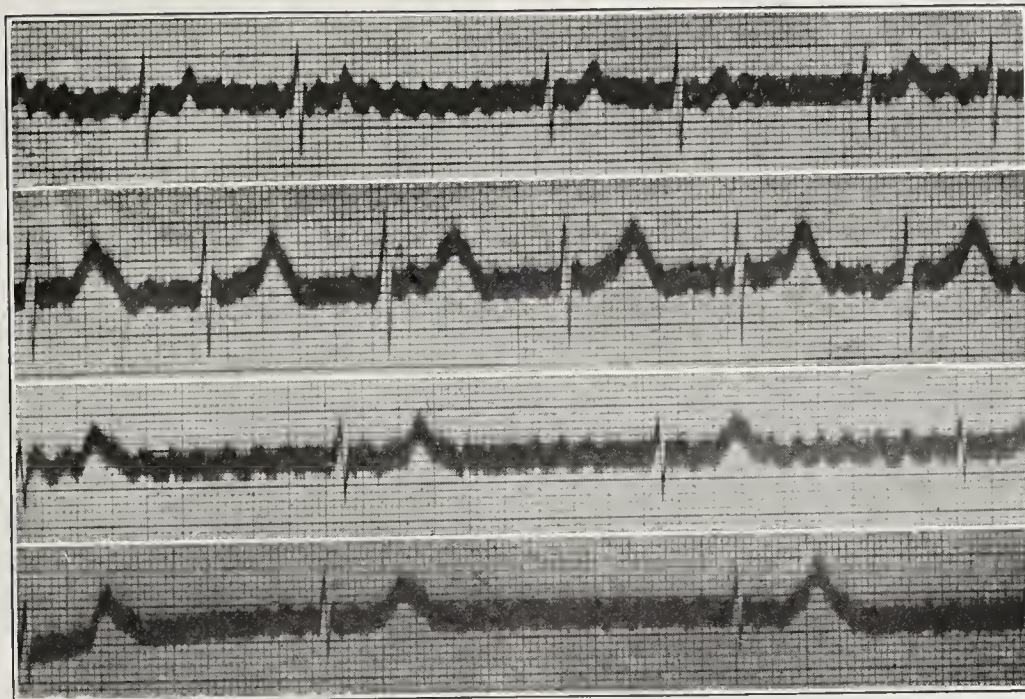
to that obtained by Schott in guinea-pigs, or to difficulty in the assumption of ventricular rhythm after the development of complete dissociation. The differentiation from the clinical point of view is academic, and in either event would depend on depression of stimulus production below the level of the block. In the case of dissociation caused by digitalis, it is well known that the dissociation may develop, and not rarely does so, without causing serious symptoms. The

scanty evidence available at present suggests that the assumption of ventricular rhythm under the influence of quinidin is more difficult than in the case of digitalis. If this proves to be correct, it would follow that quinidin heart block is more dangerous than digitalis block.

SUMMARY

In the case of auricular fibrillation reported, auriculoventricular dissociation developed without change in the auricular mechanism following the administration of quinidin. There was no evidence of preexisting defect in conduction. The use of digitalis had been discontinued twelve days before the development of dissociation, but may have been a minor factor in its causation, the major factor undoubtedly being quinidin. It is suggested that the patient's conduction system was peculiarly susceptible to quinidin. There was a sudden transient attack of unconsciousness about the time of the onset of dissociation, accompanied by very slow ventricular action and weak pulse. The evidence indicated that the attack was caused by difficulty in stimulus production below the level of the block.

1704 Pine Street.



All tracings are Lead II: top tracing, made Jan. 25, 1922, after treatment with digitalis, but before quinidin; second tracing, February 6, persistence of auricular fibrillation, but complete dissociation with regular ventricular rhythm, rate 60; third tracing, February 8, mechanism same as preceding, but ventricular rate 34; fourth tracing, February 9, first stage of recovery from dissociation.

9. Haass: Ueber die Chinidin Therapie der unregelmässigen Herz-tätigkeit, *Berl. klin. Wehnschr.* 58: 540 (May 23) 1921.

A CLINICAL AND ROENTGEN-RAY STUDY
OF TUBERCULOUS BRONCHO-
ADENOPATHY*

THOMPSON FRAZER, M.D.

AND

JOHN D. MACRAE, M.D.

ASHEVILLE, N. C.

With the realization that tuberculosis commonly has its inception during the earlier years of life, physicians, so long concerned chiefly with the diagnosis and treatment of tuberculosis in adults, are now focusing their attention to a greater degree on the manifestations of this disease in childhood, and particularly on that form known as tuberculous tracheobronchial adenopathy. During the last few years, studies looking toward an earlier diagnosis of childhood tuberculosis have resulted in the accumulation of such a mass of data that we have thought it wise to attempt an evaluation of the various signs, symptoms and tests which have a bearing on the diagnosis of this condition.

The data which relate to the diagnosis of childhood tuberculosis comprise: (1) a history of exposure to infection; (2) the Pirquet skin test; (3) symptoms; (4) physical signs, and (5) roentgen-ray findings.

EXPOSURE TO INFECTION

Although it may appear heretical to say so, we feel that the importance of a history of exposure has been overestimated; for a definite history of exposure does not give us as much information as does a positive Pirquet test, which indicates infection with the tubercle bacillus but not necessarily tuberculosis in a clinical sense. In the presence of symptoms, however, and with the absence of other infections which might account for such symptoms, the knowledge of exposure and of possible infection with the tubercle bacillus constitutes one link in the diagnostic chain; but it must

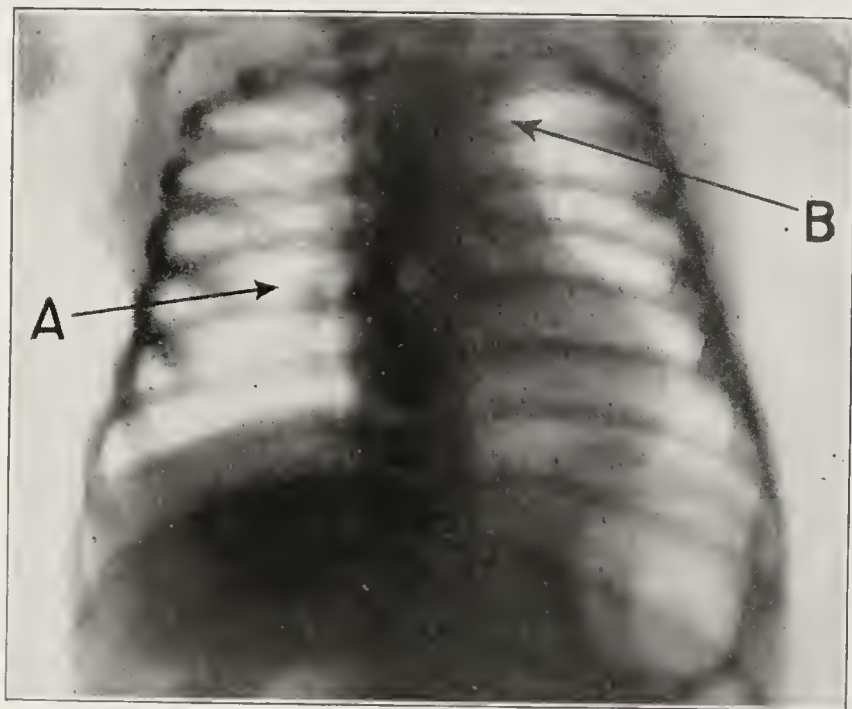


Fig. 1.—Lungs of child, nine days after birth: A, small hilum shadow; B, thymus.

be remembered that a negative history of exposure does not by any means exclude the possibility of tuberculous infection. It seems that a history of exposure might be of more value if recent; unfortunately, however, it

is but seldom that one can ascertain at what period of life exposure resulted in infection. In this respect, the report of Hess (1912) is unique. A group of eight orphan asylum children between 2 and 3 years of age, giving a negative Pirquet test when admitted to the institution, were attended for six weeks by a woman



Fig. 2.—Normal chest: A, hilum.

who was found to have tuberculosis. In the course of a few months' time, all of these children gave a positive reaction to the test; other sources of infection having been excluded, it was possible in this instance to fix both the source and, approximately, the date of infection.

PIRQUET REACTION

A positive reaction to the skin test indicates infection with the tubercle bacillus, but, as just stated, does not necessarily point to this infection as the cause of symptoms. With increasing age, the proportion of children giving a positive reaction likewise increases; according to Veeder and Johnston, whose figures are somewhat lower than those of most observers, 1.5 per cent. give a positive reaction during the first year of life, 5 per cent. during the second year, and 20 per cent. between the ages of 2 and 4, with a gradual rise to 40 per cent. in the years between 12 and 14. A positive reaction assumes greater importance as a disease indicator, the more recently the infection has been acquired, and therefore, in a general way, is of more significance, the younger the child. A negative reaction implies—with the well-known limitations of the test—absence of infection; the test is, therefore, of the greatest value in excluding tuberculosis, and should be employed in every case.

SYMPTOMS

The symptoms of bronchial node tuberculosis are less characteristic than those of adult pulmonary tuberculosis; cough is less common, hemoptysis is rare, while fever and rapid pulse are associated with so many of the ailments of childhood that too much stress should not be laid on them. Of far greater importance are a loss of weight (or a failure to gain weight over a period of several months), and a ready fatigability, especially when both of these symptoms are present. Strongly suggestive, but in no sense diagnostic of tuberculous adenopathy, they should always lead to a

* Read before the staff of U. S. P. H. S. Hospital 60, Oteen, N. C., Feb. 15, 1923.

thorough study of the case for confirmatory evidence of tuberculosis.

PHYSICAL SIGNS

Much has been written of the physical signs of tracheobronchial adenopathy, and much will have to be rewritten; for until we have established a norm for the signs in a child's chest—or, rather, until we have learned to recognize what constitutes the range of normal variability, it is very hazardous to label this or that sign abnormal and indicative of disease. This applies to the attempt to elicit parasternal or inter-scapular dullness, as well as to ascribe a pathologic import to slight differences in the character of the breathing. The value of the hilum dimple, of Eustace-Smith's, and of d'Espine's signs is, at best, questionable.

ROENTGEN-RAY FINDINGS

The lack of more definite physical signs has led us to look to the roentgen ray for tangible evidence of adenopathy; and, while the roentgen ray often yields

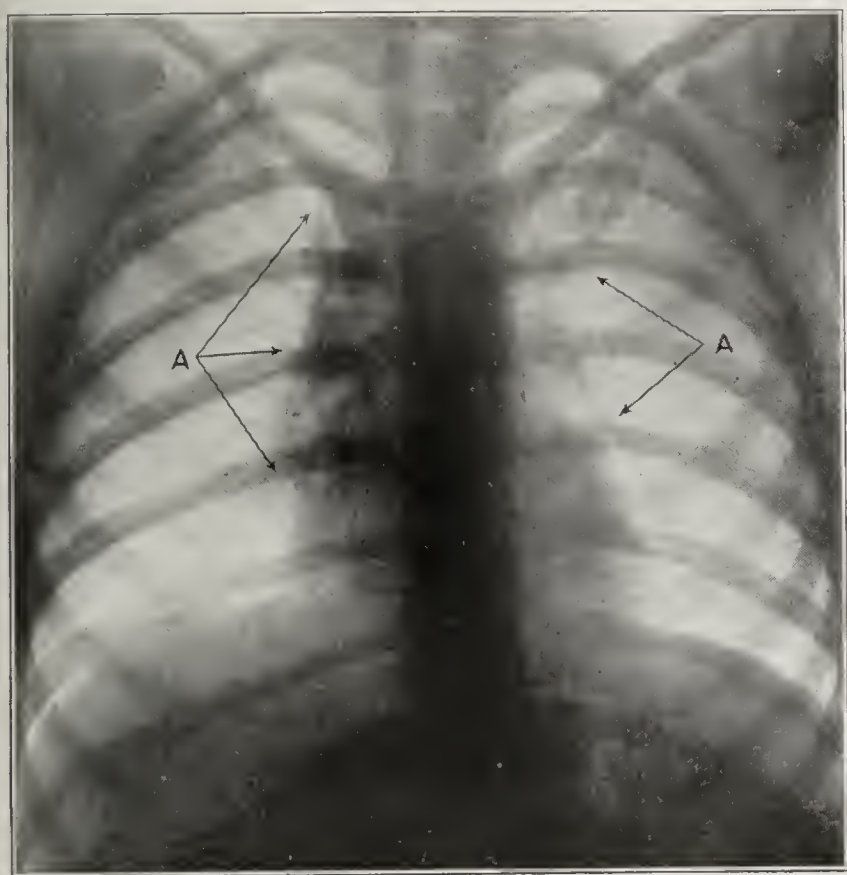


Fig. 3.—A, A, tuberculous adenopathy without calcification.

valuable information and should be employed whenever tuberculosis is suspected, we feel that a note of warning should be sounded against relying on this to the exclusion of other methods of examination. In the roentgen-ray consideration of children's lungs, we need, first of all, to establish a norm; but as what is normal at birth is very different from what is seen in the lungs of a healthy child at puberty, it is plain that we are dealing with variables. As a result of the study of children's lungs which we have undertaken during the past year, through the courtesy of Dr. O. L. Miller of the North Carolina Children's Hospital, Gastonia, N. C., we have formed the following impressions:

1. The chest should be symmetrical, the trachea in the midline, bifurcating in front of the body of the fourth dorsal vertebra or a little lower. The domes of the diaphragm are smooth; the right diaphragm is in front of the eighth interspace, and the left slightly lower. The mediastinal shadow shows the heart to be more nearly transverse than in the adult, and in the very young (Fig. 1) the thymus shadow is sometimes

recognized about the aortic arch when no symptoms of enlarged thymus exist. The hilum, or root, shadow is located in the inner zone, and extends upward to about the fifth rib posteriorly, and downward till it crosses four ribs and intervening rib spaces (Fig. 2); its width and density vary widely in health. The lung fields

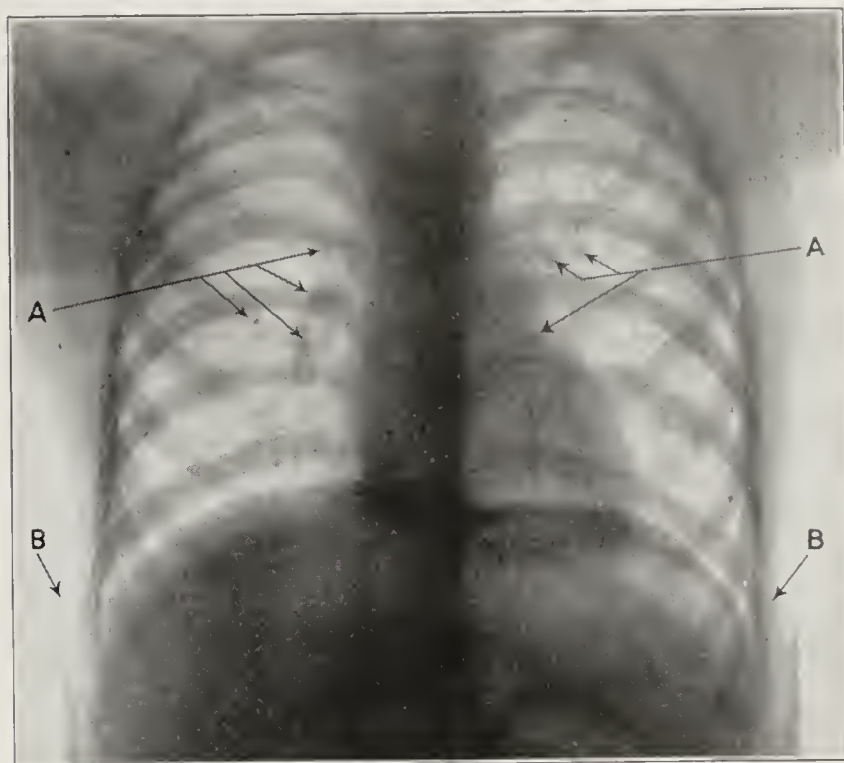


Fig. 4.—Tuberculous adenopathy: A, A, small, calcified nodes; B, B, plaster-of-Paris cast for tuberculous hip.

show no markings in the outer zone, and, in the very young, none in the middle zone.

2. At birth, lung markings, i. e., trunk shadows, are absent, and the hilum shadow is small.

3. As the child gets older, dust inhalations and infections make for more distinct shadows. The hilum shadow is produced by lymph nodes, thick-walled

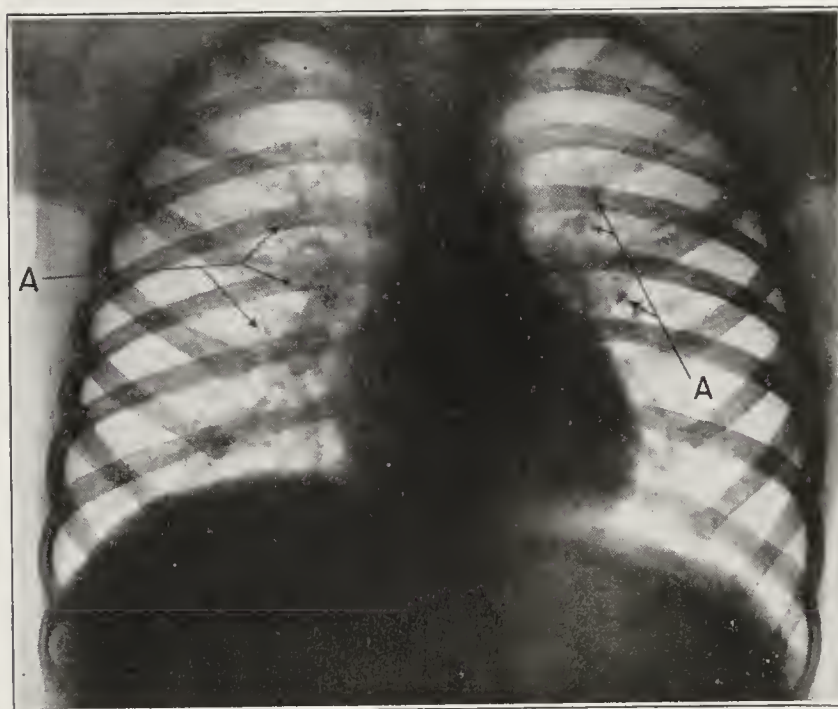


Fig. 5.—Nontuberculous adenopathy: A, A, calcified nodes.

bronchial tubes, blood-filled vessels and connective tissue binding them together, and it is to be noted that these shadows increase in density and area, whether a history of infections is obtainable or not.

4. Lymphadenopathy becomes apparent after the common diseases of childhood, especially those which involve the respiratory tract, such as whooping-cough

and measles, but it must be remembered that the lymphoid tissues in children are peculiarly prone to react to other infections, notably chronic appendicitis, and diseased teeth and tonsils. At this point let us urge against the tendency to read tuberculosis into films showing large hilum shadows unless these other causes can be excluded.

5. There is a group presenting, as its salient feature, marked hypertrophy of the tracheobronchial lymph nodes (Fig. 3), and another group in which the same hypertrophy is associated with calcification of the nodes (Fig. 4). All of the first group gave a positive Pirquet reaction and had known tuberculous foci elsewhere in the body. Those with calcified nodes occurred in cases in which tuberculous bone lesions were present, with the exception of one case of osteomyelitis which gave a negative Pirquet reaction (Fig. 5). If the roentgenogram had been relied on exclusively, some faulty deductions might have been made, for all of these children were in good health so far as their chests were concerned.

We have been struck with the fact that all cases in which bone lesions existed showed marked calcification of hilar lymph nodes, and we submit the question: Does calcification of these nodes necessarily indicate the presence of tuberculous processes?

THE VAGINAL PESSARY

ITS INDICATIONS AND LIMITATIONS *

EMIL NOVAK, M.D.

BALTIMORE

Gynecology has become so predominantly a surgical specialty that one rather hesitates to undertake even a very much qualified defense of such a nonsurgical implement as the pessary. The present-day indifference to this once popular instrument emphasizes the ephemeral nature of most of the fads which, epidemic-like, sweep over the profession at intervals. The abandonment of the pessary treatment of certain uterine displacements is a natural result of the remarkable development of gynecologic operative procedures. It is probably true, however, that the pendulum has swung too far, and that the present day gynecologic surgeon, in view of the pessary's conceded shortcomings, has shut his eyes to the fact that this instrument fills a real need in a certain selected group of cases. The young gynecologist of today frequently has no conception of what the pessary is meant to do, and he is apt to be even irritated at the suggestion that such an implement should be accorded at least a modest position in his armamentarium.

The history of the vaginal pessary is a most interesting one, establishing points of contact with many of the earlier giants of gynecologic history, for there were few of these who did not write on this subject. Many of them devised new types and modifications of pessaries. I shall not attempt a review of these various developments in a paper which I wish to be primarily "practical."

INDICATIONS

The two most important indications for the use of the vaginal pessary are prolapse and retrodisplacement of the uterus, in certain cases only and under certain

conditions only. There are few gynecologists now who use pessaries for the treatment of anteversion of the uterus, although some still employ the Gehlung pessary in the treatment of cystocele and anterior vaginal prolapse. This plan of treatment has never attained a great vogue, although it would seem to be the best form of palliative treatment in cases in which operation is out of the question.

Of the retrodisplacements amenable to pessary treatment, it may be said that retroversions offer a far more hopeful field than the backward flexions. With the latter the fundus is apt to be large and heavy, so that it falls backward over the posterior arm of the pessary. It is obvious that there can be very little leverage exerted on such a top-heavy uterus by the pessary, although it is conceivable that the latter, by taking in vaginal slack, may cause a certain amount of elevation.

Prolapse and retrodisplacement of the uterus often go hand in hand. It is comparatively uncommon to see extreme degrees of either one of these malpositions without some degree of the other. With regard to prolapse, it may be said that, in general, the results of modern operative methods are so excellent and their dangers so slight that, in the absence of some definite contraindication, surgery is the treatment of choice, especially since the symptoms of the patient are usually sufficiently distressing to call for some form of relief. With regard to both retroversion and retroflexion, the profession is becoming more and more conservative. The mere demonstration of such a malposition should not be considered, per se, an indication for operation, as was the practice at one time with many gynecologists. Frequently, such displacements are associated with no symptoms whatsoever. On the other hand, there may be troublesome symptoms definitely traceable to the malposition of the uterus. This has been well brought out in the recent excellent study of Lynch.¹

Puerperal Retrodisplacements.—These furnish one of the most frequent and most important indications for the employment of the pessary. The routine performance of postpartum examination of the pelvic organs is instructive in many ways, but in none more than in the light it throws on the incidence of postpartum displacements. This has been abundantly shown in a statistical way by Lynch and other investigators. Lynch, for example, found posterior displacements at some time during the first year following confinement in 41.1 per cent. of the 1,230 cases studied from this standpoint. Every woman should be examined within about four weeks after confinement. If, as often happens, retrodisplacement is found, the uterus should be restored to normal position and a pessary inserted.

In a very large proportion of the cases, the wearing of the pessary for a short time, usually only a few weeks, is all that is necessary, and there is no tendency to a recurrence of the retrodisplacement. It is true, of course, that the mere bimanual replacement of the uterus, even without the pessary, may suffice in certain cases, but not in all. The importance of this indication is difficult to overestimate, and the failure to make careful postpartum examinations is therefore a very culpable omission. Many a woman can thus be spared later troublesome symptoms and surgical correction of the displacement. I have time and again been impressed with the success and the permanence of thus

* From the Gynecological Department of Johns Hopkins Medical School.

1. Lynch, F. W.: Retroversion of the Uterus Following Delivery, *Am. J. Obst. & Gynec.* 4: 362-371 (Oct.) 1922.

early correcting these displacements, and have felt that this one indication alone should be sufficient incentive for every gynecologist and obstetrician to familiarize himself with the general subject of pessary treatment.

Retrodisplacement or Prolapse with Pregnancy.—This, to my mind, is also a most important indication for the use of the pessary. It is a well-known fact that neither retrodisplacement nor prolapse, even of the most exaggerated type, makes pregnancy impossible. I have seen a number of cases in which pregnancy occurred, even though the cervix protruded beyond the outlet. In one of these patients, the wife of a physician, arrangements had been made for the operative relief of the prolapse, when the occurrence of amenorrhea led me to defer the operation. A ring pessary was fitted and was worn for the first few months of pregnancy, after which the uterus lifted itself well into the abdomen. Toward the end of pregnancy,

at about the eighth month, the weight of the uterus again forced the cervix down, so that, when the patient was standing, it hung between the limbs. This resulted in enormous edema and congestion of the prolapsed cervix and vaginal walls, and the friction against the thighs caused erosion and bleeding from the cervix. It would have been useless to attempt pessary treatment at this stage, as the weight of the uterus and its contents would have made retention of the pessary impossible. The patient was instructed to spend as much time lying down as possible. When the cervix was much prolapsed and edematous, the foot of the bed was ele-

vated, and soft, warm boric acid compresses were applied locally. In this way the patient was tided over to term. Within the last few weeks I have seen an almost identical case, with Dr. Jennie N. Browne of this city. Theoretically, there is much greater risk of sepsis in such cases than in the normal woman, but all the patients that I have observed with this association of conditions passed through their labors quite uneventfully. In these cases, labor consists of practically only the first and third stages, the second stage being virtually skipped.

Far more frequent is the association of pregnancy and retrodisplacement. The latter commonly, though not invariably, antedates the pregnancy. If the retrodisplacement is of the type of retroversion, and if it is not extreme, simple manual reposition may be possible and may be all that is necessary. For that matter, in

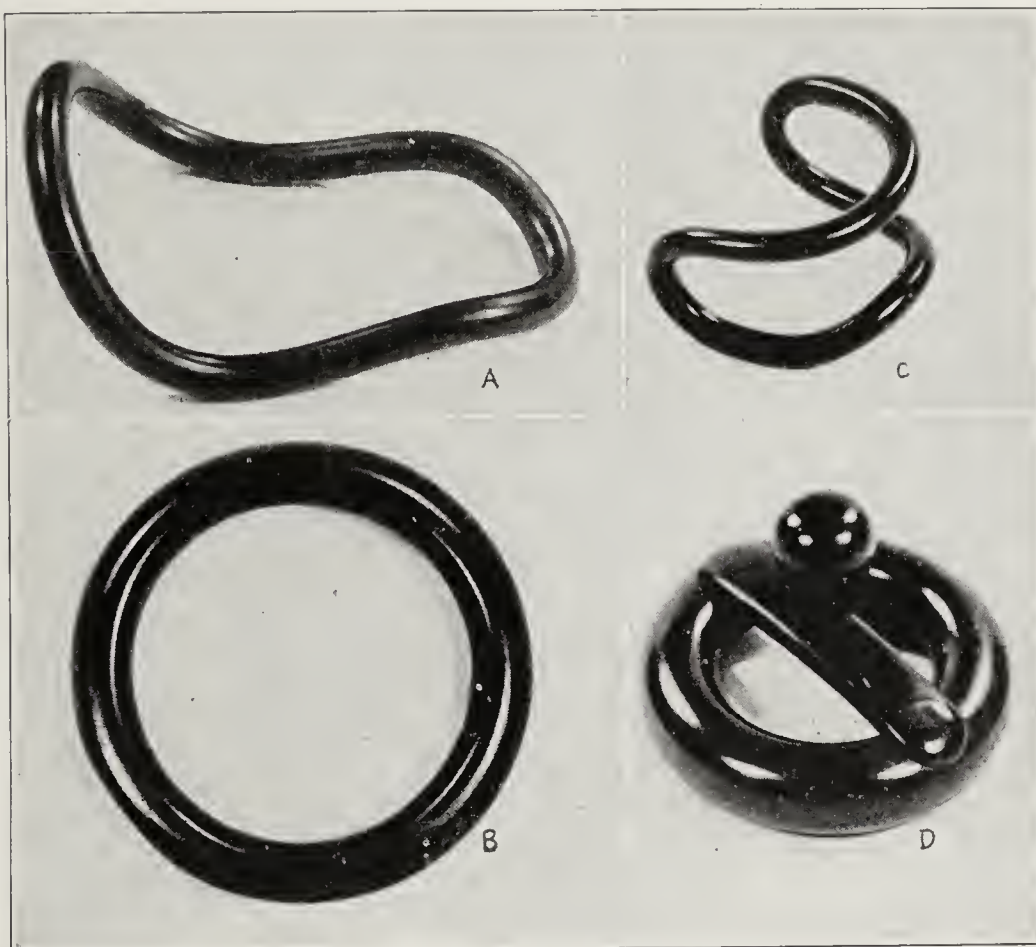
many of these cases, the gradual increase in the size of the pregnant uterus will lift it above the pelvic brim and thus permit of a normal continuance of the pregnancy. If, on the other hand, the displacement is more pronounced, and especially if there is a flexion, there is much danger of incarceration of the fundus in the hollow of the sacrum, with probable abortion. In cases of this type the bimanual replacement of the uterus, whenever possible, followed by the insertion of a properly fitted Hodge-Smith pessary, is often of the greatest service. Almost always the pessary can be removed at the end of three or three and a half months, by which time the uterus has lifted itself above the promontory.

Prolapse in Old Women.—It is, of course, difficult to fix any arbitrary upper age limit to the performance of operations for the correction of uterine prolapse. There are women of 70 or even more who are vigorous,

well preserved and active, and in whom operation is justifiable for the relief of the distressing symptoms of complete prolapse of the uterus, especially when combined with large cystocele. The indication is particularly strong when there is extensive ulceration of the everted and thickened mucosa covering the cervix or vagina, so that the danger of malignancy becomes a real one.

On the other hand, there are patients, considerably younger, in whom the operation would seem to present more danger than is justified by the symptoms complained of by the patient. In the case of an old woman who has had complete prolapse

for many years, it is often good judgment to let her finish out her life without operation. It is in such cases as this that a pessary serves a valuable palliative purpose. The type best suited for complete prolapse is unquestionably some form of ring pessary, made of hard rubber. A rather large ring is usually necessary, although the size must, of course, be adapted to the individual case. The pessary distends the redundant vaginal vault, taking in all slack, and forming a hammock in which the cervix hangs, at a much higher level than without the pessary. Soft rubber pessaries are often used for this indication in the belief that they cause less irritation than the hard rubber variety. Their employment, however, should be strongly condemned. They become foul very quickly, causing a troublesome and offensive discharge, and entailing greater risk of ulceration than the hard rubber



Types of pessary: A, the Albert Smith pessary, especially valuable in the treatment of retrodisplacements; the Hodge instrument is a modification of this, having a concave posterior arm and a somewhat broader anterior arm; B, the ordinary ring pessary of hard rubber, employed especially in cases of prolapse; C, the Gehring pessary for the treatment of cystocele; D, the Menge pessary; into the crossbar is screwed a conical stem or rudder, which fits into the vagina and keeps the pessary from turning on edge.

variety. A small pessary is of no use in a case of marked prolapse, and such a pessary is often lost by the patient.

It goes without saying that the results are much better when the perineal laceration or relaxation is of moderate extent than in those cases in which the entire perineal floor is gone. In extreme cases of the latter type, with large cystocele and rectocele, it is almost impossible for the patient to retain any form of vaginal pessary. In fitting the implement, a size should be selected which is sufficiently large to cause some difficulty and perhaps slight pain in passing it through the outlet. Once the latter is passed, there is abundant room in the greatly distended vaginal canal. The time-honored caution, that the pessary be loose enough to permit the index finger to sweep around between the pessary and the vaginal wall, is a wise one. This is especially true in the case of old women, in whom the mucosa is thin and pasty, so that the slightest undue pressure causes ulceration. For this reason it is doubly important to advise frequent examinations, so that the gynecologist can assure himself that there is no ulceration and that the pessary is not burying itself in the tissues. Cleansing douches are also of importance in these cases.

Prolapse or Retrodisplacement in Patients with Serious Systemic Disease.—From time to time, one encounters cases of prolapse or retrodisplacement which are causing troublesome symptoms, but in which operation is contraindicated by some serious general condition, such as chronic valvular disease of the heart, pulmonary tuberculosis, or advanced renal disease. The contraindication here, of course, applies primarily to the anesthetic, and only secondarily to the operation itself. It may be urged that the difficulty of the anesthetic may be obviated by resorting to local or spinal anesthesia. On the other hand, I feel that when the condition of the heart, lungs or kidneys is sufficiently grave to contraindicate general anesthesia, the operation is rarely justified, and it is better to treat the patient palliatively with a pessary.

As a Temporary Measure When Operation is Deferred for Social or Economic Reasons.—There are many cases in which, on purely physical grounds, operation is indicated clearly enough, but in which the patient simply cannot or will not submit to radical measures. For example, a woman with even a complete prolapse will often defer its correction if she is burdened with the care of a newly born infant. This is especially true when the symptoms are not very troublesome. In other cases, financial considerations may cause postponement of the operation, in still others domestic factors, and so on. When operation is thus postponed, it is usually wise, as a temporary measure, to advise the wearing of a properly fitted pessary until the necessary operative procedure can be carried out. In this way a woman can often be given a fair amount of comfort, and the extent of the later operation perhaps somewhat minimized.

As a Test to Determine the Pathologic Importance of Retrodisplacements.—The mere fact that a retrodisplacement is found in a patient who complains of pelvic symptoms of one sort or another does not justify one in linking these together as cause and effect, especially if the displacement is of the simple, uncomplicated variety so often found in women without symptoms. The pessary is often an aid in determining the rôle of the uterine displacement in the production of the symptoms. If the latter are relieved by restoring the uterus

to its normal position and retaining it by means of the pessary, the assumption would seem justified that the malposition of the uterus is the cause of the symptoms, and the advisability of its operative correction would therefore arise for consideration.

CONTRAINDICATIONS

There are three chief contraindications to the employment of pessaries in the treatment of retrodisplacements: (1) the inability to replace the uterus to at least approximately its normal position before inserting the pessary; (2) the existence of a marked degree of perineal relaxation, and (3) the existence of chronic pelvic inflammatory disease.

1. In connection with the first of these, it should be remembered that the function of the pessary is not to force a displaced uterus into position, but to retain in position a uterus which has been replaced by some other means. This is a fact which many gynecologists fail to recognize, and I have repeatedly seen pessaries inserted without the slightest preliminary effort at replacing the uterus. The results under such circumstances are reasonably sure to be unsatisfactory, as will be emphasized below.

2. The importance of the factor of perineal relaxation is obvious when one studies the mode of action of the pessary. The instrument takes its foothold, so to speak, from the perineal muscles, on which its elevating action, in a large measure, depends. If this muscular floor is lacking, it is evident that there will be very little lifting power to the pessary. Furthermore, in cases of marked relaxation, especially with cystocele or rectocele, there is always the difficulty, perhaps impossibility, of retaining the pessary at all.

3. Retrodisplacement associated with fixation of the uterus is an absolute contraindication to the use of pessaries. A uterus so fixed cannot, of course, be replaced by bimanual examination, and it is not only useless, but distinctly harmful, to insert a pessary under such conditions. Furthermore, the discomfort and pain produced would almost surely prevent the wearing of the pessary. The treatment of retrodisplacements complicated by pelvic inflammatory disease should be along surgical lines.

REPLACEMENT OF THE UTERUS

One of the most important of all rules in connection with the use of pessaries is that, before the insertion of a pessary, the uterus should first be restored to an approximately normal position. In other words, as I have already emphasized, the purpose of the pessary is not to force a displaced uterus into its proper position, but merely to keep the organ in place, once it has been restored by some other means. Many physicians, and not a few gynecologists, do not realize the importance of this fact, ignorance of which, in my experience, is the reason for many of the unsatisfactory results reported from the use of pessaries. Almost always the uterus, when not adherent, can be restored by simple bimanual manipulation. The fundus is gently pushed upward by pressure with the finger in the posterior fornix, and then the finger is passed to the front of the cervix, pushing the latter backward. The fundus can thus ordinarily be swung upward and toward the front. The replacement is completed by engaging the external hand behind the fundus through the abdominal wall, while the backward pressure of the internal hand on the cervix is maintained.

Occasionally it is necessary to place the patient in the knee-chest posture. This procedure is of great value, for it allows the uterus to fall forward by its own weight into its normal position. If necessary, this forward movement may be facilitated by gentle pressure on the fundus from behind. The deepening of the vagina which a good knee-chest posture entails may make it impossible to use the finger for this purpose, in which case good use may be made of a sponge on long vaginal dressing forceps or a sponge holder. Some authors recommend traction on the cervix by tenaculum forceps, combined with upward and forward pressure on the fundus through either the vagina or the rectum. My experience has been that this maneuver is rarely necessary with nonadherent uteri, and that it might be risky in those which are adherent. In the older days the uterine reposer—a long, jointed finger-like instrument which was introduced into the uterine cavity for the purpose of elevating the organ—was quite generally employed. The dangers of this implement are obvious, and it has been very properly abandoned. The same statement applies to the employment of the uterine sound to force the uterus into anterior position.

TYPES OF PESSARY FOR ORDINARY USE

The hard rubber pessary is infinitely preferable to the soft rubber variety, which still has a rather wide vogue. The latter soon becomes foul, and often causes profuse leukorrhea. Although the number of pessaries which have been devised is legion, I believe that two or three varieties will fulfil practically all the really logical indications for pessary treatment. The two types which I find sufficient for practically all needs are the ring pessary and the Hodge-Smith pessaries. The familiar Hodge pessary, a modification of the Albert Smith type, is especially useful in the treatment of retrodisplacements, within the limitations which have been discussed above. The ring pessary is, generally speaking, the type to be preferred in the management of prolapsus of the uterus. Occasionally, when the outlet is large and when the simple ring pessary tends to stand on edge, as it were, the Menge modification is of distinct value, for it possesses a stem attachment which holds the pessary more or less at right angles to the long angle of the vagina.

THE FITTING AND INSERTION OF THE PESSARY

The cardinal point in connection with the fitting and insertion of the pessary is that the pessary be adapted to the needs of the individual case. Merely to insert a "store" pessary in a case of retrodisplacement is just as logical as to inflict on one a hat selected at random, and without regard to the size and shape of one's head. The pessary should fit snugly, but not tightly. The time-honored rule that it be possible to pass the index finger easily between the pessary and the vaginal wall is a safe one to follow. The length should be such that the lower pole is just concealed within the outlet. This can be easily measured by means of the index finger, the tip of which is passed up into the vaginal vault. The width is also easy to estimate, exact measurement ordinarily not being necessary. The length of the shorter posterior, as compared to the longer anterior arm of the pessary is dependent on the depth of the posterior fornix and the amount of elevation of the uterus which is desired. The distal tip of the instrument should be given a slight bend away from the urethra in order to avoid any discomfort which might

result from pressure on the latter. The shaping of the pessary is readily accomplished by first boiling it, thus making it soft and easily flexible. It is then quickly molded into the shape desired, after which it is made to "set" by immersion for a moment or two in cold water. This method I find much more satisfactory than that employed by some gynecologists of softening the pessary by passing it through a Bunsen flame, after first thoroughly greasing it.

The insertion of the pessary is simple enough. The perineum is drawn back by one or two fingers of the left hand, acting as a speculum or retractor. The pessary, held at its narrow anterior end, is then introduced obliquely into the vagina, and pushed up as far as possible toward the vault. When the finger of the left hand is passed up into the vagina, the posterior rim will almost always be found to lie just in front of the cervix, instead of just behind it, as it should. The finger is therefore used to press it behind the cervix and to drive it home into the posterior vaginal fornix, where it belongs. In other words, the cervix lies within the lumen of the pessary. The finger is then swept about the latter to make sure that it is not making undue pressure. Care should be taken also that the lower end of the pessary does not protrude beyond the introitus. It is often a good plan to confirm the fit of the pessary by having the patient stand while the finger is kept within the vagina.

THE MECHANISM OF THE PESSARY

It is safe to say that comparatively few practitioners are familiar with the mode of action of the vaginal pessary. Many have only a vague idea that in some mysterious way it pushes a displaced uterus upward. As a matter of fact, it is just this which the pessary is not meant to do, as has already been emphasized. Its function is to keep the fundus in forward position, once it has been mechanically replaced. How is this effect accomplished? Not by direct pressure on the fundus, but rather by pulling back the cervix toward the hollow of the sacrum. This action, in turn, is produced by the posterior short arm of the pessary, which fits snugly into the posterior fornix, and tends to deepen it, much as it would be deepened by one's pushing the index finger into it as deeply as possible. By this pushing of the fornix wall upward and backward, the cervix is indirectly drawn in the same direction, and the fundus is thrown correspondingly toward the front. Combined with this action there is, of course, a certain amount of distention of the vagina, so that "slack" is taken in and a certain amount of elevation is thus secured.

In the case of the ring pessary, the latter factor is much more important than the leverage action described above. It is for this reason that, in the treatment of marked prolapse, the effort is made to take in as much slack as possible by using comparatively large ring pessaries, which thus produce a hammock-like support of the uterus. Such a pessary derives much of its support from the pubic rami, which also aid very materially in retaining it within the vagina.

PRECAUTIONS AND DANGERS DURING WEARING OF PESSARY

During the wearing of the pessary, the woman is instructed to use douches once or twice daily, depending on the amount of discharge. For this purpose, boric acid or borax is perhaps as satisfactory as any

other substance, although weak mercuric chlorid solution, permanganate, compound solution of cresol or other drugs may also be used. An examination should be made within a few days of the insertion of the pessary, to make sure that the uterus is being satisfactorily retained. After this the pessary may be allowed to remain for periods of about six weeks. At these intervals the pessary is removed, cleansed and reinserted. I am also in the habit of advising these pessary patients to assume the knee-chest position once or twice daily, if only for a few minutes at a time. This posture allows the uterus to swing forward into good anterior position, thus permitting the pessary to secure a fresh grip, as it were. This simple measure accomplishes practically as much as would a visit to the gynecologist, restoring the uterus as satisfactorily in most cases as would bimanual manipulation.

In the event of there being evidence of vaginal irritation or ulceration, which is usually manifested by a blood-tinged discharge, the pessary should be kept out for periods of from a few days to perhaps two weeks or so. Vaginal ulceration is almost never seen with a properly fitting Hodge-Smith pessary in cases of retro-displacement, but it is not rare in old women in whom a rather large ring pessary has been employed for the retention of a marked prolapse of the uterus. With proper supervision of this sort I have never seen any disagreeable after-results from the use of pessaries.

It is well known that numerous accidents have been reported following the improper use of pessaries. I have myself had occasion several times to cut out from the vaginal wall pessaries, introduced by others, which have literally eaten out a groove for themselves, and have thus become almost completely buried. Pessaries have thus been allowed to remain for incredible periods of time without being removed, in one instance, as long as forty years.² Indeed, Piwniczka³ has described an instrument which he calls a pessariotome, resembling a bone forceps, and which is designed to remove incarcerated pessaries. Instances are reported also in which the pessary has ulcerated through into the abdomen, and has later been recovered by laparotomy.

All these cases, however, are merely illustrations of gross neglect on the part of either patient or physician, and are not to be construed as evidence against the value and safety of pessaries when properly fitted and properly supervised. The cases in which pessaries should be employed are usually those in which operation would be attended with considerable danger. This gives great force to the statement of Bantock,⁴ who, writing in 1905, said, "I am not aware that there is on record a single case in which a woman has lost her life through the use, or even the abuse, of a vaginal pessary."

26 East Preston Street.

2. "Veritas": Pessary Retained for Forty Years, Boston M. & S. J. **140**: 175, 1899.

3. Piwniczka, H.: Ein Instrument zur Entfernung inkarzierter Pessarien, Centralbl. f. Gynäk. **27**: 1302-1304, 1903.

4. Bantock, G. G.: In Defense of the Pessary, J. Obst. & Gynec. Brit. Emp. **7**: 17-29, 1905.

Location of Detention Hospitals.—A board of health cannot establish and maintain a detention hospital for the treatment of communicable diseases in a thickly settled residential district. This is the decision in a case decided by the supreme court of Michigan. Suit was brought to restrain the maintenance of a detention hospital in a residential district by the board of health of the city of Lansing.—*Pub. Health Rep.* **34**: 1791 (Aug. 8) 1919.

THE MECHANISM OF NATURAL AND ACQUIRED STREPTOCOCCUS IMMUNITY

PRELIMINARY NOTE *

FREDERICK P. GAY, M.D.

AND

LEWIS F. MORRISON, M.A.

WASHINGTON, D. C.

In two recent communications,¹ one of us (F. P. G.) gave evidence for the belief that infections with a given strain of hemolytic streptococcus in different areas of the body may be more efficiently prevented by previous immunization of that particular area rather than other parts of the body. Evidence in favor of this local form of immunity continues to accumulate and will later be presented in detail. Incidental to this line of investigation, a very convincing demonstration of the constant association of "tissue macrophages" or clasmatoocytes (Ranvier) with protection of a given area against the streptococcus whether natural or acquired has been obtained.

Metchnikoff originally described his "macrophages," or large mononuclear phagocytes of the blood and tissues, in connection with experimental streptococcus erysipelas in the rabbit, but the ultimate conclusion to be drawn from his lifelong and marvelously documented cellular theory of immunity is that the preponderating rôle in disposing of acute bacterial infectious agents is taken by the polymorphonuclear leukocytes. The mononuclear macrophages have seemed occupied largely in the disposal of animal cells, dead polymorphonuclears and protozoa, and, in addition, of the bacteria of certain chronic infections, such as tuberculosis. As we have recently pointed out, however, observations since the original work of Metchnikoff continue to associate macrophages with streptococcus infections and local tissue resistance to the streptococcus. (MacCallum, Cecil, Hopkins and Parker, Levaditi.)

The exact nature of the cells involved in a purposeful response to streptococcus invasion has been confused by their designation as "endothelial," particularly in infections which have involved the serous cavities. Several authors, particularly Durham, Wallgren, Noetzel, Buxton and Torrey, and Kanai, have indicated that recovery from experimental streptococcus peritonitis is due, at least in part, to "endothelial" phagocytosis. Histologists are now throwing great light on the "cell stems" of embryonic and adult tissue by means of vital stains (Sabin). The clasmatoocytes of Ranvier in particular have been differentiated from fibroblasts (Evans and Scott), and from the serosal cells lining the peritoneal cavity (Cunningham) by the acid azo dyes and by neutral red. The clasmatoocytes possess a vacuolar "segregation apparatus" which enables them to retain these dyes in a characteristic manner. In addition, they have been shown to be the most resistant of body cells (Lewis and McCoy), and are endowed with more marked phagocytic properties than is endothelium.

As Cunningham and we have shown, the only cells present in normal peritoneal and pleural fluids are "clasmatoocytes," derived in all probability from subjacent

* This work was begun in the University of California and continued at the Hygienic Laboratory, U. S. Public Health Service, Washington, D. C., through the courtesy of the Surgeon General.

1. Gay, F. P., and Rhodes, Bernice: Experimental Erysipelas, Studies in Streptococcus Infection and Immunity, *J. Infect. Dis.* **31**: 101-115 (Aug.) 1922. Gay, F. P.: On Local and General Immunity, *J. Immunol.* **8**, No. 1 (Jan.) 1923.

connective tissue and omentum, and not serosal or endothelial cells, as usually stated. Following the injection of a fatal dose of the streptococcus in the pleura of a normal rabbit, the polymorphonuclear leukocytes rise from a negligible percentage to more than 90 in twenty-four hours, the clasmatoocytes fall from an average of 85 per cent. to 15 per cent., the bacteria steadily increase, invasion of the pericardium and other pleura follows and the animal dies in from three to seven days. In an actively immunized animal, the clasmatoocyte count remains high, and at twenty-four hours (the critical phase) averages 74 per cent. At this time, the bacteria have decreased markedly in number or, in the majority of instances, the cavity has become sterile. In a similar manner, other conditions of successful resistance to streptococcus pleurisy are constantly associated with a persistently high clasmatoocyte count; the use of a sublethal dose of bacteria, and preparation of the cavity by plain broth or by streptococcus immune serum. Other conditions of lack of protection, preparation by normal rabbit serum and the use of filtrates of pleural exudates from fatally infected animals (aggressins?), are all followed by a drop in the clasmatoocytes and a rise in the polymorphonuclear cells.

We have no definite information from our work as yet on the origin of these clasmatoocytes which appear so rapidly and apparently effectively in the serous cavities, as to whether they are derived from adult endothelium (Mallory et al.) or from the blood. A cursory survey of our histologic material indicates that information on this point will be available. This much is known: these clasmatoocytes are ubiquitous, they are rapidly mobilized and they are phagocytic and most resistant. Our observations indicate that a definite category of cells present outside the blood stream, the "clasmatoocytes" or "tissue macrophages," is associated with natural and acquired resistance to an acute infectious agent, the streptococcus.

1701 Massachusetts Avenue.

AGE INCIDENCE OF GASTRIC CANCER

WITH SPECIAL REFERENCE TO CANCER IN
THE YOUNG *

MEYER GOLOB, M.D.

NEW YORK

It has been generally accepted as a fact by practitioners that cancer is confined within the limits of a minimum and maximum age, reaching the apex of frequency during the sixth decade of life. So common has this belief become that the phrase "cancer age" has gained a ready currency not only among physicians but among laymen as well. Like most other generalities, this concept of cancer is only partly true, and, so far as its practical import in diagnosis is concerned, must be regarded as a dangerous half-truth. Cabot¹ writes: "We are accustomed to say that when a patient past forty years begins to have dyspepsia out of a clear sky—that is, without any obvious cause or any previous habit—cancer is the most probable diagnosis; but when saying this we must remember that the cancer age is also the arteriosclerotic age, and, therefore, the time for nephritis and uremia. Furthermore, the cancer age is also the gallstone age and the age for angina pectoris." He cites as an illustration the case of a

woman of 29 years, who, after one operation for a fibroid of the right ovary and another for a cyst of the left ovary, became rapidly emaciated, with a weight loss of 56 pounds (25 kg.) in six months and accompanying evidence of a mass in the epigastrium, gastric stasis, visible peristalsis and roentgen-ray indication of pyloric obstruction. The patient was operated on again, and a tumor was found at the pylorus. "The case is worth remembering," the writer concludes, "as a proof that gastric cancer may occur at twenty-nine." To which may be added that no age is immune, and that a diagnosis relying to any degree on the tenet of "cancer age" may lead to a fatal issue. The case here reported will serve as an illustration:

F. K., a man, aged 31, an awning maker, came under my observation in the gastro-intestinal department of the Vanderbilt Clinic, Nov. 25, 1922. He was married, and had one child living and well. The family history and previous personal history were negative. He stated that he had previously enjoyed good health and had never suffered from stomach disorders. Though he estimated his illness to be of four weeks' duration, close interrogation elicited a much longer period, dating back to early in the spring of 1922. His chief complaints were nausea, postprandial discomfort and vomiting on several occasions, the vomitus consisting of the food ingested. During this period he did not suffer any pain.

His appetite was fair for food he liked, but otherwise deficient, with a pronounced dislike for meat. His habitus was of the sthenic type; his height, 5 feet, 9 inches (175 cm.), and weight, 162 pounds (74 kg.). He gave his maximum weight as 185 pounds (84 kg.). The pulmonary and cardiovascular systems were normal. The abdomen presented tenderness in the midepigastrium, but no rigidity or mass; the liver edge was not palpable, and the spleen was not enlarged. The pupils responded to light and accommodation. The knee-jerks were equal and active. The fasting contents consisted of 30 c.c. of congo-negative fluid, with a fair amount of macroscopic blood, the appearance of which favored the conclusion that it was not traumatic. Microscopic examination revealed pus cells, many to the field. Ewald's single test meal method showed 30 c.c., poorly chymified, mucus much increased, separated into two layers, the upper layer containing the food, the lower, clear fluid. Free hydrochloric acid was 0; combined hydrochloric acid, 0; total acid, 4; pepsin and rennet, 0. The Wassermann test reported from the skin department was negative.

A roentgenographic examination of the gastro-intestinal tract revealed a filling defect of a part of the pars media and entire pars pylorica. The pylorus was gaping, as was evidenced by immediate gastric emptying. The six hour plate showed a small fragment of barium at the proximal portion of the filling defect. The colonic tract showed cecal stasis, a spastic colon and a tendency to dyschezia.

Dr. Howard Lilienthal, who operated on the patient at the Mount Sinai Hospital, reported that examination under anesthesia failed to disclose any mass or abdominal resistance. A transverse incision was made about an inch above the umbilicus, dividing the right rectus and passing more than half way through the left. Immediately a large, succulent, nodular mass was found occupying the greater part of the posterior wall of the stomach. The pyloric region, as well as the omentum, was filled with nodules. The falciform ligament contained a number of tumor masses. A specimen was removed from the gastroduodenal omentum, and the wound was closed, as the case was considered absolutely inoperable and no free part of the stomach was available for even an anterior gastrostomy; besides which, the patient did not vomit, but food passed quickly through the stomach.

Dr. Lilienthal remarked that cancer of the stomach will be diagnosed early in proportion to the obstruction it causes to the passage of food. A carcinoma of the cardia as well as of the pylorus, therefore, will be much more likely to be discovered early than one of the body of the stomach. With

* From the Department of Gastro-Enterology, Vanderbilt Clinic, Columbia University College of Physicians and Surgeons.
1. Cabot: Differential Diagnosis 2: 265.

a small cancer of the stomach, the surgeon has a good opportunity to achieve a radical cure. In the case of this patient, the cardia and the pylorus were free, but the lesser curvature and almost the whole of the posterior wall of the stomach formed one stiff mass of carcinoma, thick and non-pliable. The omentum from which the specimen was removed was also infiltrated, and there were numerous secondary deposits on the liver and the gastrohepatic omentum. It is a question whether an operation would have saved this patient at any time since a diagnosis was possible.

Dr. Mandelbaum reported that microscopic examination of the nodule removed from the omentum showed a metastatic colloid carcinoma. Excluding sarcoma, this is, say Smithies and Ochsner, the least frequent type of gastric cancer.

COMMENT

The salient points which will be discussed, are: (1) the age of the patient—one year after the third decade of life; that is, not within the limits of the so-called "cancer age," which begins, approximately, at 40; (2) a history of good health till the spring of 1922; (3) the absence of pain; (4) the mass, nonpalpable, though involving the greater portion of the stomach; (5) a picture of true achylia gastrica, and (6) a positive hemolysis.

There is a very sound basis in the voluminous evidence at our disposal for the conclusion that gastric cancer is found mostly during the ages from about 40 to 60, and exhibits a most marked tendency to avoid the extremes of age. Aaron² cites Lebert's figures on this matter: under 30 years, 1 per cent.; from 30 to 40 years, 17.6 per cent.; from 40 to 60 years, 60.7 per cent.; from 60 to 70 years, 16.3 per cent., and above 70 years, 4.4 per cent. Osler,³ in an analysis of 150 cases, finds six between 20 and 30 years, of whom the youngest is 22; from 30 to 40 years, seventeen; from 40 to 50 years, thirty-eight; from 50 to 60 years, forty-nine; from 60 to 70 years, thirty-six, and from 70 to 80 years, four. It is of interest to note that the maximum liability in both sets of figures lies between 40 and 60 years of age. Lynch⁴ states that "cancer may occur at any age, but usually after 50. In some 800 cases I have seen, 1 per cent. occurred at 21 years, 2.5 per cent. under 30, and 7.5 per cent. between 30 and 35 years of age," thus indicating a plotted curve similar to those of the foregoing authorities. Smithies and Ochsner⁵ found that out of 921 cases of gastric cancer the percentage of those under 30 was 2.17, with a minimum age of 18 years, and an average age of 27.2 years. Ewing⁶ asserts that "while the disease is distinctly one of advanced age, the rather frequent occurrence between 30 and 40 and between 20 and 30 years is noteworthy." Osler and McCrae⁷ make an interesting division of the first three decades into two periods, one to the twentieth year and the other from the twenty-first to the thirtieth. They hold that "cases occurring during the first period are clinical and pathological curiosities. Those of the latter period are of more interest, since, though a small fraction of the total cases, they comprise a fairly constant percentage and show fairly uniform symptoms." It will be seen that all of the authorities that have been cited are in substantial accord as to the relative infrequency of gastric cancer at both extremes of age. A mortality table furnished by Dr. Guilfooy of the New York Board of Health, summarizing deaths from all cancers for the

five years from 1917 to 1921, inclusive, presents a very similar picture of age incidence. Out of 25,836 reported deaths, only 446, or 1.7 per cent., were under 25; 4,070, or 15 per cent., were between 25 and 44; 13,981, or 54 per cent., between 45 and 64, and 7,339, or 27 per cent., over 65. Furthermore, it seems evident that the conclusion we must draw from all these statistical tables is that if the term "cancer age" is to have any use in diagnosis, then it should be only of tentative import, and may be applied to include, but never to exclude.

The second point to invite our attention is the characteristic invasion of this malady: insidious, beginning with loss of appetite, reluctance toward meat, nausea, progressive weakness, and lastly and most emphatically, the fact that this apparently vague and nondescript type of symptoms most generally occurs in an individual who has not previously suffered from gastric disorders. However, anomalies in the course of cancer must always be thought of. Cabot,⁸ relating the case of a patient who had an epigastric mass for five years, yet lost only 10 or 12 pounds, and these in the last two years, concludes: "We have no right to say that cancer of the stomach cannot exist for five years and produce such a tumor as is here described. This patient was operated on and a mass found of hard, fused glands, which were situated in the omentum and greater curvature infiltrated with neoplastic tissue."

The patient in my case did not complain of pain. We know that the pain symptom is what most often induces the patient to seek medical aid, yet this weighty signal is frequently lacking. Barker,⁹ citing parenthetically the figure of 13 per cent. given by Osler and McCrae, asserts that pain may be absent throughout the history of a cancer, except in cancer of the cardia, in ulcer carcinomatosum, or after perigastric adhesions have developed. Anorexia with weight loss, and freedom from pain may be the only symptoms staring the physician in the face and demanding investigation.

A tumor could not be palpated in this case, despite the relaxed posture of the patient and the complete absence of tension. This was perhaps due, in a measure, to the fact that the patient was of the sthenic type, wherein the stomach is generally high in position and therefore not readily accessible to palpation. Such a situation invites an error in diagnosis, as it may permit a tumor to grow without betraying its presence until discovered by a more comprehensive clinical investigation—and then it is usually too late. It is thus evident that failure to discern by touch should not lessen the need for a more exhaustive study.

As the presence of the cancer was obscured by freedom from pain and by the failure to palpate the tumor, the absence of both a gastric residue and hydrochloric acid suggested quite plausibly a tentative diagnosis of a nonmalignant achylia gastrica. This diagnosis will not hold when due attention is given to the subdued symptomatology; and, of course, it was quickly upset by a roentgenographic study. Achylia is associated with a wide range of maladies, and with signs and symptoms conducive to diagnostic embarrassment. The case suggests that when achylia is revealed in the course of an examination, the roentgenologist, as his part of the investigation, should roentgenograph the oral cavity for periapical abscesses; the lungs for tuberculosis; the cardiovascular system for a specific aortitis, and last and of grave importance, the stomach for malignancy

2. Aaron: Disorders of the Digestive Organs, p. 479.

3. Osler: Practice of Medicine, Ed. 4, p. 487.

4. Lynch: Personal communication to the author.

5. Smithies and Ochsner: Cancer of the Stomach, 1916, p. 374.

6. Ewing: Neoplastic Diseases, 1919, p. 605.

7. Osler and McCrae: Cancer of the Stomach, 1900, p. 16.

8. Cabot: Differential Diagnosis 2:101.

9. Barker: Monographic Medicine 3:526.

or syphilis or both, concomitantly. Ewing observes that "carcinoma of the lesser curvature usually arises in cases with established achylia." It is perhaps pertinent to add that a knowledge of the clinical findings and status of the stomach chemistry will assist the roentgenologist to interpret his conclusions more accurately and in consonance with them.

In this case, more as a matter of professional routine, before proceeding with the operation, it was desired to determine whether syphilis was to any degree responsible for the patient's condition. It is cited by Stokes and Brown¹⁰ that, in a study of 200 syphilitic patients, 87 per cent. were found to have rated "stomach trouble" as their chief complaint. They have, moreover, found that "the routine roentgen-ray examination of syphilitics who complain of stomach trouble does not yield a large percentage of positive results." A serologic study was made in this case which returned negative findings. This conclusion substantiates the physical examination, which showed active knee-jerks and the absence of an Argyll Robertson pupil. A conventional approach to a history of syphilis was met with a denial by the patient. Moreover, the degree of structural pathology revealed by the roentgen ray as involving both the operable and borderline zones of the stomach was of sufficient weight to establish beyond doubt a diagnosis of malignancy. In this connection I do not wish to imply that a negative hemolysis would have deferred the operation, for I unqualifiedly agree with the writers I have last cited when they say, "We do not believe that there is any excuse for subjecting a patient who may have an operable malignant lesion to the delays of treatment for syphilis before operation."

From the operative and histopathologic findings, the fate of this case is virtually sealed, though there is a faint glimmer of hope in the roentgen-ray therapy now being applied to this patient. It is now recognized that, beginning at the pylorus, where a cancer is the most fecund, and extending toward the cardia, operability is inversely proportionate to the upward invasion of the growth. Death from colloid carcinoma, according to Parham,¹¹ is "often delayed, but the eventual mortality is greater than in other types of carcinoma. However," the writer concludes, "many patients with colloid carcinoma respond remarkably well to treatment by roentgen ray and radium."

This case is one instance among unfortunately too many others wherein the cancer stealthily progressed to almost certain fatality without an effort being made for its arrest until too late. In cancer, time is the ravaging agent, not age. The time lost from the patient to the physician and from the physician to the hospital is an evil we must combat.

CONCLUSIONS

1. Occupation, family traits, habits, mode of living, onset of complaint, in short, that fine network of circumstance with which cancer is usually associated, has a greater significance than age.

2. When the patient is of an age not within what might be termed the frequency period—the so-called "cancer age"—I believe physicians have manifested a very human failing by their reluctance to ascribe the patient's condition to so horrible a disease as cancer, and naturally cast about for a milder malady.

3. Symptoms warranting a diagnosis of chronic gastritis, particularly in patients who claimed the enjoyment of good health prior to the onset, favor a suspicion of cancer.

4. When a diagnosis of carcinoma ventriculi is established in a case in which there is no palpable mass, it is not safe to assume from the absence of such a mass that the disease is in an early stage, for a large growth that has well metastasized may exist without producing a palpable tumor.

5. It is the prediagnostic phase of cancer that we must endeavor to detect—a phase often disregarded because of the absence of impressive signs or symptoms, as when neither the cardiac nor the pyloric orifice is involved, when there is no hesitation in food entrance and no obstruction to food exit. A suggestive symptomatology, no matter how faint the indication, calls for a searching inquiry.

6. Finally, let us remember that the easier it is to diagnose a cancer, the harder it is to operate on it.

544 West One Hundred and Fiftieth Street.

TREATMENT OF SEASONAL HAY-FEVER, AND SOME POSSIBLE CAUSES OF FAILURE *

HARRY S. BERNTON, M.D.

Associate Professor of Hygiene, Georgetown University School of Medicine; Special Expert, United States Public Health Service

WASHINGTON, D. C.

Noon and Freeman, in 1911, published from Wright's laboratory in London the first reports of the successful treatment of hay-fever by active immunization.¹ In this country, Koessler,² in 1910, and Clowes³ in 1913, first attempted the preventive treatment of the American or autumnal form of hay-fever. Thirteen years have scarcely elapsed since the first hope for relief has been given to the vast army of hay-fever patients. In fact, so recent is the innovation that not all the limitations or imperfections have been brought to light. Accordingly, some members of the profession have fallen victims to skepticism, whereas the sufferers from hay-fever have fallen prey to the numerous "cures" which are heralded in the lay press and journals.

It is my purpose to record the results of an inquiry into the present status of the preventive treatment of seasonal hay-fever, and to disclose the possible causes of failure of such treatment.

It is obvious that an accurate diagnosis is the first prerequisite to successful treatment. In determining the pollen to which the patient is sensitized, the cutaneous test, first performed by Blackley,⁴ is employed. A series of superficial scratches is made on the anterior aspect of the forearm, and to each abrasion a small amount of pollen is applied. A drop of tenth normal sodium hydroxid solution is added to assist in the solution of the pollen protein. Within half an hour, a characteristic wheal appears at the site of the abrasion on which the offending pollen has been placed. A

* Read before the Medical Society of the District of Columbia, March 14, 1923.

* From the Clinics of Applied Immunology, Woman's Welfare Association and the Central Dispensary and Emergency Hospital.

1. Noon: Prophylactic Vaccination Against Hay Fever, *Lancet* **1**: 1572, 1911.

2. Koessler: The Specific Treatment of Hay Fever (Pollen Disease), in Forchheimer's *Therapeutics of Internal Diseases*, **5**: 671, 1914.

3. Clowes: A Preliminary Communication on the Treatment of Autumnal Hay Fever by Vaccination with an Aqueous Extract of the Pollen of the Ragweed, *Proc. Soc. Exper. Biol. & Med.* **10**: 70, 1913.

4. Blackley: *Hay Fever: Its Causes, Treatment and Effective Prevention*, Ed. 2, London, 1880.

10. Stokes, J. H., and Brown, P. W.: Two Hundred Syphilitic Patients Whose Chief Complaint was "Stomach Trouble," *Am. J. M. Sc.* **164**: 867 (Dec.) 1922.

11. Parham, D.: Colloid Carcinoma, *Ann. Surg.* **77**: 90 (Jan.) 1923.

zone of redness surrounds the wheal, and there may be more or less itching of the adjacent skin. A positive skin reaction indicates that the patient is sensitized to that particular pollen which produces the wheal. The pollens to which the patient is not sensitized will cause no such cutaneous reaction.

GROUP REACTION

The later studies of Koessler, Goodale, Scheppegegrell, Cooke and Vander Veer, and Walker have laid emphasis on the occurrence of "group reaction" in cutaneous testing. These observers have found that patients subject to June colds react to the pollens of *Gramineae*, and that patients suffering from the autumnal form react to the pollens of the large family of *Compositae*. For example, Cooke and Vander Veer⁵ tested twenty cases of early hay-fever with the pollen protein of six of the most common grasses. With few exceptions, all the pollens yielded positive skin tests. Walker⁶ tested his cases of autumnal hay-fever with the pollen of the ragweed, and also with the pollens of four other representatives of *Compositae*—goldenrod, daisy, golden glow and sunflower. He obtained positive results in from 21 to 50 per cent. of his cases.

The significance of group reaction in routine testing should be borne in mind. It indicates that the pollens of closely allied families of plants have in common a characteristic structural arrangement of the protein molecule. It is the latter which gives rise to the positive skin reaction. The formation of an urticarial wheal, indicative of a positive reaction, is due to an effusion of serum within the superficial layers of epithelial cells. It is the tissue response provoked by the presence of an irritant. The skin, in common with the blood and other tissues, it is believed, contains a specific proteolytic ferment which liberates from the protein molecule of the pollen a poisonous end-product. This product acts as the irritant in sensitive persons.

Our findings proved confirmatory of previous studies. Some of our patients, sensitized to the pollen of the short ragweed, were tested with the pollens of four other representatives of the *Compositae* group, with these results: Seven gave positive skin tests to the pollen of the giant ragweed and to the pollen of cosmos. Sixteen positive and two negative reactions were obtained with the pollen of tithonia. Forty-eight positive and ten negative reactions were obtained with the pollen of the wormwood. Thus, of a total of ninety tests, seventy-eight, or 86 per cent., proved positive. The positive cutaneous tests obtained with the pollen of tithonia—an insect-pollinated plant of South America to which our ragweed patients may never be exposed—furnish a striking example of group reaction.

In addition, tests were made in our fifty-seven autumnal cases of hay-fever with various wind-borne pollens which had been collected during the course of a hay-fever survey of the district. Four hundred and forty-two tests were performed with pollens other than those of the *Compositae* family. Of this total, 127, or 28.7 per cent., of the tests were positive. The pollens which gave the positive reactions represented twenty-one genera of plants, belonging to ten families. These included the grasses, trees and weeds. I have regarded these reactions with pollens which do not apparently give rise to seasonal disturbances as evidence of secondary or accessory sensitizations. Their significance

has been discussed in another paper.⁷ It seems, therefore, that multiple sensitization is the rule and not the exception. Moreover, the multiplicity of these skin reactions by no means invalidates the conception of specificity.

Scheppegegrell,⁸ for purposes of simplicity, divided the hay-fever pollens into four groups:

1. *Ambrosiaceae*, comprising the ragweed, *Gaertneria*, *Ivas* and *Xanthium*.
2. *Gramineae*.
3. *Artemisia*, comprising the hay-fever plants of the Pacific and Rocky Mountain states.
4. *Chenopodiaceae*, including the amaranths and *Rumex*.

He expressed the belief that a pollen extract made from any member of a group would be applicable to other members of the same group.

Watson and Kibler⁹ are not in accord with Scheppegegrell's views. They write:

It has been stated by two or three investigators, particularly by Scheppegegrell and by Goodale, that a patient sensitized to any grass may be desensitized by an extract made from any other member of the grass family and particularly timothy; also that a patient sensitized to any member of the *Compositae* may be desensitized by any other member of the same family. Scheppegegrell has gone even further and grouped all *Rumex* (*Polygonaceae*), chenopods and amaranths together, asserting that they are so closely related that any member of the three groups may be used to desensitize against any other member of the same three groups. It is our opinion that further study and observation will prove that these statements are incorrect. Our skin tests and study have already convinced us of this, and we believe that the continued promulgation of these ideas, which many men accept as true, simply tends to confuse the subject and retard results.

In view of this conflict of opinion, this statement by Walker is by no means surprising: "There would seem to be as many different pollens causing hay-fever and as many different ways of treating hay-fever as there have been investigators."

DETERMINATION OF CAUSE

There are, nevertheless, safe and sane principles which help to determine the pollen responsible for the seasonal symptoms. The principle that symptoms of hay-fever are coincident with the blooming of wind-pollinated plants is fundamental.¹⁰ This excludes from consideration the insect-pollinated plants, such as the goldenrod, golden glow, sunflower, daisy, rose and dandelion, and all the common fruit trees. These plants are peculiarly adapted for pollination through the agency of insects. Their blooms are conspicuous and brightly colored, and they are provided with honey glands. Their pollen grains, large in size, are surrounded with a sticky capsule. Very seldom, indeed, are they floating in the air in sufficient numbers to provoke an attack of hay-fever. A sensitive person may, however, suffer from transitory symptoms on sniffing a bouquet.

The fallacy that roses and goldenrod are causes of hay-fever still has a stronghold on the imagination of the laity and of part of the profession. It has been pointed out that the pollen of the goldenrod may give a positive skin reaction in some persons who are victims of

7. Bernton, H. S.: The Significance of Multiple Cutaneous Reactions Observed in Hay Fever Subjects, to be published.

8. Scheppegegrell, William: The Classification of Hay-Fever Pollens from a Biological Standpoint, Boston M. & S. J. 177:42 (July 12) 1917.

9. Watson, S. H., and Kibler, C. S.: Etiology of Hay-Fever in Arizona and the Southwest, J. A. M. A. 78:719-722 (March 11) 1922.

10. Hall, H. M.: Hay-Fever Plants in California, Pub. Health Rep. 37:803-822 (April 7) 1922.

5. Cooke, R. A., and Vander Veer, A., Jr.: Human Sensitization, J. Immunol. 1:201 (June) 1916.

6. Walker, I. C.: Frequent Causes and the Treatment of Seasonal Hay-Fever, Arch. Int. Med. 28:71-118 (July) 1921.

autumnal hay-fever. This is an expression of group reaction, the group in this instance being *Compositae*. The use, nevertheless, of an extract of goldenrod, singly or combined with that of the ragweed, is as unnecessary, as it is unwarranted. It has no greater justification than the employment of an extract of *Tithonia* would have in the prevention of fall hay-fever.

Equal in importance to the appreciation of wind-pollinated plants as the cause of hay-fever is the date of the onset of symptoms and their duration. There is a remarkable regularity with which symptoms make their appearance. One patient limits her hay-fever season from Memorial Day to Independence Day. The vast majority of patients look forward with misgiving

TABLE 1.—Pollens That Reacted Positively

Name of Tree	Family Number	Date of Pollination
Black walnut.....	36	May 3
Hickory.....	36	May 3
Ironwood.....	37	April 15
Hazelnut.....	37	February 22
Alder.....	37	February 22
Black birch.....	37	April 15
Beechnut.....	38	May 2
Chestnut.....	38	June 15
Scarlet oak.....	38	April 15

to August 15 or August 20, which marks the advent of distress until the first frost. Blackley has well characterized the hay-fever season as the "annual torment." Field studies indicate that the onset of symptoms is coincident with the pollination of the plant to which the patient is sensitive.

In the eastern United States, the ragweeds, both the short and the giant, are chiefly responsible for the autumnal hay-fever which is by far the most prevalent type. In the New England states, the giant ragweed is rarely encountered. Accordingly, the diagnosis is much simplified. In a botanical survey of Rhode Island, I have not encountered a single specimen of the giant ragweed. In the Western states, the wormwoods play the important rôle.

The summer type of hay-fever, incorrectly called "rose fever," runs its course from May to the middle of July, and is coincident with the pollination of the grasses. In this connection, it may not be amiss to quote from Scheppegrell: ¹¹

There are several thousand varieties of grasses, but our experience has shown that when the subject is sensitive to the pollen of one variety, he reacts to all the varieties tested, although to a different degree. This is an important factor in pollen therapy, as, otherwise, the large number of grasses that are usually found, even in the same locality, would make the question of developing an active immunity to hay-fever a hopeless proposition.

Cooke and Vander Veer ⁵ write, moreover:

On the whole, we can say that an individual reacting to one [grass] reacts to all, which bespeaks a biological identity of the proteins derived from the pollens of the *Gramineae*. A further proof of this identity that can be mentioned is the fact that immunizing injections with the pollen of one grass gives clinical relief of symptoms in those cases that have reacted to all and have from time to time been purposely exposed to that form of grass to which they were not specifically immunized.

The pollen extract of timothy is extensively employed in preventive treatment, and forms, as it were, a blanket prescription for the summer type of hay-fever. I join Watson and Kibler in dissent from the views

quoted above. The application of the general principle enunciated does not always hold for a given case. To illustrate, one patient in our series reacted to the pollen of rye and failed to react to the pollens of timothy, June grass, wild oats, orchard grass, meadow grass and red top. Moreover, of twenty-three patients reacting to one or more pollens of the grasses, only one reacted positively to corn pollen, the remaining twenty-two reacting negatively. Corn is biologically classed as a grass. Nevertheless, the phenomenon of group reaction was not observed.

Local field studies enable the immunologist to determine not only the flowering dates of various grasses, but also their degree of prevalence. These findings must be correlated with the patient's symptoms. The diagnosis of the offending plant may well be based on such studies; and it may be confirmed by cutaneous testing with the varying dilutions of protein extract, derived from the pollen of the grasses under suspicion.

A similar procedure may be followed in spring hay-fever, which is coincident with the pollination of the trees. The season of this early type of hay-fever begins in March and ends in June. The following case history will serve to illustrate the points emphasized as essential to correct diagnosis:

A student, aged 17, had been a hay-fever victim for seven years. The duration of symptoms extended from the middle of April to the end of May. He was tested on two occasions with a total number of twenty-two pollens, eleven of which yielded positive skin reactions. These included pollens of nine trees and two grasses. The list presented in Table 1 embodies the family number and dates of pollination of the trees, the pollens of which reacted positively.

The pollens which gave negative cutaneous reactions were obtained from the trees listed in Table 2.

The family numbers are those adopted by Hitchcock and Standley,¹² who have arranged and numbered the plants consecutively according to generic relationship. It is noteworthy that members of Families 36, 37 and 38, all closely allied, have given positive skin reactions. This is a striking example of group reaction. The families of trees numbered 34, 40, 82, 97 and 124 have given negative reactions.

Symptoms of hay-fever in the patient under consideration were well marked about April 15. The ironwood, black

TABLE 2.—Pollens That Gave Negative Cutaneous Reactions

Name of Tree	Family Number	Date of Pollination
Crack willow.....	34	April 15
White poplar.....	34	March 20
Mock orange.....	40	May 18
Paper mulberry.....	40	May 1
White mulberry.....	40	May 1
Honey locust.....	82	May 8
Box elder.....	97	April 8
White ash.....	124	April 9

birch and scarlet oak, the positive reactors, were advanced in pollination on that day, as was the crack willow in the group of negative reactors. The survey of the District of Columbia revealed the fact that the number of ironwoods and black birches was small and that these specimens were found chiefly in the parks. The oaks, however, are numerous, and are used extensively for lining the city streets. The use of an extract of oak pollen would have been warranted in treatment. Unfortunately, when the patient first came under notice, no pollen extracts were available for testing with varying dilutions to determine the pollen to which he was most sensitive. I am happy to report that these extracts have since then been prepared.

The pollens of timothy and June grass, also, gave positive reactions in the patient. These are examples of secondary

11. Scheppegrell, William: Spring Hay-Fever, Its Cause, Prevention and Treatment, New York M. J. 109:793 (May 10) 1919.

12. Hitchcock and Standley: Contributions from the United States National Herbarium 21, Flora of the District of Columbia and Vicinity, Washington, D. C., 1919.

or accessory sensitizations, in contradistinction to the primary sensitizing factors—the pollens of the trees. Massive doses of the former may, in my opinion, give rise to transitory symptoms. They may account for the “slight colds” of short duration to which hay-fever patients are subject out of their customary season. It is of interest in this connection to note that the dates of pollination of June grass and timothy were May 16 and June 11, respectively. By this time the hay-fever symptoms were on the decline.

It is to be emphasized that observations in the field are basic in importance, and that they must be correlated with the clinical picture. They make for accurate diagnoses, for intelligent and appropriate treatment, and for better therapeutic results.

TREATMENT

The chief aim in treatment is to bring the patient to a point of tolerating the toxic material which gains entry through the respiratory tract. Desensitization against the specific excitant assures the patient freedom from symptoms. The credit belongs to Noon and Freeman for devising the method of active immunization, which is the method in vogue at present. A series of subcutaneous injections with solutions of protein, prepared from the offending pollen, is administered at regular intervals with gradually increasing concentrations. The treatment, theoretically, should be pre-seasonal and terminate with the approach of the hay-fever season. It is evident that during the season the patient is inhaling the toxic material, thus rendering subcutaneous additions unnecessary. The statement, however, is made that seasonal treatment tends to diminish the severity of symptoms.

Various measures have been employed for the preparation of protein extract from pollen. Noon and Freeman¹ obtained a solution of protein by alternating and freezing and thawing the pollen in distilled water. After filtration, the aqueous extract was boiled for ten minutes in sealed tubes. Clowes³ first precipitated the pollen with acetone, followed by extraction with distilled water. Lowdermilk¹³ substituted physiologic sodium chlorid solution for distilled water. Clock,¹⁴ however, recommended as an extractive a fluid consisting of 33 $\frac{1}{3}$ per cent. saturated sodium chlorid and 66 $\frac{2}{3}$ per cent. glycerol. Koessler² used an 8.5 per cent. solution of sodium chlorid, which he sometimes precipitated with ten times its volume of 95 per cent. alcohol. Goodale¹⁵ soaked the grains in water for a few hours and added alcohol sufficient to make a dilution of from 13 to 15 per cent. by volume. Walker⁶ preferred a 12 per cent. alcoholic saline solution. Rackemann¹⁶ added to physiologic sodium chlorid solution a slight amount of alkali in the form of 1 per cent. normal sodium hydroxid. Coca¹⁷ similarly employed an alkaline extracting medium consisting of sodium chlorid and sodium bicarbonate in such concentration that 10 c.c. of the final fluid equaled about 3 c.c. of tenth normal alkali.

The sterility of the extracts was effected by filtration through Berkefeld candles. The belief in general was held that the potency of the solutions was determined by the amount of nitrogen present. Phenol (carbolic acid), trikresol, alcohol and glycerol were the reagents

employed, on which dependence was placed for preserving the potency of the extracts and for maintaining their sterility.

The results achieved in the prevention of hay-fever are encouraging. Noon and Freeman¹⁸ reported, in 1914, complete relief in 30 per cent., and no improvement in 11 per cent. of their series of eighty-four vernal cases. Table 3 summarizes the results of several American investigators, which have been compiled from the literature. The attempt has been made, so far as it has been possible, to record only the cases of the autumnal type which had received preseasonal treatment. Exceptions to this rule are so indicated. Moreover, I have concerned myself in this study only with the percentage of those entirely relieved and those unimproved. The table indicates that of 2,684 patients receiving prophylactic treatment (with few exceptions), 12.8 per cent. have had complete relief and 16.5 per cent. have failed to receive any benefit. The remaining 70.7 per cent. enjoyed varying degrees of improvement. It is, indeed, reassuring that the results of the last few years excel those of previous years.

TABLE 3.—Results of Preseasonal Treatment of Autumnal Hay-Fever

Authors	Year	Number of Patients	Per Cent. in Whom Symptoms Were Entirely Relieved	Per Cent. in Whom Symptoms Were Unimproved
Koessler, in Foreheimer's Therapeutics 5: 671, 1914.....	1914	36	11.1	22.2
Oppenheimer and Gottlieb: New York M. J. 101: 229, 1915	1915	6	16.6	16.6
Strause and Frank: J. A. M. A. 76: 712 (March 4) 1916.....	1916	241*	18.6	15.6
Rackemann: Boston M. & S. J. 182: 295 (March 18) 1920....	1920	91	8.9	13.1
Walker: Arch. Int. Med. 28: 71 (July) 1921	1921	202	22.0	6.5
Cooke and Vander Veer: J. Immunol. 1: 201 (June) 1916; Health News, N. Y. State Dept. Health 16: 204, 1921..	1912	5	0.0	40.0
	1913	50	4.0	16.0
	1914	90	2.0	20.0
	1915	189	20.0	5.0
	1916-1920	1,774	25.0	10.0

* Various types of hay-fever.

It is to be recalled that the results of preventive inoculation, quoted above, have been those achieved by investigators in this relatively new field of therapy, and that the pollen extracts employed by them have been products of their own laboratories. The profession at large has of necessity been dependent on the commercial products of manufacturers of biologic products. Because of the limited number of reagents utilized for accurate diagnosis, and because of the limited time available for the entailed study of hay-fever patients, the indiscriminate use of pollen extracts and the employment of shotgun preparations have followed, as a matter of course, and have been responsible for disappointments.¹⁹ Undue emphasis has been placed on the rôle of insect-pollinated plants, and the administration of their pollen extracts in the prevention of hay-fever is not justified by scientific evidence. The significance of group reaction in cutaneous testing has been overlooked, and commercial literature has been unintentionally misleading.

The therapy of hay-fever is of such recent date that no standard method of extraction of pollen protein and no standard method of treatment has as yet been adopted. There is, in fact, no “United States standard

13. Lowdermilk, R. C.: Hay-Fever, J. A. M. A. 63: 141 (July 11) 1914.

14. Clock, R. O.: Comparative Value of Methods of Preparing Pollen Antigen, J. Infect. Dis. 21: 523 (Dec.) 1917.

15. Goodale: Pollen Therapy in Hay Fever, Boston M. & S. J. 173: 42, 1915.

16. Rackemann, F. M.: The Specific Treatment of Hay-Fever, Boston M. & S. J. 182: 295-301 (March 18) 1920.

17. Coca, A. F.: The Preparation of Fluidextracts and Solutions for Use in the Diagnosis and Treatment of the Allergies, with Notes on the Collection of Pollens, J. Immunol. 7: 163-178 (March) 1922.

18. Freeman: Vaccination Against Hay Fever: Report of Results During the Last Three Years, Lancet 1: 1178, 1914.

19. Scheppegegrell, William: Successful Treatment of Hay-Fever and Causes of Failure, New York M. J. 116: 196 (Aug. 16) 1922.

of potency." Reference has been previously made to the diverse opinions of authorities.

It accordingly seemed advisable to undertake a comparative study of the potency of commercial extracts on which the general profession had to rely. Since the autumnal type of hay-fever is the most prevalent, attention has been confined to the pollen extract of the short ragweed. Our control extract of short ragweed pollen was prepared, according to the method Walker, in a 12 per cent. alcoholic saline solution. Six dilutions were made from the stock solution, which contained 0.2 mg. of nitrogen per cubic centimeter. The dilutions, as shown in Table 4, ranged from 1:100 to 1:24,300. Six commercial extracts, designated by numbers 1 to 6 inclusive, were studied. Two dilutions were made from the highest concentration in which the extracts were marketed to approximate the dilutions of the control, the amount of nitrogen serving as a basis of computation. Thirty-nine patients with autumnal hay-fever were tested by Dr. Harrison and myself. Two dilutions of each of the commercial extracts, 1 to 5 inclusive, and six dilutions of the control extract were used. Sixteen of this series of patients were in addition tested with the two dilutions of commercial extract, numbered 6.

TECHNIC OF TESTS

Along the anterior aspect of one forearm, a drop of each dilution of the control extract was placed in succession at half-inch intervals, the highest dilution being uppermost. At the bend of the elbow, a drop of alcoholic saline solution was placed and used as a control. On the anterior aspect of the other forearm, two drops, one of each dilution of all the commercial preparations, was placed in succession at right angles to the long axis. The higher dilution was located on the internal aspect and the lower dilution on the external aspect of the arm, respectively. A superficial scratch was made through each drop with a needle, and the reaction was read at the end of half an hour. A wheal of 5 mm. or more was recorded as ++, and a wheal of 4 mm. or less was recorded as +, and an areola without wheal as ±.

TABLE 4.—Number of Strongly Positive Cutaneous Reactions Obtained with Control and Commercial Extracts

	A	B	C	D	E	F
Dilution.....	1:100	1:300	1:900	1:2700	1:8100	1:24300
Nitrogen, mg. per c.c.	0.2	0.066	0.022	0.0074	0.0025	0.00083
Control extract.....	34	31	25	19	11	2
Commercial extract 1.....	..	..	..	..	0	0
Commercial extract 2.....	34	31	..	..	..	..
Commercial extract 3.....	..	..	10	7	..	..
Commercial extract 4.....	..	2	0	..	..	..
Commercial extract 5.....	..	0	0	..	..	..
Control extract.....	13	..	8	..	..	..
Commercial extract 6.....	6	..	2	..	..	..

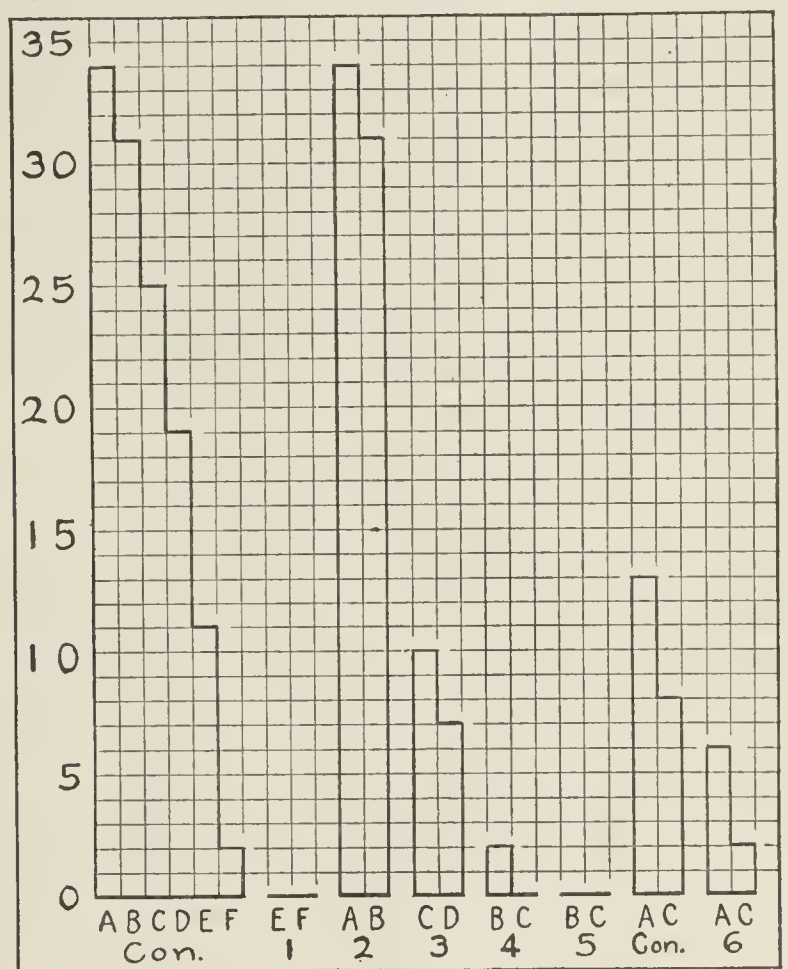
RESULTS OF TESTS

Of the thirty-nine patients submitted to the cutaneous testing, thirty-four gave a ++ reaction with the highest concentration of our ragweed extract. For purpose of brevity, only the ++ positive reactions are used in the table to serve as a basis of comparison. Table 4 indicates the number of strongly positive reactions obtained with the control extract and with each of the two dilutions of the commercial preparations.

The chart demonstrates the fact that Commercial Preparation 2 yielded reactions identical with the control in the two highest concentrations, that Preparations 6, 3 and 4 failed to give positive reactions in thirteen, twenty-seven and fifty-four tests, respectively, as compared with the control, and that Preparations 1 and 5 failed entirely to provoke skin reactions. If we accept the view that the intensity of the cutaneous reaction is

determined by the protein content of the test solution, we are confronted with two possibilities—either the protein content of five of the commercial preparations has been misrepresented, or there has been a marked and rapid deterioration of the product.

Vander Veer²⁰ pursued a similar course of study and tested four of the best known commercial extracts. He used as a control the "Cornell preparation," prepared according to the method of Coca. He performed ophthalmic and intracutaneous tests with the preparations in eighteen hay-fever subjects. Not all the patients however, were tested with each dilution of the different preparations. He found that only the very sensitive patients gave any ophthalmic reaction with the commercial products. Moreover, he noted that the latter extracts did not approximate the strength of his control



Number of ++ reactors: Con., control; 1, 2, 3, 4, 5, 6, preparations; A, B, C, D, E, F, dilutions.

preparation, which had 0.01 mg. of nitrogen per cubic centimeter, and that the activity of the most potent commercial extract equaled that of his preparation containing 0.005 mg. of nitrogen per cubic centimeter. Vander Veer's conclusion is noteworthy:

As it has been our experience that even our most sensitive cases (with very few exceptions) require for therapeutic effect a maximum dose of pollen extract containing at least 0.025 to 0.05 mg. of nitrogen, while the less sensitive may need as high as 0.1 or 0.2 mg. of active pollen nitrogen, it is difficult to see how a good result can be expected with the use of these comparatively weak commercial preparations except in the very sensitive cases, which constitute a relatively small percentage of the total. To obtain a full measure of relief, stronger extracts should be used.

POLLEN EXTRACTS

It is clear from the foregoing studies that one criterion for the therapeutic efficiency of pollen extracts is the nitrogen content, based on chemical analysis. It

20. Vander Veer, A., Jr.: A Comparison of Various Pollen Extracts with Reference to the Question of Their Therapeutic Value in Hay-Fever, *J. Immunol.* 7: 113-118 (March) 1922.

is equally obvious that the nitrogen content is stable. The potency of extracts is, however, a variable factor, and preservatives, such as alcohol, trikresol and phenol, are added to prevent deterioration. Clock is deserving of much credit for calling attention to the fact that chemical analysis fails to demonstrate the antigenic qualities of pollen extracts. Such analysis reveals only the amount of pollen protein present in solution. Clock²¹ has shown that a practical method of determining the antigenic properties of pollen extract is by means of the complement-fixation test. The amboceptor in this biologic test is the serum of rabbits which have been immunized by repeated injections, intravenous or intraperitoneal, with protein solution. He has, furthermore, devised a method of preparing a stable antigen, by the use of concentrated salt solution and glycerol.²² Pollen extracts, prepared by his method, have remained for fourteen months without loss of complement binding capacity. With his glycerolated pollen antigen, Clock²³ obtained relief from symptoms in 84 per cent. of 1,578 cases.

Our experience is confirmatory of Clock's observations. In the preventive treatment of hay-fever last summer, we employed our ragweed extracts M and P prepared in alcoholic saline solution. Both extracts gave evidence, clinically, of possessing marked potency. Nevertheless, they showed loss of antigenic properties when tested by the complement fixation method in January, four months later.

Attention has been directed to the mode of extraction of pollen protein and to the manner of preserving its antigenic, and presumably its active, content. I am of the opinion, moreover, that the method of collecting ragweed pollen assumes an importance hitherto undescribed, and probably overlooked. In the fall of 1921, I employed the method recommended by Wodehouse,²⁴ for collecting the pollen of the ragweed. The catkins of the plant were removed and allowed to dry in a warm, well-lighted room, protected from dust. The bracts were then stripped from the stems and ground in a mortar. From this ground mass, the pollen grains were separated by floating in carbon tetrachlorid. The pollen dust, when filtered and dried, was of an olive drab. In the fall of 1922, I employed the method known to botanists as "bagging." Bags made of glazed paper were drawn over the plants and securely fastened. The pollen grains, as they were shed, remained within the bags, from which they were readily gathered. The pollen dust, secured in this manner, was of a bright golden yellow, similar to that of the pollen-laden anthers. The difference in color between the yields of pollen obtained by grinding and by "bagging" was most striking. It is noteworthy that the golden yellow of the mature grains is slightly bleached by carbon tetrachlorid.

The immaturity of part of the pollen yield obtained by the method of Wodehouse may account for the difference in color. It will be recalled that the blooms of the ragweed mature in succession. Consequently, when the catkins are dried and ground, the pollen consists of a mixture of mature and immature grains. In fact, in the process of removing the catkins from the plant, there is a substantial loss of the ethereal grains, owing to the manipulation. In the plant kingdom, color

changes accompany the process of maturation, which also involves physicochemical transformation. Obviously, an extract prepared from the mature grains is likely to have more specific antigenic properties than one made from a mixture of mature and immature pollen grains. It must be borne in mind that it is only the mature pollen that reaches the mucous membranes of susceptible persons and excites symptoms of distress.

The interpretation which I have ventured to give is suggested by the following study:²⁵ Ragweed plants, collected, June 21, 1922, before the appearance of catkins, were dried and pulverized. Cutaneous tests with the plant powder were performed in twenty-three cases of autumnal hay-fever. The powder gave negative skin reactions in eighteen, and weakly positive in five cases. In no instance did the powdered plant provoke a skin reaction comparable with that produced by the ragweed pollen. The conclusion seems warranted that the peculiar property of the pollen grains which calls forth the specific proteolytic ferment in the causation of an urticarial wheal is not shared by the rest of the plant structure. The extreme degree of specificity is thus made evident. Therefore, in order to make desensitization complete, it is essential that the extracts be derived from the exciting agent—the mature pollen.

RESULTS OF PROPHYLAXIS

Reference has been made to the results of preventive treatment against autumnal hay-fever. An analysis of the statistics, dating from 1912, has indicated, as an average, complete relief in about 13 per cent., partial relief in 71 per cent., and failure in 16 per cent. of the cases treated. The outstanding feature is the constant failure of a certain percentage to secure any relief of symptoms. This fact has seemed worthy of an explanation. Our experience during the last year in the prophylactic treatment of fifty-six patients suffering from the fall type of hay-fever has thrown some light on the problem.

TABLE 5.—Results of Preseasonal Treatment

Symptoms	Patients		Average Age, Years	Average Duration, Years	Average Number of Injections	Average Percentage of Local Reactions Following Injections
	Number	Per Cent.				
Unimproved.....	6	10	42	13	16	32.6
Relieved, 25 per cent.	9	16	33	10	17	75.0
Relieved, 50 per cent.	9	16	37	17	16	89.0
Relieved, 75 per cent.	18	32	40	17	16	84.0
None or negligible....	14	25	40	20	16	84.4

Table 5 embodies the results. It shows that 25 per cent. of our patients have been relieved of symptoms, that 65 per cent. have been benefited from 25 to 75 per cent., and that 10 per cent. have been unimproved. Our extracts M and P were used successively in all cases. It is evident from Table 5 that age and the duration of the disease do not affect the outcome of treatment. Likewise, a detailed analysis indicates that the degree of sensitiveness, as determined by skin tests with varying dilutions of pollen protein, is no criterion as to the results of therapy. For example, a man, aged 59, whose disease was of three years' duration, showed skin sensitiveness to ragweed protein in a dilution of 1:100. Despite the short duration of the disease and the apparent lack of a high degree of sensitiveness, this patient was not benefited by fourteen injections. On the contrary, two women, aged 54 and 60 years, respectively, who had suffered all their lives

21. Clock, R. O.: Antipollen Serum for Standardization of Pollen Antigen, *J. Infect. Dis.* **22**: 80 (Jan.) 1918.

22. Clock, R. O.: A Stable Pollen Antigen, *J. Infect. Dis.* **21**: 387 (Oct.) 1917.

23. Clock, R. O.: Hay Fever and Its Treatment with Glycerolated Pollen Antigen, *J. M. Soc. New Jersey* **19**: 63 (March) 1922.

24. Wodehouse, R. P.: Preparation of Vegetable Food Proteins for Anaphylactic Tests, *Boston M. & S. J.* **175**: 195 (Aug. 10) 1916.

25. Bernton, H. S.: The Biological Aspects of Hay Fever, *Rhode Island M. J.*, to be published.

from seasonal hay-fever, were entirely relieved of symptoms by treatment. The skin sensitiveness in both of these cases reached a dilution as high as 1:20,000.

Early in the course of our work, it became evident that some patients responded to the subcutaneous injection of pollen protein with a local reaction. This reaction consisted of swelling, redness or itching, or of a combination of these signs. At no time was the reaction severe enough to incapacitate a patient, or even give the patient any degree of discomfort. Other persons were unaffected in that there was no local response to the injection of foreign protein.

It is indeed, noteworthy, as shown in Table 5, that only 32 per cent. of the subcutaneous injections of ragweed protein have caused local reactions in those patients unimproved by treatment, whereas, 84 per cent. of injections have produced local response in those who have enjoyed freedom from symptoms. This observation is in accord with analogous experiences in the prophylaxis against other diseases. In vaccination against smallpox, typhoid fever and diphtheria, the local reactions that ensue are indicative of the marshaling of the antibodies of defense. The opinion is warranted that failure to elicit in patients a local response to subcutaneous injection of pollen protein is evidence of a refractory state of desensitization. This may be overcome by injections with higher concentrations. The indications are clear that each injection should be of such concentration as to yield a local reaction. No set rules can be applied. Due diligence and good judgment must be exercised, however, in the avoidance of constitutional reactions.

The foregoing opinions, suggested by our analysis, find confirmation in this case history:

A man, aged 38, had been a sufferer from autumnal hay-fever for thirty-four years. His knowledge of the disease was as extensive as his symptoms were severe. After having received four injections, he made mention of the local response provoked by our extract M in high dilution. He also volunteered the information that commercial extracts, with which he had been treated in previous years, failed to cause any local reaction, save toward the end of the prescribed course of treatment. During the hay-fever season, the administration of such commercial extracts in low dilution was followed by local reaction. The greater the local reaction, the greater was the clinical relief afforded by that injection.

TABLE 6.—Concentration of Extract

Concentration of Extracts Yielding Positive Cutaneous Reactions	Number of Patients	Concentration of Extracts Used in Treatment
1:100.....	1	1:500
1:2,700.....	1	1:100
	5	1:500
	2	1:5,000
1:8,100.....	2	1:500
	2	1:1,000
	1	1:5,000
1:24,300.....	3	1:500
	5	1:1,000
	8	1:5,000
	1	1:10,000

I base my opinion on the evidence submitted that a local reaction following subcutaneous injection of protein solution is an assurance of some clinical relief.

I cannot agree with the view expressed that the concentration of extract used in treatment shall not be capable of exciting a cutaneous reaction. Cutaneous reactions are too uncertain to serve as an absolute guide in treatment. In our comparative study of commercial extracts, thirty-one patients were tested at varying stages in their course of treatment. It will be recalled

that six dilutions of our extract were used as controls. It is of interest to note, in Table 6, the concentration of extract with which treatment was being carried on, and the concentration of extract which yielded cutaneous reactions.

Thus, of thirty-one patients tested during treatment, twenty-six were receiving injections with concentrations much higher than those which yielded positive skin tests. No untoward effects were noted. Walker,⁶ in discussing the influence of treatment on cutaneous sensitiveness, says:

In practically three fifths of the cases, the intensity of the skin test diminished 100 times, and in practically the remaining two fifths it was decreased at least twenty times; the larger the number of treatments given, the greater was the decrease in the intensity of the skin test.

We have found Walker's schedule of treatment very helpful, and have modified it to meet individual requirements.

The early investigators, Dunbar,²⁶ Noon and Freeman, have advocated the use of the ophthalmic test in establishing the sensitivity of the patient and in determining an initial nontoxic dose. Koessler, however, reports that "in a series of twenty patients, the effect of every injection was controlled by the ophthalmic reaction in the endeavor to use it as a constant guide in determining the subsequent dose to be given. This has been found unnecessary and misleading."

COMMENT

It is obvious, therefore, that no satisfactory method exists either for the classification of patients or for guidance in treatment. Herein is the opportunity offered for useful investigation.

Accurate diagnosis and the administration of potent extracts of pollen protein are the essentials in the prophylactic treatment against hay-fever. Nevertheless, there are contributory factors that may affect the outcome. The upper air passages of sensitive persons merit the attention of the specialist. Surgical measures should be employed to remove mechanical obstruction or to correct deformity.

The use of bacterial vaccines has from time to time been included in the treatment of hay-fever. Vaccine therapy in chronic disorders is based on the assumption that the bacteria responsible for the infection have become immune to the tissues of the host. As the result of retarded growth, little bacterial substance is liberated to stimulate the production of immune bodies. Therefore, vaccines supposedly supply the deficiency. It is difficult to reconcile this view with conditions which obtain in uncomplicated hay-fever. This disease, according to the preponderance of evidence, is an expression of protein intoxication. The rôle which bacteria play is seemingly unimportant. The paroxysms of sneezing and the constant rhinorrhea tend to dislodge the bacteria and wash away their toxins. Self-purification becomes the first stage of self-preservation.

Active immunization, despite its limitations, offers hay-fever victims more chance for cure and relief than any other therapeutic measure. Temporary removal to localities where the offending plant does not flourish is possible for a limited number of subjects. Those who are obliged to remain at home during the critical season may, nevertheless, derive comfort through the observance of simple hygienic measures. Wearing

26. Dunbar: The Present Status of Our Knowledge of Hay Fever, J. Hyg. 13: 105, 1913.

amber-colored glasses and driving in closed automobiles may make trips outdoors more inviting. Women will not hesitate to wear veils and combine fashion with comfort. Flowers and dusts of all kinds must be avoided. Bedroom windows, kept closed during the day, will prevent the ingress of pollen grains. During sleeping hours, a screen of muslin, saturated with water, may be placed in front of open windows to admit fresh air. Vigorous exercise outdoors, as tennis and baseball, should be avoided. With increase in the number and depth of respirations, a larger amount of pollen is inhaled, which aggravates symptoms. Frequent washing of the hair is advised as a means of removing the pollen grains which may have become enmeshed. Avoidance of sudden changes in temperature and of exposure to drafts is of especial importance. Exposure of the body in undressing or getting out of bed will cause a temporary cooling of the body surface and a consequent paroxysm of sneezing. For the same reason, sensitive persons should guard against exposure to electric fans.

The accomplishments of the past augur well for the future of prophylaxis against hay-fever.

2013 O Street, N.-W.

THE POTENCY OF SOME COMMON DIGITALIS AND STROPHANTHUS PREPARATIONS *

G. F. STRONG, M.D.

Fellow, National Research Council

VANCOUVER, B. C.

AND

ALBERT WILMAERS, M.D.

Fellow, Education Foundation, Inc., Commission for Relief in Belgium

BRUSSELS

It has frequently been emphasized that it makes little difference what type of digitalis preparation is used, as long as it is active and is given in dosage sufficient to produce its physiologic effects. Not very long ago the digitalis in general use was of low strength, and the results obtained from it clinically were naturally disappointing. Pratt,¹ in 1910, examined some of the common digitalis preparations of that time, and found them very weak. We knew that because of the large amount of work, both clinical and experimental, dealing with digitalis therapy that has appeared recently, greater attention has been given to the problem of supplying active digitalis preparations. We felt that it would be of some interest to make a survey at this time of some of the commoner types of digitalis preparations to determine their potency. We chose for this purpose particularly those preparations that are readily available to the majority of cardiac patients. We have made no effort, and it would be very difficult, in a work of this kind, to examine all the common preparations of digitalis.

Except for a few preparations obtained from the drug store in this hospital, all the samples tested were procured from pharmacists in different parts of Boston. An effort was made to get the drug that is commonly dispensed when a patient presents a prescription for digitalis. We tried to determine the age of the preparations obtained, and found this impossible, since in most cases the drug was dispensed from an undated

bottle. We found that the druggists were buying their digitalis in small amounts, a practice we commend as it avoids the use of deteriorated drugs.

The method we employed was a modification of the cat method of Hatcher. Instead of the buret with small cannula in the vein, we made our injections with a tuberculin syringe graduated in 0.01 c.c., inserting the small needle directly into the exposed right saphenous vein of the anesthetized cat. One tenth of the estimated lethal dose of the preparation being tested was injected every six minutes. An electrocardiogram (Lead 2) was taken before any of the drug was given, and was repeated five minutes after each injection. The animal was constantly attached to the galvanometer, and a careful watch was kept for the earliest appearance of ventricular extrasystoles, since, following the suggestion of Levine,² these seem the best evidence of toxic action on the cat's heart. This method of injecting one tenth of the estimated lethal dose every six minutes, while subject to small error, is probably as accurate as the method of continuous injection.

In Table 1 the minimal toxic dose (M. T. D.) is the amount of the drug that had been injected when ventricular extrasystoles appeared. Earlier evidences of digitalis action, as slowing of the heart rate due to vagal stimulation, inversion of the T waves, delayed auriculoventricular conduction, and changes in the form of ventricular complex, appeared in most cases, but were inconstant in their occurrence and were deemed unsatisfactory as indexes of digitalis intoxication. The minimal lethal dose (M. L. D.) is the amount necessary to kill the animal. The minimal lethal dose per kilogram is the so-called cat unit. The percentage of the minimal lethal dose that is toxic is that portion of the actual lethal dose that was injected before ventricular extrasystoles appeared. The minimal lethal dose was figured in cubic centimeters, since all preparations were given in liquid form; it was also determined in terms of the powdered leaf (1 c.c. of the tincture equals 0.1 gm. of powdered leaf). Certain exceptions to this occur in the table. For testing the *Digitara* tablets, a maceration tincture was made according to U. S. P. directions of such strength that 1 c.c. equals 0.13 gm. of the *Digitara* tablets. *Digalen* is of such strength that 1 c.c. equals 0.3 mg. of amorphous digitoxin. We found this preparation quite weak, being only one third as strong as it should be if it contained 0.3 mg. of active digitoxin per cubic centimeter. Tincture of *strophanthus*, as will be seen from the table, is about fifty times more active than tincture of digitalis when given intravenously. That these tinctures are given in practically the same dose by mouth can only be explained by the fact that tincture of *strophanthus* is poorly absorbed from the digestive tract, or it may be partially destroyed before absorption. In the case of *strophanthone*, no mention is made by the manufacturers of the strength of this preparation in terms of crystalline *strophanthin*. We found the preparation quite weak, especially if used in the dosage suggested by the makers. In the other *strophanthin* preparations, 1 c.c. is equivalent to 1 mg. of the crystalline *strophanthin*. In Arnoud's *Ouabaine*, 1 c.c. equals 0.5 mg. of crystalline ouabain.

The mode of action of all preparations was essentially the same. The early electrocardiographic changes have already been mentioned; they were slowing of the heart rate, delayed P-R conduction, and inversion or

* From the Medical Clinic of the Peter Bent Brigham Hospital, and the Medical School of Harvard University.

1. Pratt, J. H.: The Importance of Determining the Potency of Digitalis Preparations, Boston M. & S. J. **163**: 279, 1910.

2. Levine, S. A.: The Action of *Strophanthin* on the Living Cat's Heart, J. Exper. Med. **29**: 485, 1919.

alteration of the T waves. The first evidence of toxic effect was the appearance in the majority of instances of occasional ventricular extrasystoles and sometimes of complete heart block, or definite changes in form of the ventricular complex. Following the extrasystoles which came from one or several foci, there occurred a ventricular tachycardia, during which there was a progressive increase in heart rate, and increasing impairment of intraventricular conduction. After this tachycardia a ventricular fibrillation occurred, and death ensued in a short time. The mechanism of death was always the same, the heart stopping before the respirations. Other changes noted in the cat during the injection were lip-licking (an early sign of nausea), retching and vomiting. Urine was voided in some cases, and a few times feces were expelled after the toxic dose had been exceeded. On postmortem examination, the hearts usually were found strongly contracted. From the fact that the results obtained were

an old lot, and probably represents some prewar stock, possibly as old as 1914. It was found to have only one thirtieth of the expected strength. Its present weakness is probably due to its age, being a result of deterioration of the strophanthin due to changes in the H-ion concentration, as pointed out by Levy and Cullen.⁴

Two fat-free tinctures were included in the preparations examined. There seems to be no advantage in their use. They had the same effect on the cats as regards the occurrence of retching and vomiting, and they are of no greater potency than the ordinary tinctures. The Digitora tablets we tested were made of very active leaf, and have a cat unit that corresponds to the expected standard. However, any good powdered leaf can be made up into pills by a pharmacist at less cost to the patient. Whereas most of the preparations were made by widely known pharmaceutical houses, we tried one tincture made by a local druggist from

TABLE 1.—Potency of Digitalis and Strophanthin

Cat No.	Drug		Cat Weight, Kg.	Toxic Dose M. T. D.	Lethal Dose M. L. D.	Per Cent. of M. L. D. That is Toxic	M. L. D. per Kg. in C.c.	M. L. D. per Kg. in Gm.	Margin of Safety M. L. D. — M. T. D. per Cent.
	Name	Maker							
3	Tincture digitalis.....	E. R. Squibb & Sons, New York.....	2.1	0.63	1.26	50	0.6	0.06	50
7	Tincture digitalis.....	E. R. Squibb & Sons, New York.....	3.4	1.36	2.38	57	0.7	0.07	43
13	Tincture digitalis (fat free).....	E. R. Squibb & Sons, New York.....	3.9	1.17	2.73	43	0.7	0.07	57
31	Tincture digitalis (fat free).....	E. R. Squibb & Sons, New York.....	4.2	1.68	....	50*	0.8*	0.08*	..
19	Tincture digitalis (old).....	E. R. Squibb & Sons, New York.....	2.5	1.25	2.25	56	0.9	0.09	44
1	Tincture digitalis.....	Parke Davis & Co., Detroit.....	4.5	1.8	4.5	40	1.0	0.1	60
9	Tincture digitalis.....	Parke Davis & Co., Detroit.....	2.4	1.2	2.64	45	1.2	0.12	55
33	Tincture digitalis (old).....	Parke Davis & Co., Detroit.....	2.5	1.5	2.25	66	0.9	0.09	34
4	Tincture digitalis.....	John Wyeth & Bro., Philadelphia....	2.0	1.2	2.4	50	1.2	0.12	50
14	Tincture digitalis.....	John Wyeth & Bro., Philadelphia....	2.7	1.62	2.43	67	0.9	0.09	33
23	Digitol.....	H. K. Mulford & Co., Philadelphia...	2.9	0.87	3.77	23	1.3	0.13	77
26	Digitol.....	H. K. Mulford & Co., Philadelphia...	3.8	1.96	3.66	54	0.96	0.096	46
36	Tincture digitalis.....	Burroughs Wellcome Company.....	2.7	3.24	4.32	75	1.6	0.16	25
40	Tincture digitalis.....	Burroughs Wellcome Company.....	3.4	1.02	4.08	25	1.2	0.12	75
6	Tincture digitalis.....	Norwich Pharmacal Company.....	2.4	1.68	3.32	50	1.4	0.14	50
18	Tincture digitalis.....	Norwich Pharmacal Company.....	2.5	1.0	2.25	41	0.9	0.09	56
8	Tincture digitalis.....	Huntington Avenue Pharmacy.....	2.6	2.08	4.16	50	1.6	0.16	50
10	Tincture digitalis.....	Huntington Avenue Pharmacy.....	1.8	1.44	2.34	62	1.3	0.13	38
38	Digitora.....	Upjohn Company, Kalamazoo.....	2.8	1.4	2.24	62	0.8	0.104†	38
39	Digitora.....	Upjohn Company, Kalamazoo.....	3.6	2.16	3.24	67	0.9	0.117	33
25	Digalen.....	Hoffman LaRoche Chem. Wks., N. Y.	3.5	9.95	14.5	69	4.1	1.2†	31
32	Digalen.....	Hoffman LaRoche Chem. Wks., N. Y.	2.0	4.6	6.0	77	3.0	0.9	23
29	Tincture strophanthus.....	Parke Davis & Co., Detroit.....	2.8	0.56	0.76	73	0.026	2.6§	27
34	Tincture strophanthus.....	Parke Davis & Co., Detroit.....	2.5	0.375	0.525	62	0.021	2.1	38
11	Strophanthin Boehringer.....	Merck & Co., New York.....	2.8	4.31	8.62*	..	3.07	3.07¶	..
24	Strophanthin Boehringer.....	Merck & Co., New York.....	3.0	4.5	7.8	58	2.6	2.6	42
16	Strophanthin.....	Merck & Co., New York.....	2.1	0.42	0.42	100	0.20	0.20¶	0
17	Strophanthin.....	Merck & Co., New York.....	3.0	0.45	0.57	79	0.19	0.19	21
21	Strophanthone.....	Parke Davis & Co., Detroit.....	3.9	0.24	1.67	21	0.42	....	79
22	Strophanthone.....	Parke Davis & Co., Detroit.....	3.9	1.09	1.4	78	0.36	....	22
12	Ouabaine.....	Nativelle, Paris	2.2	0.33	0.48	68	0.218	0.109#	32
41	Ouabaine.....	Nativelle, Paris	2.8	0.4	0.51	78	0.182	0.091	22

* Estimated from minimal toxic dose (M. T. D. = 50 per cent. of minimal lethal dose).
† Tincture made of such strength that 1 c.c. = 0.13 gm.
‡ Mg. of digitoxin.

§ Mg. of strophanthus leaf.
¶ Mg. of crystalline strophanthin.
Mg. of crystalline ouabain.

practically the same in all of our experiments, we feel that digitalis and strophanthus probably act in a similar way on the living cat's heart.

Although most of the preparations we tested were of recent make, being probably less than 6 months old, we examined two tinctures that we had had in the laboratory for some time. One of these, a tincture made by E. R. Squibb & Sons, was tested by Dr. Levine³ in 1919. It was made in about June of that year. We tested it three and one-half years later, and found it as potent as it was then (Experiment 19). Another old tincture was made by Parke Davis & Co., dated January, 1921. Two years later we found the same potency that Dr. Levine found in 1921. Both these tinctures had been kept tightly corked in a refrigerator at about 6 C. There is apparently little or no deterioration of a properly kept tincture. The Boehringer's Strophanthin in ampules used was from

English leaves (Experiments 8 and 10). The tincture was slightly weaker than the expected standard.

We usually used two cats for each drug. If we found a lack of close agreement between the results obtained in two experiments, we repeated the work until we were satisfied with the results. In some cases we used as many as five cats before feeling sure we had determined the actual cat unit for the preparation we were testing.

As we were especially interested in the clinical application of these findings, it occurred to us that it might be of interest to determine accurately the number of drops in a cubic centimeter of the preparations examined. We knew from previously published investigations that the number of drops per cubic centimeter in a tincture was considerably greater than is generally recognized. We counted the drops in a cubic centi-

3. Levine, S. A., and Cunningham, T. D.: The Margin of Safety of Intravenous Digitalis in Cats, Arch. Int. Med. 26: 293 (Sept.) 1920.

4. Levy, R. L., and Cullen, G. E.: Deterioration of Crystalline Strophanthin in Aqueous Solution: Its Relation to Hydrogen Ion Concentration, and a Method for Its Prevention, J. Exper. Med. 31: 267 (March) 1920.

meter of the tinctures we had examined. In doing this we tried to imitate the conditions under which the patient measures out his medicine. We obtained droppers from a number of sources, and dropped the tincture in the usual way. Some variations were found in different droppers, probably due to small differences in the diameters of the tips. Considerable variation occurred, depending on the position of the dropper; when it was held vertically there were more drops per cubic centimeter than when it was held obliquely (at an angle of about 30 degrees with the horizontal). There was a noticeable difference in the number of drops per cubic centimeter, depending on the rate of flow; when the fluid was dropped in about fifteen seconds, there were fewer drops than when about forty seconds was consumed. In spite of the fact that drops and minims (16 minims in 1 cubic centimeter) are not synonymous, a good many physicians still prescribe tincture of digitalis in drop doses when they intend to give minims. For a tincture containing as many as 65 drops per cubic centimeter, this is obviously ridiculous. It would be much better if we could avoid all reference to drops in connection with digitalis administration. A valuable means of accomplishing this would be to have droppers

TABLE 2.—*Size of Drops and Use of Droppers*

Preparation	Number of Drops per C.c.		
	When Dropped in About 40 Seconds; Dropper Held		When Dropped in About 15 Seconds; Dropper Held
	Vertically	Obliquely	Vertically
Tincture of Digitalis:			
1. Squibb's.....	65	47	50
2. Squibb's fat free.....	57	43	40
3. Parke Davis & Co.	63	40	51
4. Wyeth's.....	54	40	46
5. Digitol, H. K. Mulford.....	51	38	38
6. Burroughs Wellcome Company.....	52	41	38
7. Norwich Pharmacal Company.....	54	41	35
8. Huntington Avenue Pharmacy.....	64	43	39
9. Digalen.....	38	26	31
Tincture of strophanthus.....	62	46	49
Tap water.....	26	17	24
95 per cent. alcohol.....	60	48	45

marked in 1 c.c. and 0.5 c.c. amounts. If these were available, physicians could prescribe digitalis in such doses, and patients would have an accurate and ready method of measuring the drug. In Table 2 we show the results obtained with the various preparations. The corresponding figures for tap water and 95 per cent. alcohol are included for comparison.

CONCLUSIONS

1. The potency of a group of the more common digitalis and strophanthus preparations has been examined by the cat method.

2. The results show that there has been considerable improvement in the strength of the digitalis that is available to the average patient. Tinctures, leaves in pill form, and some liquid preparations of digitalis and strophanthus in ampules were found to approximate fairly closely the expected standards; that is, the minimal lethal dose per kilogram (cat unit) is 1 c.c. of tincture of digitalis, 0.1 gm. of the powdered digitalis leaf, 0.1 mg. of crystalline strophanthin, and 0.3 mg. of digitoxin.

3. Too great emphasis cannot be placed on the importance of avoiding the use of drops in prescribing tincture of digitalis. A readily available means of measuring cubic centimeter and five-tenths cubic centimeter amounts would be of distinct value.

THE PROTECTION AND DEVELOPMENT OF HEALTH IN BOARDING SCHOOLS

HAVEN EMERSON, M.D.

NEW YORK

While I was responsible for the protection of the health of the student body (5,421) at Cornell University at Ithaca, N. Y., during the college year 1919-1920, these observations were made:

Of the total number of days of student time possible for the entire student body, 1.6 per cent. of days were lost during the college year on account of sickness. The loss by the women students was 2.4 per cent. of their possible total days, the loss by the men being 1.5 per cent. Of the total cases of sickness recorded, numbering 8,329, 52 per cent. were due to sicknesses which fall properly within the designation of preventable diseases; that is, acute respiratory infections, acute infectious diseases, infections and communicable diseases of the skin, and disturbances due to errors of diet or in the use of foods. Of the total cases of sickness, 21 per cent. were due to respiratory affections, 7.7 per cent. due to other acute infections, 10 per cent. due to skin affections, 22 per cent. due to digestive disturbances, and 16.6 per cent. due to external causes.¹

It is to be expected that the extent of sickness among boys in boarding schools similarly separated from large urban communities will exceed that found among the older group represented among college students, and this chiefly because the schoolboys have not the acquired or natural resistance or immunity to diseases due to respiratory tract infections which more mature persons have, and further because schoolboys cannot as safely as college men and women be released from what may be best described as maternal care and supervision in matters of clothing, food, exercise and rest.

The records of a privately endowed boys' boarding school of the highest type with a uniform enrolment of 400 boys between the ages of 12 and 18 were put at my disposal while I was studying health supervision at this school. From these it appeared that over a period of three years (1919-1922), an average of 3.55 per cent. of all possible days of school attendance were lost on account of sickness: 1919-1920, 4.26 per cent.; 1920-1921, 3.15 per cent., and 1921-1922, 3.24 per cent., and further, that of all the days lost, 74.5 per cent. were lost on account of infections acquired through the respiratory tract. Furthermore, there were a considerable number of days lost through indiscretions of diet and from slight indispositions, due mainly to fatigue from one cause or another and properly chargeable to the preventable group. In day schools, public or private, in cities the loss of days' attendance by schoolchildren amounts commonly to from 8 to 10 per cent. of all possible days because of sickness.

Attention to medical care during sickness naturally has preceded interest in disease prevention in schools as among children at home, but the steadily increasing appreciation of the value and practical application of our present knowledge of protective as well as curative medical services in private practice warrants at least a consistent trial of measures theoretically sound, and certainly more likely to be successful in a controlled school group in the country than among day pupils of city communities. The following program of inquiry and medical administration is offered in the hope that boarding schools for girls, as well as those for boys,

1. Emerson, Haven, and others: Education in Health at Cornell University, 1919-1920, Am. J. Pub. Health 11:309 (April) 1921.

will develop a more alert consciousness of the value of health of body while they advance in the realm of character development and training of the intelligence.

THE OBJECTIVES

The objectives to be attained by health supervision of a boarding school are:

(a) Normal physical growth, as shown by height and weight for age, and performance in standard noncompetitive physical tests, including posture.

(b) Normal mental growth, as indicated by intelligence tests, and psychic development and behavior, as shown by response to the usual social or community situations and reactions to school discipline and responsibilities.

(c) The nearest practicable approach to regular and constant attendance at required school duties, or, in other words, the lowest possible noneffective rate.

(d) Understanding and practice of the simple necessary habits of personal hygiene of body and mind, as observed in daily school routine and disclosed at individual conferences between the pupils and the school physician.

(e) Correction of such physical defects as interfere with the progress of physical or mental development, or are likely to increase the hazard of infection to others.

(f) Prevention of diseases or conditions known to be preventable, particularly the communicable diseases, digestive disturbances and errors of nutrition.

(g) Abbreviation of the course of sickness and necessary convalescent periods by early report of symptoms and prompt hospitalization.

ELEMENTS IN A SURVEY

While physical environment rarely adds materially to the liabilities of a child at boarding school, heredity and personal contacts and performance being the chief hazards of youth, certain features of the school setting and equipment should be studied to be assured that there are no neglects in this factor of health.

A study of school sanitation will deal with the physical features generally grouped under location, housing, water and food supplies and disposal of wastes.

Location may well include the consideration of convenience in control of contact between the pupils and the adjacent population groups under certain contingencies. Here also we may deal with topography, soil, drainage, climate, flora and fauna.

Housing includes observations of the facilities for sleeping, eating, study, indoor assembly, recreation and religious observances. Limitation of floor and air space, separation of beds, etc., are items of special importance. Ventilation, that is, the amount, movement, temperature, humidity and facilities for change of air by permitting flushing of rooms with air direct through open windows, requires attention.

The adequacy and sanitary safety of water and milk supplies are readily determined by direct observation and the use of simple laboratory tests.

Food supply comes within the scope of sanitary studies in the matter of quality, and facilities for storage.

Sewage disposal, removal of kitchen and household waste and the general cleanliness of buildings and grounds may require attention in the interest of health of the school community.

It is obvious from a study of the modern and well managed country boarding schools that the causes, direct or contributing, of preventable diseases in a school community are rarely to be sought among errors of physical environment; nor is it at all likely that

improvements in the convenience or luxury of school plants can generally be relied on to reduce such sickness as commonly occurs each year among pupils or teachers.

Under the heading of hygiene are properly included all the personal elements contributing to healthy life. Only by observation of the activities of the school population from rising bell to bed time, and the period of sleep as well, can the assets and liabilities of the school regimen be reasonably measured.

Common errors consist in the opportunities for delay and exposure during bathing and dressing; lack of brief setting-up exercises before breakfast; interference with opportunities for regular bowel evacuation before or after breakfast; insufficient time for quiet eating; eating between meals; insufficient clothing outdoors in cold, windy and wet weather; excessive exercise and zeal in athletic competition for those underweight for height and age; the urging of rapidly growing children to keep up with the grade or groups when they need gentle restraint and freedom from pressure for a period, and lack of careful distinction among the pupils with fundamental differences in personality and in their mental and emotional capacities.

A PLAN FOR HEALTH PROTECTION

A plan for health protection would include:

(a) A complete health examination of each pupil on admission to school, including functional test of heart, examination of nose, throat, eyes and ears, and mental test. This to include record of communicable disease of each pupil, and the Schick test or record of negative test by a physician of the family.

(b) Monthly record of weight and height of all except those 10 per cent. or more underweight for height and age, whose record should be made and studied weekly. The chief resources for correction of errors discovered through study of such records will be found to be limitation of competitive athletics in the underweight group and the provision of extra rest, sufficient protection by clothing outdoors and the judicious selection of suitable supplementary diet. The occasional instance of the overweight child can be readily corrected by adjustment of physical expenditure and food intake.

(c) Quarterly conferences with the health physician, preferably personal and individual, to consider the success or failure of the pupil in understanding and applying the rules of healthy living, and the results. It is to be understood that this is merely the particular and personal application of instruction in hygiene required to fix the application of systematic class instruction in hygiene in the mind and daily practices of the individual pupil. An essential element and foundation for any program or service for health protection is the teaching of applied personal hygiene as a part of the school-curriculum for each grade. This is to be built on the teaching of the biologic sciences. It may well be that the health physician of the school will be the teacher in the classrooms of the subject of hygiene as well as the health officer of the school community.

(d) Daily morning observation of every pupil by some competent person who knows how each one ought to look in health (as at the breakfast table), and reference to the health physician of any one showing evidence of cold, red eyes, sore throat, rash, constipation or lack of sleep.

(e) Daily inspection of the entire school by the health physician for two weeks after holidays, or of individuals after absence from school for over night at any time.

(f) Bed care at onset of any cold or cough, or acute febrile episode.

(g) Isolation, from contact with pupils, of any teachers, cooks or dining-room help with colds, coughs or fever, and inquiry as to past history of typhoid fever and chronic coughs and colds, and sore throats among all who come in contact in classrooms or food service with pupils.

(h) Insistence on practice of washing hands before eating and after use of the toilet.

(i) Functional examination of heart, and measurement of weight and height of any pupil on discharge from infirmary or home sick-care after any fever or infection.

(j) Records of height and weight, posture and incidence of sickness tabulated for comparison by age, grade or competitive group.

THE SCHOOL HEALTH PHYSICIAN

It is believed that the protection of health of pupils is an obligation assumed by the school when it accepts them for residence or school attendance. It requires quite as much, if not more, skill on the part of a physician to detect the early incidence of preventable causes or evidences of sickness as to diagnose and treat already declared serious illnesses. The resident or attending school physician who heads the medical services should be primarily responsible for the health protection and development of the pupils, and should know when to call experts in diagnosis and treatment if sickness demands care he feels he himself is not competent to give. The school health physician, like those engaged entirely in the practice of curative medicine, needs for his development the spur of competition and contact among physicians devoted to the same kind of service. This can best be provided through association among school physicians, preferably with the existing organization of physicians directing medical services in the universities and colleges of the country.

It is quite possible that schools providing adequately for diagnosis and treatment of sick pupils by their own or other physicians, on their own or other premises under hospital conditions, will in some instances require the addition to their staff on full or part time of a physician charged primarily with health protection and perhaps trained in the preventive features of pediatrics or, at least, well informed in control of respiratory tract infections, the disorders of nutrition and the problems of mental health of children. The school health physician should be a member of the school faculty and attend its meetings.

COMPETITION IN HEALTH

If the conditions and numbers of the school population permit, intrascholastic or even interscholastic competition in health might become a matter of vivid interest to the pupils and their teachers on some such basis as the following:

It is suggested that competition in health be instituted by dividing the school into two clubs as the basis of measuring these three factors:

(1) The group effective rate: that is, the percentage of possible days' attendance attained during the school year by each of the clubs.

(2) The percentage of each club membership which has attained normal weight and height development for the age of its respective members.

(3) The percentage of each club which has acquired the habit of correct posture, this to be based on observations of posture, joint motion and muscular control judged by the medical officer of the school.

To have succeeded in winning a cherished prize for scholarship or to have figured for a season as the best competitive athlete of the school will prove but temporary honors if, at the same time, the school leaders have not acquired such understanding of the rules of hygiene and of the requirements of normal growth and bodily function that they can make use of their excellences with confidence in continued health for their future.

For the interest and support of the school principals and the school health physicians, and for the sake of gradual improvement in sanitation and hygiene at boarding schools, it would be well to provide for an annual inspection of the school and its year's record of performance by a representative of a university medical school, who might serve as consultant in matters of policy and one of a group of referees in the inter-scholastic health competition proposed.

RESEARCH IN SCHOOL HEALTH

Whenever a controllable group of individuals comes under continuous hygienic and medical supervision, opportunities are constantly arising for contributing to the sum of human knowledge in the field of preventive medicine. A number of topics suggest themselves for study by school physicians, and it would appear that enough accurate observations have already been made to justify publication of the experience of several schools for the benefit of other similar school groups. It is suggested that valuable contributions from the experience of schools could be made: (a) to the subject of school hygiene in the field of height and weight standards for pupils of such race stocks as are represented in the school parentage; (b) in the incidence of tuberculous infection among the boys of the school by the simple Pirquet intradermal test; (c) by further annual analysis of the susceptibility to and immunity against diphtheria among the children entering the schools; (d) in the distribution of respiratory tract affections according to the age group and nutritional level of the boys, and (e) in the seasonal incidence of preventable sicknesses analyzed by weeks and the ages of the different school groups.

Until schools have received at least as careful modern scientific protective medical attention as was provided for enlisted men in military service, or health service of as thorough-going quality as is given to various custodial and other public institutions, we shall not know to what considerable extent we are failing to save our boarding school children from avoidable and often permanent damage now too often resulting from infection of the respiratory tract and interference with growth.

437 West Fifty-Ninth Street.

Communicable Diseases and Travel.—Uniform provisions governing the travel of persons suffering from contagious diseases are now in force over a large part of the United States. The U. S. Public Health Service, in a bulletin just issued, says that twenty states (Alabama, Florida, Georgia, Illinois, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, New Hampshire, North Dakota, South Carolina, Tennessee, Virginia, West Virginia, Washington and Wisconsin) have adopted the standard railway sanitary code approved by the conference of the state and provincial health authorities of North America, and later by the U. S. Public Health Service in conference with the health officers of the United States. The code looks to either the prevention of travel by infected persons or to taking measures to render such travel harmless; to the adoption of such general provisions as may render unlikely the transfer of infection to travelers by towels, drinking cups and other objects of general use, and to the control of food and water on trains so as to protect them from infected persons. Prevention of all travel by infected persons is impracticable. There are sometimes good reasons why infected persons should travel; for instance, it may be advisable to take home to its parents a child suffering from measles, both for its own sake and for the sake of children whom it is visiting. If no provision is made for such patients, they may travel secretly and without safeguards.

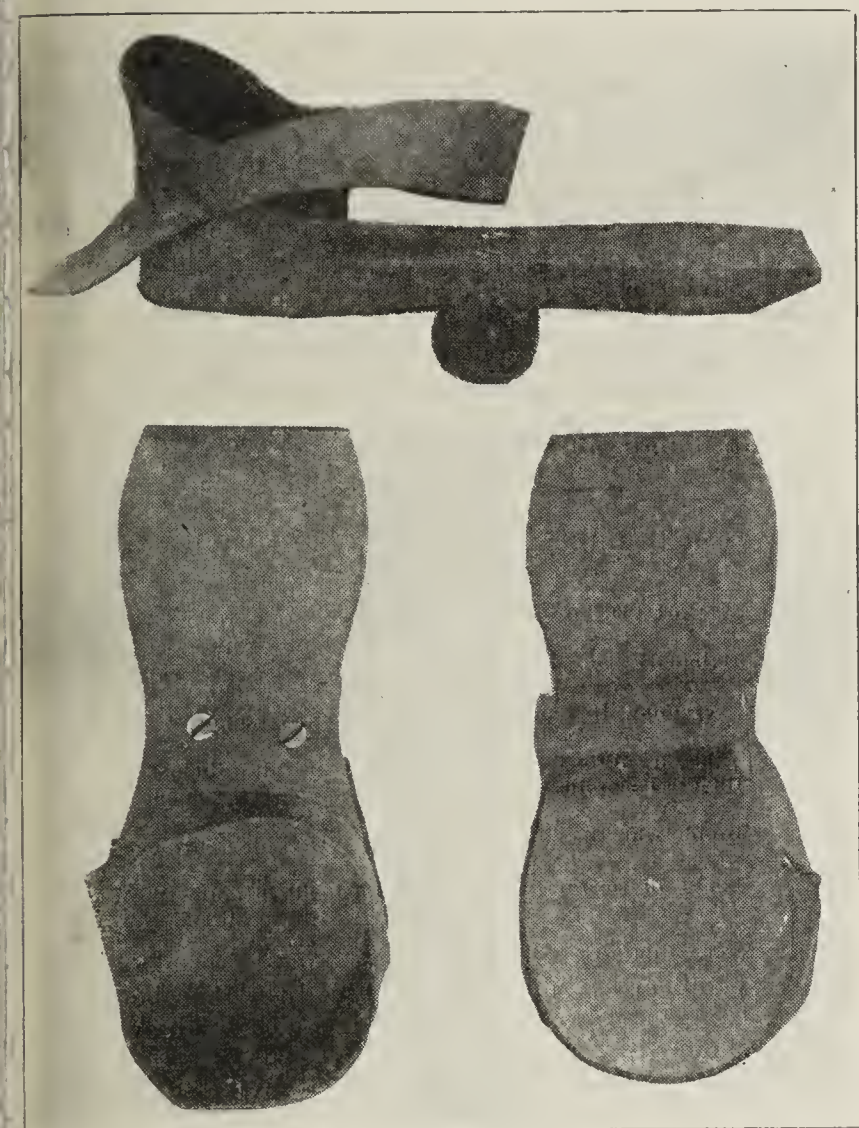
Clinical Notes, Suggestions, and New Instruments

A ROCKING-SHOE *

PATRICK P. GROSSO, M.D., CHICAGO

Past Assistant Surgeon (R.), U. S. Public Health Service

A rocking-shoe is a simple appliance that may be used successfully by the patient himself for mechanotherapy. It is suitable for cases in which there is a partial loss of function in the ankle or leg, resulting from various conditions that tend to weaken or to limit the ankle movements, such as foot drop, partial atrophy from disuse or nerve injury, partial ankylosis, contractures of tendons or muscles, stiffness following a sprain, contusion or dislocation, fractures into or about the ankle joint, or a recovering arthritis.



Rocking-shoe as seen from above, from below and from the side.

The rocking-shoe consists of a flat, rigid board, which is shaped like the sole of a shoe. Attached across the under surface, half way between the heel and the toe, is a cylindric piece of hard wood which acts as a fulcrum or rocker for plantar and dorsal flexion exercise. When the foot movements of inversion and eversion are required, the cylindric piece of wood should be of smaller gage and placed in a vertical position on the under surface of the sole, in order that the rocking motion may be side to side instead of to and fro. In order to adjust the rocking-shoe to the foot and to keep it from slipping, there is tacked around the heel of the wooden sole a leather or canvas counter with a strap and buckle that fastens about the ankle and that gives the apparatus the appearance of a slipper.

The patient is instructed in the use of the rocking-shoe. Graduated exercises are prescribed, the frequency and the time being increased daily. After a brief period, especially when the patient cooperates conscientiously, a marked

improvement in functioning power results, much greater than is usually accomplished in an up-to-date physiotherapy department.

The advantageous features are that (1) on account of the simplicity of the rocking-shoe, it can be easily made without any elaborate tools or supplies; (2) the patient can use it without the aid of an assistant or masseur, and (3) it takes the place of complicated mechanical devices, and gives satisfactory results.

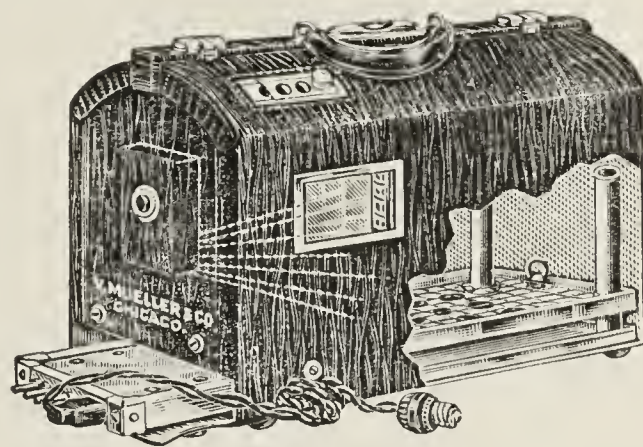
4141 Clarendon Avenue.

HEATED BED FOR TRANSPORTATION OF PREMATURE INFANTS

JULIUS H. HESS, M.D., CHICAGO

This electrically heated bag is constructed to meet conditions encountered in the home and in transporting premature infants from distant points by train or automobile. It is designed as a part of the obstetric department equipment for general and special hospitals or other institutions likely to be called on for the temporary care of premature infants.

The hand bag is of leather and steel construction, 19½ inches long, 9½ inches wide and 15 inches deep. It is divided into two compartments, the lower containing electric heating units, and the upper the crib. It is ventilated through the top by means of an adjustable slide. Observation of the infant is made possible through a glass window in the front of the bag, and a thermometer is fastened on the inside at



Heated bed for transportation of premature infants.

the window in such a position that it may be easily read from without. The bag is electrically lighted, the light being controlled by a push button on the end of the bag.

There are two heating units. The first is so constructed that it may be operated on any one of three voltages—110, for ordinary city lighting, 64 and 32, for railroad travel (the voltages used in train lighting). The second unit is designed for transportation by automobile, the plug being inserted into the lamp socket on the instrument board. To secure an equal distribution of heat throughout the bag, the false bottom is thoroughly perforated and a 1 inch tube is inserted at each corner of the false bottom and rises to the top of the bag. The heat thus reaches the mattress from below, and at the same time the upper part of the bag is warmed by radiation. The heating unit was designed by the Russell Electric Company.

Clothing and blankets used for dressing the infant during transportation should be made from heavy woolen materials.

Ordinance Requiring Health Certificates of Persons Working in Food Establishments Upheld.—In a habeas corpus proceeding the Court of Criminal Appeals of Texas has held valid an ordinance of the city of Dallas requiring of any person who works in a food establishment a health certificate showing that such person has been examined by a reputable physician and found free from any communicable disease. The ordinance made proprietors of food establishments subject to the medical examination, and the person who sought the writ of habeas corpus was the proprietor of a meat market who had been convicted for having worked in the establishment without having a health certificate.

* From U. S. Marine Hospital No. 5.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - "Medic, Chicago"

Subscription price - - - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, MAY 5, 1923

THE INTRACARDIAC INJECTION OF EPINEPHRIN

The powerful pharmacologic effects of epinephrin have been a matter of interest to the medical profession since this active principle of the suprarenal gland was isolated by Abel, Takamine and Aldrich in the period from 1901 to 1903. Credit is given to Schäfer and Oliver for having first shown, in 1895, the power of the medullary substance of the suprarenal to raise the blood pressure. Recently, considerable publicity has been given to the power of the drug, when injected into the heart, to produce a response resulting in revivification when the heart has apparently ceased its action from certain causes. According to Bodon,¹ medical officer of the United States legation in Budapest, who recently has reviewed the development of this use of epinephrin, the drug seems to have been first recommended for this purpose by Winter in 1905, although Latzko stated that he had attempted intracardiac injection on a human being as early as 1904. In 1910, Låwen and Sievers of the Trendelenburg clinic reported extensive experiments on the use of intracardiac injections of both strophanthin and epinephrin in the hearts of animals which had been caused to stop beating by temporary ligation of the circulation in the aorta and pulmonary artery. When epinephrin was injected there was a contraction of the inner zone of the parietes of the heart, which resulted in a stronger systolic contraction and a rise of blood pressure even in cases in which the vessels of the greater circulation had been replaced by rigid tubes. In other experiments, epinephrin was injected in the left ventricle immediately after loosening of the ligation of the artery, and the results were satisfactory. In another group the investigators waited until they had convinced themselves that artificial respiration with oxygen and massage of the heart were quite useless before administering the drug. In this group the results were less satisfactory, but in many instances resulted in complete restoration of the heart action.

In 1915, Gunn showed that a heart which has ceased to beat may often be revived by epinephrin, and Szubinsky applied the method in three cases on the battle field, giving from 30 to 40 c.c. of an 0.8 per cent. salt solution with digitalis, and from 10 to 15 drops of epinephrin divided into three doses. All three patients subsequently died of conditions which at necropsy were shown to be due to the war injuries they had suffered, but temporary improvement was observed in all three, in one case lasting ten hours, with a transitory return of consciousness.

In the following year, as reported by Bodon, Ruediger revived a woman who was moribund as a result of mitral regurgitation with stenosis, by giving her an intracardiac injection of strophanthin. As a result of his experiments on animals, Ruediger recommended that injections be made in the second left intercostal space close to the sternum, sometimes in the third intercostal space; but Dörner, in 1917, recommended the fourth left intercostal space close to the sternum. The latter reported that a patient, apparently dead for twenty minutes, revived for a transitory period. In a case reported by Volkmann in 1917, there was hardly any respiration, no patellar or corneal reflex, and no pulsation in the arteries, but occasional weak beats of the heart were heard. The intracardiac injection of 1 mg. of epinephrin diluted with 20 c.c. of physiologic sodium chlorid solution was given, and after the third injection sensation and consciousness returned, but the patient died two hours later.

In 1919, as reported by Bodon, van den Velden reported the results in forty-five cases treated during twelve years. He resorted to the method only when collapse was so far advanced that intravenous medication seemed impossible. He used the fourth or fifth intercostal space, two finger breadths from the left border of the sternum. At necropsy he found that the needle most frequently passed into the myocardium and not into the cavity. He used many stimulating drugs, including strophanthin, digitalis, camphorated oil, caffeine and epinephrin. In one third of his cases the immediate results were astounding, and the best results occurred in cases due to disease of the heart. In no instance, however, did any of the patients live longer than eight hours.

Later, Hesse, Zuntz, Henschen and Heydloff used this method in a variety of cases with remarkable results in some instances, each of them reporting at least one case as a cure. The most remarkable case is that reported by Guthmann in 1921 as a part of a series of five cases from the clinic for women in Erlangen. Collapse occurred during an examination for extra-uterine pregnancy. Camphor and epinephrin were injected intravenously; artificial respiration and drug stimulation of the heart were resorted to, but without result. After six minutes, an intracardiac injection was given, the heart at that time being absolutely

1. Bodon, Carl: The Intracardiac Injection of Adrenalin, *Lancet* 1: 586 (March 24) 1923.

quiescent. In ten seconds the heart sounds became perceptible, in two minutes the corneal reflex reappeared, and after eleven minutes the patient made her first respiratory movement. Four weeks later she was discharged from the clinic as well.

Bodon summarizes in his report more than ninety cases in which this method had been resorted to prior to the present year. Lasting results were obtained in twenty-four cases, including one case in Bodon's own practice which he reports in great detail. As a result of his study, he is convinced that it is not necessary or advisable to give more than 1 mg. of epinephrin or 1 c.c. of a 1:1,000 solution of the drug, in view of the possible danger of producing tetanic contraction of the muscle with systolic beating of the heart. The solution should be fresh and potent. The necessary instruments are a good syringe and a thin needle 8 cm. in length. The site of puncture should, of course, vary with the form and size of the chest and heart of the patient; but, in general, in order to reach the left ventricle, puncture should be made in the fourth or fifth intercostal space, one finger breadth inward from the left border of the relative heart dulness. As the needle arrives at the heart muscle, a slight pendulum movement is felt, and then a harder resistance as the muscle contracts from the irritation of the penetrating needle. When the needle arrives in the ventricle, blood appears. To reach the right ventricle, penetration is made in the right intercostal space on the upper rim of the fifth rib close to the sternal border. The needle passes in sagittally and is directed slightly inward. Bodon strongly recommends adherence to the fourth intercostal space on the left sternal border because the heart, lying in this region quite close to the walls of the chest, is technically easy to approach, and the dangerous areas are avoided with certainty. The chief effect to be obtained is the local stimulating action on the heart. The method is not to be used in hopeless cases, for instance, cachexia from cancer or tuberculosis, but its great value is in collapse resulting from embolism from the coronary artery, valvular trouble, toxic paralysis of the heart and similar conditions. Bodon says, "In every case where we know that the patient could have lived if some fatal state had not developed; in every case where we are induced to inject caffein, camphor or the like, it is our duty, whenever intravenous injections prove unsuccessful, and life is dwindling away, to have recourse to intracardiac injections of epinephrin." Bodon is careful, however, to indicate the limitations of the method, the psychology of its use, the necessity for explaining its limitations and value to the family of the patient, and the desirability that it be not resorted to until the patient is moribund, but not so late in that period as to be useless. Finally, he recommends that the method be made more widely known and that physicians learn it as a part of their training so that they may perform the procedure swiftly and satisfactorily.

It is the nature of man to be attracted by these methods, for they are sensational and striking. But essentially it must be remembered that the instances in which such restoration can be utilized are rare indeed. When death comes as the result of the wearing away of tissues; as the result of toxic action by overwhelming doses of either bacterial or metallic poisons, as the result of destruction of masses of vital organs, it would be cruel and futile to arouse false hopes by what could only be a sensational experiment. Epinephrin will cause contractions in a heart even after it has been removed many hours from the body in which it rested; but that is a far different matter than the restoration of life when that intangible thing known as the spirit has passed away. It is all a matter of the definition of the border between life and death. With a proper knowledge of human pathology, physicians may in rare instances find the procedure to be life saving rather than life restoring.

PHYSIOLOGIC ADJUSTMENTS ATTENDING MUSCULAR WORK

In order to secure an environment for the bodily tissues as nearly constant as is physiologically possible, profound and rapid adjustments are frequently necessary. Through changes in activity, new demands are promptly made for energy, on the one hand, and for withdrawal of products of metabolism, on the other. The process of absorption from the alimentary tract pours new material for distribution into the organism. Respiration also is regularly instituting alterations in the gaseous make-up of the circulating mediums. In the midst of this whirl of changes and exchanges, the cellular tissues might easily suffer serious deterioration if some device were not available whereby the internal environment tends to be kept fairly constant for each part of the body.

Every one interested in the human mechanism knows that muscular activity is attended by easily noted responses in certain of the physiologic functions. The pulse rate is quickened, respiration is augmented in one way or another, and heat tends to accumulate in the organism until it is promptly removed. Vasomotor changes occur so that more blood goes to the active contractile tissues and more to the skin when the temperature rises. In some cases at least, a more rapid beat of the heart appears to be an effort of compensation for fall of blood pressure due to dilatation of the blood vessels in certain parts.

Under conditions of work, the expenditure of energy and corresponding transformation of matter may readily be increased within a few hours of vigorous muscular activity to twice the calory exchange of the resting person. This may mean an additional metabolism involving 2,500 calories or more within the working period; for persons at hard work not infrequently have an energy transformation amounting to 6,000

calories a day. In order that the regulatory devices may be adequate under the great changes thus involved, efficient adjustments are essential. What they may actually mean, so far as the possibilities of aeration of the blood in the lungs are concerned, has been ascertained through direct measurement on man by Douglas and Haldane¹ at Oxford. During rest, from 5 to 8 liters (quarts) of blood passed through the lungs in different men, and during the hardest work the estimated flow was about 24 liters a minute. The blood output per heart beat in the man of average weight is about 120 c.c. (4 ounces); this frequently remains unchanged during even severe exertion. The outcome of such unique adjustments is unquestionably most favorable to the individual. The English investigators have further pointed out that various now available facts are consistent with the view that the rate of blood flow through different tissues is so regulated, as a rule, that the pressure of oxygen and the reaction, that is, the hydrogen ion concentration, remain approximately constant around the tissue elements in each tissue. When the physician prescribes physical exercise to a patient, he is calling the regulatory devices as well as the contractile cells into action, though he may fail to appreciate this. It is well for him to know the magnitude of the efforts which such exercise sometimes involves.

SUICIDE STATISTICS

It is generally accepted that the struggle to live is instinctive and inherent in all living things, and that the primordial urge to maintain life is the fundamental factor in determining evolution. Suicide is therefore one of the most puzzling of mysteries, for it seems to subvert the most primitive of all cravings. As it occurs only in man, there is reason to seek the explanation in that factor which seems almost peculiar to man: his mind. Many, indeed, see in suicide only the evidence of a mind diseased. But this explanation does not suffice. Mental disease introduces no new instincts; it merely exaggerates old tendencies by removing controls and inhibitions that would keep them in check. Other psychologists have gone to the opposite extreme and suggest that the number of suicides may even be a measure of the degree of national culture. The really essential element of mind that permits the choice of death instead of life is undoubtedly foresight and anticipation, occasionally the imaginings of insanity but more often the judgment of the actual facts.

A study of the statistics reveals glimpses of the numerous factors that enter into the formation of such judgments. The suicide rates for each hundred thousand of population for these last few years of kaleidoscopic changes are: five-year average, 1911 to 1915, 16.3; 1916, 14.2; 1917, 13.4; 1918, 12.2; 1919,

11.2, and 1920, 10.2. The figures from the United States Census Bureau for the registration area (approximately 82 per cent. of the total population) are not available for 1921 and 1922. But the Save a Life League reports the absolute numbers for those years in the whole country as over 20,000 and 13,530. These would mean a rate of about 20 and 13 respectively.

In a recent monograph, Weichbrodt¹ has analyzed European figures and discussed some interesting factors. He points out the increase in the proportion of women who commit suicide that has come simultaneously with their assumption of more active responsibility. In the United States the ratio of men to women suicides has changed from 3.3:1 in 1916, to 2.7:1 in 1920. Comparative studies of the suicide rates among Catholics, Protestants and Jews lead to the conclusion that devoutness, and not the particular form of faith, is the important element. Bratz,² presumably using the same figures, stresses the increasing tendency to individualism, with consequent loss of family and community ties, as an important contributing factor.

Recently there has been discussion of the supposedly greater frequency of suicide among physicians than among other professional classes. The figures compiled by THE JOURNAL from its records for the years 1916 to 1922 are: 39, 31, 39, 38, 32, 69 and 56. The approximate number of physicians during this period is from 158,000 to 160,000. Unfortunately, there are no figures available of other professions that would permit an actual comparison. But when it is realized that suicide is considerably more frequent among brain workers than among hand workers, there is little reason to assume that there is anything in the practice of medicine that conduces to suicide. The relation to employment already quoted suggests that it is lack of work and not overwork that most often leads to suicide. The rise in 1921 is entirely in accord with the general increase of suicide throughout the country.

1. Weichbrodt, R.: *Der Selbstmord*, Monatsschr. f. Psychiat. u. Neurol., 1923, Supp. 22.

2. This article is abstracted in the Berlin Letter in this issue.

Evolution.—Among the resolutions adopted by the council of the American Association for the Advancement of Science at its recent meeting in Boston were the following which pertain to the question of evolution: (1) The council of the association affirms that, so far as the scientific evidences of the evolution of plants and animals and man are concerned, there is no ground whatever for the assertion that these evidences constitute a "mere guess." No scientific generalization is more strongly supported by thoroughly tested evidences than is that of organic evolution. (2) The council of the association affirms that the evidences in favor of the evolution of man are sufficient to convince every scientist of note in the world, and that these evidences are increasing in number and importance every year. (3) The council of the association also affirms that the theory of evolution is one of the most potent of the great influences for good that have thus far entered into human experience; it has promoted the progress of knowledge; it has fostered unprejudiced inquiry, and it has served as an invaluable aid in humanity's search for truth in many fields.

1. Douglas, C. G., and Haldane, J. S.: *The Regulation of the General Circulation Rate in Man*, J. Physiol. 56: 69 (Feb.) 1922.

Current Comment

BORAX AS A FOOD PRESERVATIVE

A medical officer of a London suburb recently reported that some sponge-cake sold in a local bakery had been found to contain more than 35 grains of boric acid to each pound of cake. Investigation showed that the source of the boric acid was the liquid eggs (that is, egg-yolk and albumin, without the shells) shipped from China and reconstituted in England, used in the manufacture of the sponge-cake. The liquid-egg trade in England is said to amount to nearly \$10,000,000 annually. Practically no liquid-egg yolk containing boric acid comes into the United States except such as is to be used for technical purposes, such as the tanning of leather. In such instances the federal authorities require the material to be so denatured that it cannot possibly be used for food purposes or the officials demand definite proof that it will be used only for technical purposes. Liquid egg containing boric acid is refused entry into the United States on the ground that it is adulterated within the meaning of the Food and Drugs Act. The case reported from London well illustrates what happens when the bars are let down to chemical preservatives.

TREND OF THE WASSERMANN TEST

When the Wassermann test was first introduced, positive reactions were reported to have occurred in tuberculosis, scarlet fever, malaria and various other diseases. Some writers reported more than 30 per cent. of positive reactions among tuberculous patients. It is well known today that such results were erroneous; syphilis and tuberculosis exist in the same person in many instances, but the doctrine that tuberculosis alone will cause a positive Wassermann reaction is no longer held by any serologist. There is now enough evidence, it seems, to discard scarlet fever also from the Wassermann list. Hecht, Lateiner and Wilenko examined 105 cases, obtaining one positive reaction; Kolmer, in 250 cases, reported only five positive reactions, and Browning and McKenzie examined thirty-seven cases and obtained no positive reactions. Recently in *THE JOURNAL*, Christensen¹ reported 110 cases of scarlet fever, in fifty-eight of which a Wassermann test was made in every stage of the disease. Of these, fifty-three were negative at all times; five were positive with cholesterolized antigen in the first or second week, and negative later. Malaria has occasionally been reported as producing a positive Wassermann reaction. Craig² observed five cases. Thompson states that he made similar observations. The report of McConnell's³ case throws light on this question; his was a case of estivo-autumnal malaria with no clinical evidence of syphilis. The blood smear disclosed malaria parasites, and the Wassermann reaction was strongly positive. No significance was attached to the positive Wassermann reaction, which was attributed to the malaria

infection. The patient died. Necropsy revealed definite syphilitic lesions in the aorta, and involvement of the aortic leaflets. Thus, a positive Wassermann reaction supposedly due to malaria was, in fact, due to syphilis. Among 4,000 persons suffering from diseases other than syphilis, Craig obtained only twelve positive Wassermann reactions. Of the twelve, syphilis could not be entirely excluded in three, and another gave a doubtful positive reaction. It cannot be said at this time that a positive Wassermann reaction is obtained only in syphilitic infection, but the trend of recent investigation is very strongly in that direction.

TWO MORE ELECTRONIC DIAGNOSES

Some one is always taking the joy out of life. A copy of the Albuquerque, N. M., *Morning Journal* for April 18 is before us. It contains an interesting "Tale of a Guinea-Pig," occupying the greater part of a page of the paper, and written by a committee of the Bernalillo County Medical Society. This society was desirous of protecting the public, of Albuquerque in particular, from exploitation by the disciples of Albert Abrams. Because of its fame as a health resort Albuquerque has proved a fertile field for these gentry. Among those doing "electronic" stunts in Albuquerque are, it seems, one F. E. MacCracken and one Henry M. Bowers, both osteopaths. In order to lend an air of verisimilitude to an otherwise bald and unconvincing tale, the committee of the Bernalillo County Medical Society had blood specimens sent to MacCracken and Bowers from another town in that state. The specimens were supposed to be, respectively, from a hypothetical "Miss Bell" and an equally fictitious "Mrs. Jones." Actually, the specimens of blood were from a guinea-pig. The Albuquerque *Morning Journal* reproduces a letter sent to "Miss Bell" signed F. E. MacCracken and one sent to "Mrs. Jones" from Bowers. Miss Bell was told that she had "lowered resistance" which had "effected [sic!] your digestive system, the Kidneys or Renal System and the Cerebro-Spinal or Central Nervous System." "Miss Bell" also had "Digestive Sarcoma Cardiac end of the stomach 6 ohms"; this "in later stages will be noticed by Orthodox Medicine as a Cancer. But at this stage you have only 6 ohms and is in the form of an ulcer." Also "Miss Bell" had a streptococcus infection of the left frontal sinus, of both antrums, of "the Gall Bladder and the Left Tube." Could one expect a more interesting diagnosis to be made from a drop of blood, taken from a male guinea-pig? "Mrs. Jones," according to Bowers, had a "tuberculous reaction" but this "does not amount to very much." Her great trouble, according to the diagnosis, was with her "digestive reaction" and "this together with the puss [sic!] reaction, which we call streptococcus and staphylococcus is the cause of the eczema." Here again it must be recorded that the specimen of blood from which this diagnosis was made was the same guinea-pig whose sanguineous fluid was furnished MacCracken. Both Bowers and MacCracken suggested treatment. MacCracken thought that it would require "at least eight or ten weeks" to clear up "Miss Bell's" case. Bowers was "quite sure that your case would yield very nicely to our method

1. Christensen, G. E.: The Wassermann Reaction in Scarlet Fever Patients, *J. A. M. A.* **80**: 1119 (April 21) 1923.

2. Craig, C. F.: The Wassermann Test, Ed. 2, St. Louis, C. V. Mosby Company, 1921, p. 178.

3. McConnell, Guthrie: Positive Wassermann Test in a Fatal Case of Estivo-Autumnal Malaria, *J. A. M. A.* **80**: 1123 (April 21) 1923.

of treatment." All of which points to the need of some new machine from the Abrams laboratory that will be sufficiently discriminating to prevent a reaction for pus tubes from the blood of male guinea-pigs.

Association News

THE SAN FRANCISCO SESSION

Hotels at San Francisco

A list of San Francisco hotels, together with rates to be charged, was printed in *THE JOURNAL*, April 21. It will be seen from an examination of this list that the prices of hotel accommodations will vary from \$1 to \$12 a day. There need be no fear, therefore, that abundant accommodations at prices to suit all persons will not be available at San Francisco. For a number of the most prominent hotels, the rates published in *THE JOURNAL* will apply whether one or two persons occupy a room. In other words, a room, the cost of which is stated as \$8, will in certain hotels cost no more when occupied by two persons than when occupied by one.

Phi Beta Pi Fraternity Banquet

All members of the Phi Beta Pi Fraternity who attend the annual session are urged to make reservations for the dinner to be given by that fraternity at the "Plantation" at 7 o'clock, June 28. Dr. C. M. Johnson, 1344 Third Avenue, San Francisco, will be glad to receive applications for reservations.

Week End Trips After the Annual Session

Arrangements have been made for week end trips from San Francisco to Yosemite Valley and to Del Monte for parties who wish to visit these noted resorts. The trip to Yosemite Valley has been arranged as follows: Leaving San Francisco Saturday, June 30, at 11 p. m., and returning on Tuesday, July 3, at 10:05 p. m. The expenses, including Pullman berths, meals and lodging, will be included in the charge of \$59. Special parties of six each can make arrangement for this trip by automobile at the same rate. Among the main points of interest to be visited are Artist Point, Inspiration Point, Signal Peak, Wawona, Mariposa Grove of Big Trees, Chinquapin, Bridal Veil Meadows, Mono Meadows, Ostrander Rock, Glazier Point and Overhanging Rock.

The trip to Del Monte will cost \$30, and will be made by automobile. Parties for this trip must include at least six persons. Leaving San Francisco, June 30, at 10 a. m., the return to San Francisco will be at 6 p. m., July 2. Del Monte is one of California's largest and most popular resorts, consisting of a vast estate of approximately 18,000 acres, and is situated on the historic Monterey Peninsula. It is located 125 miles south of San Francisco. It is stated of Del Monte that it is the one place in America where one can do everything or nothing. Golf, polo, tennis, horseback riding, swimming, fishing, hunting, sailing, dancing, idling or working are all provided for. A special postsession golf tournament is being arranged for the morning of Sunday, July 1, and there may possibly be a polo game during the afternoon of that day.

Reservations for the Yosemite trip or for the Del Monte automobile trip must be made through the American Express Company, Market and Second streets, San Francisco.

Antituberculosis Measures in Holland.—The fight against tuberculosis is carried on in an efficient manner, especially at Amsterdam. A central dispensary, in charge of a full-time physician, is charged with the arrangement of all social measures in connection with the patients. He places the patients in sanatoriums or hospitals, according to the seriousness of their sickness. Therefore, he is constantly aware of the number of unoccupied beds in the tuberculosis department of the local hospitals and in the sanatoriums of the whole country.—J. L. C. Wortman, *Modern Hospital* 20:154 (Feb.) 1923.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Hospital News.—The Druid City Hospital, Tuscaloosa, was opened, March 26.—The contract has been let for the erection of a new \$75,000 hospital at Jasper.—The Salter Hospital, Eufaula, was opened, March 22.

Virginians Study Alabama Health Methods.—Three prospective officials of the Virginia State Department of Public Health have arrived in Montgomery to study public health methods and administration in Alabama.

State Medical Meeting.—At the fifty-sixth annual session of the Medical Association of the State of Alabama, in Mobile, April 17-20, the following officers were elected for the ensuing year: president, Dr. William W. Harper, Selma; vice presidents, Drs. James M. Watkins, Troy, and Elijah M. Harris, Russellville; secretary, Dr. Henry G. Perry, Montgomery, and treasurer, Dr. Jacob U. Ray, Woodstock.

ARIZONA

University President Inaugurated.—The inauguration of Cloyd H. Marvin as president of the University of Arizona, Tucson, occurred, April 23-24. Dr. George E. de Schweinitz, President of the American Medical Association, appointed Dr. Delamere F. Harbridge of Phoenix the official delegate to represent the Association at the inaugural ceremonies.

CONNECTICUT

Hartford County Medical Society.—At the one hundred and thirty-first annual meeting of the society in Hartford, April 3, Dr. Arthur S. Brackett, Bristol, was elected president, and Dr. Anthony W. Branon, Hartford, secretary-treasurer.

Sterling Chemical Laboratory Dedicated.—The Sterling Chemical Laboratory at Yale University, New Haven, was dedicated, April 4, in the presence of the American Chemical Society, the trustees under the will of John W. Sterling, and the authorities of Yale University. George Church, New York, acting for the Sterling trustees, presented the laboratory to Yale University, and President Angell accepted it. Following his address, Dr. Angell turned the building over to Edward C. Franklin, president of the American Chemical Society, who made a speech of greeting and thanks.

FLORIDA

Personal.—Dr. Harold M. Beardall, city physician of Orlando, has resigned. He will be succeeded by Dr. Sylvan McElroy.—Drs. P. E. Watts and A. H. Weathers were elected president and secretary, respectively, of the Jacksonville Medical Society at the recent annual meeting.

IDAHO

Supreme Court Upholds Physician.—*Northwest Medicine* states that the supreme court has decided in favor of Dr. Parley R. Nelson, Rexford, who was prosecuted for failure to pay a license tax for the practice of his profession. When the physician refused to pay the tax he was fined in the police court for violation of the ordinance. The district court of Madison County reversed this action and the city of Rexford appealed to the supreme court.

Legislative News.—The last legislature passed Senate Bill 129, which provides that no person can practice any system of treating the sick without a license to perform or prescribe such service. This bill was opposed by the osteopaths, whose main argument was that it would not allow them to use the Abrams treatment. The bill which passed by a vote of 58 to 4 will go into effect May 8.—House Bill 153, exempts physicians from the necessity of obtaining an optometrist's license. The existing law states that no one can fit or adapt lenses without first having secured an optometrist's certificate.—A bill that failed to pass by a vote of 21 to 20 provided for a law corresponding to the Harrison Narcotic Law. This bill permitted physicians only to prescribe or use narcotics. The present law is unenforceable, as it conflicts with the federal law.

ILLINOIS

Physician Fined.—It is reported that federal Judge English fined Dr. Ezra Hart, Harrisburg, \$500 when he pleaded guilty, April 14, to the second offense of violating the Harrison Narcotic Law.

Rabid Animals in Saline County.—Reports reaching the state department of public health state that a large number of animals, including cattle, horses, sheep and dogs, in Saline County, have recently been bitten by rabid dogs, and that one child in Galatia was bitten. Investigations to date show that dogs generally are under quarantine in the affected area. The department of health is keeping in touch with the situation.

Antimosquito Campaign.—A permanent campaign for the eradication of malaria mosquitoes is underway in Belleville. The estimated cost of the first year's work, \$3,500, has been provided. The expenses will be borne jointly by the local government, the local board of trade and the International Health Board. The state department of public health will furnish a sanitary engineer to supervise the work. This campaign is a direct result of the successful campaign at Carbondale last year, which is also on a permanent basis.

Chicago

"Herb Doctor" Fined.—It is reported that Stanley Gatkowski, self-styled herb doctor, was fined \$100 and costs by Municipal Judge O'Connell, April 25, for practicing medicine without a license.

Research on Respiratory Diseases.—The Metropolitan Life Insurance Company has renewed its grant of \$3,000 to the department of hygiene and bacteriology of the University of Chicago, for special investigations in respiratory diseases.

INDIANA

Practitioner Fined.—Reports state that Robert J. Clark, alias Smith, Marion, pleaded guilty to a charge of practicing medicine without a license and was fined \$100 and \$25 costs, in the superior court, April 17.

Physicians' Licenses Revoked.—The licenses held by Drs. George W. Thain and James W. Squires, both of Fort Wayne, were revoked, April 21, by the state board of medical registration and examination, it is reported. It was alleged that the former performed an illegal operation and that the latter violated the Harrison Narcotic Law.

IOWA

Hospital News.—The new building of Sacred Heart Hospital, LeMars, erected at a cost of \$300,000, was dedicated, May 6.—The Virginia Gay Memorial Hospital opened its new building for inspection, March 20.—Ground was broken, April 8, for the new home of St. Luke's Hospital, Mason City. More than 2,000 persons attended the ceremonies.

Personal.—A gift of \$520 in gold was presented to Dr. Alfred L. Brooks, by his patients and friends, on his fortieth anniversary in practice in Audubon County.—Dr. Sara E. Foulks, superintendent of the Davenport Hospital, has been granted leave of absence to serve in Greece with the American Women's Hospital Association.—W. D. Hayes has been appointed commissioner of public health and director of laboratories of Sioux City.

College Affiliation.—The affiliation of Coe College of Cedar Rapids with the Nurses' Training School of the State University of Iowa Hospital, for the purpose of organizing a five-year liberal arts nursing course, has been completed. Des Moines and Drake universities have already affiliated with the training school. Students may, after a certain amount of preparatory work in these universities, now enter the nurses' training school, and, after further training there receive a certificate of registered nurse and a degree from the affiliated school.

KANSAS

Course for Health Officers.—The twelfth annual session of the Kansas School for Health Officers was held in Topeka, April 23-28, under the auspices of the secretary of the state board of health. More than 400 health officers and nurses attended.

KENTUCKY

Woman Asks Injunction Against Health Department.—A suit has been filed praying that the board of health, Lexington, be enjoined from mailing notices to the petitioner, ask-

ing her to report at a clinic for treatment and threatening her with arrest in event of default. The petitioner alleges that she went to a clinic on the advice of a nurse, to be examined for trouble in her stomach and head, and that a blood test was made without her knowledge or consent, since which time the notices complained of have been sent. She denies that she had any venereal disease.

LOUISIANA

Hospitals Dedicated.—The Shrine Hospital for Crippled Children, Shreveport, erected at a cost of \$300,000, was dedicated, April 21.—The John Dibert Memorial Building at the Eye, Ear, Nose and Throat Hospital, New Orleans, was formally opened to the public, March 15.

Louisiana State Medical Society.—The forty-fourth annual convention of the state medical society was held in New Orleans, April 10-12. Dr. Lester J. Williams, Baton Rouge, was elected president; Drs. Charles V. Unsworth, New Orleans, Marvin Capelle, Alexandria, and Foster M. Johns, New Orleans, vice presidents, and Dr. Paul T. Talbot, New Orleans, secretary-treasurer (reelected).

Illegal Practitioners.—Injunctions restraining four men from practicing medicine without a license were obtained by the state board of medical examiners, April 20, in the civil court of New Orleans. H. Goldberg was alleged to have attempted to treat chronic nephritis by prescribing his Vita Nos. 1, 2 and 3. The patient died. It is reported that Edward L. DeBrueys was charged with diagnosing a case as kidney trouble and charging the patient \$100, and that Vincent A. Nichols was charged with attempting to cure by the "laying on of hands." G. M. Campbell was the fourth person said to be charged with illegal practice.

MAINE

Sheppard-Towner Law Vetoed.—Governor Baxter's veto of the Sheppard-Towner Law was sustained by an overwhelming vote of the legislature, March 28, according to reports.

MARYLAND

Herter Foundation Lectures.—The fifteenth course of the lectures on the Herter Memorial Foundation of Johns Hopkins University Medical Department, Baltimore, was given by Dr. Karel F. Wenckebach, professor of medicine, University of Vienna, Austria, May 3, 4 and 5, in the amphitheater of Johns Hopkins Hospital. His subject was "The Irregular Action of the Human Heart and Its Clinical Significance."

MASSACHUSETTS

New Dean for School of Medicine.—Dr. Alexander S. Begg, professor of anatomy at Boston University School of Medicine, has been appointed dean of the school to succeed Dr. John P. Sutherland, who resigned after twenty-six years of service.

Physicians Advise on Medical Career.—The last of a series of lectures on the various professions, given to Harvard University students, was delivered by Dr. William S. Thayer, physician-in-chief of Johns Hopkins Hospital, Baltimore, April 9. The following day individual conferences were given to students by Drs. Homer Gage, Worth Hale, Frederick C. Shattuck, Alfred Worcester and Walter B. Cannon.

MICHIGAN

Personal.—Prof. Walter B. Pillsbury, on leave of absence from the University of Michigan, has been delivering a series of eighteen lectures at Montpellier, France.—Dr. Max Ballin has resigned from the public welfare commission, Detroit.—Charles Freiburger, Detroit, for four years secretary of the board of health, has been appointed secretary to Mayor Doremus.

Hospital News.—Building "E" a large two winged brick structure of the Eloise Asylum, Detroit, was completely destroyed by fire, recently. Two unidentified women were burned to death. The building housed about 250 women, most of whom were bed patients.—The new municipal tuberculosis sanatorium, to be known as Sunshine Hospital, Grand Rapids, was opened, April 4.

County Associations Affiliate.—The Ionia County Medical Society gave a complimentary dinner at Belding, April 12, to the Montcalm County Medical Society. It was decided to consolidate the activities of the two societies. The following

officers were elected: Dr. Robert H. Haskell, president; Dr. John R. Hansen, vice president, and Dr. Fred A. Johnson, secretary-treasurer. The new society will be known as the Ionia-Montcalm Medical Society.

MINNESOTA

Personal.—Dr. I. George Wiltrout was recently elected mayor of Oslo.—Dr. Robert Guilmette, Argyle, has been awarded the British War Service Medal for services rendered with the Canadian Army Medical Corps.—Dr. David A. Stewart, director of the Manitoba Sanatorium for Consumptives, Ninette, Manitoba, Canada, gave an address on "Tuberculosis: The Intestinal Phase," before the Mayo Clinic, Rochester, April 18.—Dr. Julius R. Sturre, mayor of Watkins, has been elected president of the Meeker County Medical Society, and president of the city commercial club.

MISSOURI

Banquet for Past Presidents.—The Jackson County Medical Society gave the first annual dinner in honor of its past presidents, in Kansas City, April 14. Dr. Clarence B. Francisco, presided. Dr. Nathaniel Allison, dean of the Washington University Medical School, St. Louis, spoke on "Medical Problems." The prize of \$100 offered to physicians of less than ten years' experience for the best paper on original research from September, 1921, to December, 1922, was awarded to Drs. Thomas G. Orr and Russell L. Haden.

Hospital News.—The additions to the Missouri State Sanatorium, Mount Vernon, will be dedicated with appropriate ceremonies on National Hospital Day, May 12.—A new hospital will be erected in Kansas City by the Baptist Hospital Association, it is announced, at a cost of \$500,000. Plans have been completed for a new \$500,000 maternity hospital at the Washington University School of Medicine. The hospital will be eight stories high and will eventually have a capacity of 250 beds. It will supplant the present St. Louis Maternity Hospital, which has only thirty-three beds, and will have an affiliation with the medical school, similar to that of the St. Louis Children's Hospital, the Shriners Hospital for Crippled Children and the Barnes Hospital.

NEBRASKA

Professor Frankl to Give Course of Lectures.—Arrangements have been made for Prof. Oscar Frankl to conduct in Omaha a course of lectures on gynecology and endocrinology similar to that given by him recently in other cities. The course will be given during the week May 12-18. Those interested may communicate with Dr. D. T. Quigley, Thirty-Fourth and Farnam Streets, Omaha.

NEW HAMPSHIRE

Personal.—Dr. Edgar O. Crossman, Manchester, has been appointed director of the U. S. Veterans' Bureau for the New England district.—Dr. Harry O. Chesley, Dover, and Dr. Thomas J. Dougherty, Somersworth, have been appointed county physicians for Strafford County.

State Accepts Sheppard-Towner Measure.—The Murdock bill, which would withdraw New Hampshire from cooperation with the federal child welfare bureau, under the provision of the Sheppard-Towner Law was killed by practically a unanimous vote, April 10, in the house of representatives. The principal speaker against the act based his opposition on a "growing tendency to build up a paternalistic government at Washington, D. C., through the distribution of federal aid."

NEW JERSEY

Chiropractor Fined.—The state board of medical examiners reports that Max Nagel, chiropractor, Jersey City, was fined \$200 and costs, recently, following conviction on the charge of practicing medicine without a license.

NEW YORK

Physician Sentenced.—It is reported that Dr. Simeon B. Minden was sentenced from two and one half to ten years in Sing Sing Prison, in the Bronx County Court, April 25, following conviction on a charge of manslaughter. Dr. Minden was indicted, March 29, 1921, for performing an illegal operation. The patient died. In 1905, Dr. Minden was fined \$500 for violation of the patent laws, and in 1907 was fined a like amount for violation of the Harrison Narcotic Law.

Infant and Maternity Welfare.—Eighteen leading specialists in obstetrics and children's diseases serve as a board of regional consultants of the division of maternity, infancy and child hygiene of the state department of health. Since their first meeting in September, 1922, the consultants have addressed twenty-seven medical societies to explain work planned in the various districts. A demonstration nursing service of from one to four months' duration has been conducted in six communities. Since November, the division has had two consulting field nurses who spend several days in each locality to assist in maternity activities. In order to train nurses to teach maternity hygiene, an extension course has been organized in which demonstrations in various parts of the state have been held; 320 nurses enrolled for this course. A breast-feeding campaign has been opened on Long Island in cooperation with the Brooklyn Pediatric Society in which every new mother is visited by her family physician or by a nurse.

New York City

Dinner to Dr. McGrath.—Dr. John J. McGrath, who was recently appointed chairman of the Board of Bellevue and the Allied Hospitals, was the guest of honor at dinner at the Hotel Commodore, April 19. Addresses were made by Dr. George D. Stewart, Judge Otto Rosalsky, and Judge Cornelius F. Collins.

Campaign for Hospital Building.—The cornerstone of the new building of the Hospital for Joint Diseases, will be laid, May 6. Through the sale of 2,800 bronze memorial tablets at \$250 each, and other methods, it is expected \$700,000 will be raised. The hospital will have 275 rooms of which seventy-five will be private.

Public Health Lectures.—During 1922, the Bureau of Public Health Education of the Department of Health supplied 3,711 lectures. These were delivered to 106,594 people in industrial establishments, labor union halls, churches and public school buildings; 500 lectures were delivered in native tongues, including Arabic, French, German, Russian, Yiddish, Greek, Italian, Lithuanian, Polish, Portuguese, Spanish and Assyrian. There is such demand for lecturers able to speak foreign languages that the bureau maintains a staff of speakers. While the funds provided for this work, limit lectures to the City of New York, special arrangements can be made with the division of lectures for engagements outside the city.

Distribution of United Hospital Fund.—The annual distribution of the United Hospital Fund took place at City Hall on April 26, when \$550,000 was allotted to fifty-six member hospitals of the fund. This was \$25,000 more than was distributed last year. Institutions in New York received \$474,976.58 and those in Brooklyn, \$75,023.42. Of these amounts \$233,928 was allotted to eighteen general hospitals, \$97,642 to institutions caring for women and children, \$68,069 to twelve special hospitals, and \$75,336 to institutions for chronic and convalescent cases. Among the institutions receiving the larger contributions were the following: Mount Sinai, \$37,366; St. Luke's, \$32,036; Montefiore Home, \$45,931; Orthopedic, \$23,829; New York, \$22,105; Lying-In, \$21,291; Presbyterian, \$21,908.

NORTH CAROLINA

Personal.—Dr. Amzi J. Ellington has resigned as county health officer of Wayne County, to become effective, June 1.—The governor has reappointed Drs. Joseph Howell Way, Waynesville, and Andrew J. Crowell, Charlotte, members of the state board of health for a six-year period.—Dr. David A. Stanton, High Point, has been appointed a member of the state board of health to fill the unexpired term of Dr. Fletcher R. Harris, Henderson, who resigned recently.

State Association News.—At the seventieth annual meeting of the Medical Society of the State of North Carolina, in Asheville, April 17-19, the following officers were elected for the ensuing year: president, Dr. Vance McGougan, Fayetteville; vice presidents, Drs. Joseph L. Spruill, Sanatorium, Eugene B. Glenn, Asheville, and David A. Garrison, Gastonia, and secretary-treasurer, Dr. Lewis B. McBrayer, Sanatorium, secretary-treasurer. Raleigh was chosen as the meeting place for the next annual convention.—Dr. Charles W. Armstrong, Salisbury, was elected president of the North Carolina Public Health Association to succeed Dr. Alexander C. Bulla, Winston-Salem, and Dr. Frank M. Register, Raleigh, was reelected secretary.—At the sixth annual meeting of the North Carolina Hospital Association in Asheville, Dr. Lester A. Crowell, Lincolnton, was elected president to succeed Dr. Eugene B. Glenn.

OHIO

Chiropractors Sentenced.—According to reports, R. A. Kauffmann, R. P. Lorey and J. W. Webb, chiropractors of Chillicothe, were found guilty of practicing medicine without a license, April 13, and fined \$25 each, and costs. On their refusal to pay the fine, they were sentenced to serve two months in the county jail.

Public Health Officers Elect.—At the annual election of the Ohio Public Health Association, April 13, in Columbus, Dr. Clyde W. Kirkland, Bellaire, was elected president to succeed Dr. Clarence D. Selby, Toledo. Dr. Linsly R. Williams, head of the tuberculosis commission in France for the Rockefeller Foundation, New York, was the principal speaker. Dr. John E. Monger, state health officer, also gave an address.

Medical Science Building Under Construction.—The contract has been let for the construction of the medical science building, to be known as Hamilton Hall, at Ohio State University, Columbus. The medical school will be moved from its present downtown site to the campus proper and Hamilton Hall will be the first of the group of buildings to be devoted to the medical college. The medical science building will represent an expenditure of \$270,000.

Hospital News.—The name of the Protestant Hospital, Columbus, has been officially changed to White Cross Hospital.—A prenatal clinic has been established at the Akron City Hospital, with the object of giving instruction and medical advice, covering general health conditions to prospective mothers who cannot pay for extended medical attendance. Hospitalization will be attempted in abnormal cases. This clinic will cooperate with practicing physicians in educating mothers to seek skilled medical aid.—Plans for a proposed \$2,000,000 homeopathic hospital in East Cleveland collapsed, April 17, following the failure of the Cleveland Homeopathic Association and the East Cleveland Hospital Commission to agree on managerial policies.

PENNSYLVANIA

Hospital Association Conference.—The second annual conference of the Pennsylvania Hospital Association was held in Philadelphia, April 26-27. Daniel D. Test presided; Mayor Moore addressed the meeting. Elmer E. Mathews of the City Hospital, Wilkes Barre, was elected president; Dr. George M. Reese, State Hospital, Shamokin, treasurer, and John M. Smith, Hahnemann Hospital, Philadelphia, secretary.

Philadelphia

Elected to Jefferson Faculty.—The board of trustees of Jefferson Medical College, April 18, announced the election of Withrow Morse, Ph.D., of the University of West Virginia, Morgantown, to the chair of physiologic chemistry.

Fellows of the American College of Physicians.—Twenty-two Philadelphians were included in the 190 physicians admitted to fellowship in the American College of Physicians at the closing session, April 6, in Philadelphia. On account of the illness of Dr. James M. Anders, retiring president, his address was read by Dr. David Riesman.

RHODE ISLAND

Refuses Maternity Act.—The house of representatives, April 17, refused by roll call vote of 49 to 47, to pass the Peck bill, accepting the Sheppard-Towner Law.

SOUTH CAROLINA

Free Typhoid Inoculation.—A typhoid inoculation clinic was opened by the Columbia Health Department, April 9. It will continue throughout the summer. Campers and vacationists are especially urged to become immunized against typhoid fever. More than 1,000 Columbians took advantage of the free service last year.

TENNESSEE

Rotary Society for Crippled Children.—Delegates from various rotary clubs met in Nashville, April 10, and organized the Tennessee Rotary Society for Crippled Children. The following other state societies have been formed: California, Illinois, Kentucky, Michigan, New Jersey, New York, Pennsylvania, West Virginia, and Ontario, Canada. Clinics for crippled children were held at the Vanderbilt Hospital, Nashville, through the courtesy of the state medical association. The crippled children movement in connection with Rotary was organized in 1919 in Ohio.

TEXAS

Hospital News.—The city commission has adopted the plans for the new \$50,000 municipal hospital to be erected at Ennis.—Ground was broken in April for the new buildings for the Potter County Hospital, Amarillo, to be erected at a cost of \$250,000.—The new \$85,000 addition to the Central Texas Baptist Sanatorium, Waco, was formally opened to the public, March 29.

VIRGINIA

Chiropractors Fined.—According to reports, Bristow & Bristow, W. H. McChesney, and Fannie C. Bristow, chiropractors of Norfolk, were fined \$25 and costs recently for practicing medicine without a license.

State Health Association Election.—At the annual meeting of the Virginia State Public Health Association in Richmond, April 17, Dr. Powhatan S. Scheneck was elected president; Dr. Roy K. Flannagan, first vice president; Dr. Charles Keister, second vice president, and Dr. Lonsdal J. Roper, secretary-treasurer.

WASHINGTON

Personal.—Dr. Wilfred Grenfell, of Labrador, gave an address at the annual banquet of the King County Medical Society, Seattle, March 24. — Dr. David Livingstone addressed the Pierce County Medical Society at Tacoma, April 24, on the "Early History of Insanity in the Northwest."—Dr. Herbert E. Coe, Seattle, has been appointed director of the state department of child hygiene.

WISCONSIN

Physicians Refuse to Sign Death Certificate.—Every physician in Cadott refused to sign the death certificate of Sandford Richard, who died, April 4, while under the care of L. E. Laramy, local chiropractor. It was necessary for the coroner to perform a necropsy. Richard had died of hemorrhage of the lungs.

CANADA

Association News.—The summer school of the British Columbia Medical Association will be held in July this year immediately following the Annual Session of the American Medical Association in San Francisco. It is hoped that prominent physicians from the eastern and midwestern states who will be passing through Vancouver on their way to or from California, will visit the school.—The St. John (N. B.) Medical Society, which has been discontinued since the World War, was reorganized at a recent meeting.

University News.—A course in public health nursing will be established at Dalhousie University, Halifax, in cooperation with the provincial department of health, the Nova Scotia Red Cross, the Victorian Order of Nurses and the Massachusetts-Halifax Health Commission.—Pending the completion of the new health center under construction at Dalhousie University, the fifth year medical students have special clinics in certain city institutions.—All students entering McGill University, Montreal, to study medicine after September, 1923, will pursue a seven years' course, it is announced by the *Canadian Medical Association Journal*. The first two years will be spent in the arts faculty, where a revised course will be given with special attention to languages. The next four years will be spent as a student in the medical faculty, and the final year will be a year's hospital training.

GENERAL

American Child Health Association.—The Commonwealth Fund of New York has entered into an agreement with the American Child Health Association whereby \$50,000 a year will be contributed to the association in order that it may be prepared to administer the Commonwealth Fund Demonstration Program under a committee representing both groups. The National Child Health Council has voted to turn its functions in the field of child health over to the new association, and, with the consent of the American Red Cross, to transfer to it the administration of the Richland County and Mansfield, Ohio, Child Health Demonstration. Another demonstration is being conducted at Fargo, S. D., and a third was recently opened in Dallas, Texas. The finance committee of the association has authorized six scholarships, two for teachers, two for nurses and two for physicians, to enable

them to take courses fitting them to conduct better health work for children. The official organ of the association is the *Mother and Child*. A bureau of research was organized, May 1, with Dr. George T. Palmer, of the Detroit Board of Health, as director.

Society News.—The American Society of Tropical Medicine will hold its regular annual meeting, June 25-26, at San Francisco.—The semi-annual meeting of the Medical Society of Virginia, Maryland and District of Columbia will be held at Sandy Spring, Md., May 16, under the presidency of Dr. William L. Lewis, Kensington, Md.—The twentieth annual meeting of the Society for Experimental Biology and Medicine was held in New York, April 18. Holmes C. Jackson, Ph.D., who has served as secretary-treasurer of the society for the past ten years, was elected president to succeed Dr. George B. Wallace; Dr. James W. Jobling was elected vice president and Victor C. Myers, Ph.D., secretary-treasurer. The society was founded by the late Dr. Samuel J. Meltzer in 1903, and now has branches on the Pacific Coast, in Minnesota, western New York and Peking, China.—The sixty-fifth annual meeting of the American Chemical Society was held in New Haven, Conn., April 2-7, in Woolsey Hall, Yale University. Welcoming addresses were given by Colonel Bingham, lieutenant governor, for the state; Mayor Fitzgerald, for the city, and President Angell, for the university.

Bequests and Donations.—The following bequests and donations have recently been announced:

Englewood (N. J.) Hospital, \$600,000, the result of a drive for funds.
New Samaritan Hospital, Philadelphia, \$327,255, the result of campaign for funds.

Western Reserve University School of Medicine, Cleveland, \$500,000, toward a training school for nurses, by Mrs. Chester C. Bolton, of Cleveland, and \$63,000, under the will of Dr. R. D. Reynolds, of Greensprings, Ohio.

Yale University, New Haven, Conn., \$100,000, anonymously.

Beth Israel Hospital, New York, \$100,000; subscribed by twenty diners at a recent banquet of directors and friends of the hospital. A private room will be named for each of the donors.

Harvard University, Boston, \$100,000, for research in forestry, anonymously.

Northwestern University, Chicago, \$100,000, to be used as a permanent endowment fund, the income to go annually to the professor who has made the "greatest contribution to learning in the humanities," anonymously.

Nathan Littauer Hospital, Gloversville, N. Y., \$50,000, as a memorial to his father, by Lucius N. Littauer, founder of the institution.

Ashton Memorial Hospital, Pipestone, Minn., \$50,000, for the erection of a hospital in his memory, by O. E. Ashton, of Pipestone.

Kingston Hospital, R. I., for the erection of a new hospital at South Kingston, \$50,000, anonymously.

Druid City Hospital, Tuscaloosa, Ala., \$25,000, following a drive for funds, and \$10,000 for a nurses' home, donated by J. T. Horne.

Charity Hospital, New Orleans, \$25,000, anonymously.

Jewish Hospital, Brooklyn, Abraham Memorial, \$75,000 by the medical staff for a new laboratory, museum and auditorium; from Dr. Leon Louria, \$20,000; Dr. William Linder, \$10,000; William Meruk, \$5,000, and Nathan Strauss, \$1,000. Dr. Joshua Ronsheim will equip a ward at his own expense.

Henry W. Putnam Memorial Hospital, Bennington, Vt., \$15,000; New York Polyclinic Hospital, \$11,000, and the New York Skin and Cancer Hospital, \$10,000, by the will of Elizabeth T. Robinson.

New York Association for Improving the Condition of the Poor, St. John's Guild, New York Eye and Ear Infirmary, each \$10,000; New York Skin and Cancer Hospital, and the State Charities Aid Association, each \$5,000, by the will of Miss Grace Wilkes.

Elliot City Hospital, Keene, N. H., as a memorial to their daughter, \$10,000, by Mr. and Mrs. Grenville of New York.

Jewish Hospital, Cincinnati, \$10,000, to equip one floor of the new building, by Mrs. Myer Oettinger, and \$10,000 by Mrs. Ranschoff, in memory of her husband, Dr. Joseph Ranschoff of Cincinnati, to equip the surgery department.

Bridgeport (Conn.) Hospital, \$10,000, by Margaret A. Mallett.

American Theatrical Hospital Association, \$7,000, proceeds of the annual benefit held by stage stars in Chicago.

Hahnemann Medical College and Hospital, Philadelphia, and the Children's Seashore House, Atlantic City, N. J., \$5,000, each, by the will of Frank W. Hall.

Mount Sinai Hospital, New York, \$5,000, by the will of Herman L. Walter.

Broad Street Hospital, New York, \$5,000, by Henry P. Goldschmidt.

Meharry Medical College, Nashville, Tenn., from a friend in Philadelphia, and from Dr. William J. Gunn, Tallahassee, Fla., \$1,000 each.

New hospital for negroes, St. Petersburg, Fla., \$941, from the winter visitors.

For a hospital at Camp Crosby, Ind., 126 acres of land, and funds for the erection of the institution, by E. V. Ball of Muncie, Ind.

Levering Hospital, Hannibal, Mo., 100 feet of land adjoining the hospital, by W. B. Pettibone of Hannibal.

Denver Sanatorium, Denver, a bed has been donated by the Jewish Antituberculosis Association of Boston.

Deaconess Hospital, Phoenix, Arizona, furniture for a room, by the Korrick Benevolent Society.

Madison County (Ill.) Medical Society, the proceeds of the sale of the residence of the late Dr. Langley A. Whitley of Godfrey.

Richmond, Ind., the Smith farm, consisting of more than 200 acres, as a site for a tuberculosis hospital, by Mr. David Esteb.

LATIN AMERICA

Cerebrospinal Meningitis in Mexico.—Cerebrospinal meningitis was reported at Oaxaca among members of the police department. There were twenty-three cases and thirteen deaths. The outbreak was controlled by closing the police station and transferring headquarters to a nearby town.

Personal.—Dr. Afranio do Amaral has been invited to address the Pathological Society of New York on "Anti-Ophidic Immunity." He is assistant at the Instituto de Butantan, the headquarters of production of snake poison antisera in Brazil.—The *Folha Medica* of Rio de Janeiro mentions the approaching departure from Brazil of Dr. Lewis Wendel Hackett, who for six years has been in charge of the work of the Rockefeller Commission in its campaign against hookworm in Brazil. It pays high tribute to his personality, aside from his work, and to his initiative in founding an institute of hygiene, a visiting nurse service in Rio de Janeiro, and in getting twenty Brazilian physicians to take the public health course at Johns Hopkins University.—Prof. Juliano Moreira was the guest of honor at a special meeting of the Brazilian Sociedade de Neurologia, etc., on the completion of his twentieth year as director of the psychiatric clinic at Rio de Janeiro. He was also tendered a banquet.—Dr. Bert W. Caldwell of the International Health Board has resigned as a member of the Mexican-American Yellow Fever Commission. Dr. Emmett J. Vaughan has arrived from Guatemala to assume Dr. Caldwell's duties.—Dr. Tomas G. Perrin, recently appointed professor of pathology in the Army Medical School of Mexico, has been made a knight of the Spanish Order of Isabel La Católica by the king of Spain.—Dr. B. J. Gastélum has been appointed assistant secretary of education.

FOREIGN

Japanese Physicians Commemorate Pasteur Centenary.—In commemoration of the centenary of Pasteur, 108,000 francs were donated by Japanese medical scientists and others to the Pasteur Institute. A set of beautiful flower vases was also sent to Paris with the money.

Wireless Medical Advice.—Our exchanges announce that ships of every nationality on the sea may obtain medical advice on request from the two great hospitals in Stockholm. The Swedish government has approved a proposition to broadcast medical advice in the Swedish, English, German and French languages.

Chinese Students in Japan.—The Japanese government has planned to assist Chinese students in Japan should China carry out its proposed plan to cease giving financial aid to Chinese students in other countries. There are now 1,179 Chinese students at government schools supported by the Japanese government; of this number, 115 are medical students.

Italian Interuniversity Institute.—The authorities at Rome have organized an institution with this name to promote closer relations between the universities of Italy and other countries. The *Riforma medica* states that the new institute is organizing fellowships for foreigners wishing to do research work in Italy. Senator Gentile is in charge of the work. The headquarters are in the Palazzo Venezia, Rome.

Malaria Research Fellowships.—The Italian government will offer two fellowships, of 12,000 liras each, for research on malaria. Themes suggested for special study are the development of malaria in regions with few mosquitoes; the biology of mosquitoes; their range of flight; the incidence of malaria before the mosquito season; relations between malaria and domestic animals; and the water plants, which promote or check proliferation of mosquitoes.

Midwifery in the Dutch East Indies.—The *Nederlandsch Tijdschrift voor Geneeskunde* states that even if several thousand trained midwives could be supplied to the population of the interior of Dutch India, there would be no demand for their services. The old women of the villages render the necessary assistance. There are training schools for midwives connected with the lying-in hospitals at Semarang and Batavia, where girls are given practical training. The problem now is to educate the natives to accept their assistance.

Consumption of Alcohol in Sweden.—The law of 1916 regulating the sale of liquor and wine provides that each man above 25 years of age shall keep a record book in which his purchases of liquors and wines are noted by the seller, the amount allowed being fixed according to his social position and the size of his family, the maximum allowance being 4 liters a month. Sweden, with a population of six million

inhabitants, consumed 31.6 million liters of liquors in 1921; 37.8 millions in 1920; 14.4 millions in 1919, and 7.5 million liters in 1918. During the same years, the consumption of wines amounted to 2.8 millions in 1921; 4.1 millions in 1920, and 5.2 millions in 1919.

Arsphenamin in Japan.—A memorial has been presented to the home minister of Japan by four prominent pharmacologists in regard to the protection of the manufacture of arsphenamin. It is claimed that the German government takes advantage of cheap labor now available in that country and is able to undersell Japanese manufacturers. The government is requested to adopt the license system which prevails in other countries, so that the importation of arsphenamin may be checked to save the Japanese industry from extinction. On the other hand, a petition has been made by physicians of the Imperial Medical College to permit the importation of German arsphenamin under special license.

Personal.—Professor Hajek of Vienna has been delivering the Orsted series of lectures at Copenhagen on rhinolaryngologic topics. He spoke at a local medical society on the pathologic anatomic manifestations of congenital syphilis. —Bleuler, professor of psychiatry at Zurich, completes twenty-five years of teaching this month, and his friends are planning to celebrate the occasion. —The street at Berlanga nearest to the birthplace of Dr. Barragán, the president of the Spanish Urologic Society, has been renamed in his honor. —Dr. Hoffmann, professor of physiology at Würzburg, has been invited to deliver a three-months course of lectures at the University of Santiago. —Professor Brauer of Hamburg has been invited by the medical faculties and local medical societies to lecture in Moscow, Odessa and six other Russian cities. He was recently elected corresponding member by the Italian Academy of Medicine at Rome. —Among the new senators recently elected in Italy are two physicians, Professors Pestalozza and Baldo Rossi, of Rome and Milan. —A specially bound copy of the souvenir volume compiled in honor of Ramón y Cajal was recently presented to him with appropriate ceremonies. It forms two volumes and contains articles by his students and other admirers in a number of countries. This is only part of the tribute to Cajal that has been organized this year. —Dr. Henry Curwen, Kokstad, has been created a Companion of the Order of the British Empire for services to the government of Zanzibar.

Society News.—The Witwatersrand branches of the British Medical Association and the South African Medical Association have arranged a rapprochement which practically makes them one society. Every member of one will be an honorary member of the other, and the meetings will be held conjointly, the respective presidents taking the chair alternately. —The annual meeting of the Society for the Study of Inebriety was held in London, April 10. Dr. W. M. Feldman spoke on "Racial Aspects of Alcoholism." —The fifth International Congress of Historical Studies was held in Brussels, April 8-15. —The one hundred and fiftieth anniversary of the Medical Society of London, founded by Lettsom in 1773, was celebrated, May 3. Lord Dawson of Penn presided, and the Prince of Wales was the guest of honor. This is the oldest medical society in England. —The seventh All-Russian Convention of Bacteriologists, Epidemiologists and Authorities on Sanitation will be held, May 22-28, in Moscow, it is announced by the Russian Health Department. To all delegates from foreign countries there will be assigned suitable quarters at the government's expense. Subjects to be discussed are: (1) immunity, serum-vaccine-chemical therapy, and diagnosis; (2) bacteriology and epidemiology of the most important contagious diseases in Russia; (3) disinfection and extermination of rats; (4) questions of organization. For particulars address the secretary of the Organization Bureau of the Bacteriological Convention, Petrovka 17, Moscow. —The *Presse médicale* announces that the First Congress on Tropical Medicine of West Africa is to convene at Loanda, July 16, on the invitation of the Portuguese government. The French, British and Belgian colonies are planning to send delegations, as well as Nigeria and the Transvaal, and the medical faculties of Portugal.

Deaths in Other Countries

Dr. E. Reiss of Frankfort-on-the-Main, noted for research on refractometry of the blood and his monographs on internal medicine. —Dr. M. Oeconomakis, a neurologist of Athens. —Dr. E. Hahn, a neurologist of Breslau, aged 65. —Dr. P. J. Rubira of Guayaquil, one of the founders of the Sociedad Médico-Quirúrgica. —Dr. E. L. Brückner who succumbed to typhus in the campaign against this disease on the eastern border of Germany.

Government Services

Hospital Train Organized

Pursuant to instructions of the Secretary of War the organization of Hospital Train No. 7, organized reserves (Oklahoma State Unit), has been authorized.

Veterans' Bureau Hospitals Opened

The U. S. Veterans' Bureau Hospital at Redwood City, Calif., was formally opened, April 7. In the neuropsychiatric unit there are twenty-two buildings. —U. S. Veterans' Bureau, Hospital No. 24, at Menlo Park, San Mateo, Calif., was opened for inspection, March 15. It will accommodate 500 patients. —The Veterans' Bureau Hospital, at St. Louis, was formally opened, April 8. The institution was erected at a cost of \$1,250,000. The staff comprises twenty physicians, twelve consultants and thirty nurses. —Following a year's delay it was announced, April 12, that the government hospital for war veterans, at Excelsior Springs, Mo., will be rushed to completion and opened by September 1. —The war department announced, April 26, the dates for the opening of five neuropsychiatric hospitals which will accommodate 1,950 veterans. The hospital at Knoxville, Iowa, will be ready for occupancy, August 14; American Lake, Wash., October 10; Chillicothe, Ohio, December 15; Northampton, Mass., Feb. 9, 1924, and the hospital at Camp Custer, Mich., July 6, 1924. —The Veterans' Bureau will construct a 250 bed hospital at St. Cloud, Minn. Arrangements for the building of this hospital were made several months ago, but the actual work of construction has been delayed until the contract was signed this week. —A hospital for tuberculosis with a bed capacity of 750 will be available at Milwaukee, on June 1.

Head of Veterans' Bureau Issues Announcement on Training of Chiropractors

No more ex-service men undergoing rehabilitation will be permitted to take vocational training in chiropractic. Those who are taking this course under arrangements heretofore made by the Veterans' Bureau will be permitted to complete such course, but no new trainees for chiropractic will be permitted. Announcement to the above effect has been made by Gen. Frank T. Hines, director of the Veteran's Bureau. There are now 234 trainees of the Veterans' Bureau taking so-called chiropractic courses in various institutions. The government is of course required to perform these obligations, already contracted, but no new contracts will be made. The curb placed on chiropractic by General Hines is a part of his plan of placing the activities of the bureau on a more practical basis. The director feels that the list of occupations available for trainees is too large and ought to be reduced. What is wanted is that when veterans complete their various courses of vocational training, they shall be in immediate condition to earn their own living. In some states the practice of chiropractic is forbidden by law, and this obstacle results in a limitation of the field wherein the rehabilitated veteran might labor, and it is not regarded that an extension of this form of training will be of practical benefit to the veterans.

Appointments in Medical Corps

The Surgeon General of the Army has, under the present policy of the War Department, found it necessary to disapprove applications for reappointment of many former officers of the Medical Corps who are not eligible for appointment under regulations governing original entrance to the Corps. Former officers of the Medical Corps who are eligible in all requirements governing original appointments may be permitted to take examination for commission in the Medical Corps under the same conditions as applicants for original appointment. The effect of this policy will be to stabilize the medical personnel of the Army. When it becomes known that a resigned medical officer must qualify on the same basis, as to age and other requirements as an original applicant for a commission, it is probable medical officers will not resign as readily as they have in the past. An examination for appointments will be held on July 16-20, 1923 (THE JOURNAL, Feb. 17, 1923, p. 488).

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 9, 1923.

Public Health in India

In a joint letter to the *Times*, three authorities on tropical medicine—Sir Ronald Ross, Prof. W. J. Simpson and Dr. W. G. King—draw attention to the dangers of the reduction in sanitary service which the great political changes have brought about in India. During the decade 1910-1920, of the population subject to registration, amounting to 228,500,000, 3,500,000 perished from plague, nearly 4,000,000 from cholera and nearly 1,000,000 from smallpox—a yearly average of 800,000 deaths from preventable disease. In addition, 1,000,000 have died annually from malaria, which also is preventable. The general death rate, excluding the exceptional year of influenza prevalence, when the ghastly rate of 62.46 per thousand was recorded, in four years of the decade amounted to 30 per thousand, or within a fraction of that figure; in four years, this was considerably exceeded; the lowest rate, attained in but one year, was 28.72.

In contrast, England and Wales, which under former inferior sanitary conditions suffered severely from plague, cholera, and smallpox, had, in 1921, a general death rate of 12.9. In the census of 1891, the Indian male was credited with a mean expectation of life at birth of 24.59 years, in 1901 it had decreased to 23.63, and in 1911 to 22.59; while that of the Englishman, which was 40.17 in 1841, increased, under progressively improved sanitary conditions, to 44.07 by 1901, and to 51.50 by 1910-1912.

Criminal Responsibility

In a previous letter, the conclusions reached by a committee of the Medico-Psychological Association on the subject of criminal responsibility were given. The subject has also engaged the attention of the British Medical Association for some years, and in 1913 a special committee was appointed to consider the present state of the law. In due course it presented a report that has now been made the basis of memorandum of evidence, prepared under the authority of the council, for submission to a committee appointed by the lord chancellor to report on what changes, if any, are desirable in the law relating to criminal trials in which the plea of insanity is raised. The council cannot suggest any improvement on the present procedure in the case of a prisoner, under sentence of death, whose sanity is questioned, i. e., the appointment by the secretary of state of two physicians to examine the prisoner and inquire into the matter. The council holds that the following might be accepted as a fair definition of responsibility for crime. An act may be a crime although the mind of the doer is affected by disease or defective power, if such disease or defect does not prevent him (a) from knowing and appreciating the nature and quality of his act or the circumstances in which it is done; or (b) from knowing and appreciating that this act is wrong, or (c) from controlling his conduct unless the absence of the power of control is the direct and immediate consequence of his own default. But no act is a crime if the doer at the time is prevented either by defective mental power or by any disease affecting the mind from satisfying any of the conditions mentioned above. Every person found "guilty but insane" should have the same right of appeal as other convicts. Persons found "unfit to plead" and ordered to be detained should be entitled at any time for a retrial as to fitness to plead. Medical officers of prisons should have had experience in the diagnosis and treatment of disorders and

defects of the mind. The special committee of the association is of the opinion that (1) when there is reason to believe that the accused suffers from mental defect or disease, machinery should be provided for his independent and impartial examination; (2) the present method by which medical evidence is presented by the prosecution and the defense is bewildering rather than helpful to both the judge and the jury; (3) a panel should be formed of physicians with expert knowledge of psychologic medicine, and questions of mental defect or disease should be referred to them. When the offense is punishable by death or a severe penalty, the examination should be made by not less than three members of the panel. The report of such an examination should be furnished to both prosecution and defense before the trial, and at the trial evidence should be given by the expert or experts and should be considered by the court in deciding the responsibility of the accused.

Suicide and Homicide in England as Compared with America

Official figures of suicides and homicides in this country and in America, recently published by the registrar-general, afford a remarkable contrast:

Rates of Suicide for Each Hundred Thousand of Population

	1912	1913	1914	1919	1920	1921
Ninety-five American cities.....	19.5	19.7	21.0	14.3	12.4	15.7
England and Wales.....	9.9	9.6	10.1	9.1	9.1	9.9

Rates of Homicide for Each Hundred Thousand of Population

	1912	1913	1914	1919	1920	1921
Twenty-eight American cities...	8.3	8.8	8.5	9.1	8.5	9.3
England and Wales.....	0.9	0.8	0.8	0.8	0.8	0.7

In America there has been an increase of homicide, but a decline of suicide; in this country homicide has declined and suicide has not increased. Our figures are extraordinarily low, revealing a steadiness and respect for law and order, a characteristic factor, as compared with America. However, we must take into account the facts that the American figures refer only to cities, while ours refer to the whole country, and also that city populations are more prone to acts of violence than country populations. How far the American figures are due to the adverse condition of having to assimilate foreign peoples is another question.

A New Light on Epidemiology

In a report to the Medical Research Council, Surgeon-Commander S. F. Dudley of the Royal Navy has thrown a new light on epidemiology. His observations were made at the Royal Naval School at Greenwich, where 1,000 boys of good physique reside under excellent sanitary conditions and constant medical supervision. In addition, there are 100 day boys who mix freely with the boarders at work and play and at some of the meals. The immunity condition of the school in regard to diphtheria was examined by means of the Schick intracutaneous test, which was found to be very reliable. The remarkable observation was made that while 300 cases of diphtheria or scarlet fever occurred in the course of the year, not a single case occurred among the day boys, who played, worked and ate with the boarders. Another curious fact was that in an outbreak of diphtheria, five cases occurred simultaneously in five different dormitories. It was considered improbable that one boy would infect five others, all in different dormitories, classes and messes, and yet not infect any in his own dormitory. The same phenomenon was observed a month later in the case of scarlet fever. It was found that while the boarders used a common stock of

pens, each day boy brought and used his individual pen. A penholder which had been sucked and bitten by a boy known to have diphtheria yielded a virulent culture of diphtheria bacilli. It was concluded that both epidemics started in this way. A boy who happened to harbor the virus in his mouth sucked his pen. After the lesson he threw the pen into the classroom box. Another class assembled, and one member picked up the infected penholder, which he also sucked. This explains the origin of the epidemics, but not their spread. Why did the day boys always escape? Dudley explains this by dormitory infection. He explains the greater possibility of infection in dormitories than outside by a principle which he terms the "velocity of infection." He argues that in many infectious diseases there is a certain minimal dose of the infective agent necessary to cause the disease, and that a smaller dose is destroyed by the defensive mechanism of the body. If a subject receives a number of subminimal doses, which, when totaled, exceed a minimal infective dose, it is reasonable to suppose that whether or not he contracts the disease must depend on the rapidity with which these fractional doses are received; that is, whether the rate at which the infective agents can be dealt with is greater than the rate at which they are received. During the day the immunity mechanisms were able to neutralize, as rapidly as they were received, the occasional dose of infection to which all were exposed. At night the conditions in the dormitories allowed continuous bombardment with infected droplets of saliva, so that the velocity at which the infection was received was greater than that at which it could be destroyed. This principle would also account for the development of immunity without symptoms, and explain other difficulties in practical epidemiology. During an epidemic of diphtheria, many boys increased their resistance without manifesting any symptoms and without even developing recognizable antitoxin in the blood. There therefore took place a coincident epidemic of immunization among those who never permitted a multiplication of the subinfective doses received. At the same time, there occurred an epidemic of contact carriers in the school. Dudley concludes that consideration of this "epidemic immunity" should remove the necessity of postulating unknown mysterious influences as factors in an epidemic constitution.

Future Warfare

At the Royal Society of Medicine, Col. J. F. C. Fuller, general staff officer (who is not a medical officer), in a highly idealistic sketch, introduced a discussion on some of the medical problems of future warfare. He declared that war was always more of a psychologic than a physic problem, and had wrongly been regarded as a competition in slaughtering. With the development of psychologic science it would be more truly envisaged as a struggle of mind against mind, or of genius against mental mediocrity, in which bloodshed and destruction would be reduced to a minimum. The element of destruction was not only not essential, but even disadvantageous to the victors; the obsession to kill would be gradually eradicated from the military mind. In the last war it was brains, not muscle, that decided the victory.

In the future, the decisive weapons would be ethical and economic, and only in a restricted sense, military. Ethical warfare would rely on highly organized propaganda to demolish the national will of the enemy and to discredit his cause. Economic warfare would attack the national will through the national stomach. Military warfare would take the form, chiefly, of gas attacks from the air on city populations. These would temporarily paralyze, but not destroy the community. By mustard gas, war could be waged without causing widespread death or mutilation. Aircraft on a large scale could be used to envelop a people with some vesicant chemical which would render them incapable of

resistance. Indeed, the future war might take the form of anesthetizing the enemy. Colonel Fuller drew a picture of 500 aeroplanes putting London to sleep for forty-eight hours, and then landing enemy police, who, with the support of tanks, would control the situation until surrender and indemnity were forthcoming. This would be much more profitable to the enemy than wholesale destruction.

Future warfare would be astonishingly rapid. The target would be the civil population. On them, war would break with the terror of a mental earthquake. Success would depend on delivery of the psychologic knockout blow. It should be the work of the medical profession in peace to prepare the public nerve for the shock of psychologic attack. Civil physicians must also be prepared to cope with tens of thousands of gas cases, and every one must be instructed in self-protection against a gas attack.

Fatal Accident in the Administration of Chloroform

An inquest was held on a woman, aged 25, who died during the administration of chloroform in a hospital. The operation was a nasal one and special apparatus, which had been wrongly put together, was used. The result was that pure chloroform instead of chloroform vapor was sprayed into the patient's throat. The jury returned a verdict of death by misadventure.

PARIS

(From Our Regular Correspondent)

April 6, 1923.

The New Law Regarding Enlistment

Parliament has just passed a new law which makes the period of enlistment in the active military service eighteen months. The total duration of military service is twenty-eight years, which is divided into four different periods: active service, eighteen months; on the unattached list, two years; first reserve, sixteen and a half years; second reserve, eight years.

For the estimation of physical aptitude, a medical commission composed of three army physicians, one of whom shall be attached to the reserve and shall not be a resident of the arrondissement (the largest administrative division of a department), is charged with the preliminary examination of young men who make such request, before the council of revision, or exemption board, meets. The commission examines each man separately, after first inspecting his sanitary record, and notes his aptitude or inaptitude for the various branches of military service, in conformity with his morphologic characteristics and his professional capabilities. The commission may demand of the exemption board that doubtful candidates be given an expert medical examination and that they be sent for such examination to such specialists, military or civilian, as shall be agreed on by the minister, or that they be placed in a hospital for observation, without waiting to be first enrolled.

As for the exemption board, or the council of revision, as it is termed here, it is assisted by an army physician or, if a physician of the regular army is not available, by a physician of the reserve, and cannot take final action until it has received the opinion of a physician.

From the standpoint of physical aptitude, the council of revision divides the men who present themselves into four categories: (1) those who are found fit for military service; (2) those who, while suffering from some relatively slight ailment, are regarded as sufficiently strong for auxiliary services; (3) those who, possessing a weak physical constitution, are placed in the deferred class, subject to a second examination, and (4) those whose bad general constitution, together with certain weaknesses, establishes their functional

impotence, either partial or complete, and who are therefore exempted from all military service, whether armed or auxiliary.

Military Service as Affecting Medical Students

In times of peace, young men who make the request in the interest of their studies may be granted the privilege of postponing their enlistment, from year to year, up to the age of 25. Medical students perform their active service in the army medical corps. In the medical schools a special two-year advanced course for the benefit of prospective members of the army medical corps has been arranged for by the minister of war and the minister of public instruction. This course is optional.

Students of medicine who finish this special advanced course are required to serve, when later they enlist, only one year, six months as auxiliary physicians and six months as *médecins aides-majors de 2^e classe de réserve*, having the relative rank of second lieutenant, if they are doctors of medicine or have been appointed, on the basis of competitive tests, hospital interns in a city where there is a medical school, and provided further they have sixteen courses to their credit, representing four years of study. If they have only twelve courses to their credit, representing three years of study, they must serve an entire year as auxiliary physicians. Students who do not take this special course must serve, at the end of their respite, eighteen months in a formation of nurses.

International Congress of Librarians

Under the auspices of the Association des bibliothécaires français et des sociétés bibliophiles, an international congress, which is composed of delegates from the various societies of librarians and bibliophiles in different countries, is being held at the Sorbonne. M. Louis Barthou, formerly chairman of the council of ministers, now president of the Commission supérieure des bibliothèques, has accepted the honorary chairmanship. The two previous congresses were held in 1900, at Paris, and in 1910, at Brussels. The third congress was to have been held in 1915, but it was postponed on account of the war. At the present congress, the bibliophiles are meeting with the librarians, for the first time. In connection with the congress, two special exhibits have been prepared. One exhibit contains old manuscripts and anything pertaining to the history of book making from the earliest period to 1870. The other exhibit comprises books published since 1870.

Criminal Abortion and Privileged Communication

M. J. Martin, member of the superior council of the Assistance publique (public charities) calls attention in the *Revue philanthropique* to the abnormal situation that is created by too broad an interpretation of the right of privileged communication in relation to criminal abortion. Let us suppose a death has occurred as the result of criminal abortion. If the person on whom the abortion was performed dies in her home, the physician delegated by the mayor's office to verify the death can, if the cause of death appears to him suspicious, notify the authorities and a necropsy will reveal the crime. But the case is quite different if death takes place at the hospital, for under these circumstances the attending physician is the one whose duty it is to make the confirmation of death, and he is certain not to notify the authorities, considering himself bound by the right of privileged communication. It is against the latter interpretation that Martin protests, and he quotes the text of the Penal Code which, while it makes it a misdemeanor to violate the right of privileged communication, allows an exception to be made in "cases in which the law would oblige physicians to become denouncers." Is not the law of 1892 an act in derogation of the right of

privileged communication, since it requires a physician to report cases of epidemic disease that come under his observation? If legislators have, in the interest of public health, made the law less rigorous in its application, is it not in place to apply it less rigorously in the face of social interests of the greatest importance? Can we allow the right of privileged communication to be interpreted in such a manner as to render physicians accomplices in a crime as dangerous as abortion, which rages in France with particular intensity? The annual number of criminal abortions in France is estimated at 100,000, whereas the last criminal statistics published by the minister of justice show that the number of persons brought to trial in 1919 for abortion was only 301, while the number of persons receiving a sentence did not exceed 131.

Death of Dr. Gambini

The government reports the death of Dr. Gambini, a colonial physician, at Colbert, department of Constantine, from typhus contracted in the line of duty.

Classification of Children into Different Groups for the Purpose of Physical Training

At one of the recent meetings of the Société de médecine militaire française, Dr. Boigey presented an interesting communication on the best methods to be employed to prevent children and adolescents from being overexerted during physical training. Most of the accidents and untoward incidents observed in children and adolescents during or following their participation in physical exercises are due to the fact that physical directors sometimes require the same effort of subjects that have never been examined that they do of healthy persons; whereas narrow chests, defective heart action, impaired kidneys and weakened nervous systems may demand a more cautious attitude. Boigey reports a typical example: Recently, several groups of children, coming from different neighborhoods, were to assemble at a given point. They were told not to be content with arriving at the appointed hour but to strive, if possible, to be the first to reach the rendezvous. The groups were composed of children of various ages. The youngest were aged 7; the oldest were 14 or 15. The oldest in each group assumed command. The groups set out to reach the goal, the younger children following the older ones, the older children in each group urging the younger children to walk faster and not drop behind the squad, so that they might be the first to arrive. The spirit of emulation increased the energy of all members of the group tenfold. Everybody reached the rendezvous on time, but that evening, after returning home, many parents, worried over the condition of the children, called a physician, who found that the youngest were suffering from fever due to overexertion. In order to prevent a repetition of such occurrences, Boigey recommends the classification into groups, on a physiologic basis, of children and adolescents who are to engage in sport activities. This classification should be based not on the age but on the weight, chest expansion, height, muscular strength, the general physical build, psychomotor reactions, etc. The medical examination of the heart and the lungs, and the results of an inquiry into the previous pathologic history of the children should likewise be taken into account. Homogeneous groups should then be formed, composed of children or adolescents having approximately the same weight, vital capacity, height, speed and strength (as shown by a dynamometric test). Those who have an unfavorable pathologic history will be grouped together and will be subject to a special medical surveillance. Those who have never suffered from any serious illness will be placed in a group by themselves.

On the other hand, Boigey recommends that the code established by the directors of the international Olympic games

be left out of account in the training of children and adolescents, for the reason that this code was elaborated to control the contests of athletes with exceptionally strong constitutions and not to regulate the exercises and the games of adolescents from 14 to 16 years of age.

VIENNA

(From Our Regular Correspondent)

March 26, 1923.

Health Statistics for 1922

In 1922, conditions of public health continued to improve. The number of deaths was 30,068, of which 5,552 were due to tuberculosis. This compares favorably with 11,531 out of a total of 52,000 in 1918, but is slightly higher than in 1921, when the number of tuberculosis deaths was 5,265. Infant mortality is much lower than in former years; in 1910 the death rate, under the age of 1 year, was 165.66 per thousand; in 1921, 137.17; in 1922, 138.32. In 1922, the number of births was 29,982; in 1918 the figure was 29,216 per thousand of population. More persons reached the eightieth year than was the case twenty years ago, and the general conclusion to be drawn from these facts is that human life expectancy is improving. The percentage of cancer and circulatory diseases has remained fairly stationary, and influenza has again fallen to the prewar proportion. The age group 10 to 15 years has suffered most, no doubt as an after-effect of the starvation years from 1916 to 1919. Of 1,189 persons who attempted suicide, 440 were successful. These figures are higher than in any year since 1914. It is an unexplained fact that in war time the number of suicides has always been low; and also that in summer and spring (May to August) more persons kill themselves than in the gloomy periods of autumn or winter. The suicide age limits last year were: a girl of 10 years (death by hanging) and a woman of 82 (by poison). Mental instability must be regarded as the underlying cause in the majority of cases; trifling reasons were alleged by more than 70 per cent. of those who attempted suicide. Men preferred death by shooting or hanging; women resorted to poison, drowning or a leap from a top story.

Partial Strike in the Vienna Hospitals

Owing to differences between the managing board and nursing staff of a private hospital, the board dismissed all nurses and appointed a number of trained nuns to their posts. This has caused widespread disturbance in the relations between the nursing staffs and managing boards of all other Vienna hospitals, as the dismissed nurses appealed to their "union" for protection. The union (of hospital attendants) is trying to exert pressure on the government to compel reinstatement of discharged nurses by proclaiming a partial strike in all state and private hospitals. No cooking, washing or cleaning is done for the physicians or other workers, but the patients are looked after and get their meals, and operations are not interfered with. This method of sabotage, or passive resistance, is most insidious, as the innocent suffer more than the guilty; it demonstrates how political weapons can be used in a purely private dispute. As the government is at present composed of antisocialistic persons, and this strike is strictly a union method, the former is most reluctant to interfere and threatens to close some hospitals and concentrate the patients in larger institutions, unless the proper working of all hospitals is guaranteed.

Asymmetry of the Body

An interesting lecture on the asymmetry of the human skeleton and its consequences was given by Dr. Finkles at the regular meeting of the Biologic Society of Vienna. It is well known that, as a rule, the right hand and arm are stronger than the left, the left half of the skull is larger

than the right, and differences exist between the two sides of the body in the ribs, hips and shoulders. The lower extremities also differ from one another; but, contrary to popular belief, the left leg is usually the stronger. In more than 60 per cent. of adults, the left leg is the longer, larger and heavier by 5 per cent. This corresponds with conditions in quadrupeds: the right fore and left hind leg act synchronously; the gait of men is based on the same principle. In right-handed people, the right half of the body is kept a little forward in walking. Therefore the human gait is prone to make men keep to, or, rather, to deviate toward, the right. Experiments with various individuals have shown the correctness of this rule. In foggy weather, or on dark nights, when orientation is impossible, a man rowing a boat goes round in circles to the left; in walking, he tours to the right. Animals—dogs or rabbits—when temporarily deprived of the use of eyes, ears and nose, always swim in circles and return to their starting point. Fishes, pigeons and swallows give similar results. It is a mistake to organize traffic in large cities to "keep to the left" as it requires unnecessary expenditure of energy.

The Results of Prostatic Operations

In a paper before the Medical Society of Vienna, Prof. F. Rubritius discussed the results of surgical treatment of hypertrophy of the prostate. His series included seventy-seven well controlled and well nursed private patients with reliable after-care. All came under care with an advanced state of infection and insufficiency of the kidney. He employed either cystotomy alone or two separate operations. The changes in the kidney were but little amenable to treatment, and produced either a (possibly reflex) polyuria or oliguria. Rubritius prefers the suprapubic (Peyer) method of operation, and considers the perineal method rarely necessary. Exact kidney function examination is essential. All "prostatic" patients are advised to submit to operation, especially if there is complete occlusion or hemorrhage. The only contraindications are severe diseases of the lungs and heart. Rubritius found that many patients can be made fit for radical operation by first establishing free drainage. Fifty-two patients were operated on in one sitting, and twenty-five in two. Of the first group, seven, of the second, three died. These deaths were not actually due to the operation, being caused by intercurrent disease (uremia, peritonitis, pneumonia). All the other patients that have been investigated (after three and one-half years) are doing well, except the carcinomas (three cases). It is essential that the patients be seen and operated on early, before infection and kidney trouble develop. In the worst cases, in which only palliative measures are admissible, a suprapubic bladder fistula is advisable. As in about 25 per cent. of the cases malignant masses are present in the prostatic tumors, it is most important to perform an early radical operation.

An Attempt to Quash "Professional Secrecy"

The Vienna Medical Council, the official representative board of practitioners of the city, recently was forced publicly to protest against an attempt by the highest judge of the republic to remove the safeguard of professional secrecy hitherto guaranteed to the physician by law, by an order issued to all medical corporations. The order stated that "for some time practitioners had failed to inform the court or the police of cases of attempted abortion coming to their professional knowledge. As deliberate abortion is a crime, professional men are required to give information of every case of suspected induced abortion, or of a suspicious death arising in their practice. Surgeons of hospitals, sanatoriums and nursing homes must inform the police, not only when they are convinced that an interference has taken place, but

also when they suspect it." The Austrian law actually says: All medical workers, including pharmacists, midwives and coroners, must give due information whenever they learn of a case of illness, injury, death or birth in which suspicion of foul play or violence by a third person is justified. The medical council points out that the demand of the court is in contravention of the law, which stipulates that the physician is bound to professional secrecy under penalty of law, and may not disclose any knowledge obtained in a professional way unless questioned by duly qualified authorities. The physician is not an investigator for the court, and the decision whether criminal play is suspected or not must be left to his discretion. If the order of the court were put into effect, every woman of child-bearing age suffering from hemorrhage might be suspected and could be denounced to the police—an impossible situation spelling ruin to the profession and disaster to public health, for no woman would consult a physician under such circumstances. Therefore, cancellation of this order is demanded by the council.

Births, Miscarriages and Decrease of Population

In an exhaustive review of the problem of voluntary birth control, Dr. Waldstein gives interesting figures on the number of births and miscarriages reported in the years 1860 to 1915. A drop in the absolute number of children born is evident. In Germany, in 1880, 153 children were born for each thousand women between the ages of 15 and 49; in 1890 the figures went down to 146, and in 1900 to 141. In each thousand married women, the figures were 205, 127 and 96, respectively. In Vienna, in 1880, there were 40 births and 28 deaths for each thousand inhabitants. In 1890, the figures were: 32 births and 29 deaths. Ten years later they were 31 and 20; in 1910, 22 and 16; and in 1919, 17 births and 14 deaths. Since then the ratio has been reversed. If miscarriages are considered, it is found that statistics extending over seventy years (commenced by Hegar and Bumm in Germany) show that at least 10 per cent. of all pregnancies before the war terminated in abortion. Since the war, the percentage has risen to nearly 20. It is an important question whether, at present, procreation takes place too seldom, or whether too many fertilized ova perish, either by induced abortion or from natural causes. Dr. Waldstein has records of 1,217 women, of whom 506 were primiparas, 290 secundiparas, 132 tertiparas, up to two pregnant for the twelfth time, and six more than twelve times. These women together had 3,213 pregnancies with 18 per cent. of abortions and 2 per cent. of stillbirths. At the end of four years there were living 45.5 per cent. of the children; 34.5 per cent. died before the fourth year. This means that of 3,218 pregnancies only 1,451, or 45 per cent., resulted in viable children. In two other series taken from Berlin and one from Vienna, it was found that in 640 women over 50, there had been 4,060 pregnancies. This means that, during the twenty-five years of fecund life (from 20 to 45) each woman was pregnant every four years. Thus it appears that it is natural selection (miscarriage and infant mortality) that tends to keep down the number of individuals. In a series investigated by Hamburger comprising 1,042 women beyond the procreative age, who had had 7,261 pregnancies, it was found that, on an average, 18 per cent. of all pregnancies terminated prematurely (abortion) and only 50 per cent. of all children born alive reached puberty. In his series there were 2,300 women with more than ten, and 579 with more than fifteen conceptions. In Vienna, similar conditions prevail, and it may be stated that in the middle and working classes each woman has at least two pregnancies in order to bring up one child to the fifth year. The decrease in population is not due to lack of conception, but to dangers during the period of pregnancy and high infant mortality.

BERLIN

(From Our Regular Correspondent)

March 24, 1923.

Increased Incidence of Suicide

The increased incidence of suicide in the nineteenth century is explained by Bratz in the *Deutsche medizinische Wochenschrift* as due to the fact that the sense of oneness with the family and native land has become obscured. He maintains that the marked development of individualism has loosened man from his previous moorings, and his newly won freedom has borne him into dangerous channels that affect his spiritual and moral life, the final outcome of which has been an increase in suicide. The upward trend of the suicide curve is in inverse relation to the curve of natural deaths, which have decreased in about the same proportion as suicidal deaths have increased. Some countries—Germany, France, Denmark and Sweden—have a high suicide rate; others—England, Norway and Holland—have a low rate. These differences may be noted also among German and Swedish settlers in the United States, in contradistinction to Norwegians and Hollanders. As a rule, suicide is more frequent among immigrants than among their countrymen at home. In China and Japan suicide is common, while in India it is rare. The greatest number of suicides occur in May and June; the fewest, in December and January. As to religious faiths, suicide occurs least frequently among adherents of the Greek church. Roman Catholics and Protestants are next in order. Among the Jews, suicide has become much more frequent. Suicide is more common in cities than in rural districts. Whereas in the occident the incidence of suicide is greater among the men, in India, where widows are burned to death, the incidence is greater among the women. The suicide rate usually increases with age. At the age of puberty, the rate among females is almost as great as among males. Suicide is more frequent in the single or widowed than in the married; it is most frequent in divorced persons. The incidence is greater among persons who are childless than among parents. Various callings and professions show characteristic differences. The rate is low in farmers and laborers who work in the open air, but high among capitalists, soldiers, hotelkeepers and itinerant laborers (floaters). Small but steadily increasing possessions seem to afford strong protection against thoughts of suicide. In western Europe, psychic and emotional disturbances are the most frequent cause of suicide. Disease as a contributing factor seems, however, to be becoming more and more frequent. The most frequent forms of suicide are hanging, drowning, shooting and stabbing with a knife. Men resort commonly to hanging, to the revolver or the knife, whereas women take to the knife, poison or to throwing themselves down from a height. The principal causes of suicide are found to be: (1) lack of sense of unity with the family and the community; (2) financial reverses; (3) hereditary tendencies, and (4) condition of health.

The Carriage of the Human Body

In the recent Leyden Lecture of the Association for Internal Medicine, Professor Magnus reported his investigations into the location of spinal and cerebral centers that control muscle tension and maintain the erect posture of the body. Magnus showed a number of photographs of decerebrated animals—guinea-pigs, rabbits and cats. The animals were alive and could, after a fashion, sit up, stand or even walk, but there were great differences in their attitudes and movements, according as the brain had been removed a few millimeters higher or lower. For instance, an erect posture was not possible unless, in addition to the spinal cord, the medulla oblongata was preserved. Magnus showed a cat that stood with hyperextension of all four limbs. A push caused the animal to fall, but it still maintained while lying down the

overextended position of the legs characteristic of decerebration. When the position of the head is changed, the attitude of the body alters. This is caused by the interplay of two groups of reflexes; one group has its origin in the labyrinth of the internal ear, the significance of which for the equilibrium of the body is well known; the other group originates in the neck. In order to eliminate the neck reflexes, the neck, occiput and shoulder girdle were encased in a plaster cast. Under these conditions, the degree of extension of the muscles and the consequent position of the legs depend on the position of the head—whether it is in normal position, inclined to one side or thrown backward. When the labyrinths are removed by operation and the neck reflexes are tested, peculiar attitudes result. If the head is bent forward and downward, the fore legs collapse, while the hind legs are extended. If the head is bent upward and backward, the animal stands on its fore legs and sits on its hind legs. If the head is bent to one side, either both right legs or both left legs collapse. If the two groups of reflexes act together, they may accentuate or counteract one another. Observation of animals in the open; for instance, in the Zoological Gardens, reveals that these reflexes are operative in normal living animals.

When, in the experimental animals, a little more brain tissue is allowed to remain intact, new groups of reflexes are observed. Under these conditions, when the cat standing with legs overextended is given a push, it falls but gets up again at once. When the animal is held up loosely in the air, the head at once assumes its normal position owing to the reflexes of the labyrinth. If the labyrinths are removed, the head of the animal, when held up, remains in any position in which it is put. But when the animal is laid down on any surface, a cutaneous reflex is stimulated and the head assumes at once its normal position. If now a secondary stimulus is applied to the other side; for instance, by laying a board on the prostrate animal, the head no longer remains in a normal position. In guinea-pigs and rabbits it has been ascertained that there are four groups of attitude reflexes. In cats, dogs and apes, there are, in addition, optical attitude reflexes, which, however, disappear at once if the corresponding portions of the brain are removed.

In the space at our disposal it is possible to discuss only a portion of the speaker's experiments; Magnus gave further details of the methods he and his co-workers employed in investigating the anatomic location of the reflex centers concerned with certain attitudes. He also indicated the value of these experiments to anatomy, physiology and clinical medicine. Hitherto, researches on the brain have started with the cerebral cortex and have sought, by penetrating gradually deeper into the brain, to discover the locations of the various cerebral functions. Magnus has taken the opposite course. He first removes such a large portion of the brain that most of the functions are abolished. Then, in other animals of the same species, he successively removes a few millimeters less in order to discover what functions are thereby restored.

The Wassermann Test for Tuberculosis

The *Deutsche medizinische Wochenschrift* (49:303-334 [March 9] 1923) contains an article by August von Wassermann on the experimental bases for a specific serodiagnosis of active tuberculosis. Wassermann's recent researches have taken an entirely new direction, and he has departed from the view, which has heretofore been tenaciously held, that the antibodies in the blood serum of a person suffering from an infectious disease, so far as they are demonstrable at all, are qualitatively identical with those that appear in the blood of animals through artificial immunization with the causative agents of the diseases in question. It has been found possible to create a serodiagnostic test for tuberculosis which will permit a more exact differentiation of a tuberculosis serum

from a syphilis serum than was possible with the antigen used in recent years by French investigators. For the dissolution of bacteria, Wassermann uses a tetralin preparation. (NOTE.—Tetralin is a naphthalene, with four molecules of water of hydration, which has an entirely neutral reaction.—ED.). On the basis of his results, he reaches the deduction that every person, whether child or adult, whose blood serum reacts positively to the tetralin-tuberculosis-lecithin antigen is suffering from active tuberculosis. In the very frequent cases in which the physician is in doubt, especially in children in whom tuberculosis may reasonably be expected to be present, the seroreaction may furnish decisive evidence. In regard to the significance of a negative result of this serum test, Wassermann is loath to express himself definitely as yet. The test for which he gives the directions is rather delicate, but it will in many cases give the physician a definite basis to work from. To the main question whether, by serodiagnosis, we may prove the existence of tuberculosis, that is, the presence of tuberculous tissue or only the existence of a tuberculous infection—the presence of tubercle bacilli—no definite reply could be given. That would have to be settled by clinical observations extending over a period of years.

To representatives of the Berlin press, Wassermann expressed himself thus concerning his test: "Although several French investigators, among whom I may mention more particularly Besredka and the school of Calmette, had done some valuable work in this field, it had not as yet been definitely established on what a serodiagnosis for active tuberculosis really depended, and consequently it had not been possible with sufficient certainty to differentiate between the serums of syphilis and tuberculosis. The researches that I have been conducting for some time in the Kaiser Wilhelm Institute for Experimental Therapy have developed a clear view of the subject. It is, therefore, now possible to make the biochemical composition of the reagent (Diagnostikum) specific, so that it gives a positive reaction only with the blood serum of tuberculous subjects; that is, in active tuberculosis. The procedure seems to me especially suitable for welfare centers dealing with children in whom tuberculosis is suspected (but, of course, also for adults), in order to establish whether, in a given case, a latent tuberculous infection has developed to the point that an active tuberculosis is present. The test for tuberculosis resembles the test for syphilis to the extent that in both cases the blood serum of the patient has a relation to certain fatlike substances or lipoids. But the relative proportions vary in the two diseases, and, in addition, it will be noted that the blood serum of tuberculous subjects needs for its reaction, besides the lipoids, certain other substances that are contained in the tubercle bacillus. Through the establishment and consideration of these facts, I have succeeded in modifying the two procedures in such a manner that a confusion of the two diseases in an examination of the blood can be prevented, which has heretofore proved impossible."

Marriages

HENRY W. HOAGLAND, San Diego, Calif., and Paris, France, to Mrs. Katherine M. Freeland of Los Angeles, recently.

ARTHUR TREW BLACHLY, Portland, Ore., to Miss Winifred May Hubbard of Fort Dodge, Iowa, April 20.

GEORGE M. BOTLER to Miss Cora Connett, both of St. Joseph, Mo., at New York, April 7.

EDWIN G. SCHWARZ to Miss Annette Lederman, both of Fort Worth, Texas, March 4.

THOMAS NEILL BARNETT to Miss Mary Gladys Reamy, both of Richmond, Va., March 28.

Deaths

George Lincoln Goodale, Cambridge, Mass.; Bowdoin Medical School, Portland, 1863; Medical School of Harvard University, Boston, 1863; curator of the botanical museum and professor of botany, at Harvard University, until his retirement as professor emeritus in 1909; member of the National Academy of Sciences, the American Society of Naturalists, the Association of American Anatomists, the American Physiological Society, and past president of the American Association for the Advancement of Science; aged 83; died, April 12.

Harry Edward Bradley, Milwaukee; New York University Medical College, New York, 1887; veteran of the Spanish-American War; also a druggist; member of the Milwaukee Neuro-Psychiatric Society; formerly on the staffs of the Northern Hospital for the Insane, Winnebago; the Milwaukee County Asylum for Mental Diseases, Wauwatosa, and the Johnston Emergency Hospital, Milwaukee; aged 61; died, April 5, of influenza and pneumonia.

Lee Simon Shoninger, New York; Medical School of Harvard University, Boston, 1904; member of the Medical Society of the State of New York and the Massachusetts Medical Society; formerly on the staffs of the Massachusetts General Hospital, Boston, and the Mount Sinai Hospital, New York; served in the M. C., U. S. Army, during the World War; aged 44; died, April 7.

Frank Hall Williams, Portsmouth, Ohio; Miami Medical College, Cincinnati, 1883; member of the Ohio State Medical Association; served in Palestine with the American Red Cross during the World War, and as chief medical officer of Beirut; appointed medical director with the Near East Relief in Armenia in 1919; aged 64; died, March 4, at Cincinnati, following a long illness.

John Prentice Rand, Worcester, Mass.; New York Homeopathic Medical College, New York, 1883; lecturer on the history of Medicine at the Boston University School of Medicine, Boston, 1906-1916; member of the National Tuberculosis Association, and past president of the Massachusetts Surgical and Gynecological Society; aged 66; died suddenly, April 16, of heart disease.

George Frederick Payne, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1892; founder, professor of pharmacy, and president of the Atlanta College of Pharmacy; state chemist of Georgia, 1890-1898; former president of the American Pharmaceutical Association; author of *Payne's Dictionary of Pharmacy*; aged 70; died, April 18.

Henry S. Summers, Westpoint, Neb.; Medical Department of Western Reserve University, Cleveland, 1882; member of the Nebraska State Medical Association; formerly superintendent of the Hospital for the Insane, Norfolk; aged 67; died, April 10, following a long illness.

Isaac C. Gable ♂ York, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1877; past president of the Medical Society of the State of Pennsylvania; formerly member of the state board of health; aged 73; died, April 12, following a long illness.

Henry Arthur Mitchell ♂ Elkton, Md.; University of Pennsylvania School of Medicine, Philadelphia, 1900; served in the M. C., U. S. Army, in France, during the World War; on the staff of the Union Hospital of Cecil County; aged 44; died suddenly, April 6.

Milton Jennea Longworth, Lima, Ohio; University of Michigan Medical School, Ann Arbor, 1890; member of the Ohio State Medical Association; served in the M. C., U. S. Army, during the World War; aged 55; died, April 9, of rupture of the bladder.

Norman Lamont MacLachlan ♂ Findlay, Ohio; University of Michigan Medical School, Ann Arbor, 1878; on the staff of the City Hospital; aged 68; died, April 8, of injuries sustained when the automobile in which he was driving was struck by a street car.

Strickey Alvin Conrad ♂ Leetonia, Ohio; Ohio Medical University, Columbus, 1902; served in the M. C., U. S. Army, during the World War; aged 52; was killed, April 6, when the automobile in which he was driving was struck by a train.

James Douglas, Morristown, N. J.; New York University Medical College, New York, 1880; member of the Medical

Society of New Jersey; on the staff of the Morristown Memorial Hospital; aged 79; died, April 14.

Walter Hans Schroeder, Farmington, Mo.; National University of Arts and Sciences Medical Department, St. Louis, 1916; member of the Missouri State Medical Association; aged 33; died, April 3.

Clifford Webster Stickney ♂ Holden, Mass.; New York University Medical College, New York, 1881; on the staff of the Holden District Hospital; aged 67; died, April 9, of cerebral hemorrhage.

John Louis Ireland, Erie, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1893; formerly president of the board of health of Erie; aged 53; died suddenly, April 11, of heart disease.

William M. Bailey, Detroit; Western Homeopathic College, Cleveland, 1868; formerly professor of gynecology and rectal surgery at the Detroit Homeopathic Medical College; aged 77; died, April 9.

John Andrew Linebaugh, Berkeley, Calif.; Starling Medical College, Columbus, 1890; aged 59; died, April 10, at the Lane Hospital, San Francisco, of bronchopneumonia and paralysis agitans.

Enos K. Lefever, Carlisle, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1894; member of the Medical Society of the State of Pennsylvania; aged 55; died, March 27.

Edward Francis Duffy, Yonkers, N. Y.; Bellevue Hospital Medical College, New York, 1891; member of the Medical Society of the State of New York; aged 54; died, April 14.

Samuel Whitehall, Los Angeles; Eclectic Medical Institute, Cincinnati, 1868; University of Michigan Medical School, Ann Arbor, 1871; also a pharmacist; aged 75; died, April 6.

Clarence Wilbert O'Brien, Wyandotte, Mich.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1903; aged 45; died, February 15, of chronic nephritis.

Owen Kent Womack, Paris, Tenn.; Vanderbilt University Medical Department, Nashville, 1900; aged 50; died, March 31, of cardiac asthma and chronic nephritis.

Henry Gilbert Clippinger, Eau Claire, Mich.; Eclectic Medical College of Pennsylvania, Philadelphia, 1872; aged 79; died, March 29, of bronchopneumonia.

Herbert Rudolph Olson, Centerville, Iowa; State University of Iowa College of Medicine, Iowa City, 1919; aged 26; died, April 6, of pulmonary tuberculosis.

Harrie Eugene Smith ♂ Mount Vernon, N. Y.; New York University Medical College, New York, 1883; formerly city health officer; aged 63; died, April 17.

William Jules Augustine Vogt, Iowa City, State University of Iowa College of Medicine, 1881; aged 69; died, April 10, of carcinoma of the sigmoid flexure.

Patrick William O'Brien, Peekskill, N. Y.; Bellevue Hospital Medical College, New York, 1886; aged 60; died, April 15, of carcinoma of the intestine.

J. Brummel Jones, Higginsville, Mo.; St. Louis Medical College, St. Louis, 1868; aged 81; died, April 9, of bronchopneumonia, following influenza.

John Nathan Baughman, Evansville, Ind.; University of Louisville Medical Department, Louisville, Ky., 1875; aged 70; died, April 15, of paralysis.

Levi C. Wells, Cambridge, Ohio; Hahnemann Medical College and Hospital, Chicago, 1878; aged 76; died, March 11, of cerebral hemorrhage.

Edward Frank Jones, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1898; aged 61; died, April 8, of lobar pneumonia.

Maurice J. Quille, Jr. ♂ Chicago; American College of Medicine and Surgery, Chicago, 1905; aged 37; died, April 29, of septicemia.

Albert G. Pierce, Blytheville, Ark.; Tulane University of Louisiana School of Medicine, New Orleans, 1885; aged 63; died, April 5.

W. Buchanan Parsons, Missoula, Mont.; Bellevue Hospital Medical College, New York, 1870; aged 72; died, April 12, of paralysis.

Isaac W. Riggs, Pittsburgh; Western Reserve University School of Medicine, Cleveland, 1869; aged 76; died, April 9.

Sylvanus Jutkins Birch, Orange, Mass. (licensed, years of practice); aged 77; died suddenly, April 4, of senility.

Thomas T. K. Mitchell, Lawrenceville, Ga.; Medical College of Georgia, Augusta, 1857; aged 85; died, April 15.

♂ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

INTRAVENOUS THERAPY

Report of the Council on Pharmacy and Chemistry

For some years the Council has urged conservatism in the adoption of the intravenous method of administering drugs. It has been necessary to do this to offset the propaganda of proprietary firms that, for commercial purposes, feature the indiscriminate use of intravenous therapy. In order that the status of this form of drug administration might be presented to the profession and that it might be made clear under just what conditions the intravenous administration of drugs is warranted, the Council appointed a committee to study the subject and prepare a report for publication.

The report which follows was prepared by this committee and submitted to the Council. The Council has endorsed it and authorized its publication.

W. A. PUCKNER, Secretary.

The administration of drugs by the intravenous method is being extensively exploited by firms who are commercially interested in the sale of "intravenous specialties." Because of undue enthusiasm inculcated by advertising and publicity, and through lack of sound judgment, many physicians are employing it unwisely in conditions where this method of administration is not indicated. In addition to the broad general claims of superiority of intravenous injection over other methods of administration the following specific advantages are commonly urged in its favor.

1. That it affords precision of dosage.
2. That there is no irritation of the gastro-intestinal tract.
3. That the drug is not altered or destroyed in the gastro-intestinal tract.
4. That the drug enters the blood stream without loss of time.

There is a legitimate field for intravenous therapy. Nothing this Committee says on the subject in the report that follows is to be construed as a condemnation of the legitimate application of this method of administering drugs.

These alleged advantages in the routine administration of drugs are more apparent than real, and they will be considered in some detail, though not exhaustively.

1. PRECISION OF DOSAGE: An accurate definition of the word "dose" is necessary before proceeding to a discussion of the subject, because a number of meanings have been given to the word, and one must avoid confusing *precision in weighing and measuring* a drug, with *precision of dosage* of that substance. A physician administers a drug in order to induce a given effect. Obviously it is his desire to give the exact amount necessary to induce that effect—no more and no less. That amount is the dose of the substance for that patient, under the circumstances obtaining at that moment, and evidently it is not necessarily the exact dose of the drug for any other patient, or for that patient under other possible circumstances.

Since the physician never knows the exact dose of a drug until he has obtained the results sought, he chooses an amount arbitrarily, which he knows to be a fraction of the true therapeutic dose, and he administers this fraction repeatedly until the desired effects are obtained, that is, until the total therapeutic dose has been administered. This fraction, the weight or volume of which can be determined with precision, has come to be called "the dose" of the drug, and precision of weighing and measuring the fraction has come to be confused with precision of dosage.

The oral administration of a drug permits of the administration of as many fractions of the dose as the circumstances demand, and these vary with the susceptibility of the patient, the urgency of the case, and the dangers of overdosage. The

intravenous injection of a drug, however, owing to the limitations inseparable from this mode of administration practically makes it imperative to give the whole of the calculated therapeutic dose at once, except in the few cases which demand almost constant attendance by the physician. If this calculated dose proves insufficient, the patient suffers for want of the drug; if it happens to be more than the true therapeutic dose the patient suffers the toxic effects proportional to error in the estimate, and the effects of overdosage are more severe following intravenous injection than after oral administration.

Drugs are absorbed from the gastro-intestinal tract at somewhat variable rates, but there is a fair degree of uniformity of absorption for a given drug. On the other hand, different individuals show greater differences in their reactions to a given drug, that is, greater tolerance or resistance. There is a greater probability that the intravenous dose will be too large or too small, than that the patient will show an essential departure from the rule with reference to absorption from the gastro-intestinal tract.

It is generally recognized, for example, that there is a greater danger in the intravenous injection of strophanthin than there is in the oral administration of digitalis, and a number of deaths have followed the intravenous injection of the exact "calculated dose" of strophanthin. One is justified in administering strophanthin intravenously only when the exigencies of the case demand prompt relief, even though it involves some risk.

A further analogy: Anesthesia is maintained conveniently by dropping chloroform on to a face mask and permitting the patient to inhale the vapor, though there is no constant ratio between the amounts used and those taken into the blood stream. In other words, the dose of chloroform—that is the amount required to maintain the desired depth of anesthesia—is administered in almost innumerable fractions, though the anesthetist does not know the percentage of any of these fractions that is absorbed. This fractional dosage by inhalation is strictly comparable to fractional dosage by oral administration when strychnin or another drug is used.

2. THAT THERE IS NO IRRITATION OF THE GASTRO-INTESTINAL TRACT: Many drugs cause disturbances of the gastro-intestinal tract which are carelessly termed "irritation" though the action may be due to a reflex from another organ. An example is the nausea and vomiting induced by digitalis bodies through their direct action on the heart. It is obvious that the intravenous injection of such drugs does not cause less disturbance of the gastro-intestinal tract than their oral administration. Much of the true irritation of the large intestine following the administration of metallic salts, such as those of mercury, is caused during their excretion, and this also is largely independent of their mode of administration. Drugs that are directly irritant to the gastro-intestinal tract are usually irritant to the veins, the heart, and to other organs with which they come in contact in greater concentration after intravenous injection than after oral administration, hence, there are even greater objections to the intravenous injection of irritant drugs than to their oral administration.

3. THAT INTRAVENOUS INJECTION PREVENTS ALTERATION OR DESTRUCTION OF THE DRUG IN THE GASTRO-INTESTINAL TRACT: Nearly all drugs which are used for their systemic effects are absorbed fairly rapidly from the gastro-intestinal tract, and with a little judgment the physician can choose a drug which is absorbed promptly. The liver is far more active in the destruction of most drugs than is the gastro-intestinal tract, and drugs reach the liver quite as readily when injected intravenously as they do when given by mouth. The liver seldom takes all of a drug out of the blood which passes through it once, but this is usually taken up in small increments and slowly destroyed. There are, it is true, drugs such as epinephrin and arsphenamine that are not suited for oral administration. This is no argument, however, for administering, say, sodium iodid, intravenously, simply because epinephrin is destroyed in the stomach.

4. DRUGS ACT MORE PROMPTLY AFTER INTRAVENOUS INJECTION: This advantage in extreme cases does not admit of

discussion, but it is obvious that it is not of the slightest importance in the treatment of chronic conditions, or with drugs such as mercurials, iron, and iodids, which induce their therapeutic effects slowly even when they are injected intravenously. It is a mere shibboleth as it is commonly used, which holds the attention of the unthinking through the frequency of its repetition.

This Committee would point out again that it has no desire to discredit the rational use of drugs by intravenous injection, but, on the contrary, it seeks to avoid the accidents and disappointments that must follow the abuse of a method which rightly employed may be a life-saving measure. With increasing knowledge of the technic of using drugs, with the development of pharmacology it seems probable that intravenous injections will be limited to even fewer classes of drugs than at present.

The Committee recommends that the Council (1) place itself on record as opposing the reckless and indiscriminate use of drugs by intravenous injection with its attendant dangers and increased needless expense to the patient, and, (2) recognize the legitimate life-saving nature of intravenous administration of drugs in extreme cases.

The Committee holds that the indiscriminate use of the intravenous method in cases in which it is not necessary is as reprehensible as it would be to jeopardize the life of the patient and subject him to the inconvenience and expense of an unnecessary major surgical operation.

Correspondence

INFORMATION DESIRED FROM TEACHERS
OF PHYSICAL THERAPEUTICS

To the Editor:—This is offered in the hope of getting information on certain points from those who teach physical therapeutics, with the object of coming to some agreement as to what subjects shall be presented, the principles that shall govern, the clinical conditions for which they are best adapted, what forces, agencies, devices, instrumentalities, etc., shall be employed or recommended, and the methods of presentation.

I could wish for replies to include a description of organization of clinics, personnel, equipment, etc., and, in particular, how, on what basis, cooperation is obtained with other clinics.

I then propose to correlate and integrate the answers and to submit later a proposition to the end that we may get together in the best interests of clinical medicine. By such means we—all clinicians—should facilitate the emergence of a uniformity of aim and procedure.

J. MADISON TAYLOR, M.D., Philadelphia.
Professor of Physical Therapeutics and
Dietetics, Temple University Department of Medicine.

"THE CONTROL OF TRACHOMA"

To the Editor:—In the editorial comment, April 21, I was disappointed in finding no reference to the more recent conceptions of the etiology of trachoma, when the citation of the Minnesota investigation made it particularly apropos. These are, briefly, that, if trachoma is a disease entity, its spread may be better explained by an intermediary host than by interhuman contact (*Am. J. Ophth.*, September, 1922, p. 766), or that it is not a disease entity and may be developed from any infection (*ibid.*, October, 1922, p. 799). Further study along these lines will have to be made before a decision can be reached, but the facts recorded, through observations for many years, are rather subversive of con-

tagion in the ordinary sense; and the Minnesota returns add emphasis to this, unless the two races mingle there to a greater extent than in other states.

H. B. YOUNG, M.D., Burlington, Iowa.

To the Editor:—In further reference to the prevalence of trachoma in the United States, I will say that I examined 7,000 troops at Camp MacArthur, Texas, in 1918, among whom I found fifty well developed cases of this disease. I might add that these men were from Missouri and Texas, and the probabilities are that the average is a little high, trachoma being prevalent in the Ozark region of Missouri.

ORLYN S. PHILLIPS, M.D., Baker, Ore.

STATISTICS ON CANCER AT ALGIERS

To the Editor:—The government of Algeria recently published an interesting report of the mortality of the city of Algiers which includes some exceptionally valuable statistics on cancer. The report is the work of Dr. Lemaire and covers the period 1914-1921, inclusive. The cancer statistics are given in the accompanying table.

Mortality from Cancer in Algiers

	European	Native	Rates per 100,000 Total	Actual Deaths
1914.....	64.3	12.5	54.0	108
1915.....	57.5	15.0	57.0	114
1916.....	48.7	12.5	41.5	83
1917.....	54.3	5.0	45.1	89
1918.....	56.3	5.0	46.0	92
1919.....	55.6	7.5	46.0	92
1920.....	58.7	12.5	49.5	99
1921.....	66.7	6.2	42.2	87

I may add to the foregoing that the European population of Algiers is estimated at 147,986, while the native population is given as 47,669.

FREDERICK L. HOFFMAN, Newark, N. J.

"A SECOND INITIAL LESION IN SYPHILIS
ONE YEAR AFTER THE FIRST"

To the Editor:—I have read with interest the report of Drs. W. C. and A. A. Nichols in THE JOURNAL, March 24, p. 843. It seems to me that this, while seemingly an authentic case of a second infection, is merely a recurrence of the first infection. The lesion that appeared in the mouth was a mucous patch, and was indurated because it was cauterized. Every observer knows how abundantly the spirochetes are found in the secondary lesions of the mouth. According to modern teachings, the entire treatment at the time of the appearance of the so-called "second chancre" was inadequate. It takes much more treatment with both arsphenamin and mercury to cure an infection such as is reported by the authors; at least this has been my experience.

B. C. CORBUS, M.D., Chicago.

To the Editor:—In the case report by Drs. W. C. and A. A. Nichols, I take it, from the authors' conception of this case, that the patient, not having had sufficient treatment in the first year, developed the second initial lesion, because he still harbored the virus which had caused the first penile chancre. While multiple hard chancres, either in the same region or even in remote places, have been described—and I myself have seen such cases appear within a few weeks—it seems to me improbable that such an occurrence could take place an entire year afterward, when the infection had become generalized. I would be inclined to explain the second initial lesion as a so-called pseudo-ulcus durum, which can be explained by the fact that one of the mucous membranc

lesions, which had existed during the early secondary stage, became reactivated by the aggression of a new attack of spirochetes, thereby assuming the hardness and clinical appearance of an ulcer durum.

ADOLPH ROSTENBERG, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIAGNOSIS OF RABIES

To the Editor:—A man, aged 25, who had been in good health, came to me for advice, February 16, stating that exactly three weeks previously a dog owned by him died; for one week previous to the death of the dog the patient had been bitten at least six different times by the dog; he had given the wounds no treatment of any kind. February 16, he became worried for fear the dog might have been rabid. I advised sending the head in for diagnosis, which was possible, for the weather had been severely cold during the three weeks. A diagnosis of rabies was made, and antirabic vaccine treatment was started, February 22, twenty-eight days after the death of the dog, or about thirty-four or thirty-five days from the time he was first bitten.

Treatment was completed, March 12, and the patient continued in good health until March 20, when he complained of a tingling sensation in his right hand and arm. May 21, this continued, and to the tingling sensation was added severe pain. He also on this date had a temperature of 101. No other physical findings could be made out. On the evening of March 22, the pupillary reflex of the right eye was absent and the pupil remained in contraction, though not pin-point. March 23, there was partial paralysis of the orbital muscles of the right eye, so that the movements of the ball could not be controlled accurately. Throughout this day a rapid and descending paralysis of the muscles of deglutition was evident; the right arm became partially paralyzed. The patient had lengthening attacks of extreme tachycardia, and died early on the 24th of paralysis of the cardiac center.

During the time of the active symptoms, my therapy consisted of the use of sedatives: mild sedatives at first, and finally morphin and chloroform. 1. Did I omit any therapeutic agent that would have been of benefit to the patient? 2. Is there an antitoxin or any other agent that I might have given intraspinally that would have been of benefit to him? I am asking these questions simply for my own information and for the benefit of my own knowledge. M.D., Idaho.

ANSWER.—1. In this case there seems to be no room for any doubt that the patient died of rabies. As the patient came under treatment thirty-four or thirty-five days after he was bitten by the dog, it is not at all surprising that the treatment failed.

2. It does not appear that there was anything omitted in this case that would have been of benefit. There is no antitoxin or other form of antiserum known which, given intraspinally or otherwise, would have had any effect on the course of the disease.

REMOVAL OF BILE FROM URINE

To the Editor:—In THE JOURNAL, Aug. 6, 1921, p. 462, Burwell and Jones stated that bile can be removed from the urine by mixing it with an equal volume of saturated alcoholic zinc acetate solution. We have had occasion to carry out the procedure on many bile-containing urines, but have never found that it effectively removes the bile pigments. Would you kindly make a statement to this effect.

M.D., New York.

ANSWER.—Burwell and Jones, in performing the phenolsulphonephthalein test of renal function, collect the urine as usual, two hours and ten minutes after the injection of phenolsulphonephthalein, and dilute the specimen to 500 c.c. To 20 c.c. of this diluted urine is added 20 c.c. of a saturated alcoholic solution of zinc acetate, which, they state, will precipitate out the bilirubin and hemoglobin, carrying down the red blood cells with the precipitate formed. The precipitation of bilirubin by zinc salts has been known for a long time, and the method has been frequently employed. In the filtrate from this precipitation there is no reaction for bile when the iodine test is applied, nor is there any reaction for blood pigments as shown by the spectroscopic test. While this iodine test is not very sensitive, indicating only one part of biliary pigment in 10,000 of urine, yet if the filtrate shows no reaction with this test it is certainly evidence that sufficient bile has been removed to prevent interference in the latter colorimetric tests of the phenolsulphonephthalein output, which was the point claimed by the authors.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. J. W. Walker, Fayetteville.

DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.

FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.

GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.

IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.

KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.

MASSACHUSETTS: Boston, May 8-10. Sec., Dr. Charles E. Prior, State House, Boston.

MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.

MISSISSIPPI: Jackson, June 19-20. Sec., Dr. W. S. Leathers, University.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg.

VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.

WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.

REPORT OF COMMITTEE ON GRADUATE TRAINING IN OTOLARYNGOLOGY*

GEORGE E. SHAMBAUGH, M.D., SECRETARY

In a previous report on the minimum requirements essential in the preparation for special practice in otolaryngology (Graduate Training in Otolaryngology¹), this committee recommended that a period of one full year be spent in securing a proper foundation for this work; that one half of this time be devoted to the study of the fundamental sciences in the laboratory of a university, and that the other half be devoted to the clinical study of cases, all of this work to be on the basis of real graduate training, in which the student does his work independently but under proper supervision, as distinguished from listening to didactic lectures or by attendance on clinics, watching others do the work. It was further stipulated that this first year's training be supplemented, so far as facilities exist, by serving as intern in hospitals devoted to the specialty or as resident in otolaryngology in a general hospital, and that when it is not feasible to secure such services, an additional six months be spent in a continuation of the first year's work or by serving as assistant in the practice of an established specialist. This additional six months may be spent by taking such special courses in otolaryngology as are offered in other medical centers, postgraduate schools, etc.

In order to avoid confusion regarding this minimum requirement and what should be contemplated in a fully

* The members of this committee are: Wendell C. Phillips, M.D., New York, Chairman; Herbert Stanley Birkett, M.D., dean and professor of otolaryngology, McGill University Faculty of Medicine, Montreal; Eugene A. Crockett, M.D., Walter A. Lecompte, professor of otology, Medical School of Harvard University, Boston; Lee Wallace Dean, M.D., dean and professor of ophthalmology, otology and laryngology and oral surgery, State University of Iowa College of Medicine, Iowa City; John Marvin Ingersoll, M.D., associate professor of otology, rhinology and laryngology, Western Reserve University School of Medicine, Cleveland; Hanau W. Loeb, M.D., dean and professor of ear, nose and throat diseases, St. Louis University School of Medicine, St. Louis; John O. McReynolds, M.D., Dallas, Texas; David J. Gibb Wishart, M.D., professor of otolaryngology, University of Toronto Faculty of Medicine, Toronto; secretary, George Elmer Shambaugh, M.D., professor of laryngology and otology, Rush Medical College, Chicago.

¹ A. M. A. Bull., Jan. 15, 1921.

rounded out preparation, we submit the following summary of a report from the Committee on Graduate Training appointed by the three special societies, the American Laryngological Association, the American Otological Society and the American Laryngological, Otological and Rhinological Society.

SUMMARY OF REPORT

1. We recommend that students preparing for the practice of otolaryngology be graduates of Class A medical schools and have completed a year's service as intern in an approved general hospital or its equivalent.

2. We recommend that, when possible, the preparation for special practice be started immediately after completion of this hospital year. We do not approve of specialization beginning during the undergraduate medical course, or in the intern year.

3. We recommend that the minimum training consist of eighteen months full-time work, the first year to be spent in one place. The last six months may be continued here or the work may be pursued in other approved centers. During the first year, one half of the time should be devoted to the clinical study of cases, the other half to the study of the fundamental sciences and to library work.

4. All of this work must be on the basis of genuine graduate instruction in which the student does his work individually under proper supervision.

5. The work in the fundamental sciences should be done in properly equipped laboratories, such as exist in all Class A medical schools. The clinical work must be done in a properly equipped and properly organized outpatient department of either a Class A school or a special hospital, the student serving as clinical assistant.

6. On the completion of the first year's fundamental training, the student is advised to secure so far as this is possible the position of intern in a special hospital, or of resident in otolaryngology in a general hospital.

7. For those students who are not able to secure suitable hospital positions after the completion of the first year's fundamental training, the remaining six months' work necessary to fill out the eighteen months' minimum requirement may be taken as continuation of the first year's work in the same institution or by taking special work in other centers. Others may devote the last six months serving as assistant in the practice of some established specialist. When the latter alternatives are followed, the work selected must meet the approval of the institution in which the first year's work has been taken.

8. We recommend that on the completion of the foregoing requirements the student be granted a suitable certificate setting forth that he has had the proper preparation for taking up the practice of the specialty. This certificate is to be granted by the institution in which the first year's work has been taken. We make no recommendation regarding the granting of higher degrees. We feel satisfied that such degrees will be granted as readily by the university to those students preparing for the practice of otolaryngology as to students in any other field, whenever the work pursued meets the requirements established for the granting of such degrees.

9. We recommend that the student in otolaryngology devote three years, if possible, to the study of his specialty.

The committee hopes to be able to assist the candidates in the following ways:

(a) Securing from the graduate departments of the universities a suitable degree to be conferred only on such candidates as have followed the course outlined above.

(b) By correspondence with the graduate departments of the universities with a view to securing a uniformity in the course of study to be pursued.

(c) By arranging with the hospitals referred to above to limit their appointments, as interns, to those candidates possessing qualifications as outlined in the preceding.

(d) By preparing a list of hospitals to which candidates may safely be recommended to apply for the position of intern.

(e) By securing reliable information as to the facilities offered by various centers, which they may place at the disposal of those who desire to perfect themselves still further in any department of otolaryngology, after the foregoing course has been concluded.

FACILITIES FOR SECURING SPECIAL TRAINING IN OTOLARYNGOLOGY

In the present report we are making a partial survey of the facilities existing in this country for securing special training in otolaryngology. Our aim has been to include in this statement only such facilities as would constitute a part of the requirement preparatory for special practice as stipulated in our previous report. It is the belief of the committee that the publication in *THE JOURNAL* of these data, supplemented from time to time as other data are received, will be of great assistance for those seeking proper preparation for special practice.

Facilities for graduate training in otolaryngology have developed along three lines: (1) by serving as assistant in the work of outpatient departments; (2) by serving as intern in special hospitals or as resident in otolaryngology in general hospitals; (3) by taking courses, didactic, clinical

and operative, such as are offered for the most part in post-graduate schools. The most substantial progress in graduate training so far developed in this country has been in connection with hospital services. The shortcomings inherent in such preparation have been pointed out in our previous report. It is the belief of this committee that these hospital services should logically follow a year spent in such fundamental training as can best be secured by serving for a suitable period as assistant in a properly equipped and properly organized outpatient department. Hospital work in otolaryngology has to do almost exclusively with operative cases, and for the most part with the exceptional more serious complications. The student who relies mainly on hospital experience for his training is left more or less deficient in the more important and certainly most difficult part of such preparation, namely, in the training for making proper,

Hospitals with Services for Interns or Residents in Otolaryngology

Institution	Address	Length of Service	Number of Places	Character of Service
Illinois:				
Cook County Hospital....	Chicago	1 year	1	Resident
Illinois Charitable Eye and Ear Infirmary.....	Chicago	16 months	8	Interns
North Chicago Hospital...	Chicago	2 years	4	Residents
Presbyterian Hospital....	Chicago	1 year	1	Resident
Rush Medical College.....	Chicago	1 year	8	Externs (O.P.D.)
St. Luke's Hospital.....	Chicago	1 year	1	Resident
Iowa:				
State University of Iowa..	Iowa City	2 years	8	Residents
Louisiana:				
Eye Ear, Nose and Throat Hospital.....	New Orleans	1 year	5	Interns
Massachusetts:				
Boston City Hospital....	Boston	18 months	3	Interns
Massachusetts Eye and Ear Infirmary and Mass. General Hospital	Boston	20 months	5	Interns
Michigan:				
State Univ. of Michigan...	Ann Arbor	4 years	4	Interns
Detroit Eye, Ear, Nose and Throat Hospital.....	Detroit	1 year	1	Intern
Harper Hospital.....	Detroit	1 and 2 yrs.	1	Resident
Minnesota:				
Mayo Clinic.....	Rochester	39 months	6	Residents
New York:				
Brooklyn Eye and Ear Hospital.....	Brooklyn	21 months	5	Interns
Methodist Episcopal Hosp.	Brooklyn	2 years	1	Interns
Bellevue Hospital.....	New York	1 year	1	Interns
Beth Israel Hospital.....	New York	6-18 mos.	1	Interns
Bronx Eye and Ear Hosp.	New York	1 year	1	Intern
Harlem Eye and Ear Hosp.	New York	18 months	2	Interns
Manhattan Eye, Ear and Throat Hospital.....	New York	18 months	6	Interns
Mount Sinai Hospital....	New York	2 years	2	Interns
New York Eye and Ear Infirmary.....	New York	18 months	6	Interns
New York Post-Graduate Hospital.....	New York	2 years	5	Interns
New York Throat, Nose and Lung Hospital.....	New York	6 mos.-1 yr.	2	Interns
St. Luke's Hospital.....	New York	18 months	3	Interns
Ohio:				
Western Reserve Univ....	Cleveland	1 year	2	Residents (O.P.D.)
Canada:				
Montreal General Hosp....	Montreal	1 year	1	Resident
Royal Victoria Hospital..	Montreal	2 years	2	Interns
Toronto General Hospital	Toronto	16 months	2	Residents

routine examinations, in the diagnosis of cases, and especially in learning how to recognize the proper indications for surgical interference. Proficiency in operative technic, when not supplemented by this fundamental training in examination and diagnosis, is sure to lead to indiscriminate and unnecessary surgery. It is always more difficult to teach a student how to recognize the proper indications for operations than it is to teach him the technic of the operation.

It is the belief of this committee that the most conspicuous defect in our facilities for providing proper training in otolaryngology will be met by a proper development of the educational function of the outpatient department. This development of the teaching function, when properly supervised, enhances as nothing can the character of the service rendered the patient. It has become generally recognized that in hospital work the best care of patients is usually found in those hospitals in which the teaching function has been fully developed. In exactly the same way the outpatient

department which is connected with an educational institution and in which the teaching function has been properly developed is capable of rendering the best service to the patient.

The material of the outpatient clinic is the ideal material for providing training in examination, history taking and diagnosis, so essential in the proper preparation for special practice. The reason this wealth of material has not been more generally utilized for teaching purposes is to be found in the more or less generally neglected state of outpatient clinics in this country. In order to make of the outpatient clinic the ideal training school for those preparing for special practice, something of the same care must be devoted to this department as is given to hospital work. This means, first of all, providing the outpatient clinic with a complete, and, as nearly as possible, ideal sanitary equipment in order that the work may be taken care of in the best possible manner. It means, moreover, the introduction in the outpatient clinic of a suitable corps of graduate students serving as clinical assistants. The service of these graduate students is as essential for the care of the outpatient as is that of interns in hospital work. Their work should, of course, be given the same supervision as does that of the intern in our best managed hospitals. Careful examinations and complete history taking is just as essential in the proper handling of the outpatient as it is in hospital work. The number of graduate students receiving this training in any institution will be determined exactly as is the number of interns in a hospital, that is, by the number which is essential to take proper care of the patients. The committee believes that the graduate students who receive appointments in the outpatient clinics should be expected to pay a suitable fee for this training.

There are already in this country a number of institutions in which the educational function of the outpatient department has been developed to the extent of providing a definite service for graduate students. In some, this work in the outpatient clinic is carried on in connection with regular intern or resident services. Positions of this sort are available, for example, at Ann Arbor, where services exist for four graduate assistants; at Iowa City, with places for eight; at Rochester, for six men; at Rush College, for eight men, and at Western Reserve in Cleveland, for two clinical assistants. It is our belief that with very little additional expense it would be possible for the majority of our Class A medical schools to provide a similar service each for a small corps of graduate students in otolaryngology. If but twenty-five of our leading Class A medical schools would provide services for an average of four men each year, the entire need for specialists in otolaryngology for this country would be provided for.

As regards the work offered to graduate students in the form of didactic lectures, clinics, operative courses, etc.: This has been developed particularly in the postgraduate schools. Some of this work is excellent, being given by competent men with experience as teachers. As already pointed out in our previous report, the logical field for such work is as review courses for men already established in special practice, and for those who have completed the one year in fundamental training outlined above. The objection frequently urged against the work of these postgraduate schools has been due to the practice of substituting this sort of work for that training which the student can acquire only by serving as clinical assistant where he is permitted to do the actual work himself. The facilities of postgraduate schools should be open freely for men completing their first year's work and who come to these institutions with the desire to select such short courses as they feel would round out their preparation. It is our belief that a sojourn of only a few weeks in several medical centers after the completion of the first year's work would have a distinctly broadening influence.

We present with this report such a list of hospital services for interns or residents in otolaryngology as we have been able to compile. We recommend that prospective graduate students in otolaryngology communicate direct with the Class A medical schools for information regarding facilities for

serving as clinical assistants in outpatient departments. Information regarding the courses available in postgraduate schools may be obtained by communicating with such schools.

The committee strongly urges that the work of such interns receive careful direction, particularly as regards outside reading, and that these interns be encouraged to pursue, as part of their regular duties, the exhaustive study of interesting cases, combining this with a complete review of the literature relating to such conditions, and that a carefully prepared report of such work be submitted as a thesis on the completion of their service. The committee regards the preparation of such a thesis with the training in library work which it involves as essential in the proper preparation of every real specialist.

Medical Economics and Miscellany

NARCOTIC CONTROL IN THE STATE OF WASHINGTON

To prevent the abuse of narcotic drugs in the state of Washington, the legislature has enacted a law covering the production, manufacture and distribution of habit-forming drugs and providing for the control of the addict. In general, the law follows the lines of the Harrison Narcotic Law. It goes further, however, in that it covers alpha and beta eucain, cannabis americana and cannabis indica. No one but a physician regularly licensed to practice medicine and surgery may prescribe any narcotic drug. The patient's ailment must be stated on the prescription, and the person procuring the drug to be prescribed must place his signature and address on the back of the prescription. The dispenser must make a copy of the prescription and preserve it, except that the copy may be removed by any prosecuting attorney or peace officer, any representative of the department of licenses, or any deputy or inspector of the state department of agriculture, all of whom may inspect such records. A person violating the provisions of the law relating to the production, manufacture and distribution of narcotic drugs is guilty of a felony, and on conviction is to be punished by imprisonment in the state penitentiary for not less than one year nor more than ten years. If the person convicted is a pharmacist, dentist, physician or veterinarian, his certificate of registration is to be revoked, and he is ineligible for reregistration for a period of ten years from and after the date of the revocation.

Every person who habitually uses any narcotic drug is guilty of a gross misdemeanor. Any state, county and municipal health officer, or his authorized deputy who is a licensed physician, may, whenever in his judgment it is necessary to protect the public safety, health and morals, examine any person reasonably suspected of habitually using narcotic drugs, and require such persons as he reasonably suspects to be drug addicts to report for treatment to an approved physician and to continue treatment at their own expense, or to submit to treatment at public expense until cured. The state board of health is empowered to determine by general regulation that the quarantine or isolation of persons habitually using narcotic drugs is necessary; and if it so determines, the officers named above may then isolate or quarantine such persons. Any person so isolated or quarantined may within ten days thereafter appeal to the superior court of the county; but, pending appeal, he is to be held in quarantine, and the judgment of the superior court is final. Persons who have been cured may be paroled or discharged by the health officer. Any person believing himself cured may appeal to the health officer for discharge, and on adverse decision may appeal to the circuit court for release; but such appeal shall not lie until after the addict has been in quarantine for a period of at least six months. Licensed physicians treating narcotic addicts are required, on the beginning of treatment, to report the case to the health officer. The state board of health may establish quarantine stations and clinics for the detention and treatment of addicts, which may be in connec-

tion with any county or city jail, or any hospital or other public or private institution having, or which may be provided with, necessary detention, segregation, isolation clinical and hospital facilities as may be required and prescribed by the board.

STATE OF WASHINGTON YIELDS TO SHEPPARD-TOWNER MATERNITY LAW

The legislature of the state of Washington has accepted the terms and conditions of the Sheppard-Towner Maternity Law, and has created in the state department of health a division to be known as the division of child hygiene, through which the provisions of the law are to be administered. Ten thousand dollars has been appropriated from the treasury to meet the requirements of the federal act.

VALUE OF CHEESE IN THE DIET

In the making of cheese, the greatest part of the casein and fat is brought down in the curdling process, leaving behind in the whey the milk, sugar and albumin. Most of the mineral substances go into the cheese. The three most important constituents, viz., the calcium, phosphates and the iron, are lost only to a small extent. Since the cheese is rich in fat, fat soluble A, or the growth vitamin, is retained almost completely in the cheese. The vitamins B and C are also retained, but to a smaller extent, which has never been exactly determined. It is clear, therefore, that whatever is said about the nutritive value of milk is to a great extent also true of cheese, because the most important constituents are retained to a very remarkable degree. As a matter of fact, being the more concentrated food, cheese enhances several fold some of the benefits derived from a milk diet. The American diet is likely to be made up chiefly of the grains and meat products. Both of these foods are known to be deficient in calcium. Indeed, it may well be said that the deficiency in calcium is the big gap in the American diet today, and it is primarily in this connection that cheese becomes an essential factor, because cheese contains a combination of calcium and phosphorus in greater proportion than in any other food, organically combined with the casein in such a way as to make it readily available. Although bread and meat may be a balanced ration from the standpoint of supplying carbohydrates and protein, it is decidedly deficient and unbalanced from the standpoint of supplying the mineral constituents. The best way to stabilize this inequality is to increase the amount of cheese and milk consumed. Concerning the digestibility of cheese, a wrong conception has been prevalent. Cheese, being a food in which the protein is closely intermingled with fat, remains a little longer in the stomach than is the case with other foods, and gives a sensation of fullness and heartiness. In the intestine, cheese is digested very quickly. Cheese, ingested together with other foods, has a marked influence in increasing the digestibility of the entire meal. The English and Scandinavians, who use many times over the amount of cheese that we do, are not troubled with as much constipation as are Americans. The number of calories that cheese furnishes per pound is quite variable depending on the cheese in question. Hard American Cheddar cheese will furnish as much as 1,900 calories a pound. When compared with other foods, cheese yields a lesser number of calories to the pound than some of the grain products, but considerably more than lean beef, fish, etc. Cheese must necessarily be considered an important food in the diet from any one of the factors considered. It would, however, be of greater value in special cases, for instance, in growing children who are in great need of calcium, phosphorus and the growth-promoting vitamin A. Cheese is especially rich in all of these factors, and the intelligent mother should see that her growing boys and girls have at least 1 ounce of cheese a day, either in the raw form or, better still, combined with vegetables in a salad.—S. K. Robinson, *American Food Journal* 18:117 (March) 1923.

Book Notices

KIRKE'S HANDBOOK OF PHYSIOLOGY. Revised and Rewritten by Charles Wilson Greene, A.M., Ph.D., Professor of Physiology and Pharmacology, University of Missouri. Tenth edition. Cloth. Price, \$5. Pp. 820, with 524 illustrations. New York: William Wood & Co., 1922.

This revision of Kirke's handbook is in no way superior to the ninth. Practically none of the defects of the previous edition have been eliminated, although the author says that revisions and amplifications have been made throughout the text. Judging from the preface, the handbook is intended for use by medical students. It is entirely inadequate for the purpose. Too much space is given to histology and physiologic chemistry, which the student either knows or knows where to find. The clinical application of physiology is not stressed, and the student is liable to treat this all-important subject the way he treats premedical zoology—as something prescribed but of no value to him. The space given to the various topics is entirely out of proportion to their recognized importance or unimportance. No more than five or six references to the original literature are given in the entire book. On the whole, however, the chapters on the blood, circulation, respiration, secretion, digestion and excretion are fairly well written. The chapter on metabolism is poor. The importance of the beta-carbon in the oxidation of fats is not mentioned. All types of glycemia and glycosuria get half a page of text. In speaking of measuring the basal metabolic rate, the author says: "The rate of heat production and of heat loss must, of course, be in balance in an animal of constant temperature, as in man. For this reason the rate of metabolism varies not with the mass, as we would expect, but with the surface area." Who could resist an argument like this? Very little space is given to vitamins. Fat-soluble A gets only eight lines of text (rickets is not even mentioned), whereas six full pages are devoted to the histology of the teeth. The treatment of the physiology of the ductless glands is even worse. The author persists in maintaining that "the parathyroids are intimately associated with the thyroids in the construction of the thyroid compound"; and that (Stewart's work notwithstanding) the medulla of the suprarenals, and not the cortex, is essential for life. Nerve-muscle physiology is treated more adequately, but its application in practice, the reaction of degeneration, is dismissed in two lines, and the nature of the reaction is not stated. However, thirteen pages are given to the histology of muscle and of the nerve fiber. The physiology of the central nervous system is not treated in the light of the newer knowledge. Sherrington's work on the spinal reflexes is not described. The knee-jerk is mentioned, but its importance as a diagnostic sign is not emphasized. A good deal of histology and anatomy of the brain is given, but the whole subject of aphasia gets less than four lines. In vain one looks for such common terms as ataxia, Brown-Séquard's syndrome, reciprocal innervation or decerebrate rigidity. The chapter on the eye has not been changed at all. Color-blindness is described, but its practical importance is overlooked. The confusing terminology as regards ophthalmoscopy and retinoscopy is retained; and since the word diopter is not even mentioned, the advice that the student fit glasses for himself and at least two others must be given in a Pickwickian sense only.

PHYSIOLOGY FOR DENTAL STUDENTS. By A. G. Curzon-Miller, B.Sc., L.M.S.S.A., F.C.S. Cloth. Price, \$3.75 net. Pp. 206, with 81 illustrations. New York: Longmans, Green & Co., 1922.

The author states that the importance of physiology cannot be overstated, but that the needs of the dental student are not so comprehensive as those of the medical student. This immediately opens a large question, and a review of this little book really involves a consideration of the whole problem of professional education. With new courses being added, and old ones either lengthened or intensified on account of new material, it is becoming a problem indeed to determine at what point to begin paring. Physiology is a complex subject, and a course put on a fully scientific basis would involve a technical consideration of the structure,

physics and chemistry of the body. There is no course in the curriculum that is so liable to overlapping as physiology, reaching on the one hand into the pure sciences, and on the other into the chemical side. This makes a course in physiology easily susceptible to abridgement, so that we may present a discussion of physiologic phenomena to those who have little more than the layman's scientific attainments. But the dental student, having had courses in anatomy, and in organic and physiologic chemistry which approximate the time that the medical student is allotted, and who in turn gives 60 per cent. of the equivalent time to physiology, needs no special textbook. The author has been obliged, for the sake of brevity, to make incomplete statements which, to the beginning student of physiology, amount to inaccuracies. In general, shortening a textbook or a course should be by elimination and not by condensation of the material presented. Speculative discussions have been intentionally omitted, and as a consequence many valuable statements, bald and undecorated, pass unseen. A simple statement is not impressive; the student must be informed of the essential facts and the reasons for our conclusions if he is to remember them. This work is so dogmatic that the laboratory could play no part in the presentation of a course from it. One of the functions that the laboratory performs for the future clinician is to place him in an investigative frame of mind, and to teach him the principles involved in valuable research, in order that he may think originally in his clinical practice, giving intelligent consideration to new problems as they arise. He should be informed as to the live issues and trend of development, or he will become a victim of dogmatism and tradition. Further, too much space has been given to histology, which is irrelevant to the material as presented, and it would have been better if the chapter on development had been left for presentation in the department of microscopic anatomy. Diagrams, such as those of the vomiting mechanism, regulation of the respiratory mechanism, cardio-inhibitory center and vasomotor center, require extended explanation for complete understanding.

GETTING READY TO BE A MOTHER. A Little Book of Information and Advice for the Young Woman Who is Looking Forward to Motherhood. By Carolyn Conant Van Blarcom, R.N., with an Introduction by J. Clifton Edgar, M.D., Consulting Obstetrician to Bellevue Hospital, and Frederick W. Rice, M.D., Associate Professor of Obstetrics, New York University and Bellevue Hospital. Cloth. Price, \$1.50. Pp. 237, with 70 illustrations. New York: The MacMillan Company, 1922.

This is, on the whole, an exceptionally practical book. It covers completely the question of prenatal care and the care of the infant during the first few weeks. The book is fully illustrated, but it is open to the objection that some of the illustrations are technical, and will merely disturb the expectant mother without giving her any practical information. This refers particularly to the diagrams showing the position of the child in utero. Such diagrams have no real utility for the layman; neither have the microscopic and gross sections showing tissues involved in generation.

"SUGGESTION" AND COMMON SENSE. By Allan Bennett, M.D., M.R.C.P., Torbay Hospital, Torquay. Cloth. Price, \$2.25, net. Pp. 105. New York: William Wood & Co., 1922.

Beginning with ridicule of modern psychotherapeutic doctrines as efforts to treat "a fragile and elusive figment (the unconscious) with a gross and mystifying materialism," the author endeavors to substitute for such magistral dogmatism a concept of an "intellect" inherent in all living cells, even those of the segmenting mammalian ovum. What is gained by this method of description, and in what way it is less an "elusive figment," is not clear. Dr. Bennett then emphasizes the primeval antiquity of suggestion in medical practice (of all kinds and cults) and seems to regard practically all therapeutic effects as the outcome of this influence. He takes great credit to himself because, unlike some others, he is "convinced that my patient had only herself to thank for the cure." Dr. Bennett is evidently an enthusiast and probably gets results, but one may wonder whether environmental influences are not of equal importance, as factors in human reactions, with the beliefs and faiths he somehow acquires. This little book is interesting but, if followed, is liable to lead to medical nihilism.

Medicolegal

Hospital a Lawful Business but May Become a Nuisance

(*Emrich v. Marcucilli (Ky.)*, 244 S. W. 2d 865)

The Court of Appeals of Kentucky says that, strictly speaking, no lawful business or enterprise is ever a nuisance per se, or to be classed as in and of itself a nuisance, the true definition of a "nuisance per se" being one wholly forbidden by the law. But, that a hospital, which is a lawful business, may, on account of extraneous facts, become a nuisance to one within sufficient proximity thereto is everywhere recognized. Many authorities establish the fixed doctrine, without dissent from any court, that no business, however lawful, may be operated so near to the property of another as materially to interfere with the latter's enjoyment of his own; but the interference must be a substantial, as distinguished from a merely fanciful one. In this case, the defendant acquired an old residence and converted it into what he operated as a general and lying-in hospital. Plaintiff Marcucilli's residence at its nearest point was about 10 feet from the north side of the hospital, and at other places as far as 23 feet from the hospital. There were windows on the south side of his house and on the north side of the hospital. The plaintiff sought to have the operation of the hospital enjoined as a nuisance, and the defendant was perpetually enjoined from operating in his building a lying-in hospital, and enjoined from or suffering offensive odors to invade the plaintiff's dwelling from his hospital operated as a general one. In affirming that judgment, the court of appeals is of the opinion that, leaving out of the question the effect of such a business on the financial value of the plaintiff's property, the proof was sufficient to show there was such an unlawful interference by noises and odors with the plaintiff's comfortable enjoyment of his residence as to justify him in maintaining this proceeding, and the court did not err in restraining the defendant from operating a lying-in hospital in his building. There was no evidence that any objectionable noises or odors of the disturbing kind referred to were produced through the operation in the defendant's building of a general hospital, and because its consequential effects might be to reduce the value of the plaintiff's property was not sufficient in itself to create an abatable nuisance. Besides, the only evidence introduced on the reduced value of the plaintiff's premises was based on the operation of the defendant's property as a lying-in hospital, although it is possible that the mere operation of any character of hospital in proximity to the plaintiff's premises would have some depressing effect on value. The business, as has been seen, is a lawful one, and becomes a nuisance only when the manner of its operation is such as to produce the discomforts of which the law will take cognizance. If the operation of the defendant's hospital should at any time be conducted in such a manner as to produce them, or if he should convert it into a contagious hospital or treat therein patients with contagious diseases, and thereby render the habitation of the plaintiff's premises dangerous to the health of the occupants, it would then become such a nuisance as would entitle the plaintiff to a new application for relief.

Insufficient Evidence of Damages from Amputation

(*Bush v. Chilcott (Mont.)*, 210 Pac. R. 907)

The Supreme Court of Montana, in reversing a judgment for \$3,500 damages rendered against the defendant for alleged malpractice, does so on the ground that, viewing the evidence in the most favorable light possible for the plaintiff, the evidence was not sufficient to support a verdict for damages. The court says that the plaintiff was thrown from a cart, one wheel of which passed over his left leg, breaking both bones of the leg about 3 inches above the ankle. His team ran away, and he walked and crawled 7 miles to the nearest ranch. From there he was taken in an automobile to the defendant physician, arriving there eight or nine hours after the accident. Two weeks after the accident, he was taken to a hospital, where his leg was amputated about midway between the knee and the hip. It was alleged that

the part of the plaintiff's leg below the point at which the break occurred became infected with gangrene; that the defendant knew of that fact, but did nothing to prevent the spread of the infection and did not amputate the leg promptly so as to prevent the spread of the infection, and that because of such negligence the infection spread, and the plaintiff lost the additional portion of the leg, and was damaged thereby. The damage claimed was that which it was alleged resulted from the loss of the additional portion of the leg. The loss of the foot, together with a portion of the leg between the break and the knee was attributable to and a direct result of the injury resulting from the accident. No attempt was made in the complaint to hold the defendant liable for this loss. Assuming that the defendant was negligent in the manner charged, and that such negligence was the proximate cause of the loss of the additional portion of the limb, then, on proof thereof, the plaintiff was entitled to recover such damages as would compensate him for all the detriment proximately caused thereby. But all the evidence in the record which related to the damage alleged to have been suffered, except the fact of the amputation, was contained in the plaintiff's testimony to the effect that he had not been able to make a success of trapping, as he had before; he was slower in setting and tending his traps; he had to use an inferior trap because he could not use his foot to step on the springs, and he had to use a very gentle horse because he could not mount as he previously could; nor was he able to make himself useful in caring for sheep, as formerly. He testified further that it would take one fourth or more from what he used to make; that if he had lost only his foot, so that he would still have a knee-joint, he could earn more money than without the knee-joint. The evidence was not sufficient to support the verdict for damages, and for that reason the judgment recovered by the plaintiff is reversed, and a new trial granted to the defendant. While it is true that, in cases of this character, damages cannot be ascertained with mathematical certainty, yet a jury must have some competent evidence before it from which to arrive at its conclusions, and must not base its verdict on mere conjecture and speculation; and this rule is not altered by the fact that the ascertainment of the proper amount of damages is a matter of practical difficulty. In the testimony mentioned, the plaintiff compared his ability after the amputation, in the several respects stated, with his efficiency in like respects before the accident occurred, while a part of this difference was caused by the loss of the foot and part of the leg below the knee, which, admittedly, was the result of the unfortunate accident, and not in anywise occasioned by the alleged negligence of the defendant.

Competence of Insane Persons to Be Witnesses

(*Lanier v. Bryan* (N. C.), 114 S. E. R. 6)

The Supreme Court of North Carolina says that the tests that have usually been applied to determine the competence of a person offered as a witness are those of age, mental power, religious belief, and capacity to understand the nature and obligation of an oath. Particularly with reference to the first three of them the decisions have not been uniform. With respect to age it is now generally held that no precise minimum limit can be fixed, and that as to mentality the controlling factor is the strength of the witness' understanding, or the degree of his intelligence. In a number of American cases decided in the first half of the nineteenth century, it was held that idiots and insane persons were not competent to be witnesses; but subsequently the courts, "keeping pace with the progress of science" and the demands of a more enlightened period, relaxed the rigor of these decisions and modified the former strictness of the rule. Now the principle is generally recognized that a lunatic or a person affected with insanity is competent to be a witness if he has sufficient mind to understand the nature and obligation of an oath and correctly to receive and impart his impressions of the matters which he has seen or heard.

In this case, in which the plaintiff recovered a judgment for damages for seduction, the trial judge, after hearing the testimony of a physician who was an expert in mental diseases and who had treated the plaintiff in a training school,

found therefrom that she was over 21 years old and had been adjudged to be of unsound mind; that she was an imbecile and had a mentality not in excess of that of a normal child of from 3 to 6 years; and that she was incapable of any sense of moral obligation or of understanding the nature of an oath. But immediately thereafter the plaintiff was examined as a witness, and after hearing her testimony and considering it in connection with other evidence, the judge entered of record a general order adjudging the plaintiff competent to testify, and thus practically reversed and nullified portions of his previous findings and brought the case within the general rule, freed from the exceptions. The supreme court finds no error entitling the defendant to a new trial.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.
- American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
- American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
- American Bronchoscopic Society, Atlantic City, May 9. Dr. William B. Chamberlin, Osborn Building, Cleveland, Secretary.
- American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
- American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
- American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otolological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
- American Ophthalmological Society, Colorado Springs, June 1921. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
- American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
- American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
- American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
- American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
- American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
- American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
- Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
- Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
- California Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
- Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
- Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
- Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
- Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
- Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
- Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Joplin, May 8-10. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.
- Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Hampshire Medical Society, Concord, May 22-23. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- New Jersey Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
- New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
- North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
- Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
- Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
- Rhode Island Medical Society, Providence, June 7. Dr. I. W. Lecch, 369 Broad Street, Providence, Secretary.
- Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
- Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
- West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
- Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.
- Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Arkansas Medical Society Journal, Little Rock

March, 1923, 19, No. 10

- Fractional Gastric Analysis. W. D. Rose, Little Rock.—p. 187.
Treatment of Psoriasis. E. A. Purdum, Hot Springs.—p. 192.
Ectopic Pregnancy. C. V. Scott, Little Rock.—p. 194.

American Journal of Medical Sciences, Philadelphia

165: 313-434 (March) 1923

- Mechanism of Physical Signs, with Special Reference to Foreign Bodies in Bronchi. C. Jackson, Philadelphia.—p. 313.
*Nature of Complement Fixation Reaction in Syphilis in Relation to Standardization of Technic. J. A. Kolmer, Philadelphia.—p. 320.
*Production of Heart Murmurs. W. D. Reid, Boston.—p. 328.
*Value of Roentgen Ray in Cardiac Diagnosis. F. N. Wilson and E. F. Merrill, Ann Arbor, Mich.—p. 340.
*Sudden Death Following Thoracentesis. E. S. Du Bray, San Francisco.—p. 357.
*Diffuse Glomerulonephritis. H. Elwyn, New York.—p. 366.
*Graves' Syndrome and Involuntary Nervous System. L. Kessel, C. C. Lieb and H. T. Hyman, New York.—p. 384.
I. Thyroid Enlargement in Persons without Sympathomimetic Manifestations. L. Kessel and H. T. Hyman, New York.—p. 387.
*Significance of Sequence and Mode of Development of Symptoms as Aid to Diagnosis of Multiple Sclerosis in Early Stages. W. B. Cadwalader and J. W. McConnell, Philadelphia.—p. 398.
Traumatic Cerebral Edema. W. Sharpe, New York.—p. 405.
Prognosis in Cancer of Breast. H. C. Saltzstein, Detroit.—p. 424.
*Magnesium Sulphate as Sedative. P. G. Weston and M. Q. Howard, Warren, Pa.—p. 431.
Nephritis: Necropsy Reports and Recent Views. R. Floyd, New York.—p. 434.

Complement Fixation Reaction in Syphilis.—Kolmer favors standardization of the Wassermann test. He feels that his test meets all requirements. The first purpose should be to secure as good a technic as possible in the light of present knowledge. More unification of results in Wassermann tests in different laboratories means little or nothing unless the test is technically correct and as sensitive as is possible with practical specificity. Even under these conditions individual variation in the scientific attainments and accuracy of different serologists will ever be modifying factors, if the test aims to be a sensitive one; but Kolmer believes standardization is possible under these conditions.

Nature of Heart Murmurs.—In the hope of obtaining a better understanding of the nature of murmurs detected in the physical examination of the patient, Reid has studied the murmurs which may be produced in rubber tubes through which a stream of water is passing. He has also analyzed clinical records and necropsy reports. A murmur is most readily produced when conditions exist for the formation of a "veine fluide" or jet. Such conditions are: (a) stenosis or narrowing of the vessel; (b) sudden increase in the caliber of the tube. A certain velocity of the stream is necessary. Within certain limits the loudness or intensity of the murmur is proportional to the velocity of the stream. The murmur is propagated both up stream and down, but better in the latter direction. A second condition, easily giving rise to a murmur, is the culdesac against the current. A mere sharp edge or lip is sufficient to cause a murmur. The murmur produced by the culdesac against the current is less intense than that associated with the veine fluide, and it is better transmitted up stream than down stream. Roughness of the inner surface of a vessel appears not to cause a murmur, or if this be not literally true, then a murmur due to roughness of the vessel wall is very slight and in no sense comparable to the murmurs produced when a veine fluide or a culdesac against the stream are present. The conditions suitable for the formation of a veine fluide, a culdesac against the stream and roughness of the vessel wall may be and often are present together in the human heart. The quality of the murmur is influenced by the character of the vessel wall at the point of production. In their transmission, murmurs may be altered by the effect of resonance and of the reflection and refraction of sounds.

Value of Roentgen Ray in Cardiac Diagnosis.—While recognizing the usefulness of the roentgen ray in the diagnosis of cardiac disease, Wilson and Merrill warn against basing a diagnosis of cardiac enlargement on the roentgen-ray findings alone, particularly in cases in which no cause for such enlargement can be found. The exaggeration of the importance of the roentgen-ray examination of the heart, at the expense of other methods, is deplored.

Sudden Death Following Thoracentesis.—Du Bray concludes that in his case the accident was caused by a combined physiologic-pathologic mechanism, namely, injury and congestion of the lung parenchyma plus acute pulmonary edema with secondary circulatory reflexes. Nothing was observed either in the clinical picture or in the necropsy findings to suggest that air embolism was a factor.

Diffuse Glomerulonephritis.—Volhard's theory of acute angiospastic renal ischemia as the starting point of diffuse glomerulonephritis, Elwyn thinks is the best explanation so far offered for the pathogenesis of this disease. The theory is also of value in treatment. At all times, when the functional reserve of the kidney is lessened or has entirely disappeared, either by acute ischemic or by chronic changes, treatment should be directed toward limiting the intake of those substances that in their normal quantities cannot be eliminated by the kidney which has become limited in its function. These substances are protein, food and water, and their reduction is always indicated when the blood shows an increase in the nitrogenous waste substances.

Hyperthyroidism and Nervous System.—The results of a study of fifty-five persons with thyroid enlargement are presented by Kessel and Hyman. None of the patients presented sympathomimetic manifestations or alterations in basal metabolism. The efficacy of iodids in reducing neck circumference is again demonstrated. The mechanism of the production of hyperplasia is through diminution in the iodine store. That hyperplasia of the thyroid gland indicated hypersecretion, the authors assert, is based on inferences which are not compatible with the available data. There was no evidence to support the theory of the toxicity of adenoma. The influence of nervous impulses on the secretion of the thyroid gland has not been demonstrated. The rôle of the thyroid in the production of clinical symptoms is held to be greatly overemphasized.

Diagnosis of Multiple Sclerosis.—Cadwalader and McConnell state that the sequence, mode of development, and the combination of signs are more important than the individual symptoms themselves. In addition, the occurrence of cerebral symptoms, most particularly scanning speech and nystagmus, either alone or after spinal symptoms have developed, or the reverse—spinal symptoms following the cerebral manifestations—is strongly indicative of the dissemination of the pathologic process. If there is a history of earlier remissions, or of a discontinuance of the process in the early stages, followed by a progressive course, the nature of the disease can be determined with considerable accuracy. With the exception of syphilis, no subacute or chronic disease other than multiple sclerosis presents this remittent picture so constantly.

Magnesium Sulphate as Sedative.—Weston and Howard record their experience with magnesium sulphate as a sedative. Pure, recrystallized magnesium sulphate, with its water of crystallization was made into a 50 per cent. solution with distilled water and sterilized. The solution (2 c.c.) was injected subcutaneously and intramuscularly more than a thousand times. No local pain or sloughing occurred when proper aseptic technic was used. In 82.7 per cent. of the cases the sedative action was prompt, the patient becoming quiet after fifteen or thirty minutes and sleeping from five to seven hours. In a few instances the patient became quiet but did not sleep. The effect persisted for from five to ten hours. The salt was found to be a very excellent substitute for morphin and hyoscin in many cases. It was found necessary to repeat the dose of 2 c.c. in 6 per cent. of the cases before sedation was obtained. In 11 per cent. of the cases no effect at all was noticed after the injection of three or more doses. The salt is quite harmless in the dose necessary to produce

sedative effect and can be given liberally when necessary. No opportunity has occurred for using the salt in preoperative or postoperative cases or in acute thyrotoxicosis.

American Journal of Ophthalmology, Chicago

6: 161-223 (March) 1923

- Significance of Tuberculin Reaction and Other Problems in Ocular Tuberculosis. W. H. Luedde, St. Louis.—p. 161.
Corneal Deposits of Cholesterol and Lime Salts Dissolved by Alcohol. L. F. Love, Philadelphia.—p. 174.
Neurofibroma of Orbit. E. Stieren, Pittsburgh.—p. 176.
Malignant Lymphoma of Lacrimal Gland. L. M. Francis, Buffalo.—p. 182.
Tumors and Cysts Arising Near Apex of Orbit. W. L. Benedict, Rochester, Minn.—p. 183.
Intracapsular Cataract Extraction with Erisiphake. W. Zentmayer, Philadelphia.—p. 202.
Practical Points in Refraction. C. D. Westcott, Chicago.—p. 204.
Plea for More General Use of Cross Cylinder. W. H. Crisp, Denver.—p. 209.
Practical Side of Ophthalmometer. O. Orendorf, Canon City, Colo.—p. 215.
Three Cases of Asthenopia Treated by Psychotherapy. W. B. Lancaster, Boston.—p. 216.
Incubation Period of Trachoma. Contagiousness in Atrophic Stage. H. Gifford, Omaha.—p. 221.
Glioma Involving Orbit. C. J. Adams, Kokomo, Ind.—p. 222.
Forceps for Trial Cylinders without Handles. S. L. Olsho, Philadelphia.—p. 223.
Cataract Extraction in Man Suffering from Pernicious Anemia. J. B. Stanford, Memphis, Tenn.—p. 223.

American Journal of Public Health, Detroit

13: 163-210 (March) 1923

- The Administration of Health Departments. A. W. Freeman, Baltimore.—p. 163.
Prevention of Pneumonia by Pneumococcus Vaccine. R. L. Cecil, New York.—p. 182.
Preventive Infant Feeding—Its Simplification. H. J. Gerstenberger, Cleveland.—p. 185.
Medical Examination of Food Handlers. C. V. Craster, Newark, N. J.—p. 196.
Attempt to Isolate Bacillus Typhosus or Bacillus Paratyphosus from Clotted Blood. R. Gilbert, Albany, N. Y.—p. 201.
Local Quarantine and Inoculation for Smallpox in American Colonies (1620-1775). E. C. Tandy, New York.—p. 203.
Lead in Drinking Water. C. D. Howard.—p. 207.
Typhoid Fever Epidemic Traced to Cheese. E. D. Rich.—p. 210.

Archives of Neurology and Psychiatry, Chicago

9: 283-358 (March) 1923

- *Deep Sensibility of Face. L. E. Davis, Chicago.—p. 283.
*Afferent Impulses of Trigeminal Nerve. M. W. Gerard, Chicago.—p. 306.
*Hereditary and Nonhereditary Mental Defect. H. W. Potter and R. S. Viers, Thiells, N. Y.—p. 339.
*Case of Ambulatory Automatism. H. D. Singer, Chicago.—p. 347.
*Basal Metabolism in Mental Disease. K. M. Bowman and G. P. Grabfield, Boston.—p. 358.

Deep Sensibility of Face.—In studying the deep sensibility of the face, Davis attempted to establish two points: (1) Is pressure pain sensibility lost after division of the sensory root of the trigeminal nerve? (2) If this type of sensation is not lost, do the fibers which transmit pressure pain travel cephalad in the facial nerve? His conclusions are as follows: Pressure pain sensibility in the face is retained following trigeminal neurectomy or ganglionectomy, although all superficial cutaneous sensibility is lost. Afferent fibers which transmit pressure pain sensation from the face exist within the facial nerve trunk. The cells of origin of these afferent fibers exist within the geniculate ganglion, and their internal prolongations pass cephalad within the nervus intermedius. The facial nerve is, therefore, a mixed nerve in man, and contains a general visceral sensory component.

Afferent Impulses of Trigeminal Nerve.—Besides offering data on the anatomy of the central trigeminal structures in cat and man, the following physiologic observations are discussed by Gerard. Painful, and possibly thermal, stimuli in the trigeminal area produce conscious and reflex effects via the spinal fifth tract and nucleus only, while tactile stimuli produce effects via the main sensory fifth nucleus only (thirty-nine cases of occlusion of the posterior inferior cerebellar artery, eight other human cases, and twenty-one cats with experimental lesions). Pain fibers from the cornea terminate just below the upper 7 millimeters of the spinal tract (cat). Pain fibers from adjacent regions descend further (human). The fields of tactile sensibility of the two trigeminal nerves

supplying the nose do not overlap (cat). The adequate stimulus for the oculocardiac reflex is pain rather than pressure, and the reflex path includes the spinal fifth tract. The spinal fifth tract and nucleus are functionally related to the tract of Lissauer and the substantia gelatinosa, respectively. Deep pain sensation from the facial muscles is probably carried by the facial nerve. These results favor the view that impulses from more than one type of sensory stimulus may be transmitted by the same nerve fiber.

Hereditary and Nonhereditary Mental Defect.—Two groups, one comprising fifty patients with a history of feeble-minded ancestors and the other composed of a like number of patients having an unimpaired heredity, were studied comparatively by Potter and Viers, with respect to etiology, intelligence, physical growth and physical defects and diseases. A history of possible etiologic significance other than heredity was found in eight patients belonging to the hereditary group and in thirty-one belonging to the nonhereditary group. The average intelligence quotient of the hereditary group, fifty-six, was fifteen points higher than that of the nonhereditary group, which was forty-one. In the former group there were no idiots; five were imbeciles, thirty-five were morons and ten were borderline types. In the latter group there were twelve idiots, twelve imbeciles, twenty-four morons and only two belonging to the borderline types. The whole number of the two respective groups showing physical defects and diseases did not differ materially, there being twenty-six cases among the hereditary group, and thirty among the nonhereditary group. One further salient feature is the fact that among 100 cases, in more than one half some physical disease or defect was present. Among this number were not included patients with minor defects of the eyes, ears, nose or throat. This study would tend to indicate that there are decided differences between hereditary types of mental deficiency and those cases which for want of a better term might be called sporadic.

Ambulatory Automatism.—The outstanding features of the personality of the patient whose case is cited by Singer were restless energy combined with a sensitive, timorous conventionality. Coupled with the associations of childhood, the former led to a craving for change and adventure which was held in check by the latter. The man joined the navy, developed tuberculosis and was discharged. Alcohol given in treatment was adopted as a substitute for his hopes and served for a time to allay the disappointment. With returning health this was discontinued, but a recurrence of the illness and its accompanying fears, a serious psychic shock, exhaustion and an accidental dose of whisky led to an effort to escape by a fugue with a blind return to excessive drinking. Following this first fugue that lasted a few days, subsequent difficulties were reacted to in the same manner. Numerous fugues occurred, one lasting two and one-half years. In these fugues he supported himself, drank heavily and twice married.

Basal Metabolism in Mental Disease.—In a series of fifty cases of mental disease only four showed increased basal metabolism. Three of these cases belonged to the manic-depressive group. The fourth case with a high reading was one of psychopathic personality without psychosis. The authors feel that this tendency toward a low basal metabolism in cases of mental disease is of importance and merits consideration in formulating theories as to etiology and treatment.

Florida Medical Association Journal, St. Augustine and Jacksonville

9: 129-135 (Feb.) 1923

- Suppurative Arthritis Following Focal Infection. E. J. Melville, St. Petersburg.—p. 129.
Invisible Ingredient in Medicine and Surgery. R. R. Kime, Orlando.—p. 131.
Lipoids. H. Iscovesco, Paris, France.—p. 135.

Journal of Bacteriology, Baltimore

8: 103-173 (March) 1923

- Influence of H Ion Concentration on Structure. I. B. Influenzae. G. Reed and J. H. Orr, Kingston, Canada.—p. 103.
Variations in Hydrogen Sulphid Production by Bacteria. F. W. Tilley, Washington, D. C.—p. 115.

- *Comparison of Ziehl-Neelsen and Schulte-Tigges Methods of Staining Tubercle Bacilli. H. L. Shoub, New York.—p. 121.
 Physiologic Youth in Bacteria. J. M. Sherman and W. R. Albus, Washington, D. C.—p. 127.
 Salt Action. VI. Stimulating and Inhibitive Effect of Certain Cations on Bacterial Growth. M. Hotchkiss, New Haven, Conn.—p. 141.
 Bacteriophage of D'Herelle: Its Therapeutic Applications. A. Beckerich and P. Hauduroy, Strasbourg, France.—p. 163.
 Variation of Bacterium Coli. H. Bergstrand, Stockholm, Sweden.—p. 173.

Methods of Staining Tubercle Bacilli.—Shoub thinks that the Schulte-Tigges method of staining tubercle bacilli is not more difficult than the Ziehl-Neelsen method; it gives about 33 per cent. more positives; it exposes more than five times as many organisms; it does away with the use of alcohol.

Journal of Industrial Hygiene, Boston

4: 163-491 (March) 1923

- Carbon Monoxid Asphyxia: Problem of Resuscitation. C. K. Drinker and W. B. Cannon, Boston.—p. 163.
 Industrial Medicine in 1922. W. I. Clark, Jr., Worcester, Mass.—p. 474.
 Ventilation of English Factories and Workshops in Hot Weather. T. C. Angus.—p. 479.
 Influence of Benzol on Certain Aspects of Metabolism. F. P. Underhill and B. R. Harris, New Haven, Conn.—p. 491.

Journal of Laboratory and Clinical Medicine, St. Louis

8: 357-411 (March) 1923

- Clinical and Laboratory Procedures in Pediatrics. A. Levinson, Chicago.—p. 357.
 Mixed Tumors of Uterus. A. J. Petersen, Chicago.—p. 369.
 Pseudospirochetes Derived from Red Blood Cells. E. W. Schultz, San Francisco.—p. 375.
 *Pharmacology of Isopropyl Alcohol. Synopsis of Available Data. D. H. Grant, Elizabeth, N. J.—p. 382.
 Pathogenicity of Streptococci from Diphtheria Throats for Mice. L. Brody and L. Arnold, Chicago.—p. 387.
 Changes in Streptococci Flora of Throat During Diphtheria. L. Arnold, Chicago.—p. 389.
 Deterioration of Procain Solutions. M. L. Bonar, Morgantown, W. Va.—p. 391.
 Simplified Technic for Clinical Blood Chemistry. A. Mirkin and S. J. Drushkin, New York.—p. 395.
 Successful Method for Isolation of Diphtheria Bacilli from Mixed Cultures. A. I. van Saun and I. A. Graves, New Haven, Conn.—p. 406.
 Note on Comments of Reznikoff on Use of Sodium Sulphate as Precipitant of "Pseudoglobulin." P. E. Howe, Princeton, N. J.—p. 408.
 *Method for Determination of Hemoglobin. R. L. Haden, Kansas City, Mo.—p. 411.

Pharmacology of Isopropyl Alcohol.—Grant fails to see how any reasonable objection can be made to the use of isopropyl alcohol as a lotion or vehicle for external medication, nor as a constituent of compounds for oral and nasal medication, such as practically all mouth washes, gargles, dentifrices, etc., which do not involve the probability of swallowing more than a few cubic centimeters, at most, of the alcohol. The toxicity of isopropyl alcohol probably lies between one and two times that of ethyl alcohol. Isopropyl alcohol is not potable.

Determination of Hemoglobin.—The method described by Haden is an adaptation of the acid hematin method of Sahli to the Hellige colorimeter.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

21: 77-151 (March) 1923

- Action of Certain Depressant Drugs on Sensory Threshold for Faradic Stimulation in Human Subjects and the Effect of Tobacco Smoking on This Action. W. Hale and G. P. Grabfield, Boston.—p. 77.
 Biologic Significance of Lipoids. Action of Cephalin and Lecithin. W. S. Van Leeuwen and A. V. S. Györgyi.—p. 85.
 Sensitivity of Different Nerve Endings to Atropin. V. E. Henderson, Toronto.—p. 99.
 *Active Principles of Pituitary Gland. H. W. Dudley, London.—p. 103.
 *Comparative Toxicity of Inorganic Lead Compounds and Metallic Lead for Pigeons. P. J. Hanzlik and E. Prescho, San Francisco.—p. 123.
 *Therapeutic Efficiency of Various Agents for Chronic Poisoning by Metallic Lead in Pigeons. P. J. Hanzlik and E. Prescho, San Francisco.—p. 131.
 Comparative Toxicity of Metallic Lead and Other Heavy Metals for Pigeons. P. J. Hanzlik and E. Prescho, San Francisco.—p. 145.
 Biologic Action of Potassium and Its Radioactivity. H. Zwaardemaker, Utrecht, Holland.—p. 151.

Active Principles of Pituitary Gland.—An attempt has been made by Dudley to effect a purification of the oxytocic principle of the posterior lobe of the pituitary gland. A crystal-

line picrate was obtained which had the characteristic actions of pituitary extracts on plain muscle and blood pressure. It had an activity of the same order as that of histamin. It was found to be the picrate of an inert substance merely contaminated with small amounts of the pituitary principles and was eventually identified as potassium creatinin picrate. Out of the mother liquor from the recrystallization of this potassium creatinin picrate a small alcohol soluble residue was obtained. This yielded an acetone insoluble *A* and an acetone soluble *R* fraction. *A* had an oxytocic activity equal to about twelve times that of histamin (reckoned as base), producing a definite contraction of the uterus in a dilution of 1:1,250,000,000. *A* also contained a pressor principle, displaying no preliminary depressor activity. It produced a strong rise of blood pressure in a dose of 0.01 mg. *R* had one-twentieth the oxytocic activity of *A*, and in doses of 0.5 mg., produced a strong depressor action followed by a moderate pressor action on the blood pressure. Evidence is put forward to show that the oxytocic and pressor principles of *A* are two separate chemical substances, and that the pressor principles of *A* and *R* are most probably also two distinct chemical entities. It is considered, therefore, that there is valid evidence for the presence of at least three different physiologically active principles in pituitary extracts. This view is in direct conflict with that of Abel and Rouiller.

Toxicity of Inorganic Lead Compounds and Metallic Lead.

—The following lead compounds: chlorid, iodid, sulphid, carbonate and acetate, administered in single, and continuous or daily doses, whose lead content was equivalent to and greater than the fatal dosage of metallic lead, Hanzlik and Prescho found were less toxic than metallic lead for pigeons under similar conditions of experimentation.

Therapeutic Efficiency of Various Agents in Lead Poisoning.—The therapeutic efficiency of some agents in current use for the treatment of chronic lead poisoning was tested by Hanzlik and Prescho in pigeons. Using sodium chlorid as control, the daily administration of sodium iodid in food and drinking water, and of magnesium sulphate and calcium sulphid in food, in doses corresponding to medium and large therapeutic doses, were found to be beneficial. This agrees generally with the clinical results obtained with these agents in the treatment of chronic lead poisoning in man. The beneficial effects of magnesium sulphate are due in part, at least, to its cathartic action. The beneficial therapeutic effects of all agents tested are attributed partly to the diminished solubility of the lead and, therefore, diminished absorption.

Michigan State Medical Society Journal, Grand Rapids

March, 1923, 21, No. 3

- Insulin. F. J. Banting, Toronto, Canada.—p. 113.
 Advances in Radiation Therapy of Deep-Seated Tumors. R. H. Stevens, Detroit.—p. 124.
 Case of Malignant Tricuspid Endocarditis. W. S. Reveno, Detroit.—p. 130.
 Case of Granuloma Rubra Nasae. W. H. Gordon, Detroit.—p. 132.
 Disturbance of Sleep. C. D. Camp, Ann Arbor, Mich.—p. 133.
 Some Problems of Industrial Surgery. W. L. Finton, Jackson, Mich.—p. 138.
 Indications for Cesarean Section; Study of 100 Cases. M. Burnell, Flint, Mich.—p. 140.
 Toxemias of Pregnancy Including Pre-Eclampsia, Eclampsia and Nephritis. Indications for and Methods of Artificial Interruption of Pregnancy. R. Peterson, Ann Arbor, Mich.—p. 144.
 Hyperemesis Gravidarum. J. N. Bell, Detroit.—p. 146.
 Heart Disease and Pregnancy. F. N. Wilson and G. R. Herrmann, Ann Arbor, Mich.—p. 148.
 Contracted Pelvis and Other Serious Maternal Defects Requiring Artificial Termination of Pregnancy. H. H. Cummings, Ann Arbor, Mich.—p. 150.

Military Surgeon, Washington, D. C.

52: 233-302 (March) 1923

- Shall Sex Hygiene Be Taught in the Public Schools? L. A. Stone, Chicago.—p. 233.
 Progress of Medical Science During World War. W. A. N. Dorland, Chicago.—p. 244.
 Diphtheria. C. Schlayer, Berlin.—p. 261.
 Prussian Field Hospitals in Eighteenth Century. G. M. Blech.—p. 273.
 Elementary Chemical Study of Parathyroid Glands of Cattle. A. M. Hanson, Faribault, Minn.—p. 280.
 Defense of Usual Method of Calculation of Annual Death Rates. A. G. Love.—p. 285.
 Sanitation on Atlantic Transports. J. D. R. Woodworth.—p. 290.

- Airplane Deafness and Its Prevention. V. T. Scott.—p. 300.
Bathing and Delousing American Troops at Brest, France, Prior to Their Embarkation for United States. L. H. Dunn, Ovid, N. Y.—p. 302.

Nebraska State Medical Journal, Norfolk

S: 81-107 (March) 1923

- Induction of Labor at Term. W. W. Arrasmith, Grand Island.—p. 81.
Type of Diet as an Etiologic Factor in Diabetes Mellitus. J. E. Meyer, Columbus.—p. 89.
Clinical Phases of Diabetes Mellitus. W. J. Raynor, Grand Island.—p. 93.
Peptic Ulcer. J. M. Willis, McCook.—p. 95.
Interpretation of Fevers in Children. J. V. Reilly, Grand Island.—p. 97.
Medical Practice as Business. W. R. Boyer, Pawnee City.—p. 99.
Double Uterus; Report of Case. A. L. Kee, Cambridge.—p. 101.
Acute Appendicitis Complicating Pregnancy. A. W. Anderson, West Point.—p. 102.
Ruptured Tubal Pregnancy: A Case Record. C. F. Ulrich, Valentine.—p. 105.
Nontuberculous Inflammation of Cecum. Report of Case. F. G. Kolouch, Schuyler.—p. 106.
Primary Uterine Inertia in Twin Pregnancy Following Premature Rupture of Membranes. A. Townsend, Minatare.—p. 107.

Surgery, Gynecology and Obstetrics, Chicago

36: 303-421 (March) 1923

- *Surgical End-Results in General with Case of Cavernous Hemangioma of Skull in Particular. H. Cushing, Boston.—p. 303.
*Embolectomy in Treatment of Circulatory Disturbances in Extremities. E. Key, Stockholm, Sweden.—p. 309.
John B. Murphy on Surgery of Joints. R. Bastianelli, Rome, Italy.—p. 317.
*Comparative Study of Two Series of Gallbladder Lesions. J. G. Clark, Philadelphia.—p. 323.
*Bile Duct Anomaly as Factor in Pathogenesis of Cholecystitis. M. G. Seelig, St. Louis.—p. 331.
*Liver Abscess. Report of One Hundred Operations. A. I. Ludlow, Seoul, Korea.—p. 336.
Rupture of Liver. Report of Case in Which Autotransfusion was Employed. C. S. White, Washington.—p. 343.
*Functional Liver Tests. Experimental Study. V. R. Deakin and E. A. Graham, St. Louis.—p. 348.
*Hydatid Cysts of Lungs and Pleura. R. Halahan, Buenos Aires.—p. 354.
*Acute Suppurative Pleurisy. Analysis of Ninety-Four Cases. C. H. Peck and H. W. Cave, New York.—p. 357.
*Hypophyseal Duct Tumor in Child of Ten. T. H. Lanman and L. W. Smith, Boston.—p. 361.
*Lymphaticostomy in Peritonitis. W. A. Costain, Toronto, Canada.—p. 365.
Obstruction at Uterovesical Valve. T. N. Hepburn, Hartford, Conn.—p. 368.
*Effect of Radium on Rabbit Ovaries. H. A. Weiss, Davenport, Ia.—p. 373.
*Conservatism in Treatment of "Essential" Uterine Hemorrhage. S. H. Geist, New York.—p. 383.
Morphologic Histology of Adenocarcinoma of Body of Uterus in Relation to Longevity. Study of 186 Cases. A. E. Mahle, Rochester, Minn.—p. 385.
*Lingual Goiter. F. H. Lahey, Boston.—p. 395.
Primary Osteomyelitis of Patella. Report of Case and Review of Literature. V. E. Chesky, Halstead, Kan.—p. 398.
*Two Embryologically Important Specimens of Tubal Twins. L. B. Arey, Chicago.—p. 407.
*New Technic for Closure of Abdomen. R. E. Pasman, Buenos Aires.—p. 416.
Identification of Common Bile Duct in Presence of Anomalous Condition of Biliary Passages. J. Homans, Boston.—p. 417.
Overhead Elevator. P. N. Jepson, Rochester, Minn.—p. 418.
Instrument to Facilitate Threading of Surgical Needles. F. S. Richardson, Minneapolis.—p. 419.
Simplified "Towel Clip." L. M. Stearns, Kearney, Neb.—p. 420.
*Two-Forceps Maneuver for Persistent Occipitoposterior Presentation. S. Seides, New York.—p. 421.

Surgical End-Results: Taking Stock.—The value of taking stock of surgical end-results as a means of making a better diagnosis and, therefore, prescribing better treatment is emphasized by Cushing. In his opinion, there could be no better way of gaging the working conditions in a given hospital than by the character of a report it would submit on some such question as the results, immediate and remote, of the operations for cancer of the breast, covering a given decade. Such a report would reveal at a glance not only the quality of the operative work itself, but how carefully it was safeguarded—how correct were the diagnoses leading to the operation; how thorough the pathologic studies; how dependable were the hospital case records; how conscientious the hospital in its quest for information concerning the ultimate results. He suggests that in place of the futile lists of diseases and operations which encumber the annual publications of hospitals, the hospitals be requested to include

each year a concise report on some particular clinical problem. In this way ample data for almost any required statistical study could be secured, and the process would lead to a very desirable regrouping of the institutions already on the acceptable list, into those which keep sufficiently reliable and complete records of their patients and those which do not. One particular case is cited in which the original diagnosis was melanotic sarcoma of the skull, probably metastatic. The case proved, from the evidence of time as well as from the evidence of subsequent histologic studies, to be a tumor of less malignant nature than had originally been supposed—a cavernous hemangioma—and emphasizes the fact that a diagnosis of bone sarcoma in cases which have long survived operation must be received with skepticism until the original records of the case have been scrutinized anew.

Embolectomy in Circulatory Disturbances in Extremities.—Key has had occasion to remove by arteriotomy an embolus that was producing circulatory disturbance in the extremities, ten times on nine patients (one had embolus in both legs). The operation was performed from two hours to four days after the earliest symptoms. Gangrene appeared after four of the operations. In the other cases, the result was good. Of the cases in which gangrene occurred, one patient was operated on four hours after the first symptoms appeared, two after fifteen and forty-three hours, respectively, and one patient not until the fourth day.

Cholecystectomy.—The outstanding points in favor of cholecystectomy according to Clark are: the postoperative convalescence is decidedly better, the percentage of cures is larger, the mortality is less, and surgical complications are in the minority. Against these advantages may be debited as a danger the fact that should serious symptoms arise in the cholecystectomized patient which demand a subsequent operation, the opportunity for surgical alleviation is endangered through the absence of the gallbladder. Such operations are more difficult and dangerous, for anatomic orientation is greatly obscured. However, the possibility of a subsequent operation is minimized by the superior results following the removal of the gallbladder when its mucous membrane or mural integrity had been seriously impaired.

Bile Duct Anomaly.—In Seelig's case the cystic duct, emerging from the gallbladder somewhat laterally (toward the left side), and then, kinking on itself very sharply, coursed upward along the left lateral wall of the gallbladder for about one inch and a half. The duct then turned to the left to empty in the common duct. As a matter of fact, the cystic duct, as such, was not recognizable, because it was seemingly incorporated in the gallbladder wall. Furthermore the posterior wall of the gallbladder was adherent to the common duct, so that when traction was put on the gallbladder the common duct pulled up exactly as would a normal cystic duct. Division of the cystic duct at its point of entrance into the common duct and mobilization of the gallbladder brought into view the common duct coursing behind the gallbladder and emerging from below its pelvis, in the position normally occupied by the cystic duct.

Liver Abscess.—Although Korea has a temperate climate, Ludlow says that both amebic dysentery and amebic liver abscess are common among Koreans. The incidence of liver abscess in Korean women is 8 per cent.—a larger percentage than that reported in other countries. The large single abscess of the right lobe of the liver predominates.

Functional Liver Tests.—Deakin and Graham conclude from their study that phenoltetrachlorophthalein is not a satisfactory substance to use in an hepatic functional test based on the quantitative estimation of its output in the bile.

Hydatid Cysts of Lungs and Pleura.—Halahan records two cases of hydatid of the pleura and three cases of hydatid of the lung. In two of the latter cases rupture occurred into a bronchus and in one case into the pleural cavity.

Acute Suppurative Pleurisy.—The average time from the onset of the illness to the day when the diagnosis of empyema was made in the ninety-four cases analyzed by Peck and Cave was 38.2 days. Sixty-nine cases were postpneumonic, eleven were postinfluenzal; three were secondary to lung abscess. In eleven cases the preexisting cause was undeter-

mined: Rib resection was employed in seventy-nine cases. Eighteen of the ninety-four patients died, a mortality of 19.1 per cent.

Case of Hypophysial Duct Tumor.—A case of hypophysial duct tumor in a child, aged 10, showing symptoms for slightly more than one year, is presented by Lanman and Smith. The importance of the vestigial reliquia of the embryologic hypophysial duct is emphasized.

Lymphaticostomy in Peritonitis.—Experimentation has demonstrated to Costain that there is a fatal absorption through the thoracic duct in cases of suppurative peritonitis, disproving the occurrence of a fatal absorption through the subperitoneal capillaries or through the diaphragmatic lymphatics to the anterior mediastinal lymphatics and the right lymphatic duct. It showed, moreover, what is, perhaps, the most extraordinary fact of all, that when a fatal absorption is overcome, the peritoneal cavity is capable of looking after such a formidable structure as a necrotic appendix.

Effects of Radium on Rabbit Ovaries.—The experiments reported by Weis tend to prove that 600 milligram hours of radium have no ultimate detrimental effect on rabbit ovaries. From the clinical side of these observations Weis says that when radium is given intra-uterinely for menorrhagia, for example, the resulting amenorrhea is not due to the effect of the radium on the ovarian follicles, but to the effect on the endometrium which receives a severe burn from the radium. If the burn be extensive enough a permanent amenorrhea results; and if not so severe, the amenorrhea persists only a few months.

Treatment of Essential Uterine Hemorrhage.—In four cases with profuse atypical bleeding reported by Geist, the uterus was grossly normal but both ovaries were found to be diseased. By a partial resection of as much of the diseased areas as was consistent with the maintenance of function, the symptoms were relieved and a practically normal cycle was instituted.

Lingual Goiter.—With the point of origin of the thyroid in mind, the course of its descent and the knowledge that the thyroglossal tract often persists from the foramen cecum to the isthmus of the thyroid, Lahey says the development of masses of thyroid tissue at (1) the foramen cecum—lingual goiter; (2) within the root of the tongue—intralungual goiter; (3) in front of the larynx—prelaryngeal goiter; (4) in the normal location of the thyroid, and (5) as a retrosternal accessory goiter, is readily understood.

Tubal Twins.—The two specimens described by Arey present highly significant features. The first demonstrates for the first time the actual origin of homologous human twins from the same ovum. The second specimen bespeaks its single ovum origin about as strongly, for only yolk sac and stalk are present. Hence the yolk sac appears as a vestige unessential physiologically to growth or differentiation.

New Technic for Closure of Abdomen.—Pashan places sterile gauze over the protruding omentum and intestine to protect them from contamination. Then he places three or four isolated strong catgut sutures through all the layers of the abdomen except the skin, later starting the suture of the peritoneum alone with a continuous mattress suture which is left loose. The three or four isolated stitches are tied one after the other and the protecting gauze is slowly removed. By making traction slowly and firmly at the end of the mattress suture the edges of the peritoneal layer are brought into perfect approximation. The rest of the wound, which is no longer under such tension, is closed in the same manner, the closure of the serosa being finally easily accomplished.

West Virginia Medical Journal, Huntington

17: 358-382 (March) 1923

Acute Osteomyelitis. Plea for Early Recognition and Prompt Surgical Relief. F. L. Hupp, Wheeling.—p. 358.

Treatment of Acute Brain Injuries. Indications for Operation. C. C. Coleman, Richmond.—p. 366.

Certain Essentials Necessary for Better Results in Diagnosis, Treatment and Control of Pulmonary Tuberculosis in West Virginia. E. E. Clovis and G. E. Mills, Terra Alta.—p. 374.

"Group Practice." S. Leigh, Norfolk, Va.—p. 382.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 493-542 (March 24) 1923

*Tuberculin in Diagnosis and Treatment of Tuberculosis. R. Philip.—p. 493.

Cardiac Problems in Adolescent Life. G. A. Sutherland.—p. 496.

*Man's Posture: Its Evolution and Disorders. A. Keith.—p. 499.

Nature of Arteriosclerosis. G. Evans.—p. 502.

*Treatment of Puerperal Infections. B. P. Watson.—p. 505.

*Use of Quinidin in Auricular Fibrillation. F. R. Fraser.—p. 507.

Tuberculin in Diagnosis and Treatment of Tuberculosis.

—For twelve years Philip has been making extensive observations on the effects of the exhibition of tuberculin by the percutaneous as opposed to the subcutaneous method. One of the first points to emerge in the course of these studies was that when tuberculin, in varying combinations, was rubbed firmly into the skin of a tuberculous patient, it was freely absorbed. Philip's therapeutic procedure is based on these facts. Tuberculin administered percutaneously by inunction is absorbed and exerts a specific influence on tuberculous processes wherever situated, analogous to those resulting from subcutaneous injection. The curative influence becomes speedily obvious. Assuming its therapeutic value, the method has numerous advantages over other methods of exhibition. Something may be said for the absence of pain or discomfort. The procedure is not an operation in the mind of the patient. This has significance in all cases, but especially in children—the dread of the recurring puncture is excluded. The local (skin) reaction, while generally definite enough, causes little, if any, discomfort. The cutaneous response seems to afford, in some degree, a gauge of the susceptibility of the patient. In this way dosage may be regulated in respect of amount and frequency. The curative influence on superficial tuberculous foci (cutaneous, glandular, etc.) is commonly apparent within a few weeks and is, as a rule, continuous. Philip strongly advises the adoption of this line of treatment on the earliest indication of chronic glandular enlargement in children. By an arrest, at that stage the graver incidents due to involvement of viscera are anticipated and prevented. The exhibition of tuberculin by inunction has the advantage that in most cases it interferes little with the life and occupation of the patient. The actual amount of tuberculin applied to the skin in a straightforward case (using, say, 25 per cent. dilution) may be estimated as approximately 0.1 c.c. The ointment containing this is rubbed (worked) into the cleansed skin over an area of 1 or 2 square inches by means of a small sterilized glass rod. The inunction may be repeated—in the absence of contraindication—once weekly.

Man's Posture: Its Evolution and Disorders.—Keith's concluding remarks, which bear on the subject of scoliosis, are: In none of the orthograde forms is such a continuous and urgent demand made on the postural spinal mechanism as in man. In man only is the whole weight of the suprasacral part of the body supported erect on the spine over long intervals. The demand on this neuromuscular postural mechanism is even greater in the sitting than in the standing posture, particularly if a person sits leaning forward in writing and reading. Sitting bolt upright is particularly exhausting, more especially for young people in whom growth of vertebrae and of spinal muscles is proceeding apace. The muscles which act on the short levers of the spine yield first, while the muscles which act on the long costal levers can still keep on. These exhausted short spinal muscles are rested by allowing the vertebrae to rotate until the articular processes begin to lock and the transverse processes rest on the necks of the long costal levers. Herein lies the beginning of lateral curvature or scoliosis. If the habit becomes fixed, then come the deformities of chest, vertebrae, and spine with which orthopedic surgeons are only too familiar. It is not correct, however, to say that spines are not perfectly adapted to the upright posture; it would be more accurate to say that human spines were not evolved to withstand the monotonous and trying postures entailed by modern education and by many modern industries.

Treatment of Puerperal Infections.—Watson makes it a rule never to curet the uterus or carry out any intra-uterine manipulation in a case of abortion if the patient has a rise of temperature, unless there is severe hemorrhage. If the abortion is incomplete and a mass is felt projecting through and blocking the cervical canal, this may be removed very gently, but more interference than that is unwise. After the temperature has been normal for some days, if there is still evidence, by the persistence of bleeding and the patulous condition of the cervix, that the abortion is incomplete, gentle curetting may be carried out. Even after waiting this time it is almost invariably found that the patient's temperature rises after the operation, and she not infrequently has a rigor, showing almost certainly that there has been a blood invasion. Fortunately, in most cases, this is only temporary.

Quinidin Sulphate in Auricular Fibrillation.—Fraser states that quinidin treatment will result in a stable, normal rhythm if the cause of the auricular fibrillation can be treated successfully or if it has ceased to be active. In his opinion, cases in which there are extensive structural changes in the heart are not suitable for quinidin treatment, especially if the response to digitalis is not good, as dangerous symptoms may result. In some cases at least the comfort and efficiency of the patient is greater when a normal rhythm results from quinidin treatment than when digitalis treatment alone is used. In the cases in which the results are satisfactory, larger doses than 10 grains of quinidin sulphate, at intervals of six hours, were not necessary, nor smaller initial doses than 5 grains, three times a day. If necessary to maintain normal rhythm, quinidin may be continued to be administered indefinitely in doses of at least 5 grains, three times a day, and it is probably advisable in all cases to continue it for some weeks after normal rhythm has resulted, though in gradually decreasing doses.

Journal of Obstetrics and Gynecology of the British Empire, Manchester

29: 549-644, 1922

- Cranial Stress in Fetus During Labor. Effects of Excessive Stress on Intracranial Contents. E. Holland.—p. 549.
 *Intracranial Trauma in the Newborn. N. B. Capon.—p. 572.
 Modern Scope and Technic of Myomectomy. V. Bonney.—p. 591.
 *Indications and Results of Myomectomy. A. E. Giles.—p. 608.
 *Chronic Endocervicitis and Its Treatment. J. W. Burns.—p. 619.
 *Three Cases of Chorea Gravidarum. E. J. Maclean.—p. 630.
 Hydrometra Associated with Absence of Vagina and Genital Tuberculosis. D. Dougal.—p. 634.
 Fatal Case of Postpartum Eclampsia Associated with Accidental Hemorrhage. F. Ivens.—p. 637.
 Five Specimens Illustrating Necrobiotic Changes in Fibroids Associated with Pregnancy. F. Ivens.—p. 639.
 Case of Unilateral Hematomatous Hematometra and Hematosalpinx. C. E. Purslow.—p. 643.
 Placenta Praevia in Double Uterus. Cesarean Section. Recovery. W. F. Nash.—p. 644.

Intracranial Birth Trauma.—Among twenty-eight neonatal deaths reviewed by Capon, signs and symptoms of intracranial birth trauma occurred in sixteen. Intracranial hemorrhage occurred in six cases; lacerations of the dura mater in seven cases. In seven of the sixteen cases of birth trauma, intracranial congestion was the only pathologic condition found within the fetal skull. In these cases there were no visceral hemorrhages. Of sixteen infants showing signs and symptoms of birth trauma, eight were prematurely born. Among fifty-two stillbirths, signs of intracranial birth trauma occurred in forty-one cases; intracranial hemorrhage in twenty-four; lacerations of the dura mater in thirty-one cases. Of forty-one stillborn fetuses showing evidence of intracranial trauma, twelve were prematurely born. In this series of eighty neonatal deaths and stillbirths the relative frequency of the different fetal presentations in cases showing signs of birth trauma differs very little from that obtaining in the uninjured specimens. Intracranial hemorrhage occurring during labor is more frequently diffuse than localized. This fact would appear to contraindicate surgical intervention except in rare and special cases.

Myomectomy Versus Hysterectomy.—Comparing the mortality of myomectomy and hysterectomy, Giles gives these figures: hysterectomy for fibroids: 987 cases, 17 deaths, mortality 1.72 per cent.; myomectomy: 167 cases, 3 deaths, mor-

tality 1.8 per cent. The above figures represent all cases from 1897. The present day mortality is lower, and the figures from the end of 1910 to date are as follows: hysterectomy: 684 cases, 5 deaths, mortality 0.72 per cent.; myomectomy: 107 cases, 1 death, mortality 0.93 per cent.

Chronic Endocervicitis.—Burns insists that chronic endocervicitis should be recognized as a pathologic entity distinct from endometritis. That the condition is infective is proved by the fact that a positive culture can be obtained in 92 per cent. of cases. In 50 per cent. of cases, staphylococcus, either alone or in association with some other organism, is present. Applications of various drugs, douching, tamponage, etc., give only temporary relief because the antiseptics do not reach the infecting agent in the lumen of the glands. In Burns' experience, ionization will bring about a marked improvement in those cases in which erosion is not present. For those cases associated with erosion the only method which will bring about a cure is the removal of the lower two thirds of the cervical canal, including the erosion.

Chorea Gravidarum.—The cases described by Maclean conform to the type of ordinary or Sydenham's chorea as distinguished from Huntington's chorea. The incidence of the chorea occurred in one case in the early months, and in two cases in the later months of pregnancy. All the patients gave a history of antecedent chorea or rheumatism or both. Two of the cases were of mild type, one of rather severe type. Two of the patients were primigravidae, and one had given birth to three children. None of the patients had albuminuria or other evidence of pregnancy toxemia. None showed a tendency to spontaneous abortion or premature labor. In the severe case, in which abortion was induced, the relief of symptoms was practically immediate.

Kitasato Archives of Experimental Medicine, Tokyo

5: 1-108 (Nov.) 1922

- *Biologic Study of Hemolytic Streptococci. K. Ando and N. Ito.
 I. General Characteristics.—p. 1.
 *II. Pathogenic and Nonpathogenic or Less Pathogenic, Hemolytic Streptococci.—p. 23.
 *III. Meaning of Production of Hemolysin on the Pathogenicity.—p. 30.
 *Meaning of Serum Globulin in Luetin Reaction. K. Taoka.—p. 44.
 *Studies on Blood Component Necessary for Growth of Influenza Bacilli. M. Terada.—p. 62.
 *Value of Plasmophagocytosis in Early Diagnosis of Typhoid. M. Ohtani.—p. 92.
 *New Medium for Cultivation of Typhoid Group of Organisms in Blood. I. Otaki and C. Akimoto.—p. 101.

General Characteristics of Hemolytic Streptococci.—By means of the blood agar method (Brown's standard method) Ando and Ito have divided hemolytic streptococci into typical and atypical beta types. The typical beta type is pathogenic, while the atypical beta type is nonpathogenic or less pathogenic. The authors could not find any special relation between the morphology, the cultural characteristics on the heated blood agar, the pathogenicity and the classification.

Difference Between Typical and Atypical Types of Hemolytic Streptococci.—Ando believes that his experiment shows that there is a distinct difference in the behavior by animal passages between the typical and atypical types of hemolytic streptococci. Thus the virulence of the typical and the atypical beta types present no differences when they are examined soon after isolation or after storage for a certain period of time, but the examination of twelve strains of the atypical beta type after animal passage showed, with two exceptions, that there is no increase in virulence. On the other hand, the virulence of the typical beta type, without regard to the source of isolation, is markedly increased by animal passage. The atypical beta type was not found in an infected cavity. It has no, or very little, adaptability in contrast with the typical beta type (a) virulence, (b) by the mechanism of hemolysin production in serum free broth culture.

Meaning of Production of Hemolysin on Pathogenicity of Streptococci.—The ability to produce hemolysin, Ito says, differs markedly between the typical and atypical beta types of streptococci. He believes that these facts offer a firm basis for the conclusion that the typical beta type is pathogenic, while the atypical beta type is nonpathogenic.

Meaning of Serum Globulin in Luetin Reaction.—Experimental data have convinced Taoka that the test serum used both for the Wassermann reaction and the serum globulin reaction should be heated.

Blood Component Necessary for Growth of Influenza Bacilli.—The red blood cells are the blood component needed for the growth of the influenza bacillus, according to Terada. Fresh blood serum or plasma prevent growth. By heating these to 56 C. they are inactivated. Heating is also essential to liberate the growth promoting substance from the red blood cells. This substance is not a part of the hemoglobin. Heating whole blood to 70 C. for twenty minutes, or to 100 C. for a few minutes, destroys the growth preventing bodies in the serum and plasma and liberates the growth promoting substance from the red blood cells.

Value of Plasmophagocytosis in Early Diagnosis of Typhoid.—Ohtani is certain that plasmophagocytosis is an immune reaction. It invariably yields positive results in cases of typhoid and paratyphoid. It may be obtained early in the disease.

New Medium for Cultivation of Typhoid Group of Organisms in Blood.—Otaki and Akimoto have used successfully the following medium for culturing typhoid bacilli: meat extract, 10.0 gm.; peptone, 10.0 gm.; saponin, 1.0 gm.; sodium citrate (neutral), 20.0 gm.; water, 1,000 gm. To 5.0 c.c. of this medium 2.0 c.c. of normal or immunized rabbit blood taken by heart puncture is added. Then one platinum loopful of typhoid suspension containing 1.0 mg. of the cultures is reinoculated into Endo's medium. The number of the colonies is determined after twenty-four hours' incubation. As control, bile medium was used. It is asserted by the authors that the sodium citrate and saponin medium has the same value as the bile fluid medium. It has advantages of being cheaper and easily and simply made.

Lancet, London

March 17, 1923, 1, No. 5194

Epithelial Tumors of Urinary Bladder. F. Kidd. (To be continued).—p. 523.

*Canned Foods in Relation to Health. W. G. Savage.—p. 527.

Traumatic Intracranial Aerocele. W. Wheeler.—p. 529.

*Surgery in Treatment of Pulmonary Tuberculosis. C. Riviere and W. H. C. Romanis.—p. 531.

Fatal Case of Syphilis of Mediastinum. H. F. Renton.—p. 534.

Roentgen-Ray Examination of Chest. B. Hudson and P. G. Sutton.—p. 535.

Canned Foods and Health.—Savage concludes that while canned foods have definite and special risks of their own, these risks are not large and, for the most part, can readily be guarded against. Compared with fresh foods, canned foods are undoubtedly safer, and popular prejudice against them is not justified. Certain improvements in manufacture, distribution, care and supervision are necessary, as has been pointed out, but these are not very considerable. No one who has studied the subject can be left in doubt as to the great value to the community of this method of preservation.

Surgery in Pulmonary Tuberculosis.—Experience has convinced Riviere and Romanis that chest operations, rapidly and skilfully carried out, under gas and oxygen anesthesia, are well tolerated by tuberculous patients, better than preconceived ideas would have suggested. For the majority of cases in which operative measures are needed for the collapse and immobilization of an adherent tuberculous lung, a well devised thoracoplasty seems to offer the best results. The operation is less severe, in skilful hands, than might be expected, and the conditions obtained are favorable for the arrest of pulmonary tuberculosis. Reactivation of the disease on the side of operation may be met by further resection of ribs, but an extension of disease in the functioning lung admits of no alleviation.

Archives Franco-Belges de Chirurgie, Brussels

February, 1923, 26, No. 2

*Traumatic Dislocation of the Spine. A. Dhalluin.—p. 97.

*Syphilitic Disease of Long Bones. C. Dambrin and G. Miginiac.—p. 114.

*Thymectomy in Infants. A. Marique.—p. 127.

*Dissecting Osteochondritis of the Knee. J. Moreau.—p. 131.

Treatment of Traumatic Shock. G. Jeanneney.—p. 157.

Torsion of the Omentum. C. Lefebvre.—p. 176.

Homoplastic Graft in the Tibia. Vander Elst.—p. 181.

Traumatic Dislocation of the Spine.—In one of Dhalluin's three cases, the forward luxation of the fourth cervical vertebra, with quadriplegia, was a football accident. Seen sixteen hours later, attempts at reduction failed until the muscles were relaxed with chloroform. Then under traction on the head, the hands on chin and back of the neck, with counter traction to the shoulders, the head bent gently forward and then backward, the vertebra snapped into place. This was plainly heard, and a second roentgenogram, taken at once, confirmed the complete reduction. No benefit was apparent for two days but then micturition became spontaneous and the paralysis gradually subsided, although the gait was still slightly hesitating three months after the accident. In another case the lesions were extensive and proved fatal. In the third case the dislocation dorsad and laterad of the first dorsal vertebra had destroyed the cauda equina beyond repair. He emphasizes the necessity for trying to reduce the luxation of a cervical vertebra without delay. Done cautiously, there need be no fear of aggravating existing injury of the cord. It may be difficult to distinguish a luxation from a sprain or a fracture, but the indispensable roentgen rays will guide to proper treatment. The intense pain in the neck and the snapping sound at the moment of the trauma are generally recorded, and the victim falls inert, paralyzed, and sometimes unconscious.

Syphilis of the Long Bones.—A sarcoma had been diagnosed in one of the six cases described with illustrations; in another case the only symptom was a sharp pain in the bone which nothing could explain. In one child the syphilitic lesion in the bone was entirely latent. In one of the cases, spontaneous fracture of the ulna was the first sign of the lesion. "Syphilis should be suspected with every affection of every bone at all ages. Fournier used to say that syphilis loves the tibia, but this is perhaps because we are able to recognize the syphilitic nature of the affection more readily than elsewhere." Syphilis swells and thickens the bone all around. There is no actual curvature of the whole bone; the proliferating bone tissue is responsible for any curved aspect. Roentgenoscopy alone decides the exact nature.

Thymectomy in Infants.—Marique has resected the thymus in fifteen infants to relieve suffocation. One of the infants had sixteen attacks of suffocation in one night. Through a low tracheotomy incision, he incised the capsule and shelled out as much of the two lobes as possible. He did not ligate the pedicle nor close the capsule nor suture the aponeuroses. The lips of the incision were held together with clips for two days. As soon as the infant roused from the anesthetic, the parents were allowed to take it home. If the intervention is strictly on the median line, there is no loss of blood. Most of the infants were about 3 months old, and twelve of the fifteen were boys. Enough of the thymus is left to insure ample secretion, and he asserts that the operation, under chloroform, is so simple and easy that any surgeon can undertake it without fear of mishap.

Dissecting Osteochondritis of the Knee.—Moreau advocates removal of the loose body in the joint when the affection has reached this stage. Elimination of the focus of dissecting osteochondritis is almost always followed by subsidence of the disturbances in gait and the pains, even when they are of long standing. The joint resumes normal functioning, as in the boy, aged 15, whose case is described with illustrations and compared with others on record.

Encéphale, Paris

18: 1-72 (Jan.) 19-3

*Mental Depression in Children. S. de Sanctis.—p. 1. Cont'd.

*Mediumic Insanity. A. Wimmer.—p. 8.

Etiologic Duality of Mania and Melancholia. P. Courbon.—p. 27.

*Improvement in Melancholia After Intercurrent Pleurisy. Usse.—p. 31.

Senile General Paresis. Riser and Gay.—p. 35.

Psychic Disturbances and Syphilis. H. et E. Biancani.—p. 40.

Dysthymic Children.—De Sanctis attributes dysthymic states (melancholia and mania) to disturbances of internal secretion and the vegetative nervous system.

Mediumic Insanity.—Wimmer publishes the histories of several cases of psychoses which occurred in spiritualism

addicts, and considers that such practices are pathogenic and not merely material accidentally available for symptoms.

Improvement After Intercurrent Infectious Disease in Case of Chronic Melancholia of Confusional Type.—Usse's patient recovered from the psychosis when serofibrinous pleurisy developed after three years in the asylum.

Journal de Chirurgie, Paris

February, 1923, 21, No. 2

*Operative Correction of Luxation of Shoulder. L. Bazy.—p. 145.

*Ascariasis of Biliary Apparatus. G. L. Hartmann-Keppel.—p. 157.

*Surgical Treatment of Hydatid Cysts. M. Deniker.—p. 170.

Operative Reduction of Old Luxation of Shoulder.—Bazy's six illustrations show the various steps of the procedure for correcting inveterate antero-internal luxation of the head of the humerus. The incision must be long, with a right-angled extension at the top, like a T or inverted L, and the coracoid process must be temporarily resected and the subscapular muscle divided. Retraction of this muscle is the main obstacle to reduction of the luxation. The head is held in place by suturing the border of the subscapularis to the glenoid ligament and reattaching the muscle to the lesser tuberosity.

Ascarids in Liver and Bile Ducts.—Keppel found two female ascarids, 19 and 24 cm. long, when he opened an abscess in the left lobe of the liver in the young soldier in the army of the Orient, who recovered after evacuation of the abscess. The second patient was a girl, aged 14, with ascarid gastro-enteritis of long standing and epileptiform convulsions. Ascarid ova were found on opening the abscess in the liver. He discusses the literature on ascariasis of the biliary apparatus.

Surgical Treatment of Hydatid Cysts.—Deniker summarizes the communications on this subject at the Argentine medical congress, October, 1922, where it was the main topic for discussion. Most of the communications were summarized in these columns as they appeared in the Argentine medical journals.

Médecine, Paris

4: 325-400 (Feb.) 1923

French Neurology in 1922. M. Laignel-Lavastine.—p. 325.

*Cerebrospinal Fluid in Multiple Sclerosis. C. Achard and J. Thiers.—p. 330.

*Sexual Perversions and Hypergenitalism. H. Claude and Borrel.—p. 335.

*Humoral Reactions in General Paralysis. M. Klippel.—p. 339.

*Minor Pituitary Syndromes. Léopold-Lévi.—p. 342.

*Extracortical Regulatory and Psychic Centers. J. Camus.—p. 351.

*Babinski's Sign in Infantile Paralysis. A. Léri and G. Basch.—p. 358.

*The Sympathetic and Sensibility. A. Tournay.—p. 363.

*New Conception of the Pyramidal Syndrome. J. A. Barré.—p. 366.

*Migraine and Anaphylaxis. P. Vallery-Radot.—p. 371.

*Near-Paranoiacs. G. Genil-Perrin.—p. 375.

*Hebephrenia and Polymorphous Delirium. J. Vinchon.—p. 378.

*Treatment of Spastic Torticollis. R. Cruchet.—p. 387.

*Varicose Ulcers and Periarthral Sympathectomy. Robineau.—p. 390.

*Treatment of Patients Suffering from Obsessions. P. Courbon.—p. 394.

Cerebrospinal Fluid in Multiple Sclerosis.—Achard and Thiers confirm the positive colloidal reactions in the cerebrospinal fluid of these patients, while the Wassermann reaction is usually negative. The demonstration of spirochetes may be a help in beginning atypical cases. As a rule, in multiple sclerosis, there is neither an increase in albumin nor in cells.

Sexual Perversions and Hypergenitalism.—Claude and Borrel quote some medicolegal cases of perversion to demonstrate their conviction that hypergenitalism is a frequent cause of unnatural sexual acts. This is not without importance with regard to the responsibility of these perverts.

Humoral Reactions in General Paralysis.—Klippel believes that the reactions in the serum and cerebrospinal fluid are only a very weak aid in the diagnosis of general paralysis, as he understands it. While he declares the clinical symptoms constant and characteristic, he does not find these qualities in the humoral reactions. To prove this, he reports a case, in which the Wassermann reaction, albumin content, number of cells, and the response to the benzoin test in the spinal fluid were normal. The patient was an illiterate alcoholic with loss of memory for recent facts. He denied syphilis. There was marked dysarthria, but the patient resented questions about it. The left knee-jerk was lively;

Romberg's sign was negative; there were no disturbances of sensibility. The left pupil was dilated; both pupils reacted feebly to light (convergence not mentioned). He was demented or imbecile, had no hallucinations, and yet had a fixed idea to return and resume his trade of a bricklayer. Another important feature was that he ate with his hands, and drank milk directly from the bottle without using the glass. The necropsy showed a diffuse degenerative encephalitis with atrophy of the cortical cells and disseminated inflammatory foci. Klippel calls this a most typical, unmistakable case of general paralysis.

Minor Pituitary Syndromes.—Léopold-Lévi surveys the conditions which may be due to exaggerated or deficient functioning of the pituitary gland. They represent, in miniature, the great syndromes: acromegaly, gigantism, dwarfism, pituitary infantilism and the adiposogenital dystrophy, but they are often only transitory. The same subject may present several of them at the same time. He discusses the time of onset and gives a synopsis of these symptoms. Hereditary or acquired syphilis is an important etiologic factor.

Extracortical Regulating and Psychic Centers.—Camus defends his old opinion that psychic functions have extracortical regulating centers. This accounts, among other things, for the undeniable rhythms of psychic action. He quotes Ballet who considered the circular psychosis only as an enormous exaggeration of normal conditions. In his experimental work with Roussy on the centers at the base of the brain that cause diabetes insipidus, obesity, glycosuria and genital atrophy, he observed frequently marked excitation of the animals without signs of pain. The psychic changes in encephalitis point also to this extracortical localization.

Babinski's Sign in Infantile Paralysis.—Léri found Babinski's sign in about 50 per cent. of his cases of infantile paralysis. This is not surprising, if we consider that the predilection of the affection for the anterior horns of the cord is related to the distribution of the vessels. The sign is caused by spread of the process to the pyramidal tracts.

The Sympathetic and Sensibility.—Tournay reviews the old question whether the changes of sensibility after lesions of the sympathetic are of vascular origin, or are specific. In clinical cases there are attacks of pains which come in slow waves and are accompanied by changes in blood supply, secretion and local temperature. They occur almost exclusively after lesions of the median and sciatic nerve, which contain many sympathetic fibers and a special artery.

Migraine and Anaphylaxis.—Vallery-Radot believes that some migraines are anaphylactic phenomena. Cutireactions obtained by Ramirez were positive in three cases (egg white, chocolate, celery). Pagniez and Nast observed a hemoclastic crisis after ingestion of chocolate in a case in which ingestion of chocolate provoked migraine. Vallery-Radot and Pagniez have prescribed, since 1916, the use of 0.5 gm. of peptone before meals in similar conditions. Some migraines are favorably influenced, while the treatment is a complete failure in others. Other authors use subcutaneous injections of 1 c.c. of horse serum, repeated weekly, and other means of desensitization.

Near-Paranoiacs.—Genil-Perrin believes that the near-paranoiacs should be known not only to doctors, but to the whole public. Social inadaptability is the chief feature. Distrust, pride, and wrong judgment lead to delirium of interpretation. "These persons are bores par excellence and not without danger to society."

Treatment of Spastic Torticollis.—Cruchet does not believe that the contractions are due to psychic causes. They should first be treated internally according to the principal cause (rheumatism, syphilis, tuberculosis). Diathermy, roentgen rays and electricity act favorably, and if this treatment fails radicular anesthesia of the corresponding cervical nerves is indicated. Injection with 60 or 70 per cent. alcohol may be tried.

Treatment of Varicose Ulcers by Periarthral Sympathectomy.—Robineau confirms the excellent results of the method, which however must sometimes be repeated because the healing process stops with the regeneration of the sympa-

thetic fibers. The immediate results are excellent—no matter where one cuts. The good results from previous methods of operation on varicose ulcers are probably also due to cutting sympathetic fibers. Nevertheless relapses occur. The ideal surgical treatment has not yet been found.

Brazil-Medico, Rio de Janeiro

1: 1-14 (Jan. 6) 1923

- *The Taylor Efficiency System in Surgery. L. Ribeiro Filho.—p. 1.
- *Pulsating Exophthalmos from Aneurysm. J. Santa Cecilia.—p. 4.
- Enzootic Pneumonic Plague. A. Magalhães.—p. 6.
- Medical Impressions of Dutch Guiana. H. C. de Souza Araujo.—p. 6.

Taylorism in Surgery.—Ribeiro relates that, when visiting the clinics of leading surgeons in Paris in 1918, he was surprised at the time wasted at operations from disregard of the principles of efficiency taught by Taylor in America and applied to surgery by R. Toupet in Paris. Ribeiro states that of those he saw, Gosset alone had systematized the work of assistants, nurses and himself; he took four minutes for a complete appendectomy.

Pulsating Exophthalmos.—The aneurysm in Santa Cecilia's case involved both the carotid artery and the cavernous sinus. A bullet had entered the ear and was removed from the nasal fossa. The aneurysm required operative relief two months later, and the right common carotid was ligated with catgut at two points. The pulsation in the eyeball ceased for a month but then returned, the catgut having evidently been absorbed. The carotid was then ligated with silk at three points. Vision declined at once after the first ligation but improved later. The exophthalmos has persisted; probably collateral circulation has developed. Ligation of the left carotid is now being considered. This is the eighth case of the kind published in Brazil, the second instance of return of the exophthalmos.

1: 69-80 (Feb. 10) 1923

- *Avidity Test of Antitoxins. R. Kraus and Rocha Botelho.—p. 69.
- Clinical Conception of Phobias. Arebaldo Lellis.—p. 72.
- Triatoma Insect Hosts of Chagas' Disease. C. Pinto.—p. 73.
- Two New Species of Triatoma. A. Neiva and C. Pinto.—p. 73.

Avidity Test of Antitoxins.—The research with scorpion and snake antitoxins reported confirms the existence of primary and secondary antitoxins. The primary (specific) antitoxin neutralizes the toxin at once; it has an immediate "avidity." The secondary, or partial antitoxins, require an hour's contact at 37 C. before neutralization is complete. The intensity of the avidity thus distinguishes the two classes. The antiscorpion serum was able to neutralize a fourfold fatal dose of snake poison (lachesis or cobra) but only after an hour's incubation.

1: 125-140 (March 10) 1923

- *Syphilitic Encephalitis of Base. H. Roxo.—p. 125.
- Operation for Pterygium. Abreu Fialho.—p. 129.

Syphilitic Encephalitis of the Base.—The man, aged 30, had been under treatment for symptoms suggesting a tumor at the base of the brain. They differed from the classic picture in certain respects, and the Wassermann reaction in the spinal fluid proved positive on one occasion, although consistently negative both in blood and fluid at other times. Recovery took place under antisiphilitic treatment and the case was retrospectively diagnosed as a gummatous inflammation in the meninges and brain, the gummatous infiltration spreading like a drop of oil, but the meningo-encephalitis finally yielding to treatment.

Repertorio de Medicina y Cirugía, Bogota

14: 43-83 (Nov.) 1922

- *Lumbar Puncture in General Paralysis. M. Rueda.—p. 47.
- Blastomycosis in Colombia. A. Peña Chavarría.—p. 52. Cont'n.
- *Uremia in Psychopathies. G. Uribe M.—p. 71.

Lumbar Puncture in General Paralysis.—Rueda reports that in 9 patients with general paralysis notable improvement followed withdrawal of from 70 to 80 c.c. of cerebrospinal fluid; in 4 the benefit was equally prompt but not so marked; in 8 there was only slight improvement; in 11 no benefit was apparent, and 2 other patients died a few days after the intervention. In the cases with pronounced improvement the spinal fluid was under high pressure. The mental faculties

seemed to return completely to normal, but in from six months to a year all cases developed dementia without gatism, although some had lost control of the sphincters when first seen.

Uremia in Mental Affections.—Uribe remarks that urea excretion in Colombia averages lower than in Europe. In hospital patients the urea content of the urine averaged only from 9.5 to 11.4 parts per thousand, and of the blood, below 0.35; any figure above this may be considered pathologic in Colombia. He tabulates the findings in thirty patients with various psychopathies; the urea content of the blood was always high in the severer cases and in the exacerbations of all forms. In one case of a confusional psychopathy with stupor, the blood contained 0.56 per thousand but as the patient improved, it dropped to 0.32. The melancholia cases always showed a tendency to azotemia.

Siglo Médico, Madrid

71: 73-94 (Jan. 27) 1923

- *Present Conceptions of Neutropism. S. J. Tello.—p. 73. Cont'd.
- *Pathogenesis of Cholelithiasis. C. Blanco Soler.—p. 77. Conclu No. 3608, p. 108.

Neutropism.—This is a review of international literature on this subject, with report of original work, the whole forming Tello's maiden address on entering the National Academy of Medicine, with a reply by Cajal. It is being published in short instalments.

Pathogenesis of Gallstones.—Blanco Soler regards pregnancy, insufficiency of the liver, endocrine derangement and constipation as the most important of the many causes that cooperate in producing cholelithiasis. Pregnancy favors production of gallstones by excessive cholesterol content in the blood, overwork by the liver, and endocrine disturbance. The last is nearly always of the type of hypothyroidism with changes in the ovaries. He asserts that chronic constipation is often connected with defective thyroid functioning, and is an important factor in gallstone production. Emotional stress is a factor at times in bringing on gallstone colic; he cites a number of convincing cases from his own experience in illustration. The tendency to gallstones belongs with the arthritis group, with sluggish metabolism and elimination; but Soler does not ascribe to stomach derangement the importance that some claim for it as a factor in cholelithiasis. Gastric secretion was normal in ten gallstone patients; there was hyperacidity in seven and hypacidity in six. Excessive thyroid functioning is rare with gallstones, but when this combination occurs it is exceptionally amenable to treatment.

71: 97-120 (Feb. 3) 1923

- *Experiences with Strabismus Operations. M. Marín Amat.—p. 97.

Operative Treatment of Squint.—Marín Amat shortens the external rectus and tenotomizes the internal rectus in the divergent eye in concomitant strabismus. He also shortens the external rectus of the normal eye though less than in the divergent eye. The results have been perfect, he says, in the sixteen cases thus treated. The visual acuity has improved in all, in addition to the esthetic improvement. He claims credit to the Spanish school for the progress made by Blanco Valeneia in 1910 by treating squint by severing and shortening the muscle without resection. The superfluous portion is superposed and the normal attachment of the muscle is thus retained. The methods of Duverger and others and of Marín Amat himself are only modifications of this.

Archiv für Gynäkologie, Berlin

118: 1-228 (March 17) 1923

- *Action of Roentgen Rays on Early Pregnancy. B. A. Archangelsky.—p. 1.
- *Nonprotein Nitrogen in Parturients. K. Hellmuth.—p. 18.
- *Cancer of Female Sex Organs. S. Peller.—p. 59.
- Primary Placenta Isthmica. M. Walther.—p. 101.
- Structure of the Placenta. J. Wieloch.—p. 112.
- *Treatment of Placenta Praevia. H. Gänssle.—p. 120.
- Genesis of Tuberculosis of the Ovary. E. Wertheimer.—p. 136.
- *Aneurysm of Splenic Artery. K. Lundwall and A. Gödl.—p. 177.
- The Breus' Mole Question. E. Kahn.—p. 185.
- Corpus Luteum Hemorrhages. N. C. Louros.—p. 194.
- Obstetric Inversion of Uterus. H. Küstner.—p. 203.
- Chorio-Epithelioma: Two Cases. Fohr and Kratzseisen.—p. 210.
- Lymphangioma of Fallopian Tube. H. A. Dietrich.—p. 224.

Action of Roentgen Rays on Early Pregnancy.—Archangel-sky states that it seems to be established that the action of the roentgen rays is felt most intensely by tissues of the embryonal type, that is, the least differentiated tissues, and by young cells just formed from the fission of the mother cell, and further by tissues during the period of the most active cell segmentation. This explains the difference in the action of the rays according to the stage of the pregnancy in women and in animals. In seven women irradiated from eight to fourteen days after the date when menstruation should have occurred, the pregnancy was interrupted easily and menstruation reestablished. In three other women, conditions were the same, except that the pregnancy was of longer duration, up to thirty-five days. The irradiation did not arrest the pregnancy, and further measures were necessary to procure abortion.

Nonprotein Nitrogen in Parturients.—Hellmuth tabulates the metabolic findings in a number of healthy parturients and others with eclampsia or other pregnancy toxicosis. He declares that many of the reports in the literature in this line are based on defective technic or erroneous conclusions. The nonprotein nitrogen was not found materially above normal even at the height of eclampsia and pregnancy nephrosis, but the urea content of the blood was higher, both absolutely and relatively to the nonprotein nitrogen. Abnormally large proportions of urea in the blood seem to be the most sensitive indicator for kidney injury late in pregnancy and in childbed.

Cancer of Female Sex Organs in Relation to Pregnancy.—Peller comments on the increase in recent years of the cases of cancer in men, but ascribes this to the improved diagnosis of cancer of the digestive tract. His comparison of statistics from different countries fails to show any connection between deaths from cancer of the genital apparatus and the number of children borne. The ratio between cancer of the mamma and of the uterus does not seem to be dependent on the number of children. He reviews 2,700 cases of cancer in women and 1,600 in men at Vienna, and 406 women with myomas. Nothing was found to indicate any connection between abortion and cancer of the genital apparatus. But cancer in nulliparous women was less often located in the cervix. Even a single pregnancy was enough to upset this proportion between cancer of the cervix and elsewhere in the uterus. The proportion of unmarried women in the whole cancer material is less than corresponds to the proportion of the unmarried in the general population. He classifies the material in thirty-eight tables, and outlines a blank for collecting comparative data.

Treatment of Placenta Praevia.—Gänssle delivered ninety-three women with placenta praevia by the vaginal route, with 8.6 per cent. mortality; two succumbed to infection and one to embolism. The mortality in ninety-three others delivered by cesarean section was 6.4 per cent. This includes fifty-two with intraperitoneal cervical section with a mortality of 5.8 per cent. For infected cases and those with a nonviable child, vaginal delivery is preferred.

Aneurysm of Splenic Artery.—The aneurysm ruptured at the ninth month of pregnancy, with fatal hemorrhage.

Beiträge zur klinischen Chirurgie, Tübingen

1923, 128, No. 2

- *Means to Influence Secretion of Bile. O. Specht.—p. 249.
- *Surgery of the Spleen. H. Herfarth.—p. 284.
- *Cancer of Mouth and Throat. L. Heidrich.—p. 310.
- Mechanical Processes in Concussion of Brain. F. Genewein.—p. 348.
- Operation for Esophagus Diverticulum. W. Dürr.—p. 366.
- Appendicitis and the Weather: No Connection. Forster.—p. 377.
- *Surgery and Kidney Function Tests. W. Peters.—p. 395.
- *Surgical Treatment of Acute Nephritis. M. Krabbel.—p. 425.
- *Pyelography. I. Szabó.—p. 433.
- *Closure of Artificial Anus. H. Knaus.—p. 441.
- *The Ovary in a Hernia. A. Schönmeier.—p. 451.
- Traumatic Slits in Transverse Mesocolon. E. Hesse.—p. 461.
- Deformity of Sacrum with Atresia of Anus and Vagina. Lentz.—p. 471.
- *Subphrenic Abscess. M. Baumann.—p. 477.
- Embryology of Suprapatellar Bursa. J. Hohlbaum.—p. 481.
- *Outcome of Arthrodesis by Cramer Method. W. Lasker.—p. 499.
- *Pulmonary Embolism with Bismuth Paste. A. Leb.—p. 515.

Means to Influence Secretion of Bile.—In this first report of his research on dogs, Specht relates the results of intake

of fluids and of extracts of endocrine glands, after discussing what has already been published by others on the influence of the circulation and nervous system on bile secretion. His tables show that the bile keeps remarkably constant in its composition, uninfluenced by fluids, organ extracts or salts, but intake of meat increases the output of bile.

Surgery of the Spleen.—Herfarth reports the ultimate outcome in more than 58 operations on the spleen for rupture, leukemia, Banti's disease, hemolytic jaundice, pernicious anemia or other indication. In one case the threatening intra-abdominal hemorrhage did not occur until the day after the contusion. Splenectomy in 3 of the 4 operative cases of Banti's disease was followed by recovery. He comments that splenectomy seems at present to be the most promising treatment for this disease. In the 7 operative cases of pernicious anemia, 57 per cent. seem to be cured for the time being. The proportion of cures would undoubtedly be larger if the surgeon were called in earlier, after failure of other measures, but before the hemoglobin goes below 20 per cent. The results were very good in his 2 cases of hemolytic jaundice.

Cancer in Mucosa of Mouth and Throat.—Heidrich reviews experiences with 155 cases of cancer of the tongue, 49 of the tonsils, 35 of the floor of the mouth, 15 of the cheek, and 12 of the palate, all given operative treatment. Recovery free from recurrence for more than three years to date is recorded in more than 17 per cent. in the first group, 11 in the second, 7.7 in the tonsil group, 33.4 per cent. in the cheek and 25 in the palate group. An exploratory excision early in every case of ulceration in the mouth should be followed by an early removal of the growth far into sound tissue. The experiences with radiotherapy are still too new for reliance to be placed on this treatment.

Tests of Functional Capacity of the Kidneys in Relation to Surgery.—Peters analyzes the functional findings as compared with the operative findings and the ultimate condition in all the operative kidney cases in the last ten years in Garré's service. He also gives the results of research along these lines in dogs. He emphasizes that we must not expect too much of these methods of investigation, but regard them as merely supplementing the clinical findings. The functional tests reveal a limitation of the functioning part of the kidney, but throw no light on its nature. He warns further that a diseased kidney may respond apparently normally to tests, while there may be transient disturbance, even complete loss of kidney functioning, in hysteria, acute nephroses, glaucoma of the kidney, and with calculi in kidney or ureter—probably from the ischemia of the kidney vessels of reflex origin.

Surgical Treatment of Acute Nephritis.—Krabbel has operated in three cases of eclampsia, as he describes, with prompt recovery; also in a case of kidney calculus with colic, and in two cases of abscesses in the kidney. In all these cases rapid recovery followed the intervention.

Pyelography.—Szabó concludes from his seventy cases of pyelography in 1921 that a 20 per cent. solution of potassium bromid can be regarded as harmless and effectual for pyelography. He applies the procedure more extensively than others, using it to aid differential diagnosis not only of kidney diseases but of other abdominal lesions.

Closing an Artificial Anus.—Knaus cuts the spur at a single sitting, by Hacker's technic, and extols the advantages of this over crushing it, especially for much debilitated patients. Four cases are compared with two others in which a different technic was applied.

Ovary in Hernia.—In a case described and in four similar ones on record the round ligament was responsible for the displacement of the adnexa. The mechanism is like that impeding descent of the testes. In another group of cases, fluctuations in intra-abdominal pressure or the weight of the ovary were the main factors.

Subphrenic Abscess.—Baumann states that in one of his three latest cases of this kind, the abscess had developed secondary to a gastric ulcer, and general sepsis proved fatal. This insidious septic course was evident also in the second case, following acute appendicitis. A fistula persisted for two years after operative evacuation of the space. In the third case the subphrenic abscess developed in connection

with traumatic rupture of the liver. In both the last mentioned cases there was diphtheritic infection of the wound.

Cramer's Operation for Arthrodesis.—Lasker concludes from his four patients reexamined more than three, nine, ten and eleven years after the operation that the Cramer method gives durable results. Both functionally and with radiography the outcome is satisfactory. He urges the use of a stout piece of bone as this takes longer to be absorbed, and gives greater strength to the joint at the time and later.

Pulmonary Embolism After Injection of Bismuth Paste.—The paste had been injected into a fistula left by an operation for goiter seven weeks before. About 10 c.c. of the 30 per cent. bismuth paste was injected into the fistula after it had been curetted. Cyanosis, shallow breathing, small rapid pulse and extreme depression followed almost at once. Roentgenoscopy showed very little of the bismuth left in the fistula while it could be seen scattered throughout the lungs, with a large deposit at the right main trunk of the pulmonary artery. Bilateral pleurisy developed but the bismuth shadows gradually cleared up and the temperature returned to normal the fifteenth day. The patient left the hospital in good subjective condition the thirty-eighth day. The bismuth paste had evidently been taken up by the veins left gaping by the curetting, and had been carried to the right heart and distributed thence through the lower lobes of the lung. As the lungs were normal, there was no infarction. The acute increase in pressure in the lesser circulation from the obstruction of the arteries was combated with digitalis every three hours and three injections daily of caffeine.

Jahrbuch für Kinderheilkunde, Berlin

January, 1923, 100, No. 5-6

- *Vitamin in Fresh and Conserved Vegetables. R. Gralka.—p. 265.
- *Pathogenesis of Acute Nutritional Disturbance in Infants. VI to IX. P. Hoffmann and S. Rosenbaum.—p. 281.
- *Heart Function after Infectious Diseases. D. Lebedev.—p. 295.
- *Differentiation of Tubercle Bacilli in Urine. D. Lebedev.—p. 312.
- *Myxedema and Pituitary. A. Roggen.—p. 317.
- *Herpes Zoster and Varicella. Z. v. Barabás.—p. 331.

Comparison of Antiscorbutic Vitamin in Fresh and Conserved Vegetables.—Gralka found in experiments on guinea-pigs that only fresh vegetables prevent scurvy. Every attempt to preserve them failed. Drying seems to destroy the action entirely.

Action of Amino-Acids on the Stomach Function in Infants.—Hoffman and Rosenbaum found that tyrosin, asparagin and leucin have the same influence on gastric evacuation and secretion as protein solutions, when given in the same concentration. Cow's milk has a stronger combining power with hydrochloric acid, but this property bears no relation to its stimulating action on the gastric secretion. Infections retard and reduce gastric secretion.

Heart Function of Children After Infectious Diseases.—Lebedev found sometimes in children convalescing from infectious diseases that the arrhythmia persisted even with accelerated pulse rate, and it did not seem to depend on the respiration. He also found parasternal dullness between the second and third ribs after practically all of the infectious diseases. He attributes it to the lack of elasticity of the heart. After the stage of hyperemia of the skin in pneumonia and influenza, he observed that the white spot after pressure by a finger does not disappear as quickly as usual. He explains it by a paresis of the skin vessels.

Differentiation Between Tubercle Bacilli and Smegma Bacilli in the Urinary Sediment.—Lebedev recommends Spengler's method of counterstaining. Nikitin's solution, consisting of 2 parts of glacial acetic acid and 1 part of a 10 per cent. alcoholic solution of acetone, decolorizes smegma bacilli in three minutes, but leaves the tubercle bacilli stained for ten or fifteen minutes.

Myxedema and Pituitary.—Roggen did not find signs of constant changes of the pituitary in congenital or acquired deficiencies of the thyroid gland. Only if the loss of the functioning of the thyroid is gradual, are changes in the pituitary found with any frequency.

Relation Between Varicella and Herpes Zoster.—Barabás reports two cases of varicella with one of herpes zoster in

the same family at the same time. In another family one child had herpes zoster eight months after an attack of varicella. In still another family a child had varicella nine months after herpes zoster.

Zeitschrift für Krebsforschung, Berlin

February, 1923, 19, No. 5-6

- *Blood Diseases in Relation to Tumors. H. Hirschfeld.—p. 269.
- *Prevalence of Cancer at Jena. G. Bilz.—p. 282.
- *Spontaneous Cancers in Wild Rats. M. Beatti.—p. 325.
- *Sarcomatosis of Domestic Hen. A. Ladwig.—p. 337.
- *Organotherapy of Malignant Disease. D. Engel.—p. 339.
- *Production of Experimental Tar Cancers. L. Halberstaedter.—p. 381.
- *Histologic Research on Origin of Tar Cancers. E. Möller.—p. 393.

Blood Diseases and Tumors.—Hirschfeld accepts Orth's term hemoblastosis to designate generalized hyperplastic affections of the blood-producing apparatus. He attempts to classify them, and explains the whole field as lying between true tumors and hyperplastic systemic affections in general.

Cancer at Jena.—Bilz relates that between 1910 and 1920 42 per cent. of the 11,092 deaths at Jena were followed by necropsy. Cancer was found in 17.42 per cent. of all cadavers over the age of 20 in the first five years, and in 14.44 per cent. in the last five years. In 30 per cent. of the cancer cases the stomach was the seat of the malignant disease; the intestines in 16 per cent.; the female genitals in 13 per cent., and the esophagus in 10 per cent. The 700 cancer cases included only 257 women. The diagnosis of malignant disease had been made in 94.28 per cent. and correctly made in 80 per cent., while the cancer had not been correctly located in 10.91 per cent., and in 9.09 per cent. the actual tumor had been overlooked.

Spontaneous Cancers in Wild Rats.—Beatti reports from Buenos Aires some new instances of spontaneous tumors in wild rats. One rat had sarcomatosis of the abdomen with metastasis in the lung, a carcinoma of the mamma, and a cutaneous fibroma. Two others had epitheliomas in the liver or stomach evidently caused by a nematode, probably *Hepaticola hepatica*.

Treatment of Tumors with Endocrine Extracts.—Engel reiterates that in our research on cancer as a local affection we overlook the organism as a whole, and yet this is what determines whether malignant disease is to develop or not. He cites, for example, Rüder's report of a family in which all the seven boys developed epithelioma of the skin between the ages of 5 months and 10 years (the grandfather had had the same disease), while the five girls in the family escaped it. Hedinger found primary carcinoma of the liver at necropsy in two sisters. A connection between the predisposition to cancer, the constitution and the endocrine system seems to be beyond question when such happenings are considered. Especially if we regard them from the standpoint of Freund and Kaminer's assertions that the serum and organs of cancer subjects do not destroy carcinoma cells as do the serum and organs of the noncancerous. They demonstrated further that this faculty is twenty-one times more potent in the serum of infants than of adults, and they traced this to the thymus, the potency declining as the thymus retrogresses. Engel has been experimenting with the protein products of endocrine glands, Abderhalden's optones. He injected this fluid subcutaneously into mice at points remote from the experimental inoculations. His research thus throws light on the potency of the protein products of the different endocrine glands and on the influence of the different glands on tumor production and inhibition. The pituitary seems to promote tumor growth, while the thyroid, and above all the thymus, check it. The elements responsible for this action seem to be the protein products in far advanced retrograde metabolism. Testes and ovaries were found inert. Ovariectomy in inoperable cancer of the mamma is justified by the stimulation of the thymus that results.

Zeitschrift für Urologie, Leipzig

1923, 17, No. 1

- *Extirpation of Carcinomatous Bladder. V. Schmieden.—p. 1.
- *The Milking Function of the Calices of the Kidney. Westenhöfer.—p. 5.
- *Clinical Aspect and Treatment of Nephroptosis. Fedoroff.—p. 7.
- *Pylonephrolithotomy. Casper.—p. 20.

- Foreign Body in Bladder. W. Hofmann.—p. 22.
Hematuria and Appendicitis. J. J. Stutzin.—p. 25.
Diagnostic Puncture of Testis. Posner.—p. 27.
Hemangioma of the Bladder. A. Hübner.—p. 29.
*Peritonitis in Bladder Disease. J. Bitschai.—p. 32.
Self-Inflicted Injury of Penis. Stutzin.—p. 37.
*Addison's Disease. H. Peiper.—p. 40.
Sickness and Death of Emperor Charles VII. E. Ebstein.—p. 50.
Relations Between Bladder and Kidneys. Armbruster.—p. 55.

Advanced Cancer of the Bladder.—Schmieden recommends the formation of an artificial anus and isolation of the rectum, in which he implants the ureters, to serve as a new bladder. He regards these measures as essential to ward off or cure ascending pyelitis after extensive extirpation of the bladder with advanced malignant disease. Of the two patients treated in this way, the man is still at work in the aniline dye establishment, working six hours a day. The interval since the operation is eighteen months. The woman died from pneumonia five months after the operation.

The Milking Calices of the Kidney.—Westenhöfer brings evidence that Haebler's work on the aspiration of urine from the parenchyma of the kidney by the milking action of the calices of the kidney was done on his suggestion. His priority is reluctantly admitted by Haebler and Ringleb in the society discussion on page 26.

Peritonitis with Bladder Disease.—Bitschai's patient with hypertrophied prostate died from peritonitis following cystitis, without perforation of the bladder walls.

Diagnosis and Operative Treatment of Addison's Disease.—Peiper recommends roentgen-ray examination of the kidney region after insufflation of oxygen into the bed of the kidney. He advocates removal when the suprarenal capsule is the seat of a unilateral tuberculous process.

Zentralblatt für Chirurgie, Leipzig

50: 329-376 (March 3) 1923

- *Weight-Bearing Capacity of Amputation Stumps. Kölliker.—p. 330.
Splint in Pirogoff and Hallux Valgus Operation. D. Kulenkampff.—p. 331.
A Peculiar Affection of Costal Cartilages. Harttung.—p. 333.
Extrapleural and Extrapertitoneal Access to Suprarenals Through the Diaphragm. A. Melnikoff.—p. 336.
Large Hepatic Cyst with Double Hepatic Ducts Cured by Operation. E. Elischer.—p. 341.
*Incision for Operations on Gallbladder. H. Simon.—p. 345.

Weight-Bearing Capacity of Amputation Stumps.—Kölliker reviews the weight-bearing capacity of the amputation stumps of the war. Of 104 thigh amputations, 2 presented good weight-bearing stumps, 4 were partially weight-bearing (that is, a prosthetic apparatus could be worn part of the time, but if worn continually, soreness resulted), 90 stumps were not weight-bearing, and 8 had never been tested for their weight-bearing capacity. Of 12 amputations by the Gritti method, 8 stumps were weight-bearing, 1 partially weight-bearing, 2 were not weight-bearing, and in one instance the weight-bearing capacity had never been tested. One amputation stump (Sabanejeff) was weight-bearing. In 69 amputations of the lower leg, there were 5 weight-bearing stumps, 3 partially weight-bearing and 61 not weight-bearing. The causes of the lack of weight-bearing capacity were: "bone scars" in 80 cases, soft part scars in 32 cases, neuromas in 18 cases, conical stumps in 14 cases, and in 19 cases there was a combination of causes. Kölliker admits that the results are far from pleasing, but thinks that if the methods of Bier, Bunge and Hirsch are used and there is more cooperation between the surgeon and the manufacturer of prosthetic apparatus, better results will be secured in the future.

Incision for Operations in Region of Gallbladder.—On the basis of his experience in twenty cholecystectomies, Simon recommends a simple median, longitudinal incision just above the umbilicus without division or incision of the rectus sheath. The results have been uniformly good. The avoidance of the division of the rectus has many advantages.

Polska Gazeta Lekarska, Lwow

1: 621-636 (July 30) 1922

- *Retroflexion of the Uterus. W. Falgowski.—p. 621.
Auto-Hemotherapy in Pruritic Skin Diseases. T. Dybowski.—p. 623.
Cont'd.

- Serotherapy of Influenza. H. Kadysz.—p. 626.
Typhus Fever. J. Grek.—p. 626.

Surgical Treatment of Retroflexion of Uterus.—Falgowski says that at the Fifth International Gynecologic Congress at Petrograd, Van der Velde enumerated 217 different methods (old and new) for the surgical treatment of retroflexion of the uterus. The reason for the existence of so many methods of meeting this condition, according to Falgowski, is that none can meet all requirements. Each case presents its own special indications that must be met. He considers the Alexander-Adams the best general method. Bad results, he says, come not from faulty technic of the method, but from the faulty conception of indications by the surgeon. As the next congress, which will be held in New York, will again discuss this question, Falgowski tries to help solve this question in the following way: First, he classifies the condition of retroflexion of the uterus into: (1) movable retroflexion without clinical symptoms; (2) retroflexion of a small, movable uterus with clinical symptoms, but with normal adnexa; (3) retroflexion of a heavy uterus, enlarged by inflammation (metritis); (4) retroflexion with adhesions to adnexa; (5) retroflexion with old tears of perineum and vagina (this also includes retroflexion with prolapse of the vagina); (6) retroflexion with anterior fixation of vaginal part of the uterus (faulty development). Each of the above types presents its own indications, which must be considered in treatment. Falgowski discusses each type separately, outlining what he considers the best method of treatment to meet all conditions.

Acta Medica Scandinavica, Stockholm

1922, 57, Supplement No. 3

- *Transactions of Scandinavian Internal Medicine Congress.—pp. 1-311.

Transactions of the Tenth Internal Medicine Congress of the Northland.—The leading addresses at this meeting at Helsingfors in June, 1921, have been summarized as they were published in the Scandinavian medical journals. This bulky volume contains all the others and the discussions. All articles are in English, French or German.

Norsk Magazin for Lægevidenskaben, Christiania

March, 1923, 84, No. 3

- *Development of Ophthalmology in Norway. S. Hagen.—p. 193.
*Hyperplastic Disease of Blood-Producing Apparatus. F. Harbitz.—p. 211.
*Serap of Indelible Pencil as Foreign Body. P. Bull.—p. 221.
*Huge Kidney Tumor. P. Bull.—p. 223.
Experiences with Epidemic Encephalitis at Vienna. Zeiner-Henriksen.—p. 229.
Present Status of Research on the Thyroid and Pituitary in Tadpoles. V. Magnus.—p. 244.

Ophthalmology in Norway.—Hagen gives a history of the pioneers in ophthalmology in Norway. It was Hjort who discarded the bandage for the eye after operations. This was in 1896, and at once, he said, infection vanished as if by magic.

Hyperplastic Disease in the Blood-Producing Organs.—Harbitz gives colored plates of the findings in two new-born infants with ascites and foci of incompletely developed blood corpuscles, representing a kind of myelo-erythroblastosis. The third case described was in a woman, aged 51, with multiple myelomas, actual erythromyeloblastomas. He suggests the possibility of a connection between these different processes.

Injury from Indelible Pencil.—Bull adds two more cases to the few on record in which the tip of an indelible pencil was broken off in the tissues (hand and heel in his cases). The anilin dyestuff used in the pencil has a toxic action, and this may keep up for weeks and months until the whole system is saturated with it. Although apparently a harmless lesion, he urges prompt excision of the tissues containing the pencil tip as the only means to ward off serious trouble.

Huge Kidney Tumor.—Bull relates that the woman, aged 39, had had blood in the urine at times for six years while the tumor in the right kidney was growing. It proved to be an atypical hypernephroma, and weighed 10.7 kg. (more than 23 pounds). She has been in florid health since its removal.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 19

CHICAGO, ILLINOIS

MAY 12, 1923

THE MENTAL AND PHYSICAL HEALTH OF SCHOOLCHILDREN

SANGER BROWN 2d, M.D.
NEW YORK

While knowledge of the subject of the mental and physical health of schoolchildren is steadily increasing, there is still much to be learned in these directions, particularly in the field of mental hygiene in the schools.

It is true that the great majority of children do reasonably well in the schools of today, both public and private, but the fact remains that a certain percentage get along indifferently, or not at all. Of this small group, some are physically below par, some acquire slowly, some are remarkably brilliant and some have the makings of genius in them. The remarks in the following pages apply particularly, though not exclusively, to the small group. Granting both the limitations and the potentialities of these children, special education has as yet failed to meet their entire needs. Education, medicine, mental hygiene and social hygiene should unite to solve the problem.

The observations discussed here are based on a physical and psychologic survey of 150 schoolchildren. These children were in a special school, a probationary school, and were there for observation because they had had difficulties in the class and had failed to make progress in their studies. The survey, therefore, was chiefly to determine the mental characteristics of these children, but a complete physical examination was made of each child and physical defects were recorded.

These children, in addition to being backward in their studies, were not getting along well with either the teachers or the other children. They were beginning to show traits of character which, if they persisted, would be detrimental to their future. The main problem in many instances was to determine the best means of finding out how certain limitations and handicaps were to be overcome or eliminated, in order to make these children successful, at first in the relatively simple relationships of school life and later in the world at large.

Children of this type are often spoken of as difficult or unusual. They are nervous and sensitive. Often they have unusual temperamental traits, and they do not have interests which are common to the majority of children. Their parents realize that some difficulty exists, but they are not sure just what it is. With some teachers, they may get along well; with others, not at all. Children presenting these difficulties exist in all families, whether rich or poor. They are met in city life and in country life, and the condition is not peculiar to the present generation.

Such children give rise to many speculations. One wishes to know whether these nervous states and minor troubles are the expression of some difficulty, inherent in the mental makeup of the child, or whether they are the result of bad management. One asks whether there is something unfavorable in the home or in the method of teaching, as applied to this particular boy, which results in failure. If the latter is the case, the condition cannot be considered inherent but is acquired, and can be corrected. One wishes to know their future. Is this condition a passing phase, or is character fixed in these ways if the difficulty continues? Could similar symptoms seen in adults have been recognized during childhood, and could these tendencies have been corrected in the beginning? One cannot answer all of these questions, but facts exist which contribute to the subject. Such questions do not pertain solely to teaching and school life. They have to do with public health, preventive medicine and community welfare.

EARLY DEVELOPMENT AND THE SCHOOL

After a child has reached the age of 4 or 5 years and goes to kindergarten, the way in which he gets on with other children, even during these early years, will depend very much on his previous development. This is apparent if one considers the early developmental period of a child's life, in physical, mental and social directions. From the physical standpoint, he goes through many stages. He learns muscular coordination of trunk and extremities, grasping things with his hands, holding up his head, creeping and walking. Sensation becomes acute and localized in the course of time. The faculty of speech develops through all its stages. During this period, the child not only cuts his teeth but also learns to eat, at first a simple, later a varied, diet. Then comes conscious sphincter control, and suitable habits of sleep. He gradually gains precision in movements and in the use of his extremities. Movements at first awkwardly performed are in time done skilfully. A steady gait develops; the child learns to dress himself; speech becomes clear, and, as finer movements of the hands become coordinate, he shows more precision at his games.

While this physical development is going on, he gradually develops in intelligence. He learns the names of things about the house, how they are put together and what they are used for. His vocabulary enlarges; he begins to understand a few abstract ideas, and he learns to read a little. During this period of purely physical development and of broadening the field of intelligence, he begins to learn something of his relations to other people. He cannot always have his own way when this inconveniences others. He learns patience and self-control. His games are modified in accordance with the way they may affect others.

The child, then, accomplishes much in the way of development before he has reached the age when he is to mingle much with other people; and if he fails in this respect it becomes evident. If muscular coordination is poor, he fails in games. If his speech develops badly and he stutters, he is handicapped. If he refuses certain foods, he may become ill-nourished, and have poor muscular development. If he is irritable, suffers from sleeplessness or cries easily, he becomes too dependent. If he is slow to learn, he falls behind and is regarded as stupid. If he has not learned the usual ways of give and take in play, he is often in trouble. He has to learn to obey, regardless of his own feelings. He learns all these things during an early period in life and before his nervous system has gained the stability which it possesses in later years.

All these may seem to be a formidable array of difficulties. Such things, however, are only a part of normal development, and with the great majority of children, these changes take place without either they themselves or their parents being in the least aware of them.

The success with which this early development in physical, mental and social spheres is accomplished is tested, in most cases, when the child enters school; for whether a school is large or small, public or private, his ability to get along with other children will be determined.

The school, especially the public school, is a test of the adaptability of the child. Most public schools, and some private schools, are made up of relatively large classes, from twenty-five to fifty pupils. The outstanding feature in the general administration of these classes is conformity to set standards. In the school, conformity to a routine is an integral part of the system. The child must arrive promptly; he must do things in conformity with others; he must respond accurately to directions in the classroom. Individual action on his part upsets the class and causes confusion. Studies are all outlined and the degree of advancement is regulated, month by month. The child should not be too slow in acquiring knowledge, and he cannot progress more rapidly than the others. In school advancement, he must conform to standards as established by the curriculum.

There are still other ways in which he must be in harmony with the others in the class. This conformity is not established by the school authorities but by the children. A boy must fit in with the group. He must be agreeable in games and share the interest of others. If he has any special failings in physical or mental ways, it will be found out. He must take his place as a leader or a follower and govern himself accordingly.

These are some of the features of any school system. Anyone familiar with this organization must be struck with its similarity to a military organization.

Some people advocate changing the school system since certain children fail under it. They feel it is too rigid and too inelastic. They suggest a system that will individualize. These changes will probably be gradually introduced into educational organizations, but at present most schools are formal in type. For the children under discussion this formality of education is far from satisfactory. They not only fail to acquire knowledge, but they also get out of sympathy with everything and fail to develop normally.

What arrangements can be made in the matter of special education of these children? To answer this question, we must find out more specifically the nature of their troubles in school.

At one time, it was thought that mental defect was the basis of most of the difficulty. Reports were made which showed that from 60 to 80 per cent. of the conduct disorders of children were attributable to mental defect. It is now known that this is not the case. Some difficult children are found to be defective, but by no means the majority. Some have pointed out that improper home environment, hardships, poverty and neglect are the causes of these conditions in children. This is doubtless true; but difficulties with children are found among the rich as well as the poor.

Some have called attention to physical disorders and malnutrition. It is true that some difficult children suffer from malnutrition; but some of them are perfect physical specimens.

In the spring of 1919, the public school authorities of New York invited the National Committee for Mental Hygiene to make an investigation of this subject. It was decided to conduct the study in one of the probationary schools of the city to which children were sent for observation. The survey dealt with various phases of the subject. The staff consisted of a physician, a psychologist and a social service worker; each child was made the subject of investigation from several standpoints: physical, psychologic and environmental. Such a survey cannot presume to answer all questions which arise as to adjustments of children, but an attempt is made to call attention to the most obvious difficulties. The particular conditions which will be discussed are: 1. Nervous instability in children. 2. Intelligence tests. 3. Physical defects. 4. Methods of examination and of treatment.

NERVOUS INSTABILITY IN CHILDREN

Nervous symptoms are much more common during childhood than is generally recognized. These symptoms appear in various ways. Children who are irritable, who sleep poorly, who learn slowly or who are oversensitive are often unstable nervously.

Nervousness is also common in adults. Many people, particularly in this country, suffer from minor neuroses. They appear perfectly well, and indeed they are not invalids, but they are not absolutely free from nervous symptoms. A knowledge of the minor neuroses is important in understanding the psychology of children. A child may be regarded as perverse, obstinate or incorrigible, when he is suffering from nervous symptoms and is liable to be sensitive and irritable.

What are the nervous symptoms of childhood? They are numerous, and they find expression in a great variety of ways. Perhaps one of the most common neuroses symptoms of childhood is overactivity. The minds of some children are teeming with ideas, and physically, too, they are overactive. They are overstimulated by such things as moving pictures or exciting stories, and they exhaust themselves nervously. Sometimes children of this type indulge in all sorts of romances and fabrications. A certain amount of this is normal during childhood, but extremes of it indicate an overactive brain. Disorders of sleep are expressions of instability. Nervous children have night terrors, play out their games in their sleep, and cry out. Sleep walking, which is particularly common in childhood, is but another symptom of this same general order.

These children are, of course, fretful, irritable and unduly sensitive. Their feelings are easily hurt and they cannot control their tempers. They are impatient and they are difficult both in school and at home. Disobedience follows attempts at discipline.

Other minor symptoms are seen. Among these may be mentioned tics, habit spasms, gestures, nodding of the head, blinking the eyes, grimacing, twitching of the mouth, tremors or twitching of the hands or of the legs and peculiarities of gait.

Sometimes the origin of these conditions is easily found. Occasionally, they are the result of suggestion or of imitation of another child. One frequently finds very simple causes for these conditions in children. Whether they will be subject to similar symptoms in later life is difficult to say; probably this depends to a considerable extent on their management.

Nervous states in children may be of psychologic origin. Children often learn habits of invalidism from over-anxious mothers. Emotional scenes and shocks may make a profound impression on them, and, if repeated often enough, are lasting in their effects. I know a little boy, aged 6, who was extremely nervous for months following a sensational murder near his home. Family discord of any kind is conducive to nervous trouble in children.

As a factor causing mental instability during childhood, considerable emphasis has been placed on questions of sex even in very young children. It is true that one finds in children much curiosity and interest about sex; many children ruminate about the subject a great deal. It is probable that such interest and curiosity should be considered normal, unless it takes on some unusual manifestation. Children vary greatly in the amount and accuracy of their knowledge of sex. A few children have full knowledge and even sex experience before puberty. Some have very distorted knowledge. A few practice masturbation to excess. This is not the cause of a great number of neurotic states in children, despite statements which have been made to the contrary. However, when excess sex stimulation takes place before puberty, the condition is disturbing physiologically, and if this stimulation continues over a long period, the child may show evidence of nervous exhaustion, and develop psycho-neurotic symptoms. While sex activity is harmful before puberty, its occurrence should not be regarded as a calamity, and hygienic rather than moral issues should be emphasized.

It is not difficult to see how these nervous symptoms, both those of the physical and those of the mental sphere, make for poor work in school. A sick child, or one who is half sick cannot conform to discipline. He is unduly sensitive and appears to be irritable and perverse. He is in no position to take his place in the class or enter into the life of the school.

Cameron¹ says somewhat optimistically, of these nervous types:

A sensitive nervous organization is often the mark of intellectual possibilities above the average, and the children who are cast outside the ordinary mold, who are the most wayward, the most intractable, who react to trifling faults of management with the most striking symptoms of disturbance, are often those with the greatest potentialities for achievement and for good. The mother of the nervous child may often rightly take comfort in thought that her child is worth the extra trouble and the extra care which he demands, because he is sent into the world with a mechanism which, just because it is more powerful than the common run, is more difficult to master and takes longer to control and to apply for useful ends.

In this survey, nervous symptoms were found in a higher percentage than was expected (20 per cent.

in the group). Epilepsy was found in four instances. The other cases showed various nervous symptoms. One boy of 10 years was in a constant state of anxiety and fear, and was always looking for some impending danger or disaster. This, of course, made it impossible for him to acquire knowledge. The condition was very similar to that which one sees in hyperthyroid states, although he had no symptoms of glandular disease.

Another boy suffered from malnutrition, and had had rickets in early life. He walked in his sleep, had night terrors and could not sit quietly in school. He came from a particularly bad home environment. He was of good intelligence and pleasant personality.

One child, aged 10, was very mischievous and over-active, and was constantly playing little tricks, joking, and could not be controlled in the regular classes. He was out on the street at night and was disobedient at home. His was a case of overactivity, resulting from too much excitement at home.

There were three boys who had somewhat similar nervous symptoms, apparently from very similar causes. All three had been subjected to undue sex stimulation before puberty, a full knowledge of sex being gained through association with older people. These boys suffered from sleeplessness and were nervous and inattentive at school. They were also delinquent, and had been involved in thieving on a number of occasions. Treatment in a special hospital would probably have benefited them greatly.

In several cases, stammering was associated with other nervous symptoms, such as sleep walking, night terrors and lack of emotional control.

The treatment of nervous conditions varies with the cause. Not infrequently a highly nervous state in children of many months' standing follows some acute physical illness, such as measles, scarlet fever, meningitis or whooping cough. This nervous state in children is comparable to neuroses seen in older people. The treatment here is quite clear. The child should have more rest than he would otherwise take. For overactivity, baths of body temperature at night, of from twenty to forty minutes' duration, are useful. Food should be taken between meals. Improvement frequently follows gain in weight. Forced feeding and a liberal amount of rest and fresh air in the country, without too much school work, generally restores these cases to normal health. Occasionally, such cases last six months or a year, and may continue much longer.

Some children become nervously unstable through undue fear of competition in school. A child who learns slowly and is in a class where the others learn rapidly is at a disadvantage, and he is likely to become distressed. One often sees many minor nervous complaints, such as stammering, blinking the eyes, quick temper and sleeplessness in situations of this kind. In these instances it may be necessary to change the school or change the class. These children cannot get along in a large group.

Environment is not infrequently the cause of nervousness in children. Sensitive children may become stimulated in a large household where there is much entertaining and a great deal of coming and going. They are fatigued; when night comes, they are restless, and talk in their sleep, and they are exhausted in the morning. What is true of the home is true of the neighborhood. Games, as well as books or entertainment, may be overstimulating. Worry at home on the part of either of the parents is often conducive to nervousness in young children.

1. Cameron, H. C.: *The Nervous Child*, New York, Oxford University Press, 1919.

In some cases, nervousness is due directly to ideas which sensitive children become distressed about. Matters of religion occasionally perplex children. At times oversensitive children feel that they are being unjustly disciplined at school. I have seen children become greatly distressed over a period of many months because, rightly or wrongly, they thought the teacher was not treating them fairly. In cases of this kind, it is highly desirable for the physician to talk over the matter alone with the child. Dr. William P. Healy of Boston has described these conditions in detail, and he clearly shows that marvelous improvement may result from even one frank interview.

INTELLIGENCE TESTS

A surprisingly large number of difficulties with school children arise from the fact that they are not graded properly in classes. In most schools, children are graded in classes according to their age, and not according to their degree of mental development or capacity to learn, which is quite a different thing. Some children are far above their age in mental development and some are far below. Thanks to the work of Alfred Binet of France, and his followers, notably Terman of this country, this degree of mental development can be established very definitely. By studying thousands of children, psychologic tests have been standardized, and they are reliable when properly performed and interpreted. They, of course, measure intelligence only, and not temperament, emotional control or character.

The Stanford revision of the Binet-Simon test has been scaled in such a way that not only are the number of years and months of mental advancement or retardation measured, but in addition the child is rated on the basis of what is known as his "intelligence quotient." This intelligence quotient, with 100 per cent. as the normal, is determined by dividing the mental age by the actual age. On the basis of the intelligence quotient, by tests of thousands of children, both normals and variants from the normal, these results have been established. Children obtaining a rating of from 90 to 110 are, in general, of normal intelligence; those with a rating over 110, ranging at times to 125 and 150 or higher, are rated as possessing superior intelligence; those between 80 and 90 possess normal intelligence, but are of dull mentality; those between 70 and 80 are rated as borderline; that is, it is difficult to state whether mental defect exists or not. Those rating below 70 are mentally defective, unless some unusual circumstance exists to explain the low rating.

In practice, these findings work out well. That is, children who are found to be defective by the tests are, as a rule, so considered in the school by teachers competent to judge. The test generally agrees with common observation, if those observations are carefully made.

As a result of tests, children have been classified psychologically according to their intelligence, thus: Mentally defective children, which term has long been in use; "dull" children; normal children, and those with superior intelligence.

Of the group first mentioned, the mentally defective children, many variants are seen. Some are model children who cause no trouble in class and are not delinquent, although they learn very slowly. Others are nervous and irritable, having nervous symptoms such as sleep walking, night terrors and habit spasms. Mental defect probably predisposes toward these symp-

toms. Defective boys are often below par physically. They have narrow chests, stooped shoulders, and other anomalies. At times, however, they are good physical specimens.

The second group mentioned, the dull boys, while not defective, make a poor showing in the class room. They are often lacking in initiative. They are slow in school problems and instead of getting 100 per cent. in the psychologic tests, their score is between 80 and 90. Although the teachers may make a persistent effort to carry them along, school subjects are distasteful to them because they learn so slowly. They often grow rebellious against discipline and the teacher believes that they are perverse and obstinate. These boys frequently play truant solely because they are not interested in school. This is the opening wedge for other misconduct. While dull in school work, they are almost up to average in other ways. They should not be kept at book work beyond the sixth or seventh grade. They should then be given manual education. These children contribute largely to the failures of adult life, and their inadequate early training is to a considerable extent responsible.

Just how these dull children turn out in after life is not known. Dr. H. H. Goddard, in "Human Efficiency and Levels of Intelligence," maintains that efficiency and success in life is largely dependent on

*Physical Defects Found in One Hundred and Twenty Schoolchildren**

	Cases		Cases
Malnutrition and nutritional disturbances	26	Defect of nervous system.....	5
Skeletal defect	20	Defective nasal breathing.....	19
Poor muscular development....	21	Hypertrophied tonsils	69
Defective vision	52	Pulmonary diseases	0
Defective hearing	7	Cardiac diseases	2
		Defective teeth	65

* Some children had several defects.

intelligence, and failure is due to lack of it. One doubts if this is exactly the case. Many people with high intelligence do not succeed; while others with inferior intelligence, through their pleasing personality and adaptability in getting along with people, do relatively well. However this may be, the boys who cannot learn academic subjects beyond a certain grade should be put to something else.

Certain children are said to possess superior intelligence by psychologists because of their high rating in the tests, and because of their rapid progress in school. In certain schools, these children have been placed in separate classes and have advanced very rapidly indeed.

An enthusiast at a recent lecture predicted that these advanced children were destined to be the leaders of the world, because of their superior intelligence. Some of them may, and some may not. Teachers have pointed out that, while they are advanced in class work, a certain number of them have poor emotional control and are quite childish with other boys, and a number of them are not strong physically. They should, however, be given the training in school that they are best fitted for. Doubtless, intelligent children waste many hours because they are kept back by the duller ones.

Psychologic examinations have suggested the reclassification of children in schools. By these tests, they are classified according to mental age and the way in which they make progress in their studies. This is an excellent plan, and when it is adopted throughout the schools, as it doubtless will be, it will do away with much of the discontent, uneven progress and trouble with

discipline which exist at present. It will not solve all problems in the school, but the classification of children in grades according to their ability to acquire will be a wise procedure.

It should not be inferred that all cases in the above mentioned group with nutritional disturbances were below normal weight for their age. Some were normal in weight, even excessively fat. But they were pale, with pasty skin; the expression showed fatigue; the extremities were blue, and there were other evidences of faulty metabolism. Some were getting an unsatisfactory diet, consisting to a great extent of starchy foods, with lack of protein. An insufficient lunch or very little breakfast accounted for headaches and fatigue in a number of the younger children.

The skeletal defects were of various types; some postural, with or without spinal curvature. Some of the children had faulty chest development, others had imperfect results following operation for injuries or fractures of the extremities. Certain defects, while not incapacitating, contributed to ill health in various ways.

Twenty-one children had poor muscular development, not necessarily as a result of insufficient exercise, but associated with poor nutrition.

Routine examination by the oculist showed that fifty-two of the children had some type of visual defect, such as astigmatism, myopia or hyperopia of varying degrees of severity. In some cases, glasses were not indicated, as the defect was very slight. In others, glasses were needed but the children refused to wear them, as they thought them an evidence of weakness or ill health. A few cases of defective hearing were found, the result of a former otitis media.

Defective nasal breathing was found in nineteen cases. In some instances, this was a mild defect caused by a deviated septum.

There were sixty-nine cases of enlarged tonsils. Some of these children had had several attacks of tonsillitis, and removal of tonsils was therefore indicated. In many of the cases, the tonsils were only slightly enlarged, apparently causing no symptoms. Removal would not be recommended by most authorities in such cases. With a number of children, when enlarged tonsils were associated with difficulty in nasal breathing, there was restlessness at night, and night terrors, attributable to the interference of free passage of air.

These children had all been carefully examined for pulmonary disease some time previously, and no active cases of tuberculosis were found.

To what extent is the welfare of the mind influenced by the state of physical health and well being? If a child is in an unsatisfactory physical condition, he is likely to suffer correspondingly in mental spheres. However, some children with excellent physique, and without physical defects of any significance, are in a far from satisfactory mental condition. Again, a child may have a number of physical defects, but these may have no bearing on the psychologic problem he presents.

In interpreting disorders in children, it is well to have all these variations in mind. On the one hand, we should not have our attention focussed on upsetting psychologic factors, to the exclusion of the physical; on the other, we should not be ready to accept physical defects as the only factors in all cases. It should also be appreciated that a physical defect of relatively minor importance in an adult may cause more serious symptoms in a child. Thus, interference with nasal breathing in an adult is uncomfortable, and predisposes to colds and infections; it may not amount to more than

this. But with the child, it interferes with play and with sleep, and renders him morose and irritable, and unable to apply himself to his lessons.

Poorly nourished children suffer in a particular way mentally. They are not necessarily retarded; indeed, they often appear to be overstimulated and overactive; but they are emotionally unstable and have nervous symptoms. With improved nutrition, these symptoms subside, and a change in temperament and disposition becomes evident.

Knowledge of the structural development of the body has advanced considerably in recent years, although it is still far from complete. We have always known of certain developmental disorders, as, for example, the underdevelopment which results from thyroid deficiency; but recent studies have carried us farther than this. We know now that the overfat boy is not fat because he has an enormous appetite or eats too many sweets, but because his glands of internal secretion or their nervous mechanisms are not functioning properly. We know that the growth of long bones is dependent on glandular activity, and that the development of sex organs and sex characteristics is controlled by glands of internal secretion.

The organs which preside over body structure are of importance in the development of the mind. Few definite facts are known of this influence, and there has been much speculation. We know that deficiency of thyroid gland not only influences body development, but also retards mental processes. Excess of this secretion accelerates mental processes and causes nervousness. Certain disorders of the pituitary gland are associated with mental dulness and retardation. Some have speculated much farther, and would associate most activities of the mind, such as emotions, temperaments, and conduct, with the glands of internal secretion. We are not in a position to make final statements about a physical basis for these qualities of the mind, and further investigations are necessary.

METHODS OF EXAMINATION

It may be of interest to review briefly the method of examining a child in these various directions.

It is well in the beginning to get a concise statement from the parents and teachers as to what, in their opinion, the difficulty is. They may state that the child is nervous and irritable, is fatigued easily, lacks concentration, has trouble with other children and is poor in his studies.

It is then necessary to get a history of the family. One learns in this way what the home environment is, and also what the other children are like. One inquires how the other children get along in school; whether the father and mother are healthy and strong, and whether there is much nervous instability or disease in the family. This gives a background which may be of value, or which may throw very little light on the situation.

Next, one obtains a full history of the child. The condition at birth and during early infancy, the age of walking and talking, illnesses, nutrition, and so on are inquired into. Then one obtains the school history, including school progress and promotions; facts as to how the child gets along with others in games, whether he is active or solitary, whether he requires much discipline or little; in other words, what his personality is like and what the teachers think of him.

Next, one inquires carefully into the nervous symptoms mentioned above, which, because of their importance, may be mentioned again: quick temper, irrita-

bility, nail biting, enuresis, sleep walking, night terrors, habit spasms, tics, blinking, stammering, fatigability, depression, undue sex knowledge and excitement. Then, inquiry is made as to the home environment and about any delinquency or misconduct which may have occurred.

On first seeing the child it is well to make the medical examination at once because children expect this from a doctor. In the course of this examination, one can learn by direct questions how the child gets along at school, how he likes his teacher and how he likes the other boys. It is often possible to gain his confidence and learn all about any difficulty both in the school and at home in this direct way. It is well to have the child alone, as children will seldom talk freely before two or three people. This frank talk may be the most important part of the examination.

When the psychologic tests are performed, the examination is complete. These tests, to be of value, must be made by some one who has had careful training in giving them. It is necessary for the examiner to be alone with the child and free from interruptions. The test generally requires from one to two hours. Experienced examiners know at once whether nervousness, shyness or other mental conditions interfere with the value of the test, and they report accordingly. Tests by amateurs are not only valueless, but also misleading.

The management of nervous children requires not only the medical measures mentioned above, but also a particular kind of education. These children are usually diffident, and they come in for a good deal of hazing of one kind or another from other children. The teacher may not have time for a child who does not learn easily, and these children drift from one school to another, thoroughly discouraged, the despair of teachers and parents. In many instances, one finds that the preparatory school, the college and even the profession has been decided on far in advance. The father is loath to give up these ambitions.

Parents must realize that, while plans must be changed, the change will make for gain rather than loss. The child is not a failure because he cannot travel along beaten paths. Nervous children are better away from home because parents are almost sure to urge them beyond their capacities. The selection of the right school is very important. A military school, in my experience, does not bring good results because firmer discipline increases rather than modifies the symptoms.

There are certain schools in which the principal or head master is able to make special teaching arrangements for some of these children. In such a school, these boys improve from the start. The head master realizes that discipline must be used moderately and judiciously; he realizes that class progress is not the most important thing, until mental stability is gained. In time, the nervous tension subsides; the worried look disappears from the boy's face; he begins to sleep at night; he is able to concentrate again, and so he is able to learn more easily. This may take many months, but success may be confidently expected.

I recall a boy in an excellent preparatory school who had been regarded a "dunce," as the mother said, for three or four years. He made no progress at all and was the despair of everyone. By examination, he was found to be a neurotic child. The psychologic tests showed that he was not a dull boy, and that his intelligence quotient was over 100, or average. He was taken from home; his nervous symptoms were treated, and at

a special school, in the course of a few months, he made excellent progress.

Those children who have no nervous handicaps such as the foregoing, but are nevertheless slow in their studies and make a low record by psychologic tests, are in a somewhat different category. Here, again, although reluctantly, certain ambitions on the part of parents must be set aside. These children do not acquire very readily through books. They are generally manually minded, and they do not get further than the beginnings in high school, or perhaps not that far. As little boys, their minds are developed through manual education. This training, which consists of various forms of shop work, is not to make artisans of them. It is to develop the mind through the use of the hands.

After the age of 11 or 12, often earlier, in the case of these particular children, manual education should be introduced. They waste their time in regular classes, with no manual training. The need of this is being recognized more and more in the best schools. Children who do not learn academically should not squander their youth and waste their time with academic studies beyond the point where they can acquire. These educational handicaps explain why a number of boys fail when they should succeed. Fortunately, such handicaps are being overcome by special forms of education in many of the better schools of today.

173 East Seventieth Street.

ANEURYSM OF THE THORACIC AORTA AS A CAUSE OF ACUTE ABDOM- INAL PAIN

REPORT OF CASE *

WILLIAM J. MALLORY, A.M., M.D.

Associate in Medicine, George Washington University Medical School
WASHINGTON, D. C.

In the textbooks on medical and surgical diagnosis, recognition of acute surgical conditions in the abdomen is usually assumed to be easy. Difficulty is acknowledged only in the preoperative differentiation of grave accidents, such as perforated gastric ulcer, perforation of the gallbladder, acute pancreatitis and mesenteric thrombosis. But the fact that thoracic disease may produce symptoms of acute surgical conditions in the abdomen is inadequately discussed.

That pneumonia may simulate acute appendicitis has long been known, and more recently Fussell and Kay¹ have reported cases of pericarditis diagnosed as acute appendicitis. Cases of angina pectoris, with symptoms of pains in the epigastrium after eating, or on exertion, may resemble gastric ulcer or gallbladder colic, but the short duration of the pain and its relation to exertion rather than to the digestive cycle are usually sufficient to prevent diagnostic mistakes. That slow leakage from an aneurysm of the thoracic aorta may produce abdominal symptoms comparable in severity to acute pancreatitis is not indicated by a perusal of the books dealing with cardiovascular, mediastinal or abdominal disease.

With regard to the frequency of its occurrence, it is stated that² "Descending thoracic aneurysm is rarer than in the abdominal aorta. It was involved in only

* Read before the Medical Society of the District of Columbia, Jan. 17, 1923.

1. Fussell, M. H., and Kay, J. A.: Symptoms of Appendicitis in Acute Pericarditis. *Am. J. M. Sc.* **163**: 40 (Jan.) 1922.

2. Osler's *Modern Medicine*, Philadelphia, Lea & Febiger, 1907, p. 487.

three out of sixty-four cases of aneurysm of the aorta, among 2,200 autopsies at the Johns Hopkins hospital."

Lucke and Rea³ report that "aneurysms were found in 2.2 per cent. of patients coming to autopsy. In only 43 per cent. of the cases was the clinical diagnosis of aneurysm made."

Harlow Brooks,⁴ in performing necropsies, was struck with the frequency with which sudden deaths from cardiac diseases had been diagnosed as "acute indigestion." Among these, probably the most frequent lethal lesion was coronary thrombosis or embolism. He is one of the few to point out not only that cardiac disease sometimes gives abdominal symptoms, but also that acute or chronic aortitis, rupture of the aorta, or aortic aneurysm, and acute mediastinitis may simulate abdominal disease.

The literature for the last ten years records a number of cases of aneurysm of the descending thoracic aorta presenting acute grave abdominal symptoms, but even when an aneurysm is suspected and searched for, its presence may be very difficult of demonstration during life.

Lerena⁵ reports such a case. There was nothing in the history to suggest aneurysm; tests for syphilis were negative; a roentgenogram gave no hint of the presence of an aneurysm. The postmortem examination demonstrated the existence of an atypical sacciform aneurysm of the thoracic aorta, with previous walling up of the vessel. The aneurysm was as large as a hen's egg and had a second smaller aneurysm which communicated with it by a narrow opening.

Du Bray⁶ presents an excellent study of a case in which the symptoms and signs led to the clinical impression that the cause of death was "massive pulmonary hemorrhage into a bronchus, in a case of ulcerative pulmonary tuberculosis." In his case, the symptoms were of four years' duration, all thoracic in character. The aneurysm, 8 by 10 by 8 cm. in size, ruptured directly into a bronchus, not involving the mediastinum. The absence of involvement of the mediastinum explains why there were no abdominal symptoms. He reviews the literature, giving twenty-eight references. In 153 instances of rupture of an aneurysm of the descending thoracic aorta into various situations and viscera, not one is mentioned as rupturing into the mediastinum, and no mention is made of abdominal symptoms. Rupture into the left pleura is by far the most common accident.

A case resembling ulcer of the stomach is reported by Demetrescu:⁷

A man, aged 35 years, entered the clinic with pain in the abdomen, and hematemesis. He vomited food and had acid eruptions. When entering the hospital, hematemesis occurred, the patient vomiting 2 liters. The abdomen was sensitive to the slightest touch, tenderness being most accentuated in the epigastric region. The pulse was 126 and the temperature ranged from 38 to 39 C. (101.4 to 102.2 F.). Ulcer of the stomach was diagnosed, and the abdomen was opened. Nothing could be found in the stomach. The next day, hematemesis occurred, to the amount of 70 c.c. The pulse was very small and thready, and the mucous membranes were pale. In the afternoon, the patient lost 100 c.c. of blood, and he died the next day. At necropsy, the aorta was found enlarged and cartilaginous in aspect in its entire extent.

Two thirds of the upper part of the descending aorta consisted of a large aneurysm. A fibrinous mass filled the aorta and esophagus. The mucosa of the esophagus was blackish at the point of the aneurysmal rupture. Nothing was found in the stomach, and the pylorus was free.

Age is of no practical diagnostic importance, for Morquio⁸ reports the case of a child, 5 years old, who was admitted for typhoid fever. For four days, it had been vomiting, and had suffered epigastric pain and cardiac collapse. At necropsy, an aneurysm was found in the lower part of the descending thoracic aorta. The aneurysm was the size of a mandarin orange. It had ruptured through the diaphragm into the abdomen, there forming a coagulum. There was no history, no symptoms nor radiographic findings which would have suggested the existence of an aneurysm.

That the lesion may complicate an acute febrile disease in the young is illustrated by the case of Soprana and Piazza.⁹

A woman, aged 21 years, who entered the hospital complaining of articular pain, had, ten days previously, begun to complain of violent pain, especially in the upper extremities, the neck and the shoulder of the right side. The face was pale. The temperature was 38.4 C. (101 F.) the pulse, 100, strong and regular, and respiration, regular. There was a slight murmur at the apex of the heart. The patient was improving, when, on the tenth day, she suddenly felt severe constriction in the thorax; precordial and epigastric pain became continuous, especially at the top of the sternum; the temperature, which had been down, rose slightly; paroxysms of precordial and epigastric pains increased; the lips became blue, the face pale, and the temperature was 37 C. (98.6 F.) rising to 38.5 C. (101.3 F.) in the afternoon. Six days later, the patient died. A lesion was found on the convex surface of the aorta in its endopericardial portion. The anatomic pathologic diagnosis was acute articular rheumatism and acute rheumatic aortitis, with three small aneurysms, two of them ruptured, producing hemopericardium.

In the case reported by Dr. John D. Thomas,¹⁰ the three main symptoms were continuous pain in the back and epigastrium, regurgitation of food and absolute constipation of one week's duration. At postmortem examination, "The thoracic aorta from the point where its descent began to just below the diaphragm was the seat of a large sacculated aneurysm, irregularly oval in shape, walls fairly thin, and contained postmortem clots; it had not ruptured."

Shore¹¹ reports a case of a man, aged 62, who, while presenting symptoms adequate for the diagnosis of thoracic aneurysm, also presented marked abdominal symptoms.

The patient was admitted to the hospital after midnight, complaining of severe precordial and epigastric pain, which followed urination performed a short time before. He had had shortness of breath for two years, and eight months previous to his present illness, he began to have slight pain, which came on an hour after eating and continued for about an hour. Lately, the pain had been worse and more nearly continuous, with exacerbations after eating. On examination, the temperature could not be registered. There was an anxious expression, pale skin, cold sweating and a little cyanosis. Breathing was rapid and shallow, and the pulse was 60, regular, full, sudden and of high tension. Rigidity of both rectus muscles and definite epigastric tenderness were

8. Morquio: Aneurisma de la aorta toracica descendente en un nino de cinco anos., *Rev. méd. d. Uruguay* 20: 555, 1917.

9. Soprana, F., and Piazza, C.: Aortite hematogene aneurismes multiples de l'aorte a debut et evolution agus, rupture dans le pericarde de l'un d'eux au cours d'une crise unique de rhumatisme articulaire, *Arch. de méd. expér. et d'anat. path.* 27: 55, 1916-1917.

10. Thomas, J. D.: Case of Aneurysm of the Thoracic Aorta with Paralysis of the Diaphragm and Hour-Glass Contraction of the Stomach, *Washington M. Ann.* 13: 146, 1914.

11. Shore, T. H. G.: Case of Dissecting Aneurysm of the Thoracic Aorta, *St. Bartholomew's Hosp J* 21: 44, 1913-14.

3. Lucke, Baldwin, and Rea, M. H.: Studies on Aneurysm, I, General Statistical Data on Aneurysm, *J. A. M. A.* 77: 935 (Sept. 17) 1921.

4. Brooks, Harlow: Abdominal Symptoms and Signs of Thoracic Disease, *Med. Rec.* 100: 1103 (Dec. 24) 1921.

5. Lerena, V. P.: Case of Aneurysm of the Thoracic Aorta Difficult of Diagnosis, *Rev. med. Cub.* 32: 431 (June) 1921.

6. Du Bray, E. S.: Saccular Aneurysm of the Descending Thoracic Aorta, *Am. J. Med. Sc.* 16: 407 (March) 1921.

7. Demetrescu, S.: Aneurism al aortel descendente rupt in esofag simuland un ulcer de stomac, *Clujul Med.* 1: 729, 1920.

present. At postmortem examination, a small rupture of the intrapericardial portion of the aorta was found, with a dissecting aneurysm which involved the aorta more or less to its abdominal bifurcation.

In the case reported by Mackinlay and Weeks,¹² the condition closely resembled ruptured duodenal ulcer.

A man, aged 54 years, who had no previous symptoms, and who had been doing heavy muscular work without any inconvenience for two years, at 8:30, while in a public bar, was suddenly seized with acute pain in the pit of the stomach, which caused him to fall to the ground, to double up and to shout. The pain radiated around his right side and up below the shoulder. It made him catch his breath, but there was no shivering. He stated that he felt as though something were closing around the bottom of the esophagus. He tried to retch, but there was no vomiting during the whole illness. The pulse rate was 100, the volume very poor. Twenty-four hours later, there was marked dulness at the base of the right lung, with absence of breath sounds. There was pulsation in the epigastrium, but no murmur. Ruptured duodenal ulcer into the lesser sac was considered, but the evidence was not considered sufficient. At postmortem examination, an aneurysm the size of an orange, at the point where the aorta passes through the crura of the diaphragm, was found. It had eroded the eleventh dorsal vertebra to the depth of half an inch. There was a large perforation into the right pleural cavity. There was marked extravasation into the cellular tissue of the spine and into the abdominal cavity extraperitoneally.

In Sanders' case¹³ there were no abdominal symptoms. An aneurysm the size of a coconut occurred in the middle of the descending aorta; the left lung was septic and deeply pressed on; the aneurysm, lying in the cup thus formed, was surrounded with pus. The vertebrae were slightly eroded.

Another case with rupture, without abdominal symptoms, is reported by Munkwitz and Jerman.¹⁴

For a short time before the onset of his last illness, the patient complained of some dyspnea on exertion and vague pains in the chest and back. While at work leaning over a drawing table, he suddenly cried out with pain and fell to the floor unconscious. There were no abdominal symptoms. Two days later, there were signs of involvement of the right pleural space. The diagnosis was aneurysm of the arch of the aorta. Death occurred suddenly, ten days after onset, in a choking attack. At necropsy, the mediastinal space was found filled with blood. There was an aneurysm of the transverse portion of the aorta, the rupture occurring where the aorta begins its descent. There were two openings, one into the pleural cavity and one into the mediastinum.

REPORT OF AUTHOR'S CASE

History.—Mr. G. P. H., aged 61, married, who had had the lower left leg amputated as a result of an accident at the age of 21, had a few months prior to his present illness, while attending a banquet, suffered an attack of palpitation, followed by a cold sweat. A few days later, he had what he called "a slight cold and cough." There was no history of previous indigestion or attacks of any kind of pain. He used tobacco and alcohol moderately. Recently, he had applied himself very closely to office work. About 7 p. m., May 31, 1921, after eating a full dinner, he was seized with sudden pain, which he described as "feeling as if some one had struck a knife in his heart." The pain was constant and severe, and did not radiate. There was no nausea or vomiting. Dr. S. H. Greene, who saw him about 9 p. m., washed a large amount of undigested food from the stomach, and gave several enemas, which resulted in a good return of normal feces, but produced no amelioration of the symptoms.

Examination.—I saw the patient about 10:30 p. m. He was sitting up on a sofa, slightly doubled up, with the hand held over the epigastrium. The skin was pale and cold, and bathed in perspiration. The respirations were shallow and grunting, but not accelerated. The pulse was 75, hard, full and regular. The pupils were normal. No abnormal sounds were heard over the heart or lungs. The abdomen was hard, rigid and tender, the last condition being more marked in the epigastrium.

He was admitted to the hospital at 11:15 p. m. At that time, the blood pressure was 220 systolic, 110 diastolic; the pulse was still under 90. There was a leukocytosis, the cells numbering 29,000. The urine contained albumin and casts. Preparatory to operation, the patient was given morphin sulphate, one-sixth grain (0.1 gm.), and atropin sulphate, $\frac{1}{150}$ grain (.004 gm.).

Diagnosis.—The provisional diagnosis was some acute condition in the upper abdomen. Perforated gastric ulcer was first thought of as being the most common cause of such symptoms, but a ruptured gallbladder or mesenteric thrombosis was considered as a possibility. Just before going into the operating room, I expressed an opinion in favor of hemorrhagic pancreatitis on account of the absence of previous digestive disturbance and the presence of marked vascular disease. When the patient was first seen and the hard pulse of high tension was noted, abdominal angina was considered, but the long duration—from 7 to 1 o'clock—six hours, and the leukocytosis of 29,000 seemed to point more definitely to a rupture of some viscus.

Operation.—At 12:30 a. m., Dr. C. S. White explored the abdomen under gas anesthesia, but found nothing abnormal.

Course and Outcome.—I still leaned toward a diagnosis of vascular lesion as to the cause of the symptoms. At 1:30, the patient was returned from the operating room in a condition of extreme shock. He did not regain consciousness for several hours. The pulse was about 130, and almost imperceptible. The respirations were irregular, at times being of the Cheyne-Stokes type. The skin was bathed in cold perspiration, and the extremities were cold. Tap water, by rectum, heart stimulants and external heat were employed, and reaction occurred slowly.

The next morning, there was no more complaint of pain than is usual after an abdominal operation. There was some hiccup and a little vomiting, but some fluid was retained.

The leukocyte count was: before operation, 29,000; June 1, 28,500; June 2, 24,000; June 3, 18,000; June 4, 19,000, and June 6, 25,400.

The renal function, at first deficient, became well established in twenty-four hours, and except for moderate restlessness and occasional attacks of hiccup, or irregular breathing, the patient seemed to be making a good recovery. This general condition continued with slight changes until June 6, when he died suddenly, at 10:15 a. m.

Necropsy Findings (Dr. Hunter).—When the chest was opened, a large dissecting aneurysm occupied the distal end of the arch of the aorta, with extensive hemorrhagic extravasations, apparently occurring at different periods; the first extravasation into the soft tissues of the mediastinal spaces exhibiting characteristics suggesting that it was of a few days' standing; the second, a rupture into the left pleural cavity, filled with blood and with considerable compression of the left lung. The aneurysm was somewhat cirroid in character, disintegration of the wall of the aorta taking place, especially superolaterally, with marked dissection between the adventitia and medial coats all the way down to the aortic orifice of the diaphragm, along the anterior surface of the thoracic aorta.

The aneurysmal dilatation extended $1\frac{1}{4}$ inches (3.2 cm.) transversely along the arch of the aorta surrounding the roots of the left subclavian and common carotid. The left subclavian artery was enlarged and showed some aneurysmal dilatation at its base. Superior to the distal end of the arch, lying between the left subclavian artery and common carotid medially and the upper lobe of the left lung laterally, there was a large clot of blood, $1\frac{1}{2}$ by $2\frac{3}{4}$ inches (3.8 by 7 cm.), where the extravasation had taken place into the proximal portion of the fibrous pericardium and the transverse sulcus.

12. Mackinlay, W. H., and Weeks, L. M.: Case of Ruptured Aneurysm of the Descending Aorta, Brit. M. J. 2: 1623, 1913.

13. Sanders, Arthur: Aneurysm of the Descending Aorta, West London M. J. 21: 127, 1916.

14. Munkwitz, F. H., and Jerman, Louis: Rupture of Aortic Aneurysm into the Right Pleural Cavity with Death Ten Days Later, Wisconsin M. J. 15: 51, 1916-17.

Toward the inferolateral margin of this clot, there was a well defined opening in the pleura, from which the extensive bleeding into the pleural cavity took place. This blood in the pleural cavity was a very recent extravasation. Only moderate soft clots were formed, whereas the clotting in the mediastinal tissues was apparently of several days' duration, and the clots were quite firm and hard. Extending from this large clot, there was definite macroscopic evidence of extensive extravasation (which probably took place slowly) into the fibrous pericardium and its contained fat, down to the diaphragm. Laterally, this extravasation had extended into the tissues of the middle mediastinum, and backward, between the pleurae, into the posterior mediastinum.

Surrounding the pulmonary plexuses, trachea and esophagus, and in the proximal part of the posterior mediastinum, it had extended backward beneath the parietal pleura and the transverse ligaments, all the way out to the sympathetic trunk. Extravasations of blood had also occurred in the soft tissues of the superior mediastinum on the right side as well as on the left, and, to some extent, into the adventitial structures of the large vessels arising from the arch of the aorta.

With respect to the viscerai pericardium, there was apparently no extravasation of blood underneath this structure below the transverse sulcus, except on the right side, where the extravasation had apparently spread across the fibrous pericardium as it covered the large vessels arising from the arch of the aorta and had insinuated itself into the adventitial covering beneath the viscerai pericardium of the lower end of the superior vena cava and a portion of the right ventricle.

The structure of the aorta itself was definitely sclerotic, numerous atheromatous patches being present along the arch as well as in the thoracic portion. In the region of the upper aneurysmal sac, the medial wall was extremely thin and very friable. The dissected pocket in the adventitia had apparently been present for some time, and as a result the wall was quite smooth and very definitely thickened.

1720 Connecticut Avenue.

A POSSIBLE MISTAKE IN THE DIAGNOSIS OF GONOCOCCAL INFECTION OF THE KIDNEY

WITH REPORT OF A SUSPECTED CASE *

CHARLES H. DE T. SHIVERS, M.D.

Assistant Professor of Syphilology, University of Pennsylvania Graduate School of Medicine; Cystoscopist, Atlantic City Hospital; Chief of the U. S. Public Health Service for the Treatment of Genito-Urinary Diseases

ATLANTIC CITY, N. J.

There is an abundant literature concerning the types of kidney infection, and in the majority of instances these infections were mixed, that is, the urine collected from the diseased side contained two or more organisms. David¹ has isolated eighteen different types of aerobic and anaerobic organisms from infections of different parts of the urinary tract. Many of them, however, do not involve the kidney. In cases in which urine was collected directly from the kidney pelvis, he found that the *Bacillus coli* type occurred in 90 per cent., and the pyogenic cocci in 5 per cent. of the cases.

Most of the infections are easily differentiated by the bacteriologist, but in a few cases a possible error might be made, unless a most exhaustive laboratory study is carried out to determine the nature of the invading organism. Two such bacteria will be under discussion in this paper, namely, *Micrococcus catarrhalis* and the gonococcus. There is very little literature² available

on the former micro-organism, and in none that I reviewed was the kidney the seat of infection; nor in any of these cases infected with *Micrococcus catarrhalis* was the organism found in the urine in either voided or catheterized specimens. This organism is commonly found in the sputum in inflammatory conditions of the respiratory tract, and at times in multiple abscesses or on the mucous membrane of the anterior urethra, where it may produce a catarrhal urethritis which generally responds readily to treatment.

*Micrococcus catarrhalis*³ may grow profusely on plain and dextrose agar and retain its characteristic appearance in frequent and long continued subculturing, and there is no tendency to ferment sugars.

In considering the latter infection of the kidney, we have reported to date in our literature⁴ twenty-seven cases of gonococcal infection of the kidney. Only fourteen out of these twenty-seven cases were a pure gonococcal infection; in the remainder, the infection was mixed. In twelve of these cases, the diagnosis was made by stained smears of material from the infected kidney, and in the remainder the laboratory tests consisted mainly of growing cultures on blood serum, serum agar, ascitic fluid and staining with the usual Gram stain. In none was mention made of the agglutination reaction or the complement fixation test in aiding the diagnosis.

As *Micrococcus catarrhalis* is not mentioned in the literature as a possible error in diagnosis with that of the gonococcus, its presence as an exciting factor in infections of the kidney must be extremely rare.

REPORT OF CASE

History.—S. S., a man, aged 20, white, in the fruit business, reported first for examination and treatment, Nov. 23, 1920, because of a urethral discharge that he first noticed three days before. The family history was negative. He was exposed to infection six days before. There was a slight urethral discharge, with burning during urination. The first urine was cloudy, and the second was clear with light shreds. A urethral smear made at this time showed many pus cells with gram-negative, intracellular and extracellular diplococci resembling the gonococcus. Treatment was immediately instituted, and on December 12, there was no urethral discharge, and both urines were clear. The secretions from the prostate gland, December 30, contained fifteen pus cells to the high power field. Jan. 14, 1921, there were many pus cells in the prostatic smear, and on February 2, the smear from the prostate was negative. The patient discontinued treatment after February 16, and at that time both urines were clear.

He returned again, August 21, with a slight urethral discharge, having been exposed two weeks before. The first urine was cloudy and the second hazy. The smears taken from the urethra showed many pus cells and a few pus cells containing many pairs of gram-negative intracellular diplococci resembling the gonococcus. The prostatic smear showed 26 pus cells to the field. There was no stricture formation anywhere along the urethra. December 12, the smears from the prostate and vesicles were negative. Both the first and the second urine voided remained hazy, but there was no urethral discharge.

3. Mallory and Wright: Pathological Technique, Ed. 6.

4. Gerster, A. G.: New York M. Month. 9: 189-219 (April 20) 1897. Dodge, W. T.: J. Michigan M. Soc. 4: 58 (Feb.) 1905. Lewis, B.: J. Cutan. & G.-U. Dis. 18: 395 (Sept.) 1900. Wynn, W. H.: Lancet 1: 352 (Feb. 11) 1905. Lewis, B.: M. Rec. 70: 521 (Oct. 6) 1906. Sellei, J., and Unterberg, H.: Berl. klin. Wchnschr. 44: 1113-1115 (Sept. 2) 1907. Hagner, F. R.: M. Rec. 79: 569 (Oct. 1) 1910. Nixon, P. I.: Surg., Gynec. & Obst. 12: 331 (April) 1911. Marcuse, B.: Therap. Monatsh. 17: 73-78 (Feb.) 1903. Weisswange, F.: München. Med. Wchnschr. 55: 967-968 (May 5) 1908. Stanton, E. M.: Urol. & Cutan. Rev. (Tech. Supp.) 1: 179 (April) 1913. Hoover, F. B.: Interstate M. J. 22: 163 (Feb.) 1915. Boyd, M. L.: Surg., Gynec. & Obst. 21: 506-510 (Oct.) 1915. Buerger, L.: New York M. J. 108: 1022 (Dec. 14) 1918. Simons, J. Urol. 7, February, 1922. Lehr, L. C.: Report of a Case of Gonorrheal Pyelitis, J. A. M. A. 59: 36 (July 6) 1912. Barney, J. D.: J. Urol. 9, January, 1923.

* Read before the Philadelphia Urological Society, Feb. 26, 1923.

1. David: Surg., Gynec. & Obst. 18: 432, 1914.

2. Walker, I. C., and Adkinson, J.: J. M. Res. 30: 373, 1916. Mayer, A.: Deutsch. med. Wchnschr. 45: 660, 1919. Clark, P. J., and Murphy, E. J.: J. Infect. Dis. 20: 306 (July) 1921.

The patient had had double pneumonia thirteen years before, but no other illness. He had never been troubled with a cough or sore throat. He had voided urine very frequently ever since he could remember, passing a small amount each time, and was a bed wetter until the age of 8 years. There had never been any difficulty in starting the stream, or pain on voiding.

TABLE 1.—Results of Agglutination Reactions, Cultures of the *Diplococcus* Being Employed as Antigen

	Serum							Antigen Control
	1:20	1:40	1:80	1:160	1:320	1:500	1:640	
Gonococcus.....	2	2	1	1	—	—	—	—
Catarrhalis.....	2	2	3	2	2	1	1	—
Meningococcus—								
Type I*.....	3	3	2	1	—	—	—	—
Type II.....	2	2	—	—	—	—	—	—
Type III.....	2	2	2	—	—	—	—	—
Type IV.....	2	2	2	1	—	—	—	—

* Gordon classification.

The patient continued to report for treatment on account of hazy urines. There are no other clinical signs of infection.

Physical Examination.—The patient was well developed and well nourished. There was nothing abnormal with the head, throat, chest, abdomen, back, extremities or external genitalia. The urine passed in two glasses was hazy, with light and heavy shreds, and smears showed a few gram-negative extracellular and intracellular diplococci. The analysis showed a slightly acid reaction, specific gravity 1.005, albumin a very faint trace, sugar negative. The high power field showed many pus cells, and a few red blood cells, about four to the field, occasional epithelial cells, and no casts. The blood pressure was: systolic, 125; diastolic, 85; pulse pressure, 40.

The first cystoscopic examination was made, Dec. 16, 1922, on account of persistently hazy and cloudy urine, and in the absence of any demonstrable urethral discharge.

The bladder capacity was only 140 c.c. The mucous membrane was normal in appearance, with marked trabeculation on the lateral walls of the bladder and fine trabeculation on the anterior wall. The trigon was markedly elevated, with the ureteral orifices situated close together. About the orifice of the right ureter, there was some puffiness, with slight congestion of the mucous membrane. Both ureters were catheterized, and the catheter extended to the pelvis of the kidney without meeting any obstruction. The urine coming from the left catheter was clear; that from the right, cloudy. Five cubic centimeters of indigocarmine was injected intravenously. It appeared from the left side in four minutes and from the right side in five and one-half minutes. There was marked intensity in one-half minute after the first appearance on both sides.

TABLE 2.—Results of Agglutination Reactions with *Gonococcus* and *Catarrhalis* Serum, and Known *Gonococcus* and *Catarrhalis* Antigens*

	Serum							Antigen Control
	1:20	1:40	1:80	1:160	1:320	1:500	1:640	
Gonococcus.....	4	4	4	4	4	2	1	—
M. catarrhalis.....	2	2	—	—	—	—	—	—

* In Tables 2 and 3, 4 indicates complete agglutination; 3, 75 per cent. agglutination; 2, 50 per cent. agglutination; 1, 25 per cent. agglutination; —, less than 25 per cent. agglutination.

Laboratory examination of the catheterized specimen from the right kidney revealed the urine straw colored and turbid. The reaction was very slightly alkaline. There was a trace of albumin. Sugar was negative. There were about 135 pus cells to the high power field, an occasional epithelial cell, and no casts. The urine from the left kidney was straw colored and clear. In reaction it was alkaline. There was a trace of albumin; sugar was negative. There were few red blood cells to the field, no pus and no casts. A smear from the right kidney disclosed three cells on a

slide, containing quite a few pairs of gram-negative intracellular diplococci resembling the gonococcus. A smear from the left kidney, with Gram's stain, showed no pus and no organism.

A bacteriologic examination was made by Dr. John A. Kolmer and Dr. Malcolm J. Harkins of urine collected from the pelvis of the right kidney. This made a correct diagnosis possible. Dr. Kolmer reported that the specimen of urine showed the presence of gram-negative diplococci which were sometimes intracellular. From this standpoint, he thoroughly agreed that the cocci resembled the gonococcus very closely. Cultures proved disappointing, as there was no growth. Probably the failure at this time to cultivate the organism was due to the fact that the urine was collected fourteen hours before it was delivered to the laboratory, although during that time it was left in the incubator.

The third cystoscopic examination was made, Feb. 1, 1923. The urine was collected from the right kidney at 10 in the morning, and delivered to the laboratory before 1 o'clock in the afternoon. It might be of interest to mention that the bladder capacity had increased to 275 c.c., with marked decrease in the amount of frequency, although no treatment had been given in the interval.

During all of the cystoscopic examinations, great care was taken to sterilize thoroughly the anterior urethra before passing the cystoscope, and to cleanse thoroughly the bladder by repeated washings with sterile distilled water before introducing the catheterizing telescope. The catheter for the

TABLE 3.—Results of Complement Fixation Test, Cultures of the *Diplococcus* Being Employed as Antigen*

	Serum Dilution				Serum Controls			
	1:5	1:10	1:20	1:40	1:5	1:10	1:20	1:40
Gonococcus.....	4	4	3	1	3	—	—	—
Meningococcus Type I†.....	—	—	—	—	—	—	—	—
Meningococcus Type II.....	—	—	—	—	—	—	—	—
Meningococcus Type III.....	—	—	—	—	—	—	—	—
Meningococcus Type IV.....	—	—	—	—	—	—	—	—

* The antigen consisted of a forty-eight hour growth on human blood agar suspended in 0.25 per cent. phenolized salt solution, heated one hour at 60 C.

† Gordon classification.

right kidney was introduced in the ureter immediately, and not allowed to scrape over the bladder surface.

I had hoped to enter this patient in the hospital for a further study of the right kidney and ureter by roentgen ray and pyelogram, to try to determine if possible the predisposing cause of the infection, but he refused. However, I think we are safe in concluding that this is a case of simple pyelitis, with the findings to date of a normal dye output, and no evidence at any time of casts in the urine examined.

DETAILED REPORT OF LABORATORY FINDINGS

Microscopic Examination of Sediment of Urine.—There were a few gram-negative diplococci, mostly extracellular. For the bacteriologic examination, the sediment collected from the centrifugalized urine was cultivated on a human blood agar plate incubated forty-eight hours at between 37 and 38 C., and examined. Plate 1 revealed approximately twenty-five colonies, apparently in pure culture, approximately 0.5 mm. in diameter, of slow growth, round, smooth, convex, entire, translucent, with no hemolysin, and no coloring of the medium. Microscopic examination revealed a diplococcus, biseuit shaped, gram-negative, not clumped. Cultures on human blood agar were of very slow and scant growth, with a tendency to form colonies. After three or four generations, growth was more abundant, was moderate, filiform along the line of inoculation, raised, glistening, smooth, translucent, with no odor, and of somewhat viscid consistency; the medium was not changed; the water of condensation was clear; there was a precipitated growth at the bottom. Huntton's⁵ plain hormone or vitamin agar and bouillon yielded no growth.

Sugar reactions were: 1 per cent. glucose serum bouillon, 1 per cent. maltose serum bouillon, 1 per cent. saccharin

5. Huntton, F. M.: J. Infect. Dis. 23: 169 (Aug.) 1918.

serum bouillon and 1 per cent. levulose serum bouillon, no acid or gas. The cultures resembled *Micrococcus catarrhalis* more than the gonococcus, and the sugar reactions indicate that the organism is *Micrococcus catarrhalis*, which is known not to ferment sugars.

The antigen of the diplococcus consisted of a forty-eight hour growth on human blood agar suspended in 0.25 per cent. phenolized salt solution, heated one hour in a water bath at 60 C.

The agglutination tests showed that gonococcus serum agglutinated a known culture of gonococcus in a final dilution of 1:640, but the urine diplococcus in only 1:160; this indicates that the diplococcus was not the gonococcus.

These results indicated that the urine diplococcus may be the gonococcus, but additional tests with a known gonococcus antigen have shown positive results with higher dilutions of serum, indicating that the urine diplococcus is not the gonococcus, but has yielded a group reaction analogous to the agglutination reactions.

The report states that there was no growth on some of the plain mediums, while in others the growth was very scanty. The one outstanding point in favor of the organism's being *Micrococcus catarrhalis* is that it did not ferment sugars. However, it would have been difficult to come to any definite conclusion without the aid of the complement fixation and the agglutination tests.

MODE OF INFECTION

We know that the kidney and its pelvis may become infected through the blood stream, through the lymph supply, or by extension of suppuration from neighboring structures, and ascending infection or infection by continuity. Bacteria may pass from the infected blood stream through the normal kidney without producing disease if these bacteria are few in number and of the less virulent type. But if there exists a defect in the kidney itself, or one resulting in the stagnation of urine in the kidney pelvis, an infection is likely to follow. In this case we cannot prove the predisposing cause, but it must exist, as *Micrococcus catarrhalis* is usually but not always an organism of low virulence. The route of infection was in all probability by the blood stream. The type of infection of the lower genito-urinary tract would lead us to believe that in this case we are dealing with two entirely different infections, although existing simultaneously.

CONCLUSIONS

1. In morphology, the gonococcus and *Micrococcus catarrhalis* are practically identical. No one can safely differentiate them by morphology and staining.
2. The case reported in this paper shows how easily this infection of the kidney could have been mistaken for gonorrhea, had not a very careful bacteriologic study been made.
3. It is not possible in all cases of gonococcal infection of the kidney to make a diagnosis from cultural characteristics alone.

121 South Illinois Avenue.

Why the Ectoplasm Failed to Materialize.—Among the papers left by the late Professor R  non of Paris was a description of his investigation of a celebrated medium of ectoplasm fame. The sitting was in a private house, and R  non took newly bought garments for the medium to wear, had all the furniture except the chairs removed from the room, and sealed the openings. Then he examined the medium's mouth, nose and rectum, and had him put on the new clothing. The medium offered the guests a drink from a bottle he had brought with him, but R  non protested against any drinking. R  non's paper is published in full in the *Echo m  dical du Nord*. Strange to relate, the s  ance was a failure. No materialization of any kind occurred, no ectoplasm appeared.

EFFICACY OF ANTIVARIOLAR VACCINATION IN THE PHILIPPINES DURING 1921 AND 1922

REGINO G. PADUA, M.D.
Senior Surgeon, Philippine Health Service
MANILA, P. I.

Heiser and Leach,¹ in their article entitled "Vaccination in the Philippines Still Effective," presented a summarized study regarding the possible causation of the outbreak of smallpox in 1918, and of the casualties of the disease up to 1920. In the same article, some of the many difficulties encountered in the way of vaccination were pointed out. In the present paper I shall attempt to supplement what was said on the immunizing value of antivariolar vaccination, as observed in the last two years.

For the purpose of this study, an analysis of all available statistics, on the morbidity and the mortality of smallpox and on the results of vaccination during 1921 and 1922, has been made.

MORBIDITY AND MORTALITY RATES IN GENERAL

In Manila, where there had been preformed every year higher proportions of successful vaccinations, smallpox completely disappeared in 1921 and 1922; the last five cases, with three deaths, occurred in 1920. In

TABLE 1.—Morbidity and Mortality Rates* per Ten Thousand Population as Compared with the Percentage of Population Immunized † During 1921

Division	Morbidity Rate	Mortality Rate	Percentage of Immunized Population in 1921
Manila.....	0	0	30.22
The provinces.....	0.45	0.14	17.06
Mindanao and Sulu.....	18.76	9.57	14.78
Average.....	1.58	0.73	17.31

* Rates based on population of each division.

† Those estimated with + "takes."

the provinces and in Mindanao and Sulu, the disease could be controlled to its possible minimum, there being a total morbidity and mortality rates, per 10,000 population, of 1.58 and 0.73, respectively, in 1921.

It is noteworthy that, in places where the percentage of immunized population was the highest, the morbidity and mortality rates have been the lowest, and conversely—in other words, in Mindanao and Sulu, where there have been more numerous obstacles to successful vaccination; hence, the estimated percentage of immunity being only 14.78 per cent., the morbidity and mortality rates had been during the year relatively more exuberant: 18.76 and 9.57, respectively.

Up to the time this paper was written, the returns of 1922, from five provinces under the Division of Provincial Sanitation, show 126 cases with twelve deaths from smallpox and, from one province under the Division of Mindanao and Sulu, fourteen cases with seven deaths. The morbidity and mortality rates per 10,000 population for the former were approximately 0.13 and 0.01, and for the latter 0.12 and 0.05, respectively. For comparison, such rates in 1920 were 0.17 and 0.10 for Manila, 11.85 and 4.97 for the provinces, and 89.48 and 46.45 for Mindanao and Sulu.

Obviously the disease is gradually disappearing. The vaccination process, systematically conducted every year

1. Heiser, V. G., and Leach, C. N.: Vaccination in the Philippines Still Effective, *J. A. M. A.* 79: 40 (July 1) 1922.

in all parts of the archipelago, has been the potent factor in this rapid reduction. As a result, 17.31 per cent. of the total population had been immunized in 1921, against 15.87 per cent. in the yearly average of ten years ending 1920.

Failure to obtain a higher percentage of immunized population in 1921 has been due to various causes. In

TABLE 2.—Percentage of Positive "Takes" on the Vaccinated

Periods of Time	Manila	The Provinces	Mindanao and Sulu	Total or Average
Aver., 1911 to 1920 inclusive.	52.95	65.02	58.85	64.32
1921.....	64.49	65.18	59.00	64.80
1922 *.....	74.22	61.19	52.93	61.02

* Up to November, 1922.

fact, experience has shown that it seems almost impossible to get a 100 per cent. positive "take" in tropical regions, unless an improvement is introduced to prevent the deterioration of the vaccine virus for a considerable length of time in hot weather. On the other hand, among those with negative "takes" there may be some who might have acquired previous immunity, and others in whom the results might have been misinterpreted by untrained sanitarians.

But, as far as the records are concerned, the percentage of positive "takes" during three periods of time may be comparatively expressed as in Table 2.

An inference may be drawn that, despite the supposedly low percentages of positive "takes," persistent vaccination of the unvaccinated, and revaccinations of those with negative "takes" every year, would perhaps produce complete immunization in all the islands in six or seven years. In an effort to explain the cause, in part, of the epidemic of 1918, it was stated² that at the beginning of the outbreak there were only 45.51 per cent. of the population immunized against the disease. With the present method, therefore, it is hoped that, if the duration of immunity conferred by successful vaccination is usually ten years, the time may not be reached for the expiration of immunity of the first batch that was vaccinated six or seven years ago.

SPECIFIC MORBIDITY AND MORTALITY RATES

The percentage distribution of the cases of smallpox that occurred in 1921 is given in Table 3.

In 1920, the disease occurred in twenty-seven out of thirty-eight provinces under the Division of Provincial Sanitation, and in seven out of nine provinces under that of Mindanao and Sulu. In 1921, it occurred in

TABLE 3.—Incidence in Percentage of the Vaccinated and Unvaccinated in 1921

Specification	Manila (None)	The Provinces (No., 302*)	Mindanao and Sulu (No., 1,160)	Total (No., 1,462*)
Vaccinated †.....	0	18.87	0.69	4.44
Unvaccinated.....	0	81.13	99.31	95.56

* Excluding the sixteen unclassified cases from the province of Camarines Sur and unreported ones from Mindoro.

† Only those with positive "takes."

twelve provinces under the former and four under the latter. In terms of the "protected" and "unprotected" population of the infected provinces during 1921, the morbidity rates of the vaccinated and unvaccinated persons, per 10,000 of each of the former, are likewise expressed, in Table 4.

This great discrepancy between the rate of the vaccinated cases and that of the unvaccinated, 0.40 and 6.04, respectively, clearly shows the protective value of vaccination against the disease. In similar manner, it can be shown that the mortality rates among the vaccinated is much lower than that among the unvaccinated.

As might be expected, 61.03 per cent. out of 1,478 cases occurred among the young population, against 38.97 per cent. among the adults (Table 5).

Further analysis similarly shows that the specific morbidity rate among children was relatively greater than that among adults (Table 6).

The relation of the morbidity rates and the percentages of immunized population in 1921 among the adults does not seem to follow that among the young. But, although vaccinations and positive "takes" in Mindanao and Sulu had been comparatively more frequent

TABLE 4.—Specific Morbidity Rates in Immunized and Non-immunized Cases, per Ten Thousand of Vaccinated and Unvaccinated Population, in 1921

Population	The Provinces	Mindanao and Sulu	Total or Average*
Immunized.....	0.37	0.88	0.40
Nonimmunized.....	1.18	49.22	6.04
Total or average.....	0.84	35.64	3.72

* Excluding the immunized and nonimmunized population of Manila.

TABLE 5.—Percentage of Cases in 1921 by Age Groups

Age Group	Manila (None)	The Provinces (No., 318*)	Mindanao and Sulu (No., 1,160)	Total or Average (No., 1,478*)
Children.....	0	65.09	59.91	61.03
Adults.....	0	34.91	40.09	38.97

* Excluding unreported cases from the province of Mindoro. There had been altogether 399 cases under the Division of Provincial Sanitation instead of 318.

TABLE 6.—Specific Morbidity Rates per Ten Thousand of Children and Adults, Respectively, as Compared with the Specific Percentage of Immunized Inhabitants in Each of the Two Groups, During 1921

Division	Children		Adults	
	Morbidity Rate	Per Cent. of Immunized Population	Morbidity Rate	Per Cent. of Immunized Population
The provinces.....	0.71	24.26	0.18	13.58
Mindanao and Sulu.....	35.86	11.07	10.95	16.47

among the adults—the successful vaccination being in the proportion of 75.77 per cent.—yet, only 0.69 per cent. of the 1,160 cases that occurred in that division were among the successfully vaccinated. Moreover, the specific morbidity rate of unvaccinated cases, per 10,000 of unsuccessfully vaccinated population in the infected localities of Mindanao and Sulu, had been relatively excessive, it being 42.94, against 1.40 of those with positive "takes."

On the other hand, it is surprising to note that such rates in the provinces under the Division of Provincial Sanitation were 0.93 for the vaccinated and 0.82 for the unvaccinated. But the statistical figures indicate that in the infected provinces under this division in which 65.09 per cent. of the cases occurred in children, only 38.18 per cent. of the vaccinations with positive results were among the latter. The large remaining number of susceptible young "unprotected" population became affected more severely, which might perhaps have enhanced the endemic curve among the vaccinated. In

2. Council of Hygiene: Report on Smallpox and Vaccination in the Philippines, submitted to the Director of Health, Jan. 19, 1923.

her words, the virulent strain had presumably increased the chances of infecting some of those with positive "takes" during the year, by overcoming the resistance and immunity afforded by vaccination. This phenomenon had occurred in the provinces of Albay, Capiz, Cebu and Negros Occidental, in which the number of cases among the successfully vaccinated showed a slight increase over the other infected regions; namely, the provinces of Iloilo, Masbate, Negros Oriental, Pampanga, Romblon and Sorsogon. In the former provinces, a total of 47.47 per cent. of the ninety-nine cases occurred among the vaccinated, while in the latter, 4.93 per cent. out of 203 cases occurred in that group. Again, in the former, the specific morbidity rates for the vaccinated were 1.73 per 10,000 of immunized population, and 0.31 for the unimmunized; while, in the latter, such rates were 0.36 and 1.73, respectively. The mortality rates in the two groups were likewise 0.28 and 0.53 per 10,000 inhabitants of the provinces concerned.

However, it is estimated that in that year, only 14.05 per cent. of the population in the former group, against 9.78 per cent. in the latter, were successfully immunized. The percentage fatalities (per hundred cases) in both groups were 54.54 and 30.88, respectively. It may, therefore, be possible that perhaps a large number of the smallpox cases that occurred dur-

TABLE 7.—Specific Morbidity Rates in Infected Provinces of Mindanao and Sulu, as Compared with the Total or Average

Localities	Vaccinated in 1921 with Positive Results		Not Vaccinated or Unsuccessfully Vaccinated in 1921	
	Popula- tion	Morbidity Rate	Popula- tion	Morbidity Rate
Mindanao and Sulu.....	57,131	1.40	268,301	42.94
Total or average of the provinces, and Min- danao and Sulu.....	670,035	0.97	3,257,398	4.29

ing 1921 in the first group of infected provinces showed positive vaccination scars in which the immunity had already waned, owing to the length of time that had elapsed. Moreover, the determination of positive "takes" of either recent or old vaccinations has been in certain instances occasionally difficult, especially for untrained sanitary inspectors.

Limiting our studies to six infected and representative provinces, the specific morbidity rates of immunized cases per 10,000 of immune population were high in those in which the percentages of immune population were low, and conversely. This is clearly indicated in Table 8.

Other measures, such as isolation or hospitalization and adequate treatment of the cases, and disinfection of the premises, had to some extent modified the incidence of the unvaccinated among the "unprotected" population in the infected localities.

The necessity of immunizing the young population in the provinces, as is being done more vigorously in Manila, may be shown by Table 9, in which it is observed that in provinces where there is relatively a greater proportion of children, the specific morbidity rates among them were generally greater.

It may be surprising to note that in the province of Romblon, in which the percentage of immunized population in 1921 had been high (27.63 per cent.), the specific morbidity rates in children and adults were likewise high; but it should be recalled that this province

had contributed the largest number of cases (ninety-four), all of which were in unvaccinated persons. Moreover, it had the largest total morbidity and mortality rates among the infected provinces; 14.15 and 5.72 per 10,000 population, respectively. On the other hand, in the province of Sorsogon, in which more than half of the total population (55.48 per cent.) was success-

TABLE 8.—Specific Morbidity Rates per Ten Thousand Immune and Nonimmune Population, Respectively, as Compared with the Percentage of Immune on the Total Inhabitants of Each Province Concerned, During 1921

Provinces	Morbidity Rates		Percentage of Immunized Population
	Immunized	Nonimmunized	
Albay.....	2.21	0.21	13.49
Capiz.....	3.67	1.14	13.01
Masbate.....	6.26	2.83	4.49
Oriental Negros.....	1.63	2.70	17.06
Romblon.....	0	19.55	27.63
Sorsogon.....	0	0.48	55.48
Total or average.....	1.32	2.37	20.80

fully vaccinated in 1921, and incidentally an equal proportion was of the young population, the specific morbidity rate was only 0.67 per 10,000 of the latter, and no case occurred among the adults.

As has been previously pointed out, the incidence of smallpox during 1922 has been epidemiologically negligible; and the relation of the disease to successful vaccination anywhere in the islands is practically the same; namely, that generalized and systematic vaccination with positive result renders relative immunity to the public, as well as to the individual against smallpox infection, diminishes the case fatality, and, in terms of population, lessens the mortality rate.

CONCLUSION

1. Interpreting the foregoing statistical results, it is firmly believed that protection of the public is afforded by systematic and successful antivariolar vaccination. There are no other factors to which the eradication of smallpox in Manila and the rapid reduction of the morbidity and mortality rates in the provinces during 1921 and 1922 may be chiefly ascribed.

2. Failure to get a higher percentage of positive "takes" than 70 has been due, in large measure, to the inability of maintaining the potency of the vaccine virus, now employed, under tropical conditions. But this can-

TABLE 9.—Percentage of Children and Adult Population, and Specific Morbidity Rates (per Ten Thousand) Among Them, in 1921

Provinces	Percentage of Population		Morbidity Rate	
	Children	Adult	Children	Adult
Albay.....	33.51	66.49	0.27	0.58
Capiz.....	34.82	65.17	2.45	0.94
Romblon.....	33.96	66.04	34.12	3.87
Sorsogon.....	55.48	44.52	0.67	0
Total or average....	33.59	66.41	3.68	0.82

not oblige the Philippine Health Service to lay aside the hope that, with persistent efforts in vaccinating and revaccinating yearly the susceptible and the non-immunes, the time will come when the public in general will be completely immunized to withstand subsequent epidemics. It is roughly estimated that this may be attained every six or seven years, if the present system is continually kept up. Moreover, our sanitary inspectors (vaccinating parties) are now becoming more

trained and experienced in the appreciation of positive "takes" and in the technic of the vaccination process.

3. In general, the specific morbidity and mortality rates of smallpox among the vaccinated have been the lowest in infected provinces in which the percentages of immunized population have been the highest, and conversely. On the other hand, all things being equal, the specific rates of the unvaccinated have been high in infected localities in which the percentages of immunized population have been low, and conversely also. Rare exceptions to this were due to the large number of susceptible children who became subsequently attacked with a more virulent strain that could not be overcome by the vaccination immunity, and those who, because of religious and various other causes, escaped vaccination.

4. On the whole, 61 per cent. of the cases during 1921 occurred among children, a great proportion of which were never vaccinated, or were unsuccessfully vaccinated. The problem, therefore, fundamentally centralized in the compulsory vaccination of children, such as is now being practiced to include infants of even 1 month old or under. And it is hoped that with subsequent modification of the vaccine virus to resist deterioration in hot weather, the actual endemic occurrence of the disease, in certain sections of the islands, will be completely done away with.

FATAL HEMORRHAGE FROM ERODED ARTERIA CYSTICA OF THE GALLBLADDER *

RICHARD H. JAFFÉ, M.D.
CHICAGO

Two acute dangers threaten the life of persons suffering from chronic peptic ulcer: the perforation of the ulcer into the peritoneal cavity, and fatal hemorrhage from eroded blood vessels. Fatal hemorrhages are comparatively rare events in chronic gastric ulcers. Da Costa¹ reports that only 3 to 8 per cent. of persons actually die of hemorrhage. The spread of an ulcer sometimes, though not as often as it is generally considered, causes obstruction of the blood vessels in its base by inflammatory changes in the vessel walls and by thrombosis. In this way larger hemorrhages may be prevented. But, on the other hand, the contractibility of a blood vessel embedded in the firm, cicatrized tissue of the ulcer may be impaired and so increase the possibility of abundant bleeding from smaller vessels.

My own experience is based on fifty-five cases in which the patients have died from peptic ulcer of the stomach or duodenum. In 41 per cent. of the cases perforation, and in 20 per cent., fatal hemorrhage had occurred.

Sometimes a large hemorrhage of the stomach is produced by the existence of a great many erosions of the mucous membrane, without the opening of a larger blood vessel. In most of the cases, however, a gaping vessel of larger or smaller caliber can be noted in the floor of a peptic ulcer. These eroded blood vessels are in the majority of cases arteries, especially branches of the coronary arteries of the stomach, of the gastropiploic arteries, or the arteria gastroduodenalis or

lienalis. Kaufmann,² and Finsterer and Glaessner reported cases in which the ulcer had involved the spleen and led to an erosion of a branch of the lienal artery. Noelle⁴ and Morrison⁵ observed cases with fatal hemorrhages from the eroded liver. Merkel,⁶ in a case of chronic gastric ulcer with abundant hemorrhage, recognized the bleeding blood vessel as the left vena renalis.

A very uncommon and interesting cause of fatal hemorrhage from a chronic gastric ulcer was noted in a necropsy which I performed recently at the request of the attending physician, Dr. Siebel.

A woman, aged about 70, well nourished, died suddenly after she had vomited large masses of blood. At necropsy, the skin was yellowish white; the mucous membranes were very pale. There were only a few livid patches. The lower extremities showed rigor mortis. The peritoneal cavity contained about 1 liter (quart) of dark red fluid blood. The intestine was distended. Dark red masses filled its lumen, as seen through its wall. The lesser curvature and the adjacent part of the anterior wall of the stomach above the pylorus were covered by, and fixed to, the lower edge of the right lobe of the liver and to the gallbladder. This connection was interrupted on the right and upper side in the region of the gallbladder. A round hole with a diameter of about 1 cm. gaped here. Clots of coagulated blood partly closed this hole. When the stomach was opened, two ulcers were seen just above the pylorus. One of them was located on the posterior surface. It was oval in a diagonal direction, and its diameter amounted to from 1.5 to 2.25 cm. Its shelving edges were indurated, and its floor was formed by the pancreas. The other ulcer involved the lesser curvature and a considerable part of the anterior wall. It was round, with a diameter of 2 cm., and it entirely penetrated the wall of the stomach. Its base consisted, in the lower part, of liver tissue deprived of the capsule and ulcerated; in the upper part, of the gallbladder. The wall of the gallbladder was there changed into a blood-stained ulcer, in the center of which gaped the lumen of an eroded artery. This proved to be the arteria cystica, a branch of the arteria hepatica. The liver was very pale yellowish brown, and firm. The ulcer on its lower edge was oval and smooth, with an almost black vascular injection. The gallbladder contained dark green bile; its mucosa showed no changes.

In the anatomic diagnosis may be noted: fatal hemorrhage from the eroded cystic artery of the gallbladder, the erosion being due to a peptic ulcer of the stomach, that had eroded the gallbladder and the right lower edge of the liver; chronic peptic ulcer of the posterior wall of the stomach; anemia of the organs; emphysema pulmonum; dilatation of the left ventricle of the heart, and a few small sclerotic plaques in the coronary arteries.

2. Kaufmann: *Spezielle pathologische Anatomie* 1, 1912.

3. Finsterer and Glaessner: *Mitt. a. d. Grenzgeb. d. Med. u. Chir.* 27: 1, 1913.

4. Noelle: *Inaug. Diss.*, Greifswald, 1899.

5. Morrison, Rutherford: *Stomach*, in *Treatise on Regional Surgery* 2: 59.

6. Merkel: *Virchows Arch. f. path. Anat.* 173: 1, 1903.

The Neanderthal Man.—The most famous of the skeletal remains representing men of the old Stone Age, when surgery had its first recorded existence, are portions of a skeleton of an extinct species of man found in a cave in the valley of the Neander River, in the Rhine province of Prussia; hence the individual is known as the Neanderthal man. The proximal end of the left ulna had evidently been fractured, since there is a marked widening of the articular fossa. The left humerus also shows signs of injury, in consequence of which it doubtless remained much weaker than the right bone. Virchow thought the condition of the bones of this ancient man indicated rickets, but Schwalbe restudied the question and decided that there was no evidence of malnutrition, and his conclusions are widely accepted.—Moodie: *The Antiquity of Disease*, University of Chicago Press, 1923.

* From the Department of Pathology, University of Illinois College of Medicine, and the Uihlein Memorial Laboratory of the Grant Hospital.

1. Da Costa, J. C.: *Modern Surgery*, 1920, p. 1096.

EXPERIMENTAL STUDIES WITH MERCURIALS IN EXPERIMENTAL SYPHILIS

WITH A BRIEF NOTE ON THEIR CLINICAL APPLICATION, ESPECIALLY AS TO FLUMERIN

JUSTINA H. HILL, M.S.
AND
HUGH H. YOUNG, M.D.
BALTIMORE

PREAMBLE, BY HUGH H. YOUNG
Clinicians generally acknowledge the supremacy of the arsphenamins in the treatment of syphilis, but, at the same time, from every branch of medicine comes

soldier was carried out while he was with his organization, on a duty status. This plan not only made it possible to continue the treatment longer and to give several courses in a year, but also had an excellent effect from the standpoint of morale, by keeping the soldier at the front.

Cursory observations made during the course of the war as to the results of the methods employed convinced me that there was great need for further experimentation, both laboratory and clinical, as to the treatment of syphilis—particularly to determine more satisfactory and sure methods in the use of mercury. When, therefore, in our clinical study of antiseptic mercurials which had been prepared by E. C. White in the chemical laboratory of the Brady Urological Institute, a salt of very low toxicity, which did not coagulate albumin and could be repeatedly injected intravenously was discov-

TABLE 1.—Experiments with Flumerin *

Rabbit	Pretreatment Period	Treatment Period	Posttreatment Period	Node Transfer
81	Left testicle and epididymis indurated throughout; small lesion left serotum; large nodule right testicle	Resolution, beginning after second dose, was complete by day of sixth dose	Held without further lesions 78 days after last dose, when node transfer was made	Negative, 90 days
82	Left testicle enlarged and indurated; nodular lesions right testicle; serotal lesion left side	Resolution of all lesions began after second dose; right testicle normal after 3 doses; resolution of other lesions complete by fifteenth dose	Held without further lesions 78 days after last dose, when node transfer was made	Negative, 90 days
79	Testicular lesion left side excised and 9 positive transfers made; nodular lesion right testicle	Resolution, beginning after second dose, was complete on day of fourth dose	Held without further lesions until forty-fifth day after last dose, when right serotal lesion developed, from which organisms were found by dark field	

* Fifteen doses of 5 mg. per kilogram given intravenously, six weekly, beginning the forty-ninth day after inoculation. Series selected because it parallels series treated with other mercurials.

the complaint of uncured cases or persistent Wassermann reactions after supposedly thorough courses of treatment. It has been more and more evident that some form of mercury is generally required to effect cure; but there is little agreement as to which preparation is the best.

I was greatly struck with this fact when commissioned to formulate routine methods of treatment for syphilis in the American Expeditionary Forces. Thorough investigations of the methods employed, particularly in the armies of our allies, showed a general agreement that neo-arsphenamin was the most practical drug for the initial treatment, and that some form of mercury should also be used; but here the agreement ceased. The British relied mostly on intramuscular injections of mercurial oil (gray oil) or mercurial cream, while the French and Italians employed either mercuric cyanid intravenously or mercuric benzoate or red mercuric iodid intramuscularly. In America, mercuric salicylate intramuscularly, or mercurial inunctions had apparently the preference, though mercuric chlorid, red mercuric iodid, yellow mercurous iodid and other forms of mercury, given in various ways, had wide usage.

The army syphilologists of France held that intravenous injections were preferable, as being more prompt and more benign in action; and, as we decided to treat our syphilitic patients with their organizations, and not to hospitalize them, we adopted the routine most commonly employed in the French army, viz., neo-arsphenamin, at first twice and later once a week, with intervening daily intravenous injections of mercuric cyanid. The plan adopted worked admirably. We did not need our hospitals which were sent over for venereal cases, and they were turned over to the wounded and sick, while the treatment of the syphilitic

TABLE 2.—Experiments with Mercuric Cyanid *

Rabbit	Pretreatment Period	Treatment Period and Posttreatment Period
202	Large nodular lesions of left testicle, 4 nodules left serotum	Left testicle became normal by fifth dose, the serotal nodules also resolving, with the exception of one, which at time of the thirteenth dose became worse, simultaneously with the appearance of a nodule in the left epididymis, 1 cm. in diameter; the lesion of the epididymis resolved rapidly, and was gone by the twenty-first dose; the serotal lesion persisted, grew worse after the last dose, and 6 days after the last dose, organisms were found in it by dark field
203	Left testicle excised and 5 positive transfers made; no further lesions	Treated in latent stage, with no lesions at any time during treatment; 35 days after the last dose, a nodule appeared in the right testicle from which organisms were found by dark field
212	Right testicle and epididymis indurated throughout; serotal lesion right side	Resolution of testicular lesion began at ninth dose, was complete by sixteenth dose; resolution of lesion of epididymis began after the thirteenth dose, and was complete by the nineteenth dose; the serotal lesion after growing worse at the time of the sixth dose, was completely resolved 6 days after the last dose; the testicle was atrophied; held without further lesions until fifty-seventh day after last dose, when node transfer was made, which was positive in 56 days
198	Left testicle indurated throughout, nodule right testicle; lesion left serotum	Lesions grew worse, a second serotal lesion developing on the left side the day of the sixth dose; lesions continued to grow worse, until on the day of the fifteenth dose, excision of the lesions of the left side was necessary, actively motile organisms being found in this material; nodules developed in the right epididymis the day of the eighteenth dose; resolution on the testicular lesion on the right side began the day of the twentieth dose, and was complete 5 days after the last dose; the nodules in the right epididymis persisted 57 days after treatment, organisms being found by dark field the fifty-seventh day after treatment

* Rabbits given twenty-one doses of 0.2 mg. per kilogram of mercuric cyanid intravenously, six weekly, beginning the forty-ninth day after inoculation.

ered, a series of animal experiments was determined on and carried out by J. H. Hill to see whether it had definite antisymphilitic value.

These studies with the new drug in rabbit syphilis showed such remarkable curative power that its usage in human syphilis was begun in cases in the Brady Urological Institute, the Johns Hopkins Hospital Department of Syphilis, and at the Walter Reed General Army Hospital. The results of some of this work

TABLE 3.—Experiments with Mercuric Salicylate*

Rab-bit	Pretreatment Period	Treatment Period
192	Entire right testicle enlarged and indurated, small serotal lesion on right side	No resolution of lesions, which grew worse, a second serotal lesion on the right side appearing after the fifth dose, simultaneously with the appearance of induration of left testicle; 2 lesions appeared on left serotum after sixth dose; all lesions grew worse, until, after tenth dose, excision of lesions on right side was necessary, a small number of organisms being found by dark field in this emulsion; one serotal lesion on left side then resolved, the other persisting
204	Large lesion left testicle, serotal lesion forming left side	Lesions grew worse on left side, a lesion appearing in right testicle at third dose; lesions grew worse, until, after fifth dose, excision of lesions on left side became necessary and organisms were found in them by dark field; a nodule appeared in the right epididymis after the sixth dose, the right testicular lesion resolving; this nodule began to resolve after the eighth dose, and was entirely gone 8 days after the twelfth dose; a nodule appeared in the right testicle 46 days after the last dose
205	Large lesion throughout left testicle	No change in lesion until after fourth dose, when it became worse, a serotal lesion developing on the left side at the sixth dose; this grew worse, breaking down the day of the eighth dose, when it was excised
211	Left testicle excised and 6 positive transfers made; right testicle indurated before treatment	Lesion remained the same until after the second dose, when it grew worse, a serotal lesion developing then; resolution of the testicular lesion began after the fifth dose and was complete in 8 days, resolution of the right serotal lesion beginning at the time of the seventh dose, complete after the tenth dose

* Rabbits given twelve doses of 0.6% mg. per kilogram of mercuric salicylate intramuscularly, at weekly intervals, beginning the forty-ninth day after inoculation.

TABLE 4.—Experiments with Red Mercuric Iodid*

Rab-bit	Pretreatment Period	Treatment Period
213	Right testicle and epididymis greatly enlarged and indurated	No change in lesions until twelfth dose, when serotal lesion appeared on right side, followed by second serotal day of twenty-first dose; the lesions of the testicle and epididymis resolved between the twenty-first and twenty-fifth doses; at end of treatment there remained 2 serotal lesions, 1 being 2 by 1.5 cm., the other 0.25 cm. in diameter; these gradually resolved, until no macroscopic lesions could be observed the twenty-fourth day after the last dose
215	Right testicle and epididymis indurated, 2 serotal lesions on right side	Lesions worse until after fifth dose, when marked improvement was noted, resolution continuing, serotal lesion being healed by twenty-first dose, the other by twenty-fifth dose, when the testicular lesion was also completely resolved; a 0.5 cm. nodule persisted in the right epididymis after treatment, until 2 weeks after the last dose, when resolution was complete
222	Part of lesion in right side excised, leaving right side enlarged and indurated throughout	Operative wound healed rapidly during treatment, the induration being gone by the fifteenth dose; held for observation and transfer
207	Well-developed 1.5 cm. lesion of right serotum	Lesion remained unchanged until eighteenth dose, when serotal lesion began to resolve, being completely healed by the twenty-first dose; a well-defined nodule appeared in the left testicle at the tenth dose, which had resolved by the twenty-second dose

* Rabbits given twenty-five doses of red mercuric iodid, six doses weekly, beginning about the fiftieth day after inoculation.

were presented in a previous paper.¹ Additional experience has shown the great value of the new mercurial, flumerin; but before proceeding further it seemed wise to apply the same methods of study of rabbit syphilis which had so effectively shown the spirocheticidal value

of flumerin to other mercurials now in common usage, which, strange to say, had never been done. The first drug selected was mercuric cyanid, which is widely used in intravenous injections, 1 c.c. of a 1 per cent. solution daily being the usual dosage. The amount used in our rabbits corresponded to this dose.

Other drugs commonly used in America are mercuric salicylate and red mercuric iodid intramuscularly, and it was thought wise to subject them to the same experimental tests so as to be able to compare all three with the results obtained with flumerin in rabbits infected with *Spirochaeta pallida*.

In the following brief report of her very valuable series of experiments, Miss Hill has not only accurately recorded the results, including the measurements of

TABLE 5.—Summary of Treatment of Fifty Cases with Flumerin

Stage of Syphilis	Number of Cases	Lesions Healed	Average No. of Days to Heal Lesions	Serologic Result (Blood)		Average No. of Doses to Reduce Wassermann
				Good	Poor	
Primary.....	5	4	22	4	1	3 remained 0
Secondary.....	21	21	19	11	10	1 case, 12 doses 8
Tertiary.....	24	19	25	9	15	10

GASTRO-INTESTINAL REACTIONS FROM FLUMERIN

Total Doses Given	Number of Injections Followed by				
	Immediate Nausea or Vomiting		Diarrhea		
	Mild	Severe	Cramps	Mild	Bloody
945.....	22 (2.3%)	19 (2.01%)	7 (0.7%)	10 (1.0%)	8 (0.9%)
	41 (4.3%)				

REACTIONS FROM FLUMERIN

Total Patients	Stomatitis		
	Total Cases	Mild	Severe
	96	36 (37.5%)	30	6 (6.2%)
	Urine Examinations		
	No Change	Existing Abnormalities Cleared up Under Flumerin	Transient Albuminuria or Casts During Treatment
	77	50	10 (12.9%)	17 (22%)
	Phenolsulphonephthalein Output		
	No Change	Increased Plus 10 or More	Decreased Minus or More
	61	36	16 (26.2%)	9 (14.7%)

the lesions from day to day, but, after holding the animals for prolonged periods, has tested out the permanence of the supposed cure by inoculation of the lymph nodes into other rabbits. Never before have mercurials been subjected to such exacting methods, and when her complete report is published, a most noteworthy contribution to syphilology will be presented.

EXPERIMENTAL WORK, BY JUSTINA H. HILL

At the time that the preliminary report¹ of our study of the action of flumerin on rabbit syphilis was made, there were no studies by the same method of the action of other mercurials, so that, while the marked antisyphilitic action of flumerin was demonstrated, it was not known whether this was greater or less than the action of the mercurials commonly used. Since then, syphilitic rabbits have been given the equivalent of the clinical course of treatment with mercuric cyanid, mercuric salicylate and red mercuric iodid. Although

1. White, E. C.; Hill, J. H.; Moore, J. E., and Young, H. H.: Flumerin: A New Mercurial for the Intravenous Treatment of Syphilis, J. A. M. A. 79: 887 (Sept. 9) 1922.

some of these experiments are incomplete, enough indication of the action of these drugs has been obtained to make a preliminary report of some value.

METHOD

Two ways are available for carrying *Spirochaeta pallida* infections in rabbits, with the initial lesion in the testicle or scrotum, methods developed by Brown and Pearce. By the first,² a rabbit with a progressing testicular or scrotal lesion is placed under ether anesthesia and the lesion excised with aseptic precautions. This material is placed in a mortar with a few cubic centimeters of physiologic sodium chlorid solution, minced with scissors and emulsified by grinding. If dark field examination shows the presence of organisms, the material is suitable for inoculation. This is done by injecting not more than 0.5 c.c. into the testicle or scrotum or both of normal rabbits. Unilateral inoculations are preferable, as the uninoculated side serves as a control at first. By the second method,³ the popliteal nodes of untreated syphilitic rabbits, which may or may not show lesions at the time of transfer, are excised, emulsified and injected as by the first method. Dark field examination of such material

overdilute the emulsion, the entire available fluid part of which is injected into the testicles of one rabbit. If this transfer animal remains without a lesion during ninety days of observation, it is concluded that the antisiphilitic action of the drug tested has been sufficient to drive the organisms from the popliteal nodes of the treated animal, from which Pearce and Brown⁵ have shown that they may be recovered regularly from untreated rabbits. A positive node transfer indicates subcurative action.

The method is of great value, because it allows the study of the action of drugs in latent syphilis, when the animal treated is without lesions, but from which a positive node-transfer may be obtained if subcurative treatment has been given, a marked advantage over earlier methods, which were limited to the observation of local lesions.

FLUMERIN

The experiments summarized in the first paper showed that flumerin has marked antisiphilitic action, if given either in large single doses or in repeated doses of 5 mg. or more per kilogram. When the tolerated single dose of 30 mg. per kilogram was given, in three out of four cases, node transfer was negative, in the

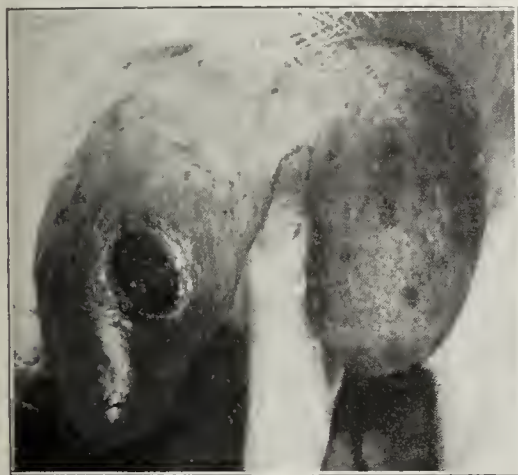


Fig. 1 (Rabbit 212).—Appearance of lesions before treatment: left side, normal; right side, testicular and scrotal lesions.

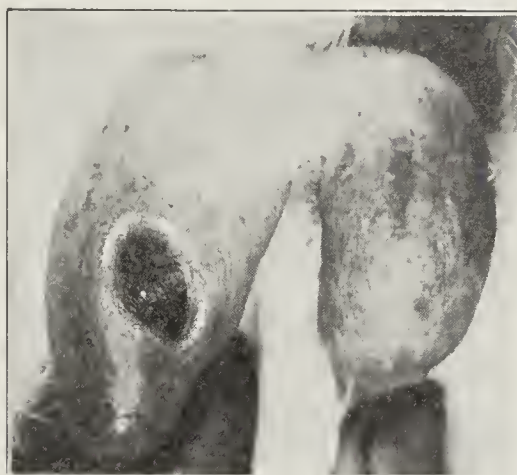


Fig. 2 (Rabbit 212).—After seven doses of mercuric cyanid: lesions on right side larger.

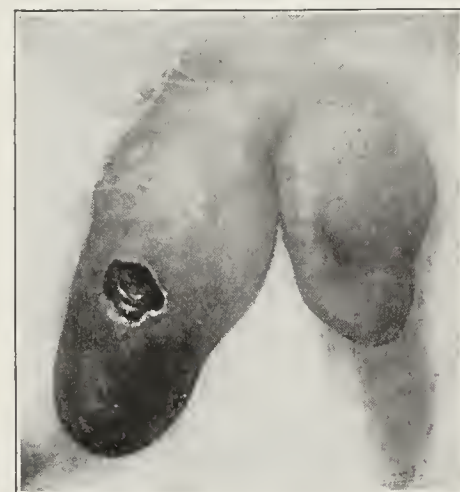


Fig. 3 (Rabbit 212).—After fourteen doses of mercuric cyanid: resolution in progress.

seldom shows organisms, although such transfers regularly produce the infection. The first method has been used in general in these experiments because more material is available for the inoculation of a number of animals from the same emulsion. The strain of organism used has been the Nichols⁴ strain, first isolated in 1912, and since carried in rabbits, an animal with a testicular infection with this organism having been given us through the kindness of Dr. Wade Brown. No *Treponema cuniculi* infections have been found.

Lesions at the site of inoculation develop from fourteen to thirty days after inoculation. Treatment may be started any time after the appearance of lesions, but most of these experiments have been done with fully developed lesions; that is, treatment has been started about the fiftieth day after inoculation. After treatment, animals in which lesions have resolved are held for observation, usually for about fifty days. If no relapse occurs during this time, popliteal node transfers are then made, the greatest care being taken not to

fourth, positive. All of these animals showed transitory albuminuria the day after treatment, which disappeared in three days. All lesions were resolved within five days. With the smaller single dose of 20 mg. per kilogram given four rabbits, the maximum number of days required for the resolution of lesions was eleven, and in only one case was the node transfer negative. One animal showed a transitory albuminuria.

Five animals were given from four to eight doses of 10 mg. per kilogram on alternate days. In no case was there any albuminuria. There was complete resolution of lesions in every case. In the two cases in which node transfers were made, they were negative.

Our chief interest has centered on the action of repeated doses of 5 mg. per kilogram, as this seems to be a dose which can be used clinically and which has shown marked action in rabbits. In the first series of five animals so treated, two of which showed a transitory albuminuria, resolution of lesions was prompt invariably, and node transfers were negative in every case. A second series of three animals, given fifteen daily doses of 5 mg. per kilogram, is described in Table 2, as these animals have been treated under conditions

2. Brown, W. H., and Pearce, Louise: Experimental Syphilis in the Rabbit, I, Primary Infection in the Testicle, J. Exper. Med. **31**: 75 (April) 1920.

3. Brown, W. H., and Pearce, Louise: Latent Infections with the Demonstration of *Spirochaeta Pallida* in Lymphoid Tissues of the Rabbit, Am. J. Syph. **5**: 1 (Jan.) 1921.

4. Nichols, H. J., and Hough, W. H.: Demonstration of *Spirochaeta pallida* in the Cerebrospinal Fluid, J. A. M. A. **60**: 108 (Jan. 11) 1913.

5. Pearce, Louise, and Brown, W. D.: A Study of the Relation of *Treponema Pallidum* to Lymphoid Tissues in Experimental Syphilis, J. Exper. Med. **35**: 39 (Jan.) 1922.

as parallel as possible to those under which other mercurials have been given. Node transfers from two of these animals were negative; in the third case there was a relapse. With a total of eight rabbits, therefore, given repeated doses of 5 mg. per kilogram, in every case resolution of lesions has been rapid; in seven node transfers were negative, and in one case there was a relapse.



Fig. 4 (Rabbit 204).—Appearance before treatment: left testis indurated; scrotal lesion forming on left side.

No further experiments have been done with repeated doses of 3 mg. per kilogram, which was shown to be subcurative in three out of the four cases tried, only one giving a negative node transfer.

MERCURIC CYANID

The details of the experiments with mercuric cyanid are given in Table 2. The drug was given intravenously, in doses of 0.2 mg. per kilogram, six weekly, with a total of twenty-one injections. The cyanid, as an intravenous mercurial, is the most comparable to flumerin. The important facts shown in Table 3 are these: In one case, Rabbit 203, treated in the latent state, although there were no lesions during treatment, nodules developed thirty-five days after the last dose, from which numerous organisms were found by dark field examination. Two rabbits had lesions which persisted throughout treatment and from which organisms



Fig. 5 (Rabbit 204).—Four days after third dose of mercuric salicylate: large lesion on right testis; scrotal lesion on left side worse.

were found after treatment. In one case, Rabbit 198, the scrotal lesion on one side became so much worse during treatment that excision was necessary the day of the fifteenth dose, when organisms were found in the emulsion. In only one case, Rabbit 212, has there been complete resolution of lesions, following the appearance of a new lesion during the first part of the treatment, node transfer from this animal, however, being positive in fifty-six days.

These experiments show that this treatment is subcurative in four cases, and that in the only case in which there was marked therapeutic action the resolution of lesions was so gradual that it would be impossible to distinguish it from the resolution of untreated lesions. Node transfer has been positive from this animal. These experiments parallel the flumerin experiments in method of administration, treatment interval, and in period of infection treated, with the difference that the cyanid series received six more treatments than the flumerin series.

MERCURIC SALICYLATE

Mercuric salicylate was given intramuscularly in oil, in weekly doses of $0.6\frac{2}{3}$ mg. per kilogram, with a total of twelve doses (Table 3). The following points may be noted from these animals, which are still under observation: In all four cases the lesions present before treatment grew worse during the first half of the injection period, and new lesions developed, in one case organisms being found by dark field examination after



Fig. 6 (Rabbit 204).—Two days after fifth dose of mercuric salicylate: large lesion on right testis; left scrotal lesion broken down.

the fifth dose, in another, after the tenth dose. As has been shown by Schamberg, Kolmer and Raiziss,⁶ the rate of absorption of salicylate is about 1 per cent. a day. The treatment period must include 100 days after the last injection. In our series, the amount of mercury absorbed during the first six weeks of treatment is shown to be insufficient to check the spread of the infection. Some resolution was noted in the latter part of the injection period. These rabbits will be held for fifty days after the treatment period, and node transfers will be made from any then without lesions. One hundred days after the last injection, however, one animal has a scrotal lesion which has persisted throughout treatment, and another a nodular testicular lesion which developed the forty-sixth day after the last injection.

RED MERCURIC IODID

Red mercuric iodid was given intramuscularly, six doses a week, with a total of twenty-five doses. The dosage was increased from an initial injection of $0.1\frac{2}{3}$ mg. per kilogram to $0.2\frac{2}{3}$ mg. per kilogram, the latter

6. Schamberg, J. F.; Kolmer, J. A., and Raiziss, J. W.: A Study of the Comparative Toxicity of the Various Preparations of Mercury, *J. Cutan. Dis.* 33: 787 (Dec.) 1915.

dose being reached by the tenth injection. The details of this series are found in Table 4. This shows that, although in two cases resolution of lesions was incomplete at the end of the injection period, and although resolution began only after at least five doses, resolution has been complete in every case. Only further observation and node transfer can show whether these

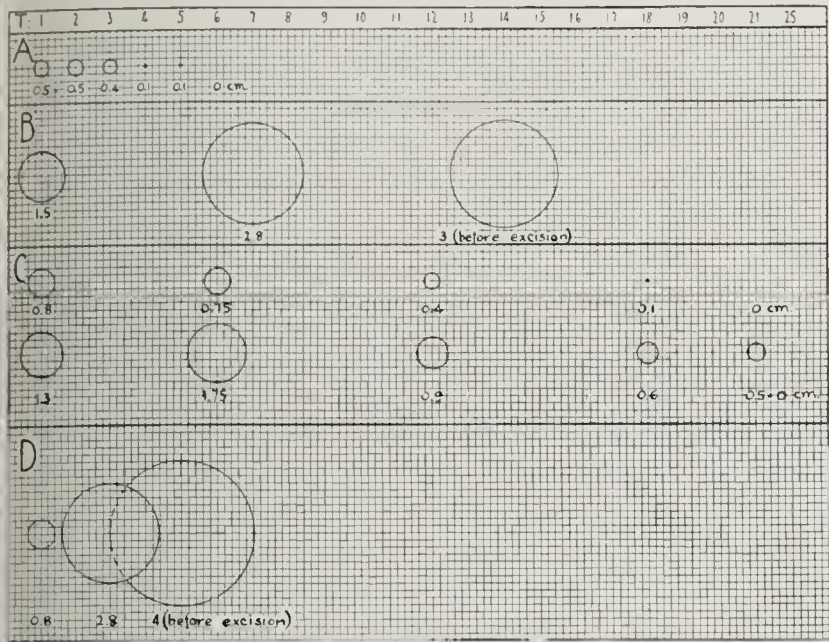


Fig. 7.—Diagram from measurements, showing action of mecurials on scrotal experimental rabbit syphilis: T, treatment; A, with flumerin, Rabbit 181; B, with mercuric cyanid, Rabbit 198; C, with red mercuric iodid, Rabbit 215, two lesions; D, with mercuric salicylate, Rabbit 204. The measurements are given in centimeters; each small square represents 2 mm.

animals are in a condition of latent syphilis, or whether the disease has been driven from the lymphatics.

SUMMARY

The marked antisyphilitic action of flumerin has been demonstrated further, fifteen doses of 5 mg. per kilogram being employed. The slight action of mercuric cyanid, given in twenty-one doses of 0.2 mg. per kilogram, and the lack of therapeutic action of mercuric salicylate, during the first part of treatment with twelve doses of 0.6 $\frac{2}{3}$ mg. per kilogram, under which all animals grew markedly worse before enough mercury was absorbed to check the infection, have been shown. The slow but complete resolution of lesions under treatment with red mercuric iodid given in twenty-five doses of from 0.1 $\frac{1}{3}$ to 0.2 $\frac{2}{3}$ mg. per kilogram has indicated the antisyphilitic action of this drug, although the permanence of its action has not yet been demonstrated.

COMMENTS, BY HUGH H. YOUNG

Flumerin in repeated doses of 5 mg. per kilogram is shown by the preceding experiments to be of much greater value than mercuric cyanid in repeated doses of 0.2 mg. per kilogram; mercuric salicylate in repeated doses of 0.6 $\frac{2}{3}$ mg. per kilogram, or red mercuric iodid in repeated doses of from 0.1 $\frac{1}{3}$ mg. to 0.2 $\frac{2}{3}$ mg. per kilogram in rabbits infected with *Spirochaeta pallida*. This was to be expected from mercuric cyanid, since we can introduce from six to ten times as much mercury by flumerin intravenously as is possible with mercuric cyanid. The fact that flumerin is so much more effective experimentally than the others which cannot be used intravenously would seem to warrant its extended trial in clinical syphilis. Only by its use in the most exacting clinics over a long period of time will its comparative value in all forms of syphilis be determined.

In our first series of 100 cases, the maximum dose employed in all but twenty-five cases was about 3 mg.

per kilogram of body weight; but Miss Hill's experimental work has shown that consistent results could not be expected from less than 5 mg. per kilogram, and in over thirty human cases the facility with which this dosage can be used has been amply demonstrated, and much better results have been obtained than with the smaller dose.

In my own practice I usually employ neo-arsphenamin with intervening daily intravenous injections of flumerin, 5 mg. per kilogram, and have yet to see a serious reaction. The impunity with which the drug may be injected repeatedly into the same vein is of great advantage, as is the feeling of certainty engendered by intravenous administration.

SACROCOCCYGEAL CHORDOMA*

EDWIN F. HIRSCH, M.D.

AND

MARY INGALS, B.S.

CHICAGO

Chordomas are tumors arising from remnants of the notochord. They are reported to occur at the two extremes of the vertebral column; namely, at the base of the skull along the clivus, and opposite the sacrum and coccyx. Luschka,¹ in 1856, recorded the first chordoma arising from the clivus. Virchow,² in 1857, made the first complete description, but thought the tissue was essentially cartilage with softening of the cartilage matrix and hydropic degeneration of the cells. In describing these cell changes he introduced the term "ecchondrosis physaliphora." His tumor, also, was located near the spheno-occipital synchondrosis. Müller,³ in 1858, first suggested that these tumors



Fig. 1.—High power drawing of "physaliphora cells," illustrating their marked mucoid degeneration.

may be of notochord origin, and that retained fragments of notochord tissue may be demonstrated in the

* From the Pathological Laboratory of St. Luke's Hospital.
1. Luschka, H.: Ueber gallertartige Auswuchse am Clivus Blumenbaehii, Virchows Arch. f. path. Anat. **11**: 8-11, 1857.
2. Virchow, Rudolf: Untersuchungen über die Entwicklung des Schadelgrundes, Berlin, 1857.
3. Müller, H.: Ueber das Vorkommen von Resten der Chorda dorsalis bei Menschen nach der Geburt, und über ihr Verhältnis zu den Gallertgeschwulsten der Clivus, Ztschr. f. rationelle Med. **2**: 202-229, 1858.

basilar cartilage and sacrum of man and animals, and that in the fetus the notochord extends to the sella turcica. In the speno-occipital synchondrosis it persists as a small mass of soft tissue analogous to the nucleus pulposus of the intervertebral disks. This tissue persists here even after birth, although it has disappeared from the neighboring bones and cartilage.

Müller's views concerning the chordoma and its origin were not accepted by Virchow and others at that time, but in 1894 Ribbert⁴ confirmed them conclusively. The first sacrococcygeal chordomas of clinical interest in man were reported by Feldmann⁵ and Mazzia⁶ in 1910, although Hennig,⁷ in 1900, had reported a sacral tumor containing notochord tissue in a seven months' fetus. Ribbert asserts that he found notochord tumors of the clivus in 2 per cent. of his

malignant tumors reported in this location. Another malignant sacrococcygeal tumor is reported by Bérard, Dunet and Peyron.¹⁰

Many of the early reports of chordomas mention small nodules along the course of the basilar artery, arising from some part of the clivus and usually without symptoms. It seems, then, that these tumors are of low malignancy, grow slowly, and at first are encapsulated. However, they may develop marked invasive properties, and recur after removal. Remote metastases with such malignant forms are uncommon.

The gross appearance of a chordoma, while not always the same, generally resembles colloid carcinoma tissue; that is, the tissue is nodular, the individual nodules being separated by bands of white fibrous tissue, and contain cell masses of varying dimensions, which have undergone mucoid degeneration. In the histologic preparations there are groups of large cells resembling epithelium with clear staining cytoplasm, which at first contain small granules responding to the mucin stains but later become vacuolated (mucin vacuoles) and much larger in size (physaliphora cells). After the escape of mucin, the cells are shrunken and necrotic, and the nuclei form irregular, dark staining masses.

All of the sacrococcygeal chordomas reviewed and reported by Stewart and the one reported by Bérard, Dunet and Peyron are malignant; the one mentioned in this report has not recurred after three years:

A man, aged 54, was admitted to the service of Dr. S. C. Plummer at St. Luke's Hospital complaining of a painless, round, firm mass in the midline of the back opposite the sacrum. It was observed first about eighteen months before, as a tumor about the size of a walnut. Six weeks before admission, the patient noticed that it had grown larger, but there were no symptoms other than pressure and inconvenience in sitting. The tumor, a slightly nodular encapsulated, gray-white tissue, roughly pear-shaped, 9 by 9 by 3.5 cm., attached behind to the sacral vertebrae, was removed under local anesthesia. The surfaces made by sectioning the tumor contained gray-white opaque tissue separated into nodules by septums of fibrous tissue, and were moist with a viscid, mucilaginous liquid.

Histologically the tissue contained vacuolated cells like those mentioned as present in a chordoma (Figs. 1 and 2). Mucin granules in the cytoplasm were demonstrated by the orange G-polychrome methylene blue stain in cells containing small vacuoles. Outside the cells were large, irregular spaces filled with mucin. Septums of fibrous tissue supported these masses of cells.

Sacrococcygeal chordomas, while relatively infrequent, deserve consideration clinically because of their tendency to recur. While practically all reported are malignant, the growth generally remains regional, and remote metastases are infrequent.



Fig. 2.—Low power drawing illustrating the structure of the chordoma.

necropsies, but no such frequency is mentioned by others. Stewart,⁸ in 1922, reviewed the chordomas, recorded in the literature, in which definite clinical symptoms were manifested. His list mentions twenty-six, of which fifteen occurred in the region of the speno-occipital synchondrosis, nine in the sacrococcygeal region, and two others in aberrant locations. Stewart includes in this list his report of a sacrococcygeal chordoma which recurred and produced metastases. Lemke⁹ reports a malignant chordoma of the clivus with destruction of the regional tissues. His review of the literature mentions thirteen of these

4. Ribbert: Ueber die Eechondrosis physalifora speno-occipitalis, *Centralbl. f. allg. Path. u. Path. Anat.* **5**: 457-461, 1894.

5. Feldmann, I.: Chordoma ossis sacri, *Beitr. z. path. Anat. u. z. allg. path. (Ziegler's)* **48**: 630-634, 1910.

6. Mazzia, O.: Chordom der Sakralin gegend, *Centralbl. f. allg. Path. u. path. Anat.* **21**: 769-772, 1910.

7. Hennig, L.: Ueber congenitale echte Sacraltumoren, *Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's)* **28**: 593-619, 1900.

8. Stewart, M. J.: Malignant Sacrococcygeal Chordoma, *J. Path. & Bacteriol.* **25**: 40-62 (Jan.) 1922.

9. Lemke, R.: Ein Fall von malignem Chordom der Schadelbasis, *Virchows Arch. f. path. Anat.* **238**: 310-323, 1922.

10. Bérard, Dunet and Peyron: *Abstr. Centralbl. f. allg. Path. u. path. Anat.* **33**: 194-195, 1922.

Hemoglobinuric Spirochetosis.—At the recent Far Eastern Medical Congress, W. Schueffner and E. P. Snijders reported that spirochetes resembling the spirochete of infectious jaundice were found numerous in all the organs in a fatal case of clinical typical blackwater fever. Noc has reported a similar case since, which confirms the possibility of spirochetosis ictero-haemoglobinurica.

SPONTANEOUS RUPTURE OF THE HEART IN A CASE OF ULCERATIVE ENDOCARDITIS*

THOMAS A. CLAYTOR, M.D.

Clinical Professor of Medicine, George Washington University Medical School; Physician, Garfield and Tuberculosis Hospitals

WASHINGTON, D. C.

Spontaneous rupture of the heart, though a rare occurrence, has many examples in literature. To Harvey is attributed the first observation of a case, and Morgagni himself, who wrote much on the subject, strangely enough succumbed to this unusual accident. George II of England also died from a tear in the wall of the right ventricle. The history of this case is so typical and is so quaint in its wording that I make a short quotation from Dr. Frank Nicholl's¹ report: "About seven o'clock in the morning a noise was somewhere heard, as if a large billet had fallen down, and upon inquiry His Majesty was found fallen down on the ground, speechless and motionless. He appeared to have come from his necessary stool and as if going to his *escritoir*." An attempt was made to let blood, but the king did not revive. At the necropsy an opening was found in the upper side of the right ventricle and about a pint of blood in the pericardium.

PATHOLOGY

It is almost certain, as was maintained by Morgagni, that a rupture never occurs in a sound heart muscle, the most frequent cause being fatty degeneration or infiltration of the muscles, and occlusion of the coronaries. Less commonly, myomalacia, abscess, gumma, echinococcus cysts and new growth are responsible.

Authors seem to agree that the vast majority of ruptures take place in the wall of the left ventricle, usually not far from the apex. Next in order of frequency come the right ventricle, right auricle and left auricle.

The size of the opening varies usually from 0.5 cm. to 1 or 2 cm. in length. Cases have been reported, however, in which the tear extended the entire length of the ventricle.

The immediate cause of the rupture is usually some exertion, but not a few cases have been reported in which the break has occurred during sleep.

SYMPTOMS

Probably in more than 70 per cent. death is instantaneous; but there may be a sense of anguish in the cardiac region with a feeling of suffocation, and life may be prolonged for several hours. Osler speaks of seeing a case in which the patient walked up a steep hill and lived for thirteen hours after the rupture occurred, and there is one case, at least, in which the patient survived for eleven hours.

It seems likely that the rapidity of death depends to some extent on the size of the rent and on the manner in which the muscle fibers are separated; i. e., whether the entire thickness of the wall gives way at once or by degrees.

Death results from shock, or from pressure produced by the overdistended pericardium.

REPORT OF CASE

History.—E., a man, aged 58, complained, Nov. 5, 1920, of pain in the back of his neck, and a general feeling of weak-

ness; he had not been well for several days, but had kept at his work. He gave the history of an old prostatic trouble, and said that for years he had been told that he had an endocardial lesion, which, however, gave him no trouble.

He was well built, and except for a peculiar pallor of the skin, which he always had, was a healthy looking man. Gonorrhea in early youth was the only history of venereal disease. There was, however, a history of abscessed teeth, and it is possible that the infection may have originated from them.

Examination revealed a moderately enlarged heart, with a loud, harsh systolic murmur over the entire precordia, transmitted to the vessels of the neck and to the axilla, with greatest intensity over the second rib and sternum and at the apex. There was no diastolic murmur, nor was there any accentuation of either second sound. The radials were slightly thickened; there was no broadening of the dulness over the aortic arch. The blood pressure was normal; the lungs were clear; the abdomen and the reflexes were normal.

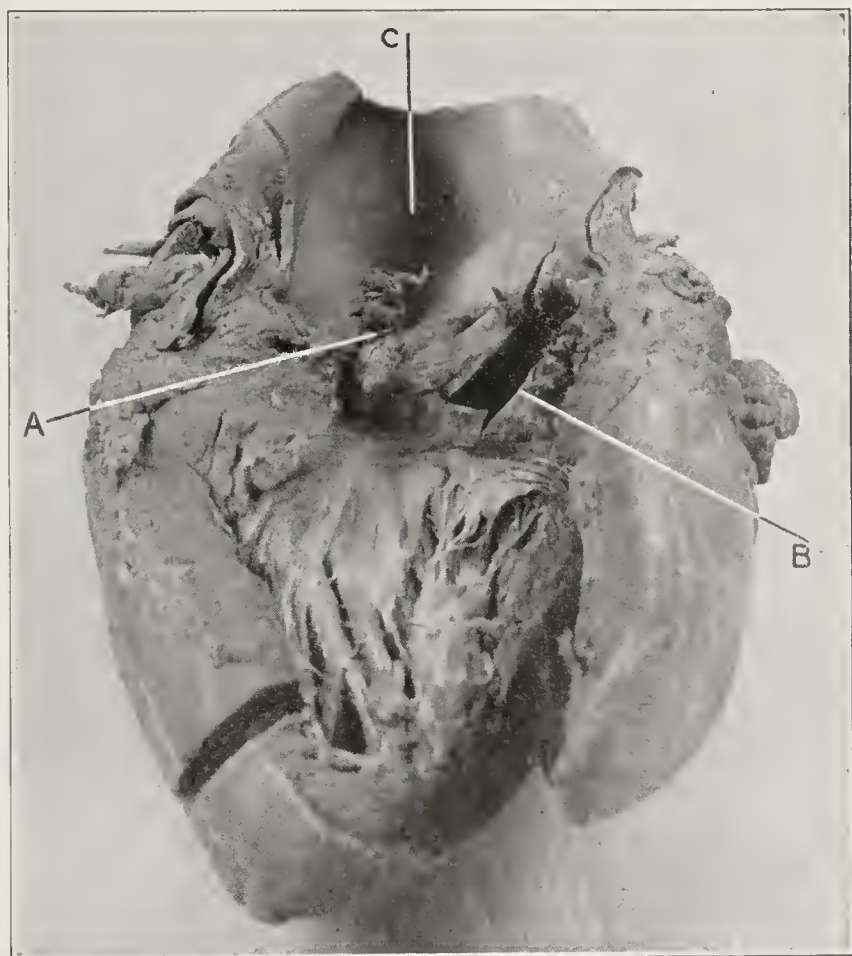


Fig. 1.—Interior of left ventricle and aortic orifice: A, character of vegetations on aortic leaflets; B, site of erosion, ulceration and rupture, from which section for microscopic examination has been removed; C, interior of dilated aortic root.

The urine showed a specific gravity of 1.016; no sugar, but a trace of albumin, with granular casts and a few pus cells. The indisposition continued with an irregular temperature, varying from normal to 102, and one week later (November 12) the leukocyte count was 21,000, with a relative increase in the polymorphonuclears. The Widal and Wassermann tests were negative. The course of the illness, together with the history of an old endocardial lesion, the irregular temperature and increased leukocytes now aroused the strong suspicion of septic endocarditis.

Dr. Frances F. Hagner, who had previously treated the prostatic trouble, was called in but was quite positive that the bladder condition was in no way responsible for the symptoms.

The leukocyte count, November 14, was 12,000, and a blood culture was negative. By November 19 the fever range was quite irregular but much higher, 104 F., and severe chills and sweats had set in. Dr. L. F. Barker now saw the patient, and fully concurred in the diagnosis of septic endocarditis, which was, that date, confirmed by positive blood findings which showed *Streptococcus viridans* in pure culture.

* Read before the Medical Society of the District of Columbia, Oct. 18, 1922.

1. Nicholl, Frank: Phil. Tr. London 52: 266, 1761.

The patient grew rapidly worse, the temperature reaching 105, with most distressing chills and intense sweats. November 26, he complained of sudden pain in the heart and died in a few minutes, probably from shock, as the internal hemorrhage was small. The entire course of the illness, after the patient took to his bed, had been just three weeks.

Necropsy.—The necropsy, performed by Dr. Oscar B. Hunter, revealed, in the right pleural cavity, a small amount of bloody fluid; there were no adhesions or tumors. The right lung was markedly congested, particularly posteriorly, apparently for the most part postmortem hypostasis; there were some, but relative few, and apparently recent, bronchopneumonic spots in the less congested areas.

The left pleural cavity contained about 250 c.c. of bloody fluid; there were few old adhesions to the apex of lung, and some to the medial aspect of the lower lobe. The congestion was similar to that seen in the right lung, but more marked; pneumonic spots also were present.

The pericardium was acutely congested; on section it showed a moderate amount of bloody fluid, with small clots.

The heart was enlarged; there was a normal amount of pericardial fat, which was hemorrhagic in the region of the left auricular appendix. The musculature was soft and fri-



Fig. 2.—Heart from above: A, hemorrhagic extravasation from aorta into superior wall of left atrium and left atrial appendix; B, tip of left atrial appendix; C, site of rupture; D, dilated aortic root.

able, with evidence of definite myocarditis. The cavity of the right auricle was dilated; the right ventricle was contracted.

The tricuspid valve leaflets were slightly thickened, with loss of their surface luster, but otherwise apparently normal, except toward the base, where the interatrial wall presented a few deep, interstitial, hemorrhagic spots. None of these spots were observed on the interventricular septum, from the right side. The pulmonary semilunar cusps were apparently normal except for the loss of their usual luster and firmness, being flabby, with flattening of the corpora aurantii and loss of outline of the lunulae. The pulmonary artery showed no well defined changes.

The left auricle and ventricle were dilated; the musculature was soft and somewhat friable. Beneath the endocardium of the auricle, in the interatrial septum, there was extensive discoloration from interstitial hemorrhage, which extended downward into the interstitial tissue of the mitral valve, involving both leaflets.

The anterior leaflet of the mitral valve was considerably thickened, nodular and discolored by hemorrhage, but not shortened. The posterior valve was wrinkled, thickened at the base, and also showed hemorrhagic extravasation into it, especially at the medial aspect.

Under the valve leaflets this hemorrhage could be seen infiltrating the musculature of the ventricle in the region of the annulus fibrosis.

The aortic cusps showed extensive thickening, and were distorted, with excessive vegetations somewhat verrucous in character, and greenish gray, with softening necrosis and ulceration, resulting in hemorrhage into the myocardium. The anterior coronary was apparently not involved, but the posterior coronary artery was in direct line with ulceration occurring at the root of the left auricular appendix. The sinus of Valsalva at this site was dilated and ruptured with hemorrhage seepage into the heart wall (interatrial septum and proximal part of left ventricle) and rather extensively into the wall of the left auricular appendix. Here and in the transverse sinus the bloody extravasation could be seen beneath the visceral pericardium. In one area on the superior posterior aspect of the left auricular appendix, rupture had occurred, and free blood had seeped into the pericardial cavity. A good sized clot plugged this aperture.

The root of the aorta was markedly dilated, and showed a diffuse, yellowish endarteritis.

1826 R Street, N.W.

A CASE OF DUODENAL DIVERTICULUM

DUNLAP P. PENHALLOW, M.D.

Chief of Surgical Section, U. S. Veterans' Hospital No. 35
ST. LOUIS

The subject of duodenal diverticula is one which is of great interest not only to the gastro-enterologist but to the surgeon as well. This condition, while rare, has been recognized for many years, and more especially since the advent of the roentgen ray in the diagnosis of pathologic gastro-intestinal conditions.

No attempt is made, in reporting this case, to theorize on the causative factors of this condition or completely to review the literature on the subject, as this has been rather recently done by Andrews,¹ from an historical standpoint and also from more recent statistics. In his review, he says:

Luismayer had 1,367 necropsies which yielded forty-five cases of diverticula, or 3 per cent. Buschi found 2 per cent. in all his researches, or a total of seventy-three cases, only fifty-four of which had clinical symptoms. Up to the time of this report (1911), no one author had had more than five cases. Later, 1913-1920, Case added reports from 6,847 examinations yielding eighty-five cases or 1.2 per cent. discovered by roentgen-ray examinations. I therefore reviewed all of our available roentgen-ray examinations of the last ten years and found that in about 2,200 stomach cases more than 300, or 14 per cent., showed deformations of the duodenal canal, of which twenty-six, or 1.2 per cent., resembled diverticula. These deformities range all the way from slight kinks or angulations of the tube caused by dragging or outside pressure to total obliteration. They include eleven cases of diverticula, large and small.

It will therefore be seen that true duodenal diverticula are comparatively rare and it is for that reason that this case is presented.

REPORT OF CASE

History.—C. S. G., aged 28, white, inducted into the Army, July 19, 1917, discharged Feb. 10, 1919, and admitted to U. S. Veterans' Hospital No. 35, Oct. 4, 1922, in December, 1917, while at Camp Cody, N. M., began to have some pain in the stomach, first noticed as an occasional pain in the epigastrium which came on about two hours after eating. This condition persisted until about eight months before admission to the hospital, at which time he thinks that he passed some black, tarry stools. Since that time, his condition had gradually grown worse, and he now had a steady gnawing pain in the epigastric region, which was worse about one and one half to two hours after eating, but was partially

1. Andrews, E. W.: Duodenal Diverticula, J. A. M. A. 77:1309-1311 (Oct. 22) 1921.

relieved by the ingestion of food and by taking alkalis. About one year previously, he began to have pain also in the appendical region. The bowels as a rule were constipated. The patient had never vomited or coughed up any blood. He had lost 40 pounds (18 kg.) in weight since 1918.

Physical Examination.—This was an ambulatory case. The general appearance of the patient was rather poor. He was thin and rather anemic. The weight was 115 pounds (about 52 kg.); the height, 68½ inches (170 cm.).

The heart, lungs and extremities were negative. The blood pressure was systolic, 102; diastolic, 62. The abdomen was flat, rather tending toward a scapoid type, and tympanitic throughout. In the epigastric region, about 3 inches above the umbilicus, was a definite point of tenderness, but there was no muscle spasm. Over McBurney's point, there was slight, well localized tenderness on moderate pressure. No masses were made out.

Treatment.—The patient was placed on a general medical and dietetic treatment while a further study of the case was being made.

Laboratory Findings.—October 6, a urine examination was negative save for an occasional pus cell. The Wassermann reaction was negative. Examination of the blood revealed: red cells, 4,990,000; white cells, 9,300; hemoglobin, 95 per cent.; small mononuclears, 32 per cent.; large mononuclears, 9 per cent.; neutrophils, 59 per cent. October 14. Examination of the gastric contents revealed: free hydrochloric acid, 39 per cent.; combined hydrochloric acid, 10 per cent.; total acidity, 54 per cent.

Roentgen-Ray Examinations.—Preliminary examination revealed no gross pathologic condition of kidneys or gallbladder. Fluoroscopic and roentgenographic examination showed stomach to be of normal size and position, fishhook in type, with normal peristalsis and motility. No defects of the gastric walls were noted. The duodenal cap was apparently filled out well, but the proximal portion of the second portion of the duodenum was dilated and retained the barium sulphate. At six hours, the stomach contained about 10 per cent. of the meal, and the head of the column was in the splenic flexure. At twenty-four hours, the head of the column was in the rectum and the tail was in the cecum, and at seventy-two hours, about one half of the meal had been discharged. The cecum was movable and not tender to pressure. The appendix was visualized at forty-eight hours. It appeared to be retrocecal in position, and was tender to pressure.

Diagnosis.—Dilatation of the second portion of the duodenum, possibly a diverticulum, with slight chronic appendicitis (as shown in the accompanying illustration) was diagnosed.

October 20, the case was referred from the gastro-intestinal service to the surgical service for consultation, and the following report was made: "The roentgen ray in this case is the most suggestive factor as regards the presence of a duodenal diverticulum. There is some tenderness over the epigastrium and also over McBurney's point, which, together with the history, is suggestive of a duodenal ulcer or a duodenal diverticulum and also a chronic appendix. Advise exploratory laparotomy for investigation of the diverticulum and also an appendectomy."

Operation.—November 1, under ether anesthesia, an oblique incision was made, commencing just below the xiphoid process, and extending downward and outward nearly to the level of the umbilicus. The anterior sheath of the rectus was incised and the rectus muscle was displaced outward. When the peritoneal cavity was opened, numerous fine adhesions between the duodenum and the liver and also in the pyloric region were noted. On the anterior surface of the first portion of the duodenum, about one-half inch from the pylorus, was a healed ulcer. The center of this ulcer consisted of dense white scar tissue, and about this area there was moderate thickening. This area was surrounded by minute blood vessels, which converged in a stellate manner toward the center of the scar. Just below this ulcer was a pouchlike protrusion from the lower anterior aspect of the first part of the duodenum. This pouch or diverticulum was

about 2.5 cm. wide at the point of junction with the duodenum, and at the distal end was about 3.5 cm. wide. The length was approximately 5 cm. This diverticulum was surrounded by adhesions, which held it to the pylorus and to the distal portion of the stomach along the greater curvature. The edge of the omentum was adherent to the tip and outer lateral border of the diverticulum. The gallbladder was apparently normal. The appendix was felt, but could not be delivered without enlarging the incision. No ulcers were found on the stomach.

The adhesions about the pylorus were freed, and the diverticulum was freed and clamped near the base. About three fourths of the diverticulum was removed; the cut edges were inverted, and the serous coat was sutured with catgut so as to restore the continuity of the lower surface of the duodenum. The omentum was sutured over the line of sutures so as to prevent further adhesions. Owing to the presence of the ulcer and also on account of possible weakening of the duodenal wall, it was felt advisable to perform a posterior gastro-enterostomy, and a typical posterior gastro-enterostomy was therefore done. The appendix was not removed at this time owing to the difficulty of delivering it; and, furthermore, it was not believed wise to prolong the operation at this time. The wound was closed in layers.



Appearance of diverticulum, showing in the duodenum a Rehfuß tube, through which the diverticulum was gradually filled. This roentgenogram was furnished by the courtesy of Dr. T. A. Burcham of Des Moines, Iowa, who made the original diagnosis of a duodenal diverticulum before the patient was sent to the hospital.

Course.—The postoperative convalescence was uneventful. The patient was up and about in ten days. He felt much improved and the gastric symptoms had entirely disappeared. There was still some pain and tenderness about the appendical region, and he was advised to have the appendix removed in order to clear up all areas of disturbance in the gastro-intestinal tract.

November 28, a fluoroscopic examination was made to determine what changes had taken place after the operation. The report was as follows: "Fluoroscopic and roentgenographic examinations show stomach to be of normal size and position, cow-horn in type, with poor peristalsis and normal movability, with a gastro-enterostomy opening on the posterior surface, functioning well. The duodenal cap was not visualized. At six hours, the stomach was empty, the head of the column was in the descending colon and the tail in the terminal ileum. At twenty-four hours, the head of the column was in the rectum and the tail in the cecum, and at seventy-two hours most of the meal had been discharged. The cecum was restricted in movability and was tender to pressure. The appendix was visualized at forty-eight hours and thereafter throughout the examination. It was found to be large, long, segmented and still contained barium at ninety-six hours when the gastro-intestinal tract was empty. Conclusions: Gastro-enterostomy functioning well. Chronic appendicitis."

Second Operation.—November 29, an appendectomy was performed. The tissues to the right of and below the level of the umbilicus were infiltrated with procain. A right rectus incision was made; the anterior sheath of the rectus muscle was incised and rectus muscle retracted toward the median line, and peritoneal cavity was opened. A long, moderately congested appendix was found in a retrocecal position. The tip of the appendix was free, swollen and congested. The proximal three fourths of the appendix was covered by a dense membrane, which held the appendix firmly to the cecum. The appendix was freed from the cecum, the meso-appendix ligated, the appendix clamped, ligated and removed. The stump was cauterized and inverted. The wound was closed in layers. The appendix when sectioned was found to contain two fecaliths.

Histologic Examination of Diverticulum and Appendix.—Small intestine: In this specimen, there was an irregular and atypical hyperplasia of the intestinal glands, many of which were branched and cystic. This was a nonmalignant adenoma.

Appendix: This was found to be atrophied from chronic inflammation.

Convalescence.—The patient had an uneventful convalescence from the appendectomy, and was discharged from the hospital, December 16. All gastric symptoms had disappeared, and the patient stated that "he felt like a new man." He gained 9 pounds (4 kg.) subsequent to the gastro-enterostomy and his general condition was much improved as compared to his condition at the time of admission.

5800 Arsenal Street.

Clinical Notes, Suggestions, and New Instruments

AN EFFICIENT METHOD OF APPLYING RADIUM WITHIN THE MOUTH

E. WOOD RUGGLES, A.M., M.D., ROCHESTER, N. Y.

The treatment of lesions within the mouth with roentgen rays or radium has always been a procedure of the utmost difficulty. It is much more practicable with radium, but the holding of an applicator on one area for hours is intensely

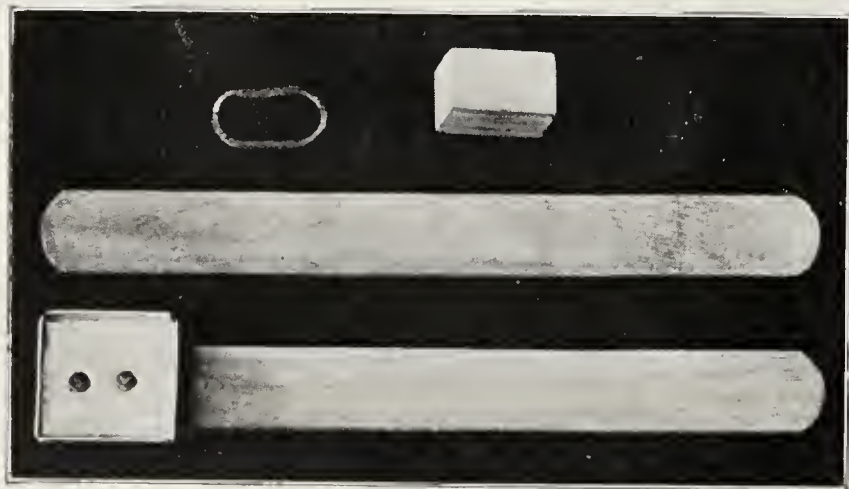


Fig. 1.—Separate parts of apparatus for applying radium within the mouth.

wearisome to the nurse, or to the patient if he does it himself. Besides this, it is practically impossible to hold the radium in exactly the same position for any length of time.

Five months ago a Polish girl, aged 6 years, was brought to me for the treatment of an extensive cavernous nevus of the internal surface of the right cheek and the lower lip. It encroached on the true skin beyond the vermilion border for an area of only about one-quarter by one-sixteenth inch (6 by 1.5 mm.) at the center of the lower lip. The cheek was nearly an inch in diameter at the most prominent part, and the lower lip hung down on the chin, causing a revolting appearance, like an exaggeration of the condition of the lower lip in a full-blooded African negro.

Treatment for this condition meant hours of exposure, and for a moment I was staggered, as the child was too young to hold the radium, and the parents too poor to pay for a nurse and not intelligent enough to do it themselves. It then occurred to me to attach the radium plaque to the end of an ordinary white pine tongue depressor, which is quite flexible, with rubber adhesive plaster, to locate it properly and then to place a similar depressor exactly opposite on the



Fig. 2.—Apparatus in place.

outside of the mouth. I then placed a rubber band, folded two or three times so as to give adequate pressure, at the center of the depressors, and inserted a block of wood about one-half inch thick between the outer ends.

The pressure produces no pain or even inconvenience except that of leaving the mouth open, even when left in position, as in this case, for five hours (with 0.2 mm. of brass protection). The plaque remains indefinitely in exactly the same location, as can be demonstrated by moving the outer ends up or down. On being released, they return to their original position. In treating the lower lip a cord was attached to the outer ends and looped over the back of the head so as to avoid downward tension on the lip.

The results in this case, while slow, have been very gratifying. The thickness of the cheek has been considerably reduced, and the child is able almost to close the lower lip to its normal position. Some discoloration has appeared near the angle of the mouth, evidently an extension of the nevus toward the skin, and an indication that, without treatment, the skin over the whole nevus would be involved. This area has not yet been treated, as the other parts were much thicker.

In the same manner I have also treated with radium a precancerous scaly lesion of the vermilion border of the lower lip, which had existed over a year, and the result was perfect. Lesions of the projecting part of the tongue can be treated similarly by increasing the thickness of the block which separates the outer extremities. The same method can be employed with lesions of the skin on the cheeks, lips and ears, especially when greater pressure is desired than can be obtained by adhesive plaster.

Of course the principal condition in which this apparatus would be useful is leukoplakia, but there are several other diseases of the oral cavity in which treatment with radium is indicated; for example, lupus vulgaris and erythematosis, epithelioma, carcinoma, lichen planus and, rarely, sarcoma and acanthosis nigricans.

I have endeavored to have the instrument constructed of aluminum, there being an alloy which has considerable

flexibility; but I have found that, to secure sufficient springiness, the pieces would be too heavy for comfort and might sag downward. The Standard Chemical Company of Pittsburgh has constructed, at my suggestion, an applicator which, while utilizing the tensile strength of wood, renders it much easier to retain the radium in position. An aluminum box which fits the 2 c.c. radium plaques, and is slightly shallower, is attached to the end of one of the tongue depressors, as shown in Figure 1. At one corner a slot is left, extending to the bottom of the box, so that a small instrument, such as a nail, can be used to dislodge the plaque if it is not easily removable.

I fully believe that this applicator will find wide use if once tested, as it renders the treatment of intra-oral lesions a procedure of the greatest ease and simplicity.

348 University Avenue.

A CASE OF PHARYNGEAL DIPHTHERIA PROBABLY DUE TO AUTO-INFECTION FROM A DIPHTHERIC LESION OF THE THUMB*

A. H. BALDWIN, M.B.; FRANK McCALLUM, M.B., AND
J. A. DOULL, M.D., BALTIMORE

A physician, aged 30, a graduate student, gave a positive reaction to the Schick test, Oct. 10, 1922. There was a very slight pseudoreaction. There was no history of previous diphtheria.

October 25, he carried out a virulence test with a culture from a known clinical case of diphtheria. At this date, he had not himself been in contact with a known clinical case for some time; nor had he been working with any other diphtheria cultures. While inoculating the guinea-pig, he pricked the skin on the dorsum of the terminal phalanx of the left thumb with the needle of a syringe containing the suspension from a twenty-four hour Loeffler slant. The suspension in the syringe was from a culture from the above mentioned case, and caused typical diphtheric lesions in the guinea-pig. October 29, the patient visited the laboratory and examined the inoculated animal, but after this date he was not exposed to any known source of infection.

October 27, a hard papule about the size of a millet seed developed at the site of the needle prick, and by the 29th this had developed into a necrotic ulcer, with hyperemia, edema and partial anesthesia over the area. Definite lymphangitis was present, a line one-quarter inch in width running along the dorsum of the thumb, up the flexor surface of the forearm to the antecubital fossa and along the inner side of the arm to a distance of about 6 inches above the elbow. No axillary tenderness was present, nor were the axillary glands palpable. The area on the thumb was freely incised, blood and serum, but no pus, being obtained. There were no constitutional symptoms, but the lesion did not heal, and, November 1, it showed a necrosis covering nearly the whole of the skin area on the dorsum of the terminal and encroaching on the outer side of the first phalanx.

November 2, a section of skin about a third of an inch square sloughed. During the night, the patient removed the bandage and the dressing from the thumb; and, he stated, he was under the impression that he had his thumb in his mouth during the night.

November 5, about midday, the patient complained of a sore throat, and on examination a patch of membrane was seen on the right tonsil. He had a temperature of 102.6 F. At 6 o'clock in the evening, when antitoxin was given, the patch was much increased in size. Cultures from his throat were positive, and the diagnosis of pharyngeal diphtheria was confirmed clinically at Sydenham Hospital, to which the patient was removed next day.

November 8, the membrane had disappeared from the throat and the thumb lesion had practically healed. Redness persists still (four months later) over the area of the wound. As the nature of the thumb lesion was not recognized until November 6, no cultures were secured from the wound.

COMMENT

The case presents these interesting features: (1) a laboratory wound infection in a person known to have given a Schick positive reaction; (2) a probable transference of the bacilli to the mouth during sleep; (3) a rapid disappearance of throat and wound lesions on the administration of antitoxin.

Since recovery, the patient has repeatedly given negative reactions to the Schick test, and his reaction was still negative, March 1. He had received altogether in November 12,000 units of antitoxin. An interesting feature is the marked pseudoreaction which has been present on each of these later tests.

An interesting case in the literature which somewhat resembles this one is that cited by Mallory¹ of a student who cut his finger while removing the organs of the neck during necropsy on a child who died of diphtheria. He sucked the wound in the attempt to prevent infection, and developed diphtheria at the end of twenty-four hours.

CATHARSIS IN THE TREATMENT OF "COLDS"

HUGH MACDONALD, S.B., M.D., EVANSTON, ILL.

The almost universal use by the profession and the laity of laxatives and cathartics in the treatment of acute upper respiratory tract infections (so-called "colds") suggested an investigation to determine how large a rôle this method of therapy played in shortening the duration of these conditions.

A mild epidemic of acute respiratory infections—rhinitis, sinusitis, pharyngitis, tonsillitis, laryngitis, tracheitis and bronchitis—occurring during January and February, 1923, furnished an opportunity to investigate this problem among the employees of a large industrial organization situated in Chicago.

In most of the cases under observation there was a more or less generalized infection of the whole upper respiratory tract before the termination of the illness. The usual complaints were general malaise, "cold" in the nose, chilliness, headache, sore throat and cough. Fever was present in most cases, but in a few this one symptom alone remained absent. A definite leukocytosis was present in more than 95 per cent. of the cases.

About a half of the employees, reporting to the medical department for home passes because of illness, were instructed that, if their bowels were moving regularly (which was generally the case), they should refrain from the use of cathartics.

It is a routine of this industrial organization that the medical department examine, on their return to work, all employees who have been home for illness. The data in this report were collected at this time.

Information on fifty-one practically consecutive cases occurring during the height of the epidemic was obtained. Thirty-seven persons had used cathartics, mainly at the onset of the illness. The average duration of unemployment of this group was nine days. Fourteen had used no cathartics. Their average duration of unemployment was 7.71 days—14.3 per cent. less than the former group.

COMMENT AND CONCLUSIONS

Alvarez and others have demonstrated the decreased amount of gas pains and increased comfort experienced by surgical patients in whom the preoperative and postoperative purgatives had been omitted.

Cases are frequently observed in which the frequency of bowel movements and prostration from large doses of cathartics in the treatment of "colds" undoubtedly prolongs the period of incapacity. While it is not claimed that the omission of catharsis will hasten the subsidence of definite symptoms, it is suggested that the omission of cathartics in the absence of constipation in the treatment of "colds" does not apparently delay recovery.

1604 Chicago Avenue.

* From the Department of Epidemiology, School of Hygiene and Public Health, Johns Hopkins University.

1. Mallory: Pathology of Diphtheria, in Nuttall and Graham-Smith: Bacteriology of Diphtheria, Cambridge, 1913, p. 120.

*Special Article*PERIODIC MEDICAL EXAMINATIONS OF
APPARENTLY HEALTHY PERSONS

HAVEN EMERSON, M.D.

Chairman of Committee of Council on Health and Public Instruction

NEW YORK

From both medical and lay sources requests have come to the American Medical Association to prepare a description of the objects to be attained, the methods to be employed and results which may be expected from inquiry into and observation of the tissues and physiologic functions of persons, young and old, who are not at the time aware of any disease or defect which is causing them to seek medical relief.

By resolution of the House of Delegates in June, 1922, the Council on Health and Public Instruction was authorized to prepare forms suitable for use by practitioners of medicine in carrying out the purposes of the periodic health examination, and the statement here submitted is offered in fulfilment of this obligation.¹

The preparation of forms for record of the applicant's history and the medical examination, without explanatory text as to the intent and meaning of the questions and the methods suggested for carrying out the tests of physical condition, seemed insufficient to comply with the spirit of the instructions of the House of Delegates. The forms will, in any event, be printed separately, and are intended for use on 5 by 8 inch cards printed on both sides, or on the single face of a letter sheet measuring 8 by 10 inches.

Medical experience of the benefits of periodic examinations of presumably healthy persons is sufficiently widespread to make any detailed reference superfluous. It is taken for granted that physicians are aware of the material reduction in infant deaths accomplished by the supervision under medical direction of the feeding and hygiene of healthy babies from birth to the age of 2 years.

During the years prior to entry into school life, and for many of the children during their school years, some form of medical supervision during apparent health has seemed justified by the number of important defects discovered which need correction, and by the improvement in growth and functions of body and mind when such handicaps are removed.

The annual physical examination of commissioned officers of the army is a type of medical service for health protection which is now increasingly called for by individuals and groups of adults, whether at their own initiative and expense or as a part of employment or insurance contracts as a sound financial investment.

The periodic medical examination of apparently healthy persons is designed to detect the early evidences of disorder before discomfort, inconvenience, interference with work, or anxiety has driven them to seek medical advice for the treatment of established disease. The methods employed are those used in the diagnosis

of disease. The attitude of mind, the point of view of physician and patient is the chief distinguishing feature which makes the health examination sufficiently novel and important to both parties concerned to justify the following suggestions for the methods to be employed, and forms of record approved and found useful.

The use of these forms, or their equivalent, is to be encouraged, in part because, by recording methodically observations and opinions as to the physical and functional fitness of persons passing through their hands, physicians will acquire an increasing skill and keenness in detecting early evidences of preventable and curable conditions, and also because, by the general employment of a thorough and complete method of inquiry by physicians, the laity will learn to appreciate the importance to their own health of good medical examinations, and to expect attention to the details of personal hygiene on which continued health so often depends.

In the past, when a person has consulted a physician he usually has had symptoms of disease of which he has been aware, and concerning the importance of which he seeks opinion and relief through treatment, or he fears he has a disease, although not suffering from anything more tangible than apprehension of disability, or he has sought protection against some preventable infection, such as smallpox, typhoid and diphtheria. Nowadays we find people coming to physicians in increasing numbers to have an estimate of their state of health, and guidance in the means of maintaining or improving it, or for specific advice to avoid the disabilities of advancing years.

For whichever reason the physician is consulted, he must obtain such pertinent facts of the patient's personal and family experience as may bear on the specific diseased condition now existing, or which seem to require modification of his manner of life in the interest of his health.

HISTORY OF APPLICANT

However varied may be the questioning necessarily directed to elicit pertinent facts when an explanation or diagnosis of a particular diseased condition is sought, there is a more uniform series of facts which it is desirable to learn in dealing with those who are presumably well. The method of medical examination, however, should be in all essentials the same, whether a diagnosis of disease or the discovery of good health is sought. If anything, the physician must be more keenly alert, and his examination must be more comprehensive to detect early unsuspected evidences of faulty function or structure in the latter than in the former case. To quote from the Army Medical Bulletin² which deals in detail with the annual medical examination of officers:

While the printed form upon which the pertinent facts are reported constitutes a guide to the logical steps by which the examinations should be conducted, it must never be considered as a measure of the scope of the investigation into the health of the individual.

Even though inquiry as to past illnesses of the patient and his ancestors does not directly contribute to an exact knowledge of his present bodily function and structure, the past personal and family history must be obtained because of the light they often throw on the patient's health.

It is important to know how he feels, how he sleeps, what he eats, how effectively he does his work and the nature of it, his home environment, his modes of exer-

1. At the November, 1922, meeting of the state secretaries in Chicago, a committee was appointed by the presiding officer to act in cooperation with the committee of the Council on Health and Public Instruction in preparing the forms. A preliminary draft was submitted in January, 1923, to the committee of the state secretaries (Drs. Rock Sleyster, Milwaukee; Edgar A. Hines, Seneca, S. C.; Tom B. Throckmorton, Des Moines, Iowa; Walter F. Donaldson, Pittsburgh, and Olin West, Chicago). After correspondence with leading clinicians in their respective states, the committee met with the Council on Health and Public Instruction, March 6, 1923, in Chicago, and numerous changes in the text were decided on. The consensus of the two committees is represented in the forms and text herewith submitted.

2. Army M. Bull. 7, Nov. 15, 1922, pp. 210-221.

cise and recreation, how he gets on with his family and associates, and whether he has any worries.

Health examinations should be arranged for on an appointment basis and not merely as incidental to service for the sick at crowded office hours. An appointment is in every way desirable for both patient and physician, because of the necessity of spending not less than from three quarters of an hour to an hour with each patient. The physician's time can be materially saved if the patient is asked to fill out beforehand and bring with him a sheet or card giving the information called for on Form A, unless the facts are already known to the physician. With suitable omissions and additions, this can be made appropriate for men and women at work

able for even an elementary knowledge of the patient have been emphasized by printing these in heavy faced type. The physician will in most instances find it necessary to verify the answers submitted by the applicant, through additional questioning appropriate to each case.

DETAILS OF PERSONAL HISTORY

With few exceptions, the reasons for including the questions listed in Form A are obvious, and the phrasing of them is sufficient to express the intent of the physician. No form of questions will suit every physician or mean the same thing to all patients. The items under 1, 2 and 3 are desirable for purposes of identification, except the question as to religion, which is put

Form A

HISTORY FORM

1. Name	Country of Birth
2. Address	White or Colored?
3. Age	Religion
4. What is your present occupation?	Single, married, widowed, divorced?
5. How often have you changed your work?	Why?
6. What are the conditions of your work?	
Regular, Satisfactory, Monotonous, Dangerous, Fatiguing, Indoors or out,	
Light, Dark, Dusty, Smelly, Noisy, Crowded, Scated, Standing,	
Walking, Hours per day? Days per week? or others,	
7. Do you support yourself,	by your work?
8. What are your home conditions?	
In a family, Alone, Room and bed to yourself, Quiet, Time to yourself,	
Congenial, Depressing, Irritating?	
9. What are your sleeping conditions?	
Hours in bed, Window open, Restful, Disturbed by children or others?	
10. How often do you eat?	
Regularly, Where, Between meals, Time at meals?	
11. Are you a moderate or hearty eater?	Taking one or more helpings at a meal of:
Meat (including fish and eggs)	Sweets or sugar
Baked beans	Fruit
Green vegetables (spinach, cabbage, etc.)	Salads
Potatoes (or rice, macaroni or cereal)	Bread
Pie, cake or pastry	Butter
12. How much do you drink daily of:	
Water	Tea
Milk	Coffee
13. How frequently do you use candy?	Soft Drinks
14. Do you have a movement of the bowels daily without the use of drugs?	Alcoholic Drinks
15. Do you take any regular exercise in addition to your work?	How much tobacco?
Competitive, Strenuous, Under direction, Indoors or out?	
16. To what extent do you share in social, church, political, club or trade associations?	
17. What are your pleasures or recreation?	
18. Are you subject to worries or moods, or periods of gloom and cheerfulness?	
19. Have you ever been ill with any of the following, and at what ages?	
Tuberculosis	Scarlet Fever
Malaria	Diphtheria
Rheumatism	Typhoid Fever
Syphilis or Gonorrhea	Tonsillitis (Sore Throat)
20. Have you been protected against smallpox, typhoid, diphtheria or other diseases by vaccination, and when?	Frequent Colds
21. Have you had any accidents, broken bones or surgical operations?	Convulsive Seizures
22. How often do you consult your dentist?	Nervous Breakdown
23. Are your parents, brothers and sisters living?	Migraine or Neuralgia
If not what were the causes of death and at what ages?	
24. Do you remember any diseases in your family which may have affected your own health?	
25. Do you consider yourself in good health?	When last?
If a woman, answer these:	If not, what is your complaint?
26. Are your monthly periods regular?	Prolonged?
27. Have they interfered with your occupation,	by pain?
28. Have pregnancies and confinements been free from accident?	Excessive?
	or headache?

in shops, offices or factories, or for women at home whose chief, if not only, occupation and interest is the household and the children. Special forms, such as those published by the Women's Foundation for Health for adult women, and those approved by the American Child Health Association to meet the particular needs of infants and children, may be found more convenient for these classes of patients. The physician will, in any event, wish to verify and develop by further questioning the answers submitted.

While it is believed that a reasonably thorough understanding of the patient's manner of life can be obtained only by exact information on all the items included in the History Form A, owing to the great variations which will be encountered in the social, economic and intelligence levels of the persons applying for these examinations, certain questions believed to be indispens-

here for convenience of spacing, and also because many factors of human relationship, mental and spiritual, diet and social habits are determined, particularly among our foreign born, by their church affiliations, and many of the resources needed in helping those who suffer more through their emotions than from organic disease can be brought to bear only by recognizing and using the established influences of religious beliefs and convictions.

If 4 and 5 are answered completely, 6, in which are suggested some of the more important factors which determine physical and mental deterioration, is perhaps unnecessary. The information to be obtained from 7 and 8, while not commonly sought by physicians in taking personal histories of the sick, has been found altogether necessary, or at least desirable, in getting a picture of the economic and social environment of the

individual wage earner, who constitutes so large a part of urban populations. Functional nervous disorders are not uncommonly explained chiefly by the anxiety and distress which result from narrow resources of money and friends.

Question 9 is fairly complete as it stands.

Questions 10, 11, 12 and 13 are obviously susceptible of considerable elaboration; but, aside from the reasonably exact information they may elicit for the physician's use, they will suggest to the mind of many patients the necessity of some thought and attention to the elements and proportions of their food and drink.

The prevalence and damaging effect on health of persistent constipation and habitual use of medication

medical examination should be made to include at least observations as listed on Form B, given below. When the history or physical findings indicate some particular liability to defect, as for instance low sugar tolerance, high blood pressure, latent syphilitic infection, asthma or hay-fever, the appropriate supplementary resources of clinical and laboratory procedures will, of course, be called for. Or if, when the vision or the reflexes are tested, errors are detected which require more exact methods, reference will in some instances be made to the specialist.

The equipment and facilities for the examination are those of the practicing physician's office, and such instruments as are needed are commonly carried in a

Form B

PHYSICAL EXAMINATION RECORD

Name	Weight, Usual	Temp.	Pulse S	Case No.	Bl. Pres. S
1. Height	Present		L		{ Sys.
	(Theoretical normal				{ Dias.
	for age and height)				L { Sys.
Hearing R		Vision R	Corrected R		{ Dias.
L		L	L		
Urine: appearance			Sp. gr.	Sugar	
Feces: appearance			parasites		
2. Standing					
Posture					
Muscle tests					
Nutrition					
Skin					
Superficial glands					
Chest					
Hands					
Arms					
Male genitalia					
Hernia					
Legs					
Romberg					
3. Sitting					
Hair					
Eye reflexes					
Nose					
Teeth					
Gums					
Tongue					
Tonsils					
Pharynx					
Ears					
Heart					
Lungs					
4. Lying					
Abdomen					
Reflexes					
Sensation					
Liver					
Spleen					
Kidneys					
Female genitalia					
Rectum (hemorrhoids)					
5. Summary: Defects of function and structure and errors of habit.					
6. Advice given to the patient:					

for its relief, and the ease with which most cases can be relieved by attention to regular habits of bowel evacuation, suitable use of fluids, appropriate diet and exercise, are sufficient reasons for 14 and 15.

Questions 16, 17 and 18 are, like 7 and 8, included with a view to obtaining some insight into the social, mental and emotional capacities, resources and liabilities of the applicant for a health examination. A correct estimate of a person's health cannot be arrived at by considering alone the structures and functions of the body without regard to personality and the psychologic factors.

The list under 19 may be extended or limited according to the age and place of residence of the applicant, etc.

Questions 20 to 28 require no comment.

THE MEDICAL HEALTH EXAMINATION

When the appointment is kept, preferably at the physician's office, with the completed questionnaire, a

suitably equipped kit bag, with the exception of the weight scales.

The examining room must be warm, preferably between 70 and 74 F., and a light washable woolen cape or large square of flannel shaped to the shoulders should be provided for protection of the bared surfaces of the body as the examiner passes from one area to another. An examining table or other flat, firm surface is needed for the recumbent examination. The instruments needed are:

- Tape measure

Tongue depressors

Spot light

Stethoscope

Blood pressure instrument

Otoscope

Laryngeal mirror

Tallqvist's hemoglobin scale,

or Dare hemoglobinometer

Nose speculum
- Vision chart (Snellen)

Rubber gloves or finger cots

Vaginal speculum

Weight scales

Simple urine testing outfit for

appearance, specific gravity,

albumin by acetic acid and

heat test and sugar by Bene-

dict test, or other standard

test

Thermometer

Other equipment that permits added completeness and convenience of the examination includes:

Centrifuge	Wassermann tubes
Microscope	Reflex hammer
Ophthalmoscope	Dynamometer
Flesh pencil	Tuning fork

THE PHYSICAL EXAMINATION

A certain group of observations (Section 1 of Form B) can often be made by a lay assistant, office clerk or nurse with accuracy, and these are therefore put in a group by themselves. Similarly, as the examination can best be carried out in an orderly manner, those other observations are grouped which are usually made in the standing, seated and recumbent positions respectively (Sections 2, 3 and 4 of Form B).

It will be noted that the blank form provides not for a series of detailed notes for all observations made on the various parts and functions of the body; but, recognizing that we are dealing here not with a diagnosis of established disease but with an estimate of health or certain variations from an accepted normal range of healthy conditions, only the headings are listed under which objective signs indicating abnormal conditions may well be described.

In other words, these record forms are not intended for anthropologic research or for statistical studies of physical signs, although many valuable contributions in these fields might well result from a large number of careful examinations of people in health. The form proposed is intended to offer suitable space in which to record the items of history and those objective findings on which a physician would be able to base his opinion as to the probable soundness of a person's health, or his advice in matters needing change in habits or conduct of life.

Further study and additional examinations will usually be required to determine the precise location, extent and character of various disease processes or defects which may be revealed or suspected as the result of the health examination.

The summary (Section 5) is for the convenience of future reference to the record, and to commit the physician to an expression of opinion as result of his study of the history and examination of the patient.

The advice given (Section 6) should consist of written directions to the patient, for the correction or limitation of defects or errors discovered. Simple, precise, nontechnical wording should be used, and only such measures should be proposed as fall within the possibilities of the patient to carry out.

Disease states will, of course, be treated by the examining physician, or the patient may be referred elsewhere for appropriate care.

It will commonly be found that social, recreational and other local resources with which the physician should be familiar can be used with advantage, as gymnasiums, libraries, clubs, and community groups of various kinds, for mental and physical development in the interest of health.

DETAILS OF PHYSICAL EXAMINATION

For the convenience of those physicians who have not been accustomed to follow a particular and comprehensive routine of physical examination, the following brief elaboration of each of the items listed in Form B is offered.

Height: To be taken barefoot, and where there is asymmetry, in the position with the pelvis at right angles to the vertical axis of the body.

Weight: Preferably stripped, or with the examining cape only. By the usual weight is meant the weight during apparent health during the past year and after attaining maturity. Excellent standard height and weight charts for adults are published by the National Tuberculosis Association, and for children by the American Child Health Association. A standard height and weight chart for men and women (from 15 to 84 years) wearing ordinary indoor clothing was prepared by the Medico-Actuarial Investigation of forty-two life insurance companies of the United States and Canada in 1912, and is widely used.

Temperature: The thermometer under the tongue for three minutes. In children, a rectal temperature is preferable.

Pulse: To be taken standing and in the recumbent position and recorded in each position when for two successive quarter minutes the rate remains the same. In addition to the pulse rate, its quality, rhythm, regularity, and the character of the arterial wall are to be noted. (It is the practice among life insurance examiners to take the pulse and the blood pressure in the sitting and standing positions only, and at intervals of thirty and forty-five seconds after exercising.)

Blood Pressure: The auscultatory method is advised and the systolic and diastolic pressures should be read in both standing and recumbent positions, when the pulse rate has shown the same rate for two successive quarter minutes. (Life insurance companies have published tables of blood pressures and the usual range within normal limits according to age and other factors.)

Hearing: The room must be quiet and the patient so placed that there is no greater resonance or reverberation from walls, etc., on one side than on the other. Any watch will serve to test acuteness of hearing if its audibility is known for people with normal hearing. The patient should keep eyes shut while the watch is held at various distances from the head on each side, and one ear should be closed, while the opposite ear is tested, by pressing the tragus firmly against the meatus. The test of hearing by the whispered and spoken voice, the patient being placed with his back to the physician, is in some ways better than the watch test, and is particularly valuable when malingering or deception by the patient is suspected.

Vision: Refractive errors are to be tested for near and distant vision by the Snellen test card or other standard types or forms. If corrective lenses are in use by the patient, the tests should be repeated with them on.

Urine: The appearance, as color, deposit, blood, pus or other sediment, the specific gravity at room temperature, the presence of albumin by the acetic acid and heat test and the presence of sugar by the Benedict test are to be noted. The Heller test for albumin and the Haynes test for sugar are widely used in life insurance practice. In persons over 50 years of age, and when traces or more of albumin are found, a microscopic examination of the urine is important.

Feces: In many instances in adults in whom dietary defects are suspected, and commonly in infants, the appearance of the feces will give valuable information. In persons living in or coming from areas of hookworm prevalence or widespread distribution of amebic dysentery and other tropical and subtropical intestinal manifestations, a microscopic examination of the fresh stool is desirable.

Posture: Mobility of chest, of spine, of all joints, relation of shoulders to pelvis, knees to ankles, pes planus and cavus, lordosis and scoliosis are to be looked for, and protuberant or flat abdomen to be noted. Musculature for development and quality, and tests by grip and resistance to flexion and extension of arms and legs.

Nutrition: Color and quality of skin and mucous membranes. Amount and distribution of subcutaneous fat. Relation of height, weight and age as compared with National Tuberculosis Association chart or other standard.

Skin: Eruptions, scars, areas of infection, urticaria, precancerous lesions of excessive cell proliferation, pigmented moles, calluses, corns.

Superficial Glands: Cervical, axillary, inguinal, epitrochlear, thyroid to be noted particularly for unusual size, tenderness or evidences of previous inflammation or enlargement.

Chest: Asymmetry, prominences or depressions indicating present or past disease of lungs or heart, or of errors of bony and muscular development, rickets.

Hands: Atrophy, tremors, grip, occupational or accidental injuries.

Male Genitals: Present lesions or past scars on glans, discharge or drop on stripping the urethra. Hydrocele or varicocele.

Hernia: In digital examination for undue patency of inguinal canals the subject should stand with feet well apart, feet toeing in, and then rise on balls of his feet with arms above his head and cough.

Legs: Varicosities.

Romberg Test: The subject should stand with heels and toes touching, away from contact with any object or person and with eyes closed. Any swaying and the direction of it should be noted.

Hair: Amount, distribution, dryness, lack of luster, irregular lengths indicating poor nutrition. Infections or infestations of scalp.

Eyes: Evidences of strain or irritation, congestion or inflammation of conjunctivae or closure of lacrimal duct. Scars on cornea. Discharge as in trachoma. Pupillary reactions to light and in accommodation. Preferably supplemented by retinal inspection with ophthalmoscope.

Nose: Patency of nares, evidence of infection, chronic discharge, character and location of obstruction. Direct inspection with nasal speculum.

Teeth and Gums: Occlusion. Failure or irregularity of eruption of teeth. Broken or carious surfaces, tenderness, evidence of present or past root abscesses. Inspection of surfaces under removable appliances. Sensitiveness to cold and heat. Tartar deposit. Bleeding, purulent discharge, erosion or retraction of gum margins. Inspection to be carried out with use of tongue depressor and spot light. A narrow arch and high palate are worth noting, particularly in mouth breathers among children.

Tongue: Search on tongue and cheeks for roughnesses, leukoplakia, or possible precancerous lesions or ulcerations. Test tongue for tremors and symmetry when extended. Test speech in repeating trial phrases such as "Third Artillery Brigade" or others to determine nervous or muscular control of throat, tongue and lips.

Tonsils and Pharynx: Careful search by direct inspection and, if necessary, with use of laryngeal mirror for foci of infection, or evidence of hypertrophy of lymphatic tissue in throat and retronasal space. Note presence and character of secretions.

Ears: After removing wax or other dirt, inspect ear drum with otoscope, especially noting scars, sclerosis, perforations or discharge, and tenderness in soft or bony parts in vicinity. If hearing has been found defective, test bone conduction for sounds.

Heart: All observations made with patient at rest should be repeated immediately after brief exercise, of a kind and amount to cause at least momentary increase in respiration. The location and character of apex beat, the size of heart, the force and character of systolic impulse, the correlation between apex impulse and carotid and radial pulses, the effect of exercise on heart action are all of more value in estimating the presence, degree and importance of organic heart defect than is the presence of murmurs. The source, location in the cardiac cycle and significance of abnormal sounds, murmurs and thrills should always be determined if possible. Inspection, palpation, percussion and auscultation should be used methodically before and after exertion, and the effect of exertion on the rate and extent of respiratory movement and on the color of the skin and lips, and the subjective symptoms of the patient should be carefully noted in order to estimate the work capacity or reserve of the heart muscle.

Lungs: In addition to the systematic observation of the chest, back and front, during quiet breathing, and in full inspiration and expiration, by inspection, palpation, percussion and auscultation, the subject should be required to breathe out fully, then cough lightly and immediately breathe in, with the stethoscope continuously applied to different areas of the chest in turn during such a maneuver, especially above the third rib in front and the spine of the scapula behind. In this way the minuter, moist sounds indicating an early or incompletely arrested tuberculous process are most likely to be

detected. Often only by considering the physical findings, together with the history and perhaps repeated observation of the patient, can the significance of abnormal sounds in the chest be determined or the diagnosis of a tuberculous process be established or eliminated.

Abdomen: The patient's mouth should be kept open, the breathing be quiet and easy, the knees partially flexed, the hands crossed on the chest, and the head on a low pillow during abdominal examination. Search for tenderness, muscular resistance, masses, abnormal size, location or character of palpable viscera. Variations from usual signs should be elicited in the various regions of the abdominal cavity by inspection, palpation, percussion and auscultation. The excursion of the diaphragm should be noted on each side.

Reflexes and Sensation: The abdominal and cremasteric reflexes may well be elicited at this time, and the patellar reflex or knee jerk and ankle clonus tested while the patient is recumbent. The Babinski and other special toe signs should be elicited at this time. Hyperesthesia and hypesthesia to touch and temperature should be tested on the main areas of the trunk and extremities while the patient is recumbent.

Liver: The upper and lower levels of liver dulness in inspiration and expiration, the location and character of the lower margin, especially irregularities or unevennesses of surface or edge will be established by percussion and palpation.

Spleen: The size and character, i. e., hard or soft, will be sought by percussion and palpation.

Kidneys: In the dorsal, lateral or prone, or knee-elbow position with the abdominal wall relaxed, the outline and fixation or mobility of the kidneys can be made out by palpation except in those with very obese or heavy muscular parietes.

Female Genitals: In unmarried women no internal or vaginal examination need be made unless there is a history of symptoms such as irregular or excessive flow, abnormal discharge, or uterine discomfort to call for visual and manual examination of the vaginal tract, the cervix, body, and palpation for ovaries. Abdominal palpation alone or with rectal digital examination should suffice. In married women or those who have borne children or when there are warning symptoms of disease, inspection with the speculum and bimanual examination should be employed.

Rectum: The finger cot or rubber glove should always be used. A digital examination by rectum should be made in the case of men, to palpate the prostate and, if necessary, to carry out digital massage. In women under 45 when there is no history of menstrual disturbance, pain or irregular bleeding or persistent constipation or pain or bleeding at stool, the rectal examination may be omitted. When the examination is made in unmarried women by the aid of coincident abdominal palpation, a fairly complete palpation of the pelvic organs of generation can be made. In both men and women the digital rectal examination offers an excellent opportunity to test the character of rectal and perineal tissues and to detect the presence of inflamed hemorrhoids, fissures, tumor formation, obstruction or cicatrices.

In a procedure such as that required to obtain an accurate and comprehensive understanding of the condition of an apparently healthy person, the slavish or routine following of a standard procedure must lead to poor results. The method described above is sufficient to meet all the usual indications for a complete medical examination, but each physician will doubtless change the order and content here submitted, as may be called for in the particular patient before him. Physicians with long experience and mature judgment use a standard form as a basis from which to vary at their discretion. Those who have not developed a satisfactory method and routine will find the one here given a convenience.

It is the practice in some places where large numbers of medical examinations of healthy young adults are made, as at state universities, to approach the patient from the standpoint of his various bodily systems and their relationships, such as mental, nutrition and special

senses, instead of by the regional method proposed above. It is usually found that the individual practitioner will save himself time and get a better all around picture of the patient by following the stages of the examination indicated in the main groups 1, 2, 3 and 4, as given in Form B.

HYGIENIC ADVICE

Physicians whose training and attention have been devoted almost exclusively to the treatment of serious or long established disease processes which have interfered with the patient's comfort or earning capacity will not find themselves at once prepared to guide applicants for health service in the practices of personal hygiene.

A review of the physiology of digestion and nutrition, and the effect and uses of physical exercise and development on the muscular, nervous, circulatory and respiratory systems, will be the most helpful preparation of the physician for carrying out the object of health examinations, which is in its simplest terms the early correction of errors of personal hygiene which have developed defects of bodily function, or are likely to do so if disregarded.

Hygienic advice alone, in the presence of the many well marked disease conditions which are commonly discovered in any group of people who believe themselves wholly sound and healthy, will, of course, be of no avail without the application of appropriate medical and surgical treatment for relief and cure.

Of the many disorders found among people apparently in good health, there are five so common that advice is frequently called for to correct them. These are sleeplessness, constipation, overweight, underweight, and arterial hypertension. The physician should be prepared to give specific instruction as to hygiene, manner of life, diet, etc., according to his own opinion in helping patients, who think themselves quite well, to correct or counteract the harmful effects of these common errors which are likely to cause serious disturbance of health with advancing years.

During the past year 958 persons received health examinations as described above, at the three stations in New York City established by the United Hospital

TABLE 1.—Nature of Hygienic Advice

Hygienic Advice	Per Cent.
For general dietary	22.8
For correction of obesity.....	4.7
For malnutrition	4.1
For constipation	11.3
For exercise and outdoor recreation.....	17.4
For adequate use of water in the dietary.....	9.3
For oral hygiene	9.3
For bathing	10.2
For sleep and rest.....	6.4
For enuresis, prenatal care, clothing, sex hygiene, etc.	4.5
	100.0

Fund and under the professional direction of a committee of physicians all members of the New York Academy of Medicine. These people of various races, both sexes, all ages and chiefly from among the wage earners' families and others of limited or insufficient means, either did not consider themselves in ill health at the time of the examination or were obtaining no medical care for conditions of which they were aware but for which they believed medical treatment unnecessary.

Of the 958 examined, twenty-four, or 2.5 per cent., were found to be in good health; 697, or 72.7 per cent.,

needed definite medical treatment (this number included 214 who needed, in addition, advice as to habits and personal hygiene), and 237, or 24.7 per cent., needed only hygienic advice to correct or arrest existing errors of bodily function or defects of structure.

The hygienic advice given to 451 examinees, 214 of whom also required definite medical treatment, fell under the headings in Table 1.

TABLE 2.—Chief Diseases and Defects Needing Treatment

Diseases and Defects	Percentage of Entire Group (958) Examined
Dental defects	56
Defective vision	35
Diseased tonsils and adenoids.....	30
Circulatory disorders	28
(Which included 77 instances of functional cardiac disorders and 37 of organic heart disease)	
Diseases of women (lacerations, displacements and menstrual disturbances)	39*
Faulty posture (serious enough to cause symptoms)...	10
Malnutrition (children and adults).....	16
Constipation	12
Obesity, defective hearing, cervical adenitis and flat foot were recorded in about 10 per cent. of the cases. Twenty-two cases of syphilis and twenty-eight of suspected tuberculosis were found.	

* Percentage of 433 women examined.

The chief diseases and defects among the 697 needing medical care and treatment are given in Table 2. Multiple defects in the same individual were common.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

BARIUM SULPHATE-MERCK FOR X-RAY DIAGNOSIS (See New and Nonofficial Remedies, 1923, p. 66).

The following dosage forms have been accepted:

Skiabaryt for Oral Administration: A mixture of Barium Sulphate-Merck for X-Ray Diagnosis, 75 to 85 per cent. admixed with sugar, tragacanth, vanillin, cinnamon and cacao.

Dosage. Triturate 150 to 200 Gm. (5 to 6.5 ounces) with cold water added gradually to form a smooth, thin paste; then add warm water gradually until the mixture measures 500 Cc. (16 fluidounces). The mixture is then ready for drinking.

No U. S. patent. U. S. Trademark 165,022.

Skiabaryt for Rectal Administration: A mixture of Barium Sulphate-Merck for X-Ray Diagnosis, 75 to 85 per cent. admixed with sugar, tragacanth, vanillin and cinnamon.

Dosage. Mix 200 Gm. (6.5 ounces) with cold water to form a smooth paste; then add warm water with stirring until the mixture has acquired a fairly fluid consistency. It is then ready for administration through the irrigator.

No U. S. patent. U. S. Trademark 165,022.

Course in Medical History.—A late addition to the curriculum is the course in the history of medicine; and the reasons advanced for adding an additional burden to the already overloaded medical course and thereby helping to increase the total number of years of study, must be almost self-evident. The physician if he is to retain his status in society must be more and more a cultured gentleman. He must be more than "a dispenser of pills and powders." He must be a leader in the community, with high ideals. His aim should be "how much can I contribute rather than how much can I get out of this community." The study of the development and evolution of medicine can play a prominent part in stimulating such an altruistic attitude of mind.—*Canadian M. A. J.* 13:195 (March) 1923.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, MAY 12, 1923

NEW VIEWS ON THE PREDETERMINATION OF SEX

From early antiquity, the forecasting of the sex of the unborn child has been a matter to occupy the minds not only of physicians and biologists, but also of the public. The subject is mentioned as far back as the Jewish Talmud,¹ and reference to it crops up through intervening centuries down to the present.

Most of these conjectures, founded as they were on the insufficient data of ignorance, or plainly old wives' tales or traditions, carried no measure of conviction; but as our acquaintance with histology and biology spread and scientific minds lent themselves to the study of the question, somewhat more exact data were brought to light. In 1828, Girou de Buzareingues² wrote a monograph on this subject. In 1863, Thury³ enunciated his "law," and within the last fifteen years Caullery,⁴ Kushakewitsch,⁵ Morgan⁶ and others have contributed to the literature of the subject theories supported by more or less convincing data and experiments. In 1902, McClung⁷ stated that the accessory chromosome which Henking and Montgomery had located in certain spermatozoa is the determinant of sex. In McClung's view, each animal produces two kinds of spermatozoa in equal proportions, one set of which possesses the accessory chromosome. These views were confirmed by Edmund B. Wilson and T. H. Morgan, the latter's experiments on *Rana esculenta* indicating that these accessory chromosomes also transmit the hereditary qualities that predominate in each sex. These experiments tended to discredit the untenable theories of sex determination advanced in the past.

1. Talmud Babli, Book Nidar, par. 3.

2. Girou de Buzareingues: De la génération, Paris, 1828.

3. Thury: Mémoire sur la production des sexes, Paris and Geneva, 1863.

4. Caullery: Le problème du déterminisme du sexe, Biologica 1: 193, 1913.

5. Kushakewitsch, Serge: Die Entwicklungsgeschichte der Keimdrüsen von *Rana esculenta*: Ein Beitrag zum Sexualitätsproblem, Festschrift für R. Hertwig 11: 63-224, 1911; Ein Fall von Hermaphroditismus lateralis versus beim *Rana esculenta*, Anatom. Anzeiger 38: 531-537, 1911.

6. Morgan, T. H.: Is the Female Frog Heterozygous in Regard to Sex Determination? Am. Naturalist 45: 253-254, 1911; Is the Change in the Sex Ratio of the Frog That is Affected by External Agents Due to Partial Fertilization? ibid. 46: 108, 1911.

7. McClung: Biol. Bull. 3: 43-84, 1902.

Recently, Dr. A. Alich⁸ of Paris has elaborated further on this subject. He takes exception, as unscientific, to the focusing on one of the two elements of procreation, the spermatozoon and the ovum, as the sole and only determinant in the matter of sex. He contends that, since both are concerned in the question of fecundation, both must be concerned in the matter of the initial formation of the genital organs of the fetus. Alich grants as probable the theory of chromosome activity advanced by McClung, but refuses to limit its potency to the elements contained in the structure of the spermatozoon. He contends that these activating microcellules are present in both the ovum and the spermatozoon, and that the question of sex determination is one that is explained by the preponderance of one or the other at the time of contact of the two elements. In this connection he quotes Yves Delage,⁹ who in 1913 wrote:

It may be conceded that chromatin [chromosome] is not a homogeneous substance of which the smallest particle [the microcell of today] possesses all the characteristics of the whole, but that it is a collection of units having a distinct chemical composition, of which each cell has a definite relation to certain organs of the future state, and these themselves, an analogous chemical constitution.

Alich goes on to say that both the ovum and the spermatozoon, prior to fecundation, have their cycle of life; that, like all colloids, they are subject to the laws of evolution, and that this evolution differs according to the element considered. It is granted that the human ovum may remain capable of impregnation from eight to twelve days after its extrusion from the ovary, and therefore after the conclusion of the menstrual flow. The spermatozoa may remain active in the uterus six or eight days, after having taken from six to twenty hours to arrive at this location.

With these data as a hypothesis, Alich advances the theory that each one of these microcells, either male or female, has its special complementary destination with an analogous microcell, and carries for the creation of the genital system of the new being its coefficient of creative power; that in the creating of this system in the embryo there will be involved a certain number of male microcells and equally a certain number of female. Wherefore, it may be stated that if there is in this union a greater number of male microcells than female, the result will be a male embryo, and vice versa. It is of interest to consider what Alich has to say in support of the theory advanced in the preceding sentence. He believes that spermatozoa and ova, like all organic and inorganic colloids, have, prior to fecundation, their vital curve; and, consequently, in their evolution, follow a fixed trajectory. That is to say, the ratio of microcellular energy in each is at its height in its early life, and becomes less potent as the life cycle of each of them decreases regularly up to the time of cellular death, when they cannot fertilize or be fer-

8. Alich, A.: Bull. de l'Acad. de méd. 89: 363 (March 20) 1923.

9. Delage, Yves: Une hypothèse sur la base physique de la force héréditaire, Biologica, 1913, p. 161.

tilized. Granting this proposition of microcellular energy, the spermatozoon or ovum which is most potent in this particular form of energy must be the deciding factor in the production of either male or female.

Taking into account observations on animals, he finds this in support of his theory: A mare that has been much exhausted by work when bred with a fresh stallion gives male issue and vice versa. With sheep, if a number of the ewes are in rut at one time, the preponderance of lambs will be female, owing to the weakened force of the ram in covering an excessive number of ewes (relative numbers by experiment, three rams and fifteen ewes). If only a few of the ewes are in rut, the majority of the "get" will be male (relative number by experiment, thirteen rams, four ewes). The result between an adult rooster (2 years) and pullets of from 6 months to 1 year gives a preponderance of males, while in the opposite condition the balance is in favor of the female. From these three experiments, Alich makes the further deduction that, in addition to considering solely the question of the life cycle of the microcellular elements which he believes to be the determining factor in sex determination, account must be made for factors in the individual that affect this potential energy; that different individuals may have a different index of potency, and that this potency is influenced in the same individual by conditions such as fatigue or age, as exemplified in the foregoing experiments.

With these deductions, Alich believes that there is ready explanation, according to the theory which he advances, of the different hypotheses that have been advanced as explaining the question of sex incidence, and that it clarifies the vague premises advanced under heredity, dominant personality, superior physical strength and even the early one of priority of the orgasm, which is that advanced in the Talmud, already referred to.

He admits that there is perhaps a certain amount of conviction in these theories, but asserts that they fail in logic, since they are based on a one-sided view, taking into account only one of the generating elements, exclusive of the other.

In conclusion, he says:

The laws which we have laid down and the study which we have made takes into consideration all facts which can be presented. This study shows us that, as Cuénot¹⁰ believed, the determination of sex is syngameous; that is to say, it takes place at the time of fecundation. The two elements involved (the male and female microcells) decide the sex of the future individual at the time of contact and in accordance with the preponderance of microcellular energy in one or the other of the uniting elements, the spermatozoon or the ovum.

On the variation in the relation of this intracellular energy hangs the formation of the genital tract of the fetus; any cause which tends to favor one or the other will weigh down the sex balance of the future individual.

Such is the theory that Dr. Alich offers to the French academy as explanation of this puzzling question. It

is ingenious and fairly plausible; certainly as much so as what has already been advanced on the subject; but after all, as he says in finishing his discussion:

We have laid down a law which seems in accord with experiments hitherto made along these lines and to fit the more or less empiric speculations of early writers and also the traditions handed down from father to son. That much accomplished, further confirmation of it now rests in the hands of the biologist.

NEW ANESTHETICS: ETHYLENE AND ACETYLENE

Real additions to the subject of anesthesia are always welcome and desirable, and this year sees a revival of interest in two gas anesthetics: ethylene and acetylene. Both gases were the subject of experiment in anesthesia many years ago. In 1864, the physiologist Hermann¹ demonstrated anesthesia on himself with ethylene, and concluded that the gas acted similarly to nitrous oxid. It appears that Davy and Johannes Müller made similar demonstrations with ethylene on themselves. The effects that they reported were a sensation of pressure in the head, with moderate increase in respiratory rate in the beginning. This was followed by sleepiness, muscular weakness, dizziness and unsteady gait, and afterward headache. In 1876, Eulenberg² and, in 1885, Lüssem³ published observations on animals. Lüssem found that ethylene in concentrations of from 70 to 80 per cent. by volume mixed with 20 per cent. of oxygen caused anesthesia in animals (frogs, birds, rabbits, dogs and guinea-pigs), preceded by excitation and followed by rapid recovery. Recovery in fresh air was complete in a few minutes. A sound, prolonged sleep was not observed in rabbits and dogs with concentrations of from 30 to 40 per cent., and the stage of excitation lasted longer. Apparently there were no after-effects and no demonstrable changes in the blood. Overdosage caused death by asphyxia. Lüssem also states that he produced light narcosis in himself with diluted ethylene.

The recent experiments of Luckhardt and Carter⁴ of the Department of Physiology of the University of Chicago, and of Brown⁵ of Toronto, confirm and extend these early observations, and appear to hold out greater promise of the future usefulness of ethylene.

Acetylene was described by Lewin⁶ in 1885 as a rather efficient anesthetic, requiring only about 1 per cent. by volume in air for anesthesia, and apparently, therefore, more efficient than ethylene. This was confirmed in 1895 by Rosemann.⁷ Marked effects in cats were produced by concentrations of from 15 to 20 per cent. by volume, many animals showing vomiting, and later

1. Hermann, Ludimar: Ueber die physiologischen Wirkungen des Stickstoffoxydulgases, Arch. f. Anat. u. Physiol., 1864, p. 521. Exp. Toxikol., 1874, p. 276.

2. Eulenberg: Gewerbehygiene, 1876, p. 398.

3. Lüssem, F.: Diss., Bonn, 1885; Ztschr. f. klin. Med. **9**: 397, 1885.

4. Luckhardt, A. B., and Carter, J. B.: The Physiologic Effects of Ethylene, a New Gas Anesthetic, J. A. M. A. **80**: 765 (March 17) 1923.

5. Brown, W. E.: Preliminary Report of Experiments with Ethylene as a General Anesthetic, Canadian M. A. J., March, 1923.

6. Lewin, Louis: Lehrbuch der Toxikologie, 1885. Ogier: Sem. méd., 1887, No. 11.

7. Rosemann, R.: Ueber die Giftigkeit des Acetylens, Arch. f. exper. Path. u. Pharmacol. **36**: 179, 1895.

10. Cuénot, L.: Arch. de zool. expér. et gén., Paris, Schleicher frères **4**: 6, 1907.

dyspnea with marked general irritability. Blood appeared not to be altered by acetylene. Owing, however, to its unpleasant odor, acetylene was discarded. Apparently, this objection has now been overcome by the addition of oil of pine, as a flavor, according to the recent report of a personal visit by Horwitz⁸ to Gauss' gynecologic clinic at Freiburg.

Horwitz reports that Gauss has successfully used a mixture of acetylene, 40 parts, and oxygen, 60 parts, flavored with oil of pine, as an anesthetic in major operations in 515 cases with no catastrophes. The advantages claimed for acetylene are: rapid induction (insensibility in five minutes); simplicity of administration; safety; absence of struggling and excitement, and rapid recovery. The anesthetized patients appeared to be in natural sleep and without change in color; respiration appeared to be a trifle quicker than usual, and the temperature fell about 1 degree. It is stated that women patients testified that there were no unpleasant sensations and that postanesthetic vomiting was absent. Relaxation was not so complete as with chloroform, though it was adequate for major operations. The acetylene-oxygen mixture is used by Gauss in obstetrics, but he warns that, like all general anesthetics, it diminishes uterine contractions.

In the case of acetylene, as in that of ethylene, recent observations confirm and extend those of the older workers, but with acetylene, trials on human subjects are not reported before Gauss. Both ethylene and acetylene are asphyxiants. Their usefulness in relation to that of nitrous oxid, and also to ether, remains to be demonstrated. Meantime, they should not be used indiscriminately. It will be better to permit those who can study them and observe their effects under controlled conditions to work out their relative value.

SALT-RISING BREAD AND THE WELCH BACILLUS

Until late in the nineteenth century, the preparation of bread was an uncertain and wasteful process; then Pasteur's work on fermentation led to the perfection of bakers' yeast and revolutionized the baking industry. Today bakers' bread is manufactured scientifically and with assurance. Many people, however, continue to prefer salt-rising bread, which until recently was baked at home in the crude manner of former centuries. Salt-rising bread has a distinctive flavor and odor, and its food value per unit of volume is comparatively high. It is not made with yeast, but, for sufficient gas to raise the dough, depends on chance inoculation with gas-producing organisms that naturally reside in flour. These organisms vary with different lots of dough. Thus, failures to obtain good bread are not infrequent.

There are now on the market products intended to insure an abundance of gas for baking salt-rising bread, and some of these—so-called "bread starters"—are practically cultures of gas-producing micro-organisms.

Kohman,¹ in 1917, reported the isolation of a bacillus from salt-rising bread which he predicted would have far-reaching results on the salt-rising bread industry. It was said to be an exact parallel of the discovery of yeast. Two thirds of the gas formed by this organism was said to be hydrogen, the remainder carbon dioxide. It was a spore-bearing bacillus, which, it was stated, produced no alcohol, and which perished during the process of baking. "Hence," it was said, "salt-rising bread is as sterile as bread made with yeast." "Bread starters" have since been concocted which, it seems, are not sterilized during the process of baking.

Recently, Koser² investigated a commercial "bread starter" which was advocated for the preparation of salt-rising bread, and found that it contained large numbers of *Bacillus welchii* (*B. aerogenes-capsulatus*). It was a coarse, white powder composed of starch and certain alkaline salts in addition to the bacilli. According to directions accompanying the product, it is added to boiling hot milk and kept over night in a warm place. It is then added to hot water and flour to prepare the "sponge," which is allowed to rise; then more hot water, flour and other ingredients are added to make the dough. This is molded into loaves and baked. The addition of this starter to milk results, after incubation over night, in a frothy mass which, Koser estimated, contained from 1,000,000 to 100,000,000 *B. welchii* organisms per gram. After the bread was baked, and, in fact, after it was placed on sale, the bacillus was recovered from the interior of the loaves. In samples as small as 0.01 gm., taken from the interior of loaves, *B. welchii* was found in eighty-five out of ninety-two samples examined. Larger samples of bread, 1 and 5 gram samples, gave uniformly positive results. In decided contrast to these findings were results obtained in the examination of ordinary yeast bread, in forty 5 gram samples of which only three showed the presence of *B. welchii*. Negative results were obtained in all of the 0.1 gram samples of yeast bread examined.

Guinea-pigs were injected in the thigh muscles with 1.0 c.c. of twenty-four hour cultures in beef infusion broth containing a piece of cooked meat. The guinea-pig receiving the "bread starter" culture became quite ill after twenty-four hours. Its entire thigh and flank became swollen and tender, an ulcer formed which eventually healed with a scar, and the hair over the affected portion fell out. The guinea-pig injected with the culture obtained from loaves of salt-rising bread became somewhat sick after twenty-four hours, the thigh and flank became swollen, an extensive scar formed over the affected parts, and the hair was lost.

8. Horwitz, C. H. S.: A New General Anesthetic, *Lancet* **1**: 619 (March 24) 1923. Gauss, C. J., and Wieland, H.: Ein neues Betäubungsverfahren, *Klin. Wchnschr.* **2**: 113, 158, 1923.

1. Kohman, H. A.: Salt Rising Bread, *Sc. Am. Supp.* **84**: 212, 1917.
2. Koser, S. A.: *Bacillus Welchii* in Bread, *J. Infect. Dis.* **32**: 208 (March) 1923.

Thus, it seems, the virulence of these organisms was not very high. Koser then prepared salt-rising bread by using a virulent strain of the Welch bacillus. He obtained a culture of the "Silverman" strain, which originally was isolated from a war wound, and substituted it in the "bread starter." The bread thus made compared favorably in texture and size with the bread prepared from the starter.

The association of the Welch bacillus with wound infections in man is well known. It has also been associated with acute intestinal disorders in connection with public water supplies. It is said, however, to be a common inhabitant of the intestinal tract of man, and to occur frequently in milk. Nevertheless, the use of an organism of this type in a commercial process would appear to be a questionable procedure. A safer course would be to employ in "bread starters" an organism which is, beyond question, harmless.

Current Comment

MERCURIAL STOMATITIS

The characteristic inflammation of the mouth caused by the excessive use of mercury, and known as mercurial ptyalism or stomatitis, represents a condition rarely seen as a result of the therapeutic use of other drugs. Intoxication with mercury is by no means an uncommon clinical finding; the importance of this form of poisoning is, in fact, increasing, because of the wide use of mercury in certain fields of therapy, the possibility of the introduction of mercury and its salts into the body through ingestion, inhalation or cutaneous absorption in connection with industrial pursuits, and because of the current "popularity" of this poison for criminal purposes involving attempts against human life. In the more recent studies of the pathology of the subject, attention seems to have been focused on the kidneys, presumably because anuria becomes a prominent symptom in all severer forms of intoxication with the metal. Like other inorganic substances, mercury is secreted into the saliva; hence, various observers have championed the theory that mercurial stomatitis is attributable to the local irritation produced by the presence of the poison in contact with the mucosa. The German toxicologist Kobert favored this explanation, advancing in support of it the extreme sensitiveness of such membranes to even greatly diluted solutions of salts of mercury, so little as one part in a hundred thousand being perceptibly disagreeable. The problem has lately been subjected to a detailed critical review by Bessesen,¹ at the University of Minnesota. He admits that some specific local action of mercury may occur in mercurial stomatitis; but he regards this as inadequate to explain the intensity of the pathologic processes concerned. From his own observations, Bessesen finds distinct indications of blood and circulatory changes which must be taken into consideration in discussing any local lesion. They have been empha-

sized by many writers, and formulated into a variety of theories. The most recent review of the subject reasserts anew the belief that in mercurial poisoning the local lesions not only in the mouth but also in various other organs are due to local effects superimposed on more general or widespread vascular and cellular changes which make the local reactions possible.

SUGAR CONSUMPTION BY ACTIVE GLANDS

It is generally appreciated that functional activity in the body is the consequence of an exchange of materials—of metabolism, as it is currently designated. This transformation is commonly, and quite naturally, thought of in connection with the contractions of the musculature. Every one realizes that such work as is performed by the muscular system cannot be carried out without the conversion of energy, and that it goes on at the expense of organic substances stored in or brought to the contractile tissues. The mass of the muscles is so large in proportion to most other structures in the body that there is a tendency to identify the utilization of energy-yielding materials almost entirely with the functions of the muscles. The need of food fuel is, as a rule, thought of primarily in relation to the amount of muscular activity or work to be done. Since it has become comparatively easy to measure not only the heat output of the entire body as an index of its metabolic activity but also the equally significant oxygen consumption of individual organs, it has become more apparent that other structures than the muscles are also concerned with the use of energy-yielding organic compounds. Even the nervous tissues participate to a now measurable extent in the general metabolism of the organism. The blood stream leaves more than one tissue, other than that of the muscular tissues, poorer in oxygen and richer in carbon dioxide. With the development of microchemical methods for the estimation of both nitrogenous and non-nitrogenous compounds, such as amino-acids, urea and sugar, important progress has begun to be made in the appreciation of their origin, distribution or utilization. It has become possible, for instance, to estimate the actual consumption of sugar in glands as small as those which furnish the saliva. The studies of Anrep and Cannan¹ at University College, London, indicate that even the so-called resting submaxillary gland, for example, consumes blood sugar at a fairly constant rate. This utilization of readily available circulating carbohydrate is greatly increased under any influence that leads to salivary secretion. The maximal consumption of sugar corresponds with the maximal secretion, and does not occur, as does the oxygen consumption, in the postactive period. This suggests at once that there are two phases in the activity of such a secretory gland—the unoxidative phase, involving the breakdown of sugar, and the recovery phase, in which the products of this breakdown are removed, presumably through oxidation. It is interesting to see the field of the study of metabolism thus extended into domains beyond the consideration of the muscles alone.

1. Bessesen, D. H.: The Pathogenesis of Mercurial Stomatitis, Arch. Dermat. & Syph. 7: 332 (March) 1923.

1. Anrep, G. V., and Cannan, R. K.: The Metabolism of the Salivary Glands: The Blood Sugar Metabolism of the Submaxillary Gland, J. Physiol. 56: 248 (May) 1922; 57: 1 (Dec.) 1922.

Association News

THE SAN FRANCISCO SESSION

Dinners and Other Group Entertainments at San Francisco

Dr. Lawrence A. Draper has been appointed chairman of a special subcommittee of the Local Committee of Arrangements to arrange for dinners or other entertainments for special groups during the annual session of the American Medical Association. Several section dinners have already been arranged for, as well as other group entertainments. Those who may be interested may write directly to Dr. Draper, 806 Balboa Building, San Francisco.

Be Sure to Bring Blue Fellowship Card

Registration at the San Francisco session will be greatly facilitated if Fellows will have their blue Fellowship cards ready for presentation at a registration window. These cards have been forwarded to all Fellows whose names have been reported for enrolment by the secretaries of the constituent state medical associations. Unfortunately, some county secretaries have been dilatory in reporting the names of some members of their respective societies to state secretaries, and it has therefore been impossible for these to be enrolled on the membership roster of the American Medical Association.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Women's Medical Association.—The women physicians of the American Medical Association will hold a banquet in the Fairmont Hotel, San Francisco, June 28.

Changes in Faculty of Medical School.—The following promotions and appointments in the clinical staff of Stanford University School of Medicine, San Francisco, were announced, April 18: Dr. William P. R. Clark, promoted to professor of medicine in charge of tuberculosis work; Dr. Leo Eloesser, promoted to clinical professor of surgery; Dr. Philip K. Gilman, promoted to full clinical professorship; Dr. Thomas G. Inman, associate clinical instructor in neurology; Dr. John A. Bacher, professor of surgery in diseases of the ear, nose and throat; Dr. Harry L. Langnecker, professor of orthopedic surgery, and in charge of physiotherapy; Dr. James A. Cutting, clinical professor of medicine to conduct classes in psychiatry; Dr. Harry Spiro, assistant clinical professor of medicine; Dr. Rea E. Ashley, instructor in diseases of the ear, nose and throat; Dr. Morton R. Gibbons, instructor in hygiene and public health.

GEORGIA

Medical Association of Georgia.—At the seventy-fourth annual meeting of the Medical Association of Georgia, the following officers were elected for the ensuing year: president, Dr. John W. Daniel, Savannah; first vice president, Dr. Alfonso J. Mooney, Statesboro; second vice president, Dr. Henry C. Whelchel, Douglas, and secretary, Dr. Allen H. Bunce, Atlanta. Augusta was selected for the meeting in 1924.

ILLINOIS

Dr. Carriell Reinstated.—Dr. H. B. Carriell who was relieved as managing officer of the Dixon state colony, January 1, has been reinstated in the service of the state charities with rank of senior physician and has been ordered to report to Kankakee Hospital by the governor.

Child Health Conferences in Kane County.—A series of fifteen child health conferences were held the latter part of April by local organizations in Kane County; 600 children were examined and 1,127 physical defects recorded. These

examinations are the basis of follow-up service which will be carried out by the agencies that sponsored the conferences.

Physician Sentenced.—Dr. Omar M. Willis of Metropolis, who was indicted for violation of the Harrison Narcotic Law, was sentenced recently, it is reported, to serve three years in Leavenworth, and to pay a fine of \$500. Dr. Willis was indicted along with four others from the same city. Evidence was introduced to show, it is reported, that he had dispensed 13,000 grains of morphin within the last fourteen months.

Society News.—At a meeting of the Mercer County Medical Society in Aledo, April 17, the following officers were elected for the ensuing year: Dr. Bryce R. Winbigler of Aledo, president; Dr. Frederick J. Rathbun of New Windsor, vice president, and Dr. Victor A. McClanahan of Viola, secretary. Dr. Edward H. Oehsner of Chicago addressed the meeting.—The one hundredth meeting of the Fulton County Medical Society was held in Canton, April 10.—The Illinois Society for Crippled Children, fostered by the Rotary Club, was organized in Bloomington, April 12.—At the annual meeting of the Central Illinois Medical Society in Pana, Dr. Dorwin D. Barr, Taylorville, was elected president; Dr. Thomas O. Freeman, Mattoon, vice president, and Dr. Franklin A. Martin, Pana, secretary-treasurer.

Chicago

Large Fine for Physician.—It is reported that Dr. I. Clark Gary, proprietor of the Peoples' Hospital and Training School for Nurses, Chicago, was convicted in the federal court, April 23, on a charge of selling narcotics to drug addicts who were patients in the hospital. He was fined \$2,200.

Society News.—At the annual meeting and banquet of the Chicago Laryngological and Otological Society, May 3, the following officers were elected for the ensuing year: president, Dr. John A. Cavanaugh; vice president, Dr. Austin A. Hayden, and secretary-treasurer, Dr. Edwin McGinnis; the president, Dr. Charles H. Long, spoke on "Chicago's Past Masters in Oto-Laryngology."—At a meeting of the Chicago Urological Society, April 30, Dr. Herman N. Bunden, health commissioner of Chicago, spoke on "The Venereal Question in a Large City."

Cooperative Officing of Twelve Agencies.—Twelve social service agencies officially began work in a new home in the Keehn building, at 308 North Michigan Avenue, May 1. Two of the agencies were already located in this building, and within a few days, it is said all will be functioning there. Among the organizations which have their administrative offices at this location are: The Chicago Association for the Prevention and Relief of Heart Disease; the Illinois Society for Mental Hygiene; Illinois Society for the Prevention of Blindness, and the Infant Welfare Society.

INDIANA

Class Reunion.—Forty-three members of the class of 1903 of the Medical College of Indiana held a reunion in Indianapolis recently. Prof. John H. Oliver, their instructor twenty years ago, was the principal speaker. The Medical College of Indiana was the forerunner of the Indiana University School of Medicine.

IOWA

Veteran Member Honored.—The Polk County Medical Society held a testimonial meeting in Des Moines, April 24, in honor of Dr. David S. Fairchild of Clinton, who has completed fifty years as a member of the Iowa State Medical Society, and who is a former president of the society and editor of the *Journal of the Iowa State Medical Society*. Dr. Vincent O'Connor was the principal speaker. The testimonial was read by Dr. Harry E. Ransom, secretary of Polk County Medical Society.

KANSAS

Fifty Years in Practice.—The Doniphan County Medical Society gave a banquet and a gold-headed cane to Dr. William W. Carter of Wathena, April 11, in honor of his fiftieth year in practice.

MARYLAND

Library Association Convention.—The National Medical Library Association held a convention in Baltimore, May 7, at Osler Hall. This was the twenty-first anniversary of the organization. Dr. William Osler was its founder.

Medical Advisory Committee.—The following physicians have been appointed by the state board of welfare as a medical advisory committee to supervise the medical administration of the Maryland Penitentiary and the Maryland House of Correction: Drs. Francis L. Dunham, Lewellys F. Barker, Charles R. Austrian, Arthur M. Shipley and George Walker.

Survey at Bay View.—A survey of the 600 inmates of the almshouse at Bay View Asylum has been authorized by the supervisors of charities of Baltimore. The survey, which will be made during the summer by volunteer physicians under the direction of the medical director of the institution, will aim to improve the condition of the aged who are neither sick nor infirm, and determine how many of the inmates require treatment in the hospital for the insane.

Antiques Bequeathed to Johns Hopkins.—Furnishings from the home of the late Dr. William S. Halstead have been installed in the chief surgeon's office at Johns Hopkins Hospital. Dr. Halstead, who was surgeon-in-chief of the hospital and professor of surgery at the Johns Hopkins Medical School, left the entire contents of his home to the university and hospital. Some of these furnishings were recently exhibited at the Peabody Institute.

Medical and Chirurgical Faculty of Maryland Elect Officers.—At the one hundred and twenty-fifth annual meeting of the Medical and Chirurgical Faculty of Maryland, held at Baltimore, April 24-26, the following officers were elected for the ensuing year: president, Dr. Philip Briscoe, Mutual; vice presidents, Drs. Charles Urban Smith, Baltimore, and John Percy Wade, Catonsville; Dr. Joseph Albert Chatard, secretary, and Dr. Charles E. Brack, treasurer. Dr. Harry Gideon Wells, medical research director of the University of Chicago, gave an illustrated lecture on "Hereditary Influence on Cancer."

Hospital News.—Sydenham Hospital, adjoining Bay View, will become a tuberculosis hospital for negroes when the Municipal Hospital at Montebello is completed, about October 1. —A new state hospital, recently built at Henrytown, will open shortly, with 100 beds for tuberculous cases. —A new general hospital will be established in Baltimore on the site of the old Morrow Hospital, a part of the U. S. Public Health Service, which will be given up by the government in June. It will be known as an "open hospital," that is, any physician who is approved by the executive committee may send patients to private rooms and private wards. There will be ten free beds for radium treatment. The following physicians are members of the hospital committee: Dr. Anton G. Rytina, chairman, and Drs. James M. H. Rowland, William F. Lockwood, Julius Friedenwald, Alexius McGlannan, Emil Novak, George W. Mitchell, Charles F. Blake, Albertus Cotton and Arthur Hebb.

MASSACHUSETTS

New England Society of Psychiatry.—At a meeting of the society in Foxboro, April 11, the following officers were elected: president, Dr. Arthur H. Ruggles, Providence, R. I.; vice president, Dr. Charles H. Dolloff, Concord, N. H., and secretary-treasurer, Dr. Roderick B. Dexter, Taunton, Mass. Dr. Charles Macfie Campbell and Dr. Oscar J. Raeder read papers.

Personal.—Dr. A. G. Griffin of Malden has been appointed resident physician to the American Woolen Company's Community Center at Shawsheen Village. Dr. Griffin has been a member of the staff of the Malden Hospital for more than thirty years. —Dr. Edward K. Burbeck has been appointed medical director of the Devereaux Mansion Sanatorium, Marblehead, succeeding the late Dr. Herbert J. Hall, founder of the institution. —Dr. Frank B. Mallory, recently elected treasurer of the American Association of Pathologists and Bacteriologists, has been elected editor of the *Journal of Medical Research*. —Prof. Samuel W. Stratton, D.Sc., president of the Massachusetts Institute of Technology, Boston, will be formally inaugurated, June 11. —Dr. Richard P. Strong, director of the department of tropical medicine at Harvard Medical School, was recently elected vice president of Section N (Medical Sciences) of the American Association for the Advancement of Science.

MICHIGAN

Sterilization Bill.—The Sligh bill, providing for the sterilization of feeble-minded and mentally defective persons, has passed both branches of the legislature.

Michigan Trudeau Society Elects Officers.—At the annual meeting of the society at Howell, the following officers were

elected: Dr. Benjamin A. Shepherd, Kalamazoo, president; Dr. John W. Toan, Howell, vice president; Dr. William H. Marshall, Flint, secretary-treasurer.

Personal.—Dr. Wellington B. Huntley has been appointed city health officer of Ionia to succeed Dr. Joseph Johns, who has gone to Scotland for postgraduate work in surgery. —Dr. Henry M. Warren, Jonesville, has been reappointed health officer of Scipio Township. Dr. Warren is 83 years of age. —Dr. William H. Taylor of Ludington, practicing physician in Mason County for the last thirty-eight years, has announced his retirement, it is reported. Dr. Mason has been county physician for twenty-five years.

MINNESOTA

Annual Banquet.—Hennepin County Medical Society held its annual banquet in Minneapolis, April 17. There was an attendance of 275. The address of the evening was given by Dr. John R. Murlin, Rochester State University, New York, whose subject was "Progress and Preparation of Pancreatic Extracts for the Treatment of Diabetes."

MISSISSIPPI

Official Opening of Sanatorium.—Mississippi's tuberculosis sanatorium will be opened officially June 11, although all contracts have been completed, and patients have already been admitted. The total capacity is 415.

MISSOURI

Personal.—Dr. Robert C. Robertson, Aurora, secretary of the Lawrence-Stone Medical Society, has been appointed assistant physician at State Hospital No. 4, Farmington. —Dr. Harvey D. Lamb, St. Louis, has been appointed ophthalmologist to the Missouri School for the Blind, to succeed Dr. Joseph W. Charles, whose term has expired. —Dr. Nathaniel Allison, dean of Washington University School of Medicine, St. Louis, addressed the Jackson County Medical Society at Kansas City, April 14, on "Medical Problems." —Drs. Akira Fujinammi, Sahachiro Hata, Kinnosuke Kiura and Baron Takaki, of the commission of Japanese medical scientists, visited the Washington University School of Medicine, St. Louis, April 23-26, under the auspices of the Rockefeller Foundation. —Dr. Howard D. Kearby, city health officer of St. Joseph, has resigned. Dr. Leroy Beck, president of the Buchanan County Medical Society, has been elected to succeed him. —Dr. Otto Meyerhoff, professor of physiology, University of Kiel, lectured at the Washington University School of Medicine, St. Louis, on the "Dynamics of Muscle," and the "Energetics of Cell Processes," April 17-18. —Dr. Ralph A. Kinsella, acting professor of medicine, Washington University School of Medicine, St. Louis, addressed the Atlantic City meeting of the American Association for the Advancement of Medical Research on "Experimental Reproduction of Glomerular Nephritis." —Professor Bakule, Prague, gave a lecture and demonstration under the auspices of the St. Louis School of Occupational Therapy, Washington University School of Medicine, May 1. He is touring the United States with a group of handicapped children, whom he has trained to become adept at some gainful occupation. —Dr. Eugene L. Opie, professor of pathology, Washington University School of Medicine has again been elected to membership in the National Academy of Sciences.

NEBRASKA

State Medical Meeting.—The fifty-fifth annual convention of the Nebraska State Medical Association will be held in Lincoln, May 15-17, under the presidency of Dr. Benjamin F. Bailey. Drs. James B. Herrick, Chicago, and Arthur E. Hertzler, Kansas City, Mo., will be guests of honor.

NEW YORK

Women's Medical Association.—At the meeting of the Women's Medical Association of New York, to be held in the Hotel McAlpin, New York City, May 21, subjects concerning gastric disturbances and eye diseases will be discussed at the morning session, and subjects concerning diseases of the uterus, the relation of mental deficiency to prostitution, and other subjects will be discussed in the afternoon.

New Medical Society Formed.—The Rockaway Medical Society, recently formed, includes physicians from Rockaway Beach, Far Rockaway, Lynbrook, Rockville Center and other

Long Island towns. It has a membership now of thirty-five, and holds meetings on the third Fridays of each month. The officers are Leonard S. Rau of Lawrence, president; Abraham W. Victor, Rockaway Beach, vice president; Herbert L. Langer, Arverne, secretary; Louis V. Clark, Far Rockaway, treasurer.

Bill to Report Divorce Statistics.—A bill is under consideration by the legislature which would require all courts to report statistics of divorce cases to the state department of health. Its purpose is to give data for vital statistics and for social welfare workers concerning the names of divorced people, the nature of the divorce action, and the number, names, age and sex of the children involved. The bill is opposed on the ground that such information should not become public.

United Hospital Fund.—On April 17, the committee on dispensary development of the United Hospital Fund began a series of conferences intended especially for persons engaged in dispensaries or the outpatient departments of hospitals. The conferences are held at the New York Academy of Medicine and are free to all. The subjects to be discussed will include: admission of patients, records and statistics, cooperation between dispensaries and other agencies, clinic management, and follow-up work.

New York City

Hospital for Joint Diseases Raises Funds.—This institution is conducting a campaign to raise \$700,000 for the completion of its new building on Madison Avenue between One Hundred and Twenty-Third and One Hundred and Twenty-Fourth streets. More than \$200,000 of the amount required was raised in a few minutes at a meeting of the directors.

Bronx Physicians' Club.—For the purpose of scientific group discussion of the cases and problems met with by the general practitioner, the Bronx Physicians' Club has been organized. Every month an authority in some particular field is invited to speak. Officers of the society are: president, Dr. Benjamin Antin; secretary, Dr. William Koblenz, and treasurer, Dr. Benjamin Archer.

Academy of Medicine Campaign a Success.—The results of the drive to raise \$250,000 among the members of the New York Academy of Medicine for the purchase of a site for a new building were announced by Dr. George David Stewart at the stated meeting of the Academy on May 3. The total amount subscribed up to that time by Fellows and associate members was \$317,711.05. The total percentage of resident active Fellows subscribing is 90 per cent., the total percentage of all classes of members who have contributed is 82 per cent. The total cost of this campaign which has met with such unusual success was \$6,627.92, or 2.1 per cent. of the amount raised. Dr. Royal Storrs Haynes was chairman of the committee of sixty, which had charge of the campaign. The success of the Academy in securing this fund assures it of the contingent fund of \$1,000,000 from the Rockefeller Foundation and a similar amount from the Carnegie Foundation and opens the way for this institution to fulfil in a fitting way its function as a repository of medical learning.

OHIO

Memorial to Physician.—A \$25,000 nurses' home will be erected in Youngstown, as a memorial to Dr. Rocco Montani, who was killed in an automobile accident, Nov. 26, 1922.

Physicians Fined.—It is reported that Drs. Clifford G. Smith, John A. Dodd and Dana O. Weeks, Marion, were recently fined \$50, \$75 and \$200, and costs, respectively, when they pleaded guilty to violation of the Harrison Narcotic Law.

Chiropractors Arrested.—George E. Laubby, president of the Akron College of Chiropractic, and nine other chiropractors of Akron have been arrested for advertising to practice their profession without being licensed by the state, it is reported.

Society News.—The Academy of Medicine of Toledo and Lucas County held a general meeting, May 4, at which the following program was presented: "Trigeminal Neuralgia.—Tic Douloureux," Dr. William T. Coughlin, St. Louis University; "Diagnostic Signs of Endocrine Disease," Dr. John L. Tierney, St. Louis.

State Association Officers.—At the recent meeting of the state medical association at Dayton, May 2, Dr. George E. Follansbee, Cleveland, was chosen president-elect. Dr. Joseph S. Rardin, Portsmouth, is now president, and Don K.

Martin, Columbus, executive secretary. The next annual meeting will be held in Cleveland.

Contagious Disease Outbreaks.—The schools of Homer were closed recently, due to an outbreak of scarlet fever.—Smallpox has been reported in Pike County at four widely separated locations.—A measles epidemic at Elyria has been averaging about twenty new cases a day.—It was reported, April 18, that there was a total in the state of 502 cases of scarlet fever, 177 cases of diphtheria, and 147 cases of smallpox.

PENNSYLVANIA

Pennsylvania Food Law.—Since Governor Pinchot signed the so-called flour bill, amending clause 5 of section 3 of the state food law of May 13, 1909, the state department of agriculture has been asked what stand it will take in the matter. The Department of Agriculture will take, it is reported, no action for the present in connection with the manufacture or sale of aged, bleached or matured flour, pending further research and experimental investigation as to whether or not the nutritive value of flour is injuriously affected by such aging, bleaching or maturing. Should later developments disclose that the aging, bleaching or maturing of flour affects its quality or purity, or makes the flour appear better and of greater value than it really is, or that the substances used are injurious to health, action will then be taken by the department through the proper agencies.

Philadelphia

Dr. Work Addresses Medical Club.—Dr. Hubert Work, Secretary of the Interior, outlined the duties of the various bureaus of his department to more than 300 physicians at a meeting of the Medical Club of Philadelphia, April 20.

University News.—The first award of the Mary Ellis Bell prize for the best undergraduate work in medical research at the University of Pennsylvania was made to John B. Barnwell and Ralph Lynch for work on transplantation of islet tissue. This work was presented at the fifteenth annual meeting of the Undergraduate Medical Association, April 19.

Gift to Academy of Sciences.—A tablet to Alexander Wilson, American ornithologist, which will be unveiled at the Academy of Natural Sciences, May 17, was designed by Dr. R. Tait McKenzie and presented to the academy by the St. Andrews Society of Philadelphia, through the generosity of the late Dr. F. Lawson Cameron. Alexander Wilson was born in Paisley, Scotland, July 6, 1766, and died in Philadelphia, Aug. 23, 1813.

Society News.—The tenth annual meeting of the Public Charities Association of Pennsylvania was held, April 30. Dr. Charles H. Frazier was elected president, and Dr. Charles J. Hatfield, vice president. C. Allison Scully was appointed treasurer.—The seventy-seventh anniversary and annual banquet of the Northern Medical Association was held at the Hotel Adelphia, April 30.—The state meeting of the College of Physicians, held, May 2, was devoted to health education. Dr. Edwin C. Broome and Dr. James M. Anders gave addresses.—Dr. Joseph Sailer was reelected president of the Philadelphia Association for the Prevention and Relief of Heart Disease, at the second annual meeting, April 18. Drs. George W. Norris, vice president; William D. Stroud, secretary, and Morris W. Stroud, treasurer, were also reelected.

SOUTH CAROLINA

State Association News.—At the annual meeting of the South Carolina Medical Association, at Charleston, April 17, the following officers were elected: Dr. Leland O. Mauldin of Greenville, president; Benjamin O. Whitten, Clinton, first vice president; Edgar A. Hines, Seneca, secretary-treasurer (reelected). A woman's auxiliary society was organized, and Mrs. R. S. Cathcart, Charleston, elected president.

VERMONT

Sheppard-Towner Bill Rejected.—The senate has refused to adopt a resolution to accept the Sheppard-Towner Law.

VIRGINIA

Walter Reed Medical Society.—At the annual meeting of the Walter Reed Medical Society, at the National Soldiers' Home, Hampton, May 2-3, Drs. B. B. Vincent Lyon, Philadelphia, and Walter E. Dandy, Baltimore, were among the speakers. Officers elected for the ensuing year were: president, Col. Louis A. Thompson, Hampton; vice president, Dr. Harry D. Howe, Hampton, and secretary-treasurer, Dr. Landon E. Stubbs, Newport News.

WASHINGTON

Appropriation for Survey Requested.—At the semiannual meeting of the Washington State Board of Health, recently, the legislature was requested to appropriate \$8,000 for a health survey of the Yakima Valley, in which there has been an annual epidemic of typhoid fever.

WISCONSIN

Personal.—Dr. Joseph Lettenberger, Milwaukee, has been appointed coroner of Milwaukee County, to succeed Frank Luehring, deceased.

Soldiers' Home Opened.—The new 662 bed tuberculosis hospital at the Northwestern Branch, National Home for Disabled Volunteer Soldiers, was formally opened to the public, May 1.

CANADA

Physicians Elected to Mayoralty.—Three physicians of Nova Scotia have been elected mayors of their respective towns. Dr. Edward DuVernet of Digby; Dr. Carmon S. Marshall of Bridgewater, and Dr. George W. Whitman of Stellarton.

Western Ontario Academy of Medicine.—At a meeting of the academy at London, Ont., April 7, Prof. L. J. Austin of Queens University, Kingston, gave an address on "Tuberculosis of the Kidney and Bladder." Dr. Albert J. Ochsner of Chicago, president-elect of the American College of Surgeons, gave a clinical demonstration of postoperative fistulas and gastro-intestinal diseases. At the meeting of the academy on April 27, Dr. Dean D. Lewis of Chicago spoke on "Diagnosis of Bone Lesions," and Dr. Henry S. Plummer of Rochester, Minn., on "Diseases of the Thyroid." At the next meeting, May 25, Dr. Hugh Cabot, Ann Arbor, Mich., will speak on "Renal and Bladder Calculi," and Dr. William Goldie, Toronto, on "Hypertension."

Public Health News.—The schools and churches in North Vancouver, B. C., have been ordered closed on account of an outbreak of smallpox. A total of six cases has been reported to date.—According to reports received by Dr. J. W. S. McCullough, provincial health officer for Ontario, the typhoid epidemic at Cochrane, Ont., has practically run its course. During the past few days the daily average of new cases has not been more than two or three, where formerly it was as high as fifteen and twenty. Recently the provincial health department forwarded \$20,000 to the stricken center. During the epidemic the department has had two physicians, one supervisor, one engineer, nine public health nurses and one nursing supervisor in the afflicted district.

Hospital News.—A new hospital to care for acute mental cases is under construction at Essondale, B. C. It is to cost \$650,000, and will have accommodations for 250 patients.—A new \$500,000 home is planned for the Hotel Dieu de Precieux Sang at Quebec.—It is planned to build an addition to the 400-bed Hamilton General Hospital, Hamilton, Ont.—The new maternity hospital to be erected in Montreal will be known as the Salvation Army Maternity Hospital. The estimated cost of construction is \$200,000.—The new epidemic hospital, connected with the General Public Hospital, St. John, N. B., was formally opened recently.—The late William Hill of East Toronto has bequeathed the sum of \$100,000 for the purpose of erecting a hospital east of the Don.

GENERAL

Association of American Physicians.—At the annual meeting of the association at Atlantic City, N. J., May 1-3, the following officers were elected for the ensuing year: president, Dr. Charles F. Martin, Montreal; vice president, Dr. Lewis A. Conner, New York; secretary, Dr. Thomas McCrae, Philadelphia, and treasurer, Dr. Joseph A. Capps, Chicago.

Director of International Health Board Appointed.—Dr. Frederick F. Russell, formerly director of the International Health Board's public health laboratory service, has been appointed general director of the International Health Board to succeed Wickliffe Rose, who resigned to accept the presidency of the newly incorporated International Education Board, and of the General Education Board. The latter office became vacant by the retirement of Wallace Buttrick, who became chairman of the General Education Board.

President George E. de Schweinitz Honored by British Ophthalmologists.—At the annual congress of the Ophthalmological Society of the United Kingdom, held in London at the headquarters of the Royal Society of Medicine, April

26 to 28, Dr. George E. de Schweinitz, President of the American Medical Association, delivered the Bowman Lecture on "Certain Ocular Aspects of Pituitary Body Disorders, Mainly Exclusive of the Usual Central and Peripheral Hemipic Field Defects." Dr. de Schweinitz was elected an honorary member of the society.

American Medical Diplomas in India.—A warning has been issued to Indian medical students by the Bengal government against taking courses at a private institution to be established in Calcutta under the name of the "International Medical College." It is stated that this institution purports to train students for the M.B. and M.D. degrees of the Lincoln Jefferson University of Illinois (a university not recognized by the General Medical Council of the United Kingdom or the Council on Medical Education of the American Medical Association), and its degrees and diplomas will not, therefore, be accepted as satisfactory qualification for the practice of medicine in America, and Great Britain and her colonies.

Society News.—The American Dietetic Association will hold its annual meeting, Oct. 15 to 17, at the Hotel Claypool, Indianapolis, Ind.—The fifth annual meeting of the Western Electro-Therapeutic Association was held at Kansas City, Mo., April 19 and 20. The following officers were elected: Dr. Harry H. Bowing, Rochester, Minn., president; Edward H. Skinner, M.D., Kansas City, Mo., first vice president; Warren P. Grimes, M.D., Kansas City, Mo., treasurer; B. C. Harris, M.D., Sapulpa, Okla., registrar; trustees, Tilmann Howard Plank, M.D., Chicago, and Burton B. Grover, M.D., Colorado Springs, Colo.—At the annual meeting of the American Society for Clinical Investigation, at Atlantic City, N. J., April 30, the following officers were elected: Campbell P. Howard, Iowa City, president; Alfred E. Cohn, New York, vice president; John H. Austin, Philadelphia, secretary; David P. Barr, New York, treasurer; member of council, James H. Means, Boston.

Pharmacoepial Trustees Entertained in Cincinnati.—The board of trustees of the United States Pharmacopeia met in Cincinnati, May 4 and 5, for the transaction of business connected with the publication of the tenth edition of the United States Pharmacopeia, the manuscript of which is nearing completion. Drs. Solomon Solis Cohen, Philadelphia; Henry M. Whelpley, St. Louis; James H. Beal, Urbana, Ill.; Dean F. J. Wulling, Minneapolis; Prof. E. Fullerton Cook, Philadelphia, and Samuel L. Hilton, Washington, were present. The board was entertained, May 4, at a dinner which was given by the Ohio Valley Druggists' Association and the Cincinnati Branch of the American Pharmaceutical Association, at which about 200 physicians were present. Brief addresses were delivered as follows: "Pharmaceutical Education in Cincinnati," Charles T. P. Fennell, Phar.D., dean of the Cincinnati College of Pharmacy; "Medicine in Cincinnati," Charles E. Caldwell, A.M., M.D., professor of clinical surgery and surgical anatomy, University of Cincinnati College of Medicine; "Early Pharmacy in Cincinnati," John Uri Lloyd, Ph.M., Sc.D., M.D., former president of the American Pharmaceutical Association; "The Pharmacist and the Pharmacopeia," James Hartley Beal, Phar.D., Sc.D., LL.B., Urbana, Ill., chairman of the board of trustees of the U. S. Pharmacopeia; "The Physician and the Pharmacopeia," Solomon Solis Cohen, A.M., M.D., Philadelphia, professor of clinical medicine, Jefferson Medical College. The address by Dr. Caldwell was full of historical data of interest to all Cincinnati physicians. He gave a long list of the names of pioneers who had made Cincinnati a medical center early in the nineteenth century, a list which included such names as Drake, Whitaker, Wright, Taylor, Connor, Busse, Graham, Roberts and Bartholow. The closing address by Dr. Cohen was a plea for a comprehensive pharmacopeia in which would be included all the medicaments of well-established value. He said that he was much pleased to note a recession in the tide of therapeutic nihilism which had swept over the medical world, and indications of a return to the conservative but intelligent use of medicines. Dr. Cohen edited a shelf of books devoted to therapeutic measures other than drugs, but he is thoroughly convinced of the value of drugs when properly administered. He decried the negative attitude of pharmacologists who, because they were unable to experience certain results reported by clinicians, denied the accuracy of the clinical observer. He said that the work of the pharmacologist was necessarily coarse in its results as compared with those obtained by the experienced and competent physician at the bedside. While he acknowledged the value of the service of pharmacologists, he protested strongly against the negative dicta so frequently put forth by some of them.

The National Antinarcotic Conference.—Representatives of various agencies engaged in antinarcotic activities assembled in Washington, D. C., May 2-5. Approximately fifty persons were present. Dr. George M. Kober of Washington was elected chairman of the conference and Mr. Rexford L. Holmes was elected secretary. Dr. W. C. Woodward, executive secretary of the Bureau of Legal Medicine and Legislation of the American Medical Association, was present to study the conference and to aid in determining the extent to which the Association might identify itself with the conference and its activities.

Symposiums were held on the narcotic problem, how organizations may assist in the fight against the narcotic habit, the control of the narcotic evil by the federal government, the state control of the narcotic evil, municipal control of the narcotic evil, international amity in fighting the narcotic evil and the place of the church and the university in the fight against narcotics. A statement prepared by Secretary of State Hughes was read, pointing out that it had been the policy of the United States to restrict the manufacture and distribution of narcotics to medicinal and scientific uses, adhering to the letter and the spirit of the Hague Opium Convention of 1912. The United States is, Mr. Hughes said, in constant communication with other nations, exchanging information looking toward the detection and apprehension of illicit dealers, and illicit traffic is becoming internationally more difficult; but adequate progress cannot be made in the suppression of the traffic until there is a general agreement on what is to be regarded as illegitimate traffic. The United States government regards as legitimate only traffic for medical and scientific purposes and feels that illegitimate traffic cannot be stopped unless production of the raw product for other than medical and scientific purposes is stopped. Mr. Hughes announced the intention of the Department of State to endeavor to bring about an international recognition of that principle.

The conference went on record as defining the legitimate use of opium as use for medical and scientific purposes, and denied the asserted legitimacy of its use in tropical countries as an alleged stimulant. Resolutions were adopted urging that statutes and ordinances for the limitation of the use of narcotic drugs to medical and scientific purposes should be enacted, where not already in effect, and strengthened where they already exist, and that a greatly increased field force be provided to see to their effective administration; but that inasmuch as regulations may be a burden to legitimate practitioners and dealers, the conference recommended that only such regulations be maintained as are absolutely necessary to prevent the evils aimed at. Other resolutions pointed out the necessity for the immediate material increase of the appropriations for the enforcement of the various federal narcotic laws, called upon the federal authorities to use all appropriate agencies of the government to suppress the smuggling of habit-forming narcotics into the country, since such smuggled narcotics constitute the greatest part of the pedler's supply, and recommended that federal enforcement of the narcotic laws and regulations be separated from enforcement of the prohibition laws and regulations. The Opium Advisory Committee of the League of Nations sitting in Geneva was requested to take steps to provide for the amending of the International Opium Convention so as to make it effective, if the committee should find that it is not now effective. In view of representations made to the conference that in event of the curtailing of the production of opium and its products and of cocain, by international agreement, synthetic heroin and cocain might be produced on a commercial scale, a resolution was adopted urging that all chemical laboratories manufacturing synthetic cocain or heroin be under governmental control, that such products be labeled synthetic, and that the amount of each that might be produced in each country be limited in the same manner as the corresponding natural products are limited.

The conference created a committee to arrange for a permanent organization, as a body made up of representatives of agencies engaged in antinarcotic activities, a committee to formulate a statement of the principles involved in the limitation and prevention of narcotic addiction, and a committee to further the formulation and enactment of uniform legislation by the several states to supplement the Harrison Narcotic Act where necessary. Without committing the American Medical Association to participation in the further activities of such conferences as may be called, Dr. William C. Woodward, executive secretary of the Bureau of Legal Medicine and Legislation, was appointed a member of each of the committees named.

LATIN AMERICA

League for Mental Hygiene Founded in Brazil.—At a recent special meeting of the Brazil Sociedade de Psychiatria, it was decided to organize a Liga brasileira de hygiene mental, modeled on, and affiliated with, the League of Mental Hygiene in North America.

Yellow Fever in Brazil.—The *Folha Medica* relates that the extreme eastern coast of Brazil, from Ceará to Bahia, has a chain of endemic foci of yellow fever. The disease is prevailing now at the points farthest north and farthest south, and the latter are menacing Rio de Janeiro and the rest of the country.

Congress on Hospital Administration in Chile.—The *Revista de Beneficencia Pública* of Santiago, Chile, devotes a bulky number to the transactions of the Second Chilean Congress of all interested in the administration and support of the public hospitals of the country. The official organization for the purpose in Chile is called the Beneficencia Pública, and 286 of the officials, medical and lay, registered for the congress. The first one was held in 1917, and a large number of the resolutions voted then have been carried into effect. Among the new resolutions adopted were some urging the founding of regional hospitals and of institutes for welfare work for children. Twenty of the leading addresses are reproduced, including Dr. G. Greve's study of employment for the chronic sick in hospitals and asylums; Dr. G. Amunátegui's discussion of medical intern service, and others on pay patients in the free hospitals.

FOREIGN

Prophylaxis of Venereal Disease at Madrid.—The *Medicina Ibera* states that the first official dispensary for prophylaxis of venereal diseases has just been opened at Madrid.

Factory Regulations in Japan.—A bill for revising the Japanese factory law has been introduced into their house of representatives. Among its provisions are: to reduce the working hours for juveniles and females and to give them two holidays each month; to prohibit night work for juveniles; to restrict working hours for women before and after childbirth; to improve the sanitary conditions in the factories, and to give higher compensation for injuries, even when the accident is through the carelessness of the worker.

Prize for Medical Historical-Economic Study.—The Société médicale des hopitaux de Paris announces that the Paul-Legendre Prize of 3,000 francs will be awarded in December, 1923, for the best work on the subject "Statistical and Critical Historical Study of the Activities of the Civil and Military Medico-Surgical Corps of France during the War 1914-1918 and the Consequences as Affecting Physicians, with Conclusions Based on These Facts." Manuscripts should be sent to the bureau of the society, 12 Rue de Seine, before November.

Public Health in Finland.—A health council composed of twenty members has recently been formed in Finland. The president of the public health council; the professor of hygiene at Helsingfors University; representatives of the antituberculosis society, the Society for Combating Venereal Disease, the child welfare league, and the two Finnish medical societies are among its members. The council will work under the auspices of the Finnish Red Cross. Its first efforts will be to publish a bulletin representative of all its member societies, and to the question of a limited health demonstration.

Epidemic Encephalitis.—At the recent Congress for Internal Medicine at Vienna, April 9, this disease was the main subject for discussion, the opening address being by Economo, to whom the term "lethargic encephalitis" is due. The general verdict was that treatment has little prospect of success, and that the prognosis is growing graver as experience accumulates. Nonne commented on the three sets of symptoms in the chronic form: "depersonalization; changes in the motor apparatus; changes in the metabolism." In the lively discussion that followed, many single instances of a favorable outcome were reported.

Cancer Research in Japan.—The Japanese Society for Cancer Research was founded in 1908, and publishes the quarterly, *Gann*. It has now 280 members. Scholarships to a value of \$5,000 were distributed to sixteen workers in 1922. It appeals to research workers in other countries for reprints of their publications so that they can be translated into Japanese as a part of the society's work. The editor, M. Nagayo, Pathologic Institute, University, Tokyo, Japan, should be addressed. *Gann* is published in an English-German edition, and the

issue for February, 1923, contains the list of contents of all the preceding numbers of the total fifteen volumes.

Personal.—Prof. A. V. Hill, Manchester, England, succeeds Dr. E. H. Starling as Jodrell professor of physiology at University College, London.—Dr. Giuseppe Caronia has been nominated professor of clinical pediatrics in the University of Rome to succeed the late Prof. Luigi Concetti.—Dr. Edward W. Scripture, formerly professor of experimental psychology at Yale University, New Haven, Conn., at present connected with King's College, University of London, England, has been appointed professor of experimental phonetics at the University of Vienna.—Sir Frederick Mott, director of the pathologic laboratory of the Maudsley Hospital of the London County Council, is retiring under the age rule, but the council has arranged to retain his services until next October. Sir Frederick has held the appointment since the hospital was erected.—At a special convocation, April 11, the University of Pennsylvania conferred the honorary degree of Doctor of Science on Sir Joseph Thomson, master of Trinity College, Cambridge. Sir Joseph, after concluding his lectures before the Franklin Institute, returned to England, April 14.—Prof. W. P. Wynne, Firth professor of chemistry in the University of Sheffield, was elected president of the Chemical Society of Great Britain, at the annual meeting, to succeed Sir James Walker.—Dr. Kenelm H. Digby, professor of anatomy and Ho Tung professor of clinical surgery, and dean of the Faculty of Medicine, University of Hong Kong, arrived in New York, April 3.—A pension of 8,000 francs has been granted by the city of Paris to the widow of Dr. Leray, the roentgenologist, who died in 1921 from injuries professionally acquired.—Prof. J. Bordet of complement fixation fame, has been decorated by the king of Sweden with the cross of the Order of the Pole Star.—

Deaths in Other Countries

Major **Thomas J. Crean**, veteran of the South African and World wars; recipient of the Victoria Cross, in London, March 25.—Dr. **Elfrida Spencer**, house surgeon, Victoria Hospital for Children, London, March 17, of influenza and pneumonia.—Dr. **A. G. Simmins**; served with the British Navy during the World War; of influenza, March 23.—Dr. **W. H. Lloyd**, senior naval honorary surgeon to the king of England, April 2, in London. Dr. Lloyd became a surgeon in the navy in 1856, and fought in the China seas and, during the American Civil War, aboard the flagship *Nile*. He represented the British admiralty at the International Congress of Military Surgeons in Washington, D. C., in 1887.—Dr. **Carl Spengler**, a Swiss authority on tuberculosis, recently, at the age of 64.—Dr. **F. de Ipanema Langgaard**, consul for Brazil at Copenhagen.—Dr. **Aquiles Ferrante** of San Fernando, Dr. **E. Loudet** of Sante Fé and Dr. **V. D. Madrazo** of Buenos Aires.—Dr. **M. Immelmann** of Berlin, a pioneer in roentgenology as applied to orthopedics and physical therapeutics, aged 56.

Government Services

General Hospital Authorized

Pursuant to instructions of the Secretary of War, the organization of General Hospital No. 8, organized reserves (New York Post-Graduate Medical School and Hospital Unit, New York) has been authorized.

Field Service School Graduates

Four medical officers of the National Guard, three of the Reserve Corps, and three of the Navy completed the short basic course at the Medical Field Service School, Carlisle Barracks, Pa., April 21. Brig.-Gen. Walter D. McCaw, assistant Surgeon-General, gave the principal address at the graduating exercises. Joseph C. DeVries, Lieut.-Col., M. O. R. C., Brooklyn, announced that he would donate a medal each year to the student officer who attained the highest proficiency in the subject of drill and command. Capt. E. F. Sanford, M. O. R. C., was medalist in this class. Col. Percy M. Ashburn, commandant, presented diplomas to the following:

Capt. D. E. Abraham, M. O. R. C., Louisville, Ky.
Lieut. J. H. Durrett, Med. Corps, U. S. Navy.
Capt. J. P. Golden, D. C., N. G., Natick, Mass.
Lieut. Com. J. V. McAlpin, D. C., U. S. Navy.
Lieut. James Humbert, M. C., U. S. Navy.
Capt. B. F. Pound, D. C., Ore. N. G., Salem, Ore.
Capt. S. H. Rinehardt, M. O. R. C., Waynesburg, Pa.
Capt. E. F. Sanford, M. O. R. C., Buchanan, Ga.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 17, 1923.

Veterinary Work in India

Last year an advisory committee appointed to report on research in diseases of animals in India stated that there were immense opportunities, which were almost wholly neglected. A conference of veterinary authorities convened by the government, which met last February at Calcutta, confirmed the preceding statement and urged the training in courses of two or three years of native veterinarians of a second grade cadre, who might at least be competent to carry out instructions and perform routine work. The present financial stringency prevents the materializing of a recommendation of previous conferences to provide facilities for the training of natives up to the highest standards. Experience with the training of Indians in other branches of applied science, such as medicine, shows their capacity to grasp fully the results of modern science. But for this, an ample preliminary education and a full course of four years' professional work at a properly equipped college would be necessary. The conference reviewed the state of knowledge and practice with regard to the chief animal diseases now ravaging India, and arrived at lamentable conclusions. Anthrax infection is so heavy in East Indian wool, hair and hides that the labor organization of the League of Nations drew attention to it. The cost of disinfecting wool is greater than its present value. The conference decided that the agencies for the notification of anthrax must be improved, and that much research and skilled inspection are required to attack the cause at its seat. Rinderpest still exacts a heavy toll from live stock in India, and although an efficient serum is produced in large quantities in the Muktesar Imperial Bacteriological Laboratory, the veterinary service is insufficient to distribute and administer this preventive measure. Surra disease of horses and camels is sometimes so disastrous as to interfere with military operations. It is known to be caused by a trypanosome and probably, like trypanosomiasis and nagana, is insect-borne. But entomologic and veterinary research is necessary to discover the bearer and, therefore, the means of dealing with the disease. Though tuberculosis is supposed to be a rare disease of cattle in India, it is an increasing cause of death in industrial centers, and a large proportion of cases show symptoms which in Europe are associated with the bovine type. But there is at present neither knowledge as to the prevalence of the human and bovine type of bacillus, nor any organization for getting it. Contagious abortion of mares and cattle, and the large number of infections due to hookworm, rabies and other diseases await research on a much larger scale. The conclusion is that veterinary education, research, legislation and administration in India are unsatisfactory, and require the serious attention of the government.

The Prohibition of Lead in Paints

The question whether white lead can be displaced by leadless paints is dealt with in an important government report. In 1911, the home secretary appointed two committees to investigate in regard to the painting of buildings and of coaches. These committees reported in 1915 and 1920, and advised that it was not practicable adequately to safeguard the health of the painters by regulations, and further, that substitutes existed which could satisfactorily displace white lead for all purposes. They therefore recommended its prohibition. During the war, no attempt was made to give

effect to the recommendation. In 1921, owing to the serious failures of these substitutes, which had been observed in government work, a new committee was appointed to examine the matter. This committee now reports that it cannot support the recommendation that the use of lead paint for the painting of buildings be entirely prohibited, and that for outside painting and certain internal painting there is no efficient substitute for lead. Prohibition would increase cost, but though economy is important just now, that is not regarded by the committee as an adequate reason for exposing workers to the risk of lead poisoning. However, since the reports of the 1911 committees were made, further research on the hygienic problems of painters has indicated preventive measures which would make their calling safer to health. A study of the whole of the scientific work done in this connection shows that the chief danger lies in the inhalation of dust produced during the dry rubbing-down process. As it is now practicable to substitute a dustless process, the former can be discontinued. The new process involves the use of a water-proof sandpaper, the manufacture of which has recently been successfully undertaken in this country. The committee suggests the adoption, with modifications, of the convention recommended at the international labor conference at Geneva in November, 1921.

The Coloring of Poisons

At a recent trial, a well-known judge suggested that solutions of deadly poisons should be colored as a safeguard against mistakes. The proposal to give poisons distinctive colors has now taken a practical shape. The privy council has asked the general medical council to express its opinion on the proposal that strychnin should contain enough "brilliant green" to make it readily recognizable. It is further proposed to add suitable dyes to the arsenical poisons "sheep dip" and "weed-killer," so that if they should be administered for homicidal purposes (as they have been in recent cases), the dye would be deposited in the body of the victim.

Physicians May Prescribe for Themselves

As stated in a previous letter, the dangerous drug regulations which have recently been brought forward by the government render it illegal for a physician to prescribe dangerous drugs for himself. This regulation was made because it had been brought to the notice of the home secretary that physicians who were addicted to cocaine and morphin procured considerable quantities by writing prescriptions made out to themselves. But the hardship of this regulation has raised an outcry against it. In the House of Commons, Sir Sydney Russell Wells, physician to the London Hospital, while admitting that certain physicians were drug takers, stated that he was convinced that their number was small. This regulation was ridiculous. It hampered the physician by creating a new offense, and as a preventive it was futile. Drugs must be in his office for cases of emergency, and not one in a thousand did not carry with him a case in which there was a certain quantity of cocaine and morphin for emergency use. The prohibition to prescribe for himself in no way affected the physician's power of obtaining a drug if he wished to take it. Owing to the pressure of medical opinion, this objectionable regulation has been withdrawn.

An Objection to the Poisoning of Rats as a Measure Against Plague

In the *Times*, an Anglo-Indian official, Mr. Walter Saise, points out the danger of poisoning rats as a measure against plague. A rat from a plague-infested house is a source of danger when it dies, as the rat fleas leave the cold carcass and search for another warm-blooded host. Before it dies,

the plague rat is not a source of danger, as the fleas prefer it to another host. In a successful campaign against plague on the East Indian Railway Company's colliery estate in Bihar in 1904 and 1905, Mr. Saise declared that rewards would be paid only for live rats. Rat traps were served out to all the miners, who were promised one anna (two cents) for each rat caught. They were further told never to kill rats, or to handle any dead ones they might find about their houses. The miners or their children brought the traps, often quite full, to the collecting stations. The cages were immersed in a weak mercuric chlorid solution until the rats were dead. This procedure both drowned the rats and disinfected the cages. The cages were then shaken over small wooden boxes partly filled with jute waste. The dead rats fell into these boxes, and the fleas could be seen snuggling into the dry jute. The box, with rats and fleas, was placed on a shovel and thrown into the furnaces of the colliery boilers. The result was that the plague was stayed. In a population of 12,115, there were only seventeen deaths.

The Need for Public Education on Cancer

At the Royal Society of Medicine, Mr. J. E. Adams introduced a discussion on this subject. He desired to see a society formed for the control of cancer, similar to the societies in existence for combating tuberculosis and venereal disease. The support of the profession must first be obtained. Cancer was on the increase, and the majority of patients applied for medical assistance too late. Physicians were aware of a number of conditions which predisposed to cancer, such as syphilis, chronic degenerative mastitis and unhealed ulcerations of the cervix uteri. Were these treated as energetically as their association with cancer demanded? In any woman over 40, a lump in the breast was ten times more likely to be malignant than simple. Middle-aged men were apt to think that indigestion and hemorrhoids were the inevitable result of a sedentary life, and that drugs would put them right; but the real trouble might be a growth. The public ought to recognize that treatment without examination was not worth paying for, and the profession, that it was not worth doing. The public required enlightenment on the matter, such as was provided by the American Society for the Control of Cancer. In this country little has been done, though some health officers have issued leaflets urging people who had certain symptoms to consult a physician without delay. The British Red Cross Society was prepared to help in the distribution of authoritative intelligence, compiled by physicians on this subject. Mr. Adams proposed these resolutions, which, after discussion, were carried: (1) That it is desirable that the public should be given more information as to the early signs of cancer and the prospects of cure by immediate treatment; (2) that the British Red Cross Society be asked to conduct this publicity campaign by means of lectures and pamphlets; (3) that the Council of the Royal Society of Medicine be requested to nominate a standing committee to supply to the British Red Cross Society information suitable for wide dissemination and the education of the public.

The Danger of Food Preservatives

Dr. Reginald Dudfield, health officer for the metropolitan borough of Paddington, has presented a report in which he draws attention to the widespread use of food preservatives, their varied character, and the extraordinary range in the quantities used by different manufacturers. He points out that all the preservatives discovered to be in use are drugs, for the majority of which the British pharmacopeia lays down limits for use in prescriptions. While admitting that the quantity of any of the drugs used for preserving falls below the maximum dose laid down in the pharmacopeia, it has to

be remembered that (1) some persons manifest an intolerance to certain drugs which can be ascertained only by exhibition; (2) the effect on the human system, and particularly on the digestive tract, of drugs used as preservatives is still an undetermined question; (3) the action of some drugs is known to be cumulative, and (4) sick persons and young children are particularly affected by the majority of drugs used as preservatives. Moreover, it is to be feared that in many instances preservatives are used to disguise incipient putrefactive changes or to counteract the possible results of lack of care in the preparation of the foodstuff. A committee appointed by the government in 1899 found that the usual preservatives were: boric acid, borax (for sausages, potted meats, bacon, brawn), salicylic acid (for jams and temperance drinks), sulphites (for temperance drinks), and formaldehyd (very rarely for temperance drinks). Dr. Dudfield has sent, to a number of health officers, a questionnaire as to the use of preservatives, and has received replies from 109 areas. This table summarizes the principal results:

Commodity	Preservative	Quantities of Preservative		
		Occasion Found	Maximum Gr. per Lb.	Minimum Gr. per Lb.
Bacon.....	Boric acid.....	45	35.0	2.0
Dried fruit.....	Sulphur dioxide.....	22	15.2	1.4
Jam.....	Salicylic acid.....	27	10.0	0.07
Margarin.....	Boric acid.....	3,522	175.0	Trace
Fish pastes.....	Boric acid.....	120	105.0	Trace
Vegetables.....	Copper sulphate.....	265	10.2	Trace
Lemonade.....	Salicylic acid.....	64	13.1	0.06

PARIS

(From Our Regular Correspondent)

April 13, 1923.

Hospital Associations

An *union hospitalière* of the Northwest, which comprises fifty-two hospital establishments in thirty-two departments of this region, has just been formed. There were already three such unions hospitalières: the Union hospitalière of the Southeast, with headquarters at Lyons, the Union of the Northeast, with its seat at Nancy, and the Union of the Southwest, with its central office at Bordeaux. The fusion of these four unions hospitalières will give rise to the national federation of hospital establishments.

These *unions* are formed between the members of the administrative committees and the personnel of the hospitals, and not between the establishments themselves. The administrative personnel alone is admitted, while physicians are excluded. However, the medical profession has a certain interest in the activities of these groups, since they are called on to examine into "all the questions that are common to the hospitals and the municipal shelters." Among these may be mentioned, primarily, the relations between the physicians and the administrative councils of the hospitals. Furthermore, it is provided that certain articles constituting common needs may be purchased by these unions. It is important that physicians be consulted in regard to these purchases, so that they may, as far as possible, choose the instruments, and, at least in a general way, the supplies, with which they will be called on to work. Among other things, it is planned to establish sanatoriums in high and in moderate altitudes, such as the departments, by themselves, with their limited resources, could not hope to create. Here, too, the opinions of the medical profession should be consulted.

In a general way, the purpose of these unions may be summed up thus: an inquiry into and the protection of hospital interests; a study of all the questions common to hospitals and municipal shelters; securing for the personnel of hospital establishments the right to form associations; the

recruiting and the status of the personnel; the establishment of a superannuation fund in which all members of the personnel may participate; cooperative purchases (linen, bedding, etc.); the creation of cooperative societies; the creation of regional hospitals and homes for convalescents; study of the problem of hospital fees, and the creation, for the benefit of hospitals, of a mutual fire and accident insurance fund.

Protection of Young Children in Alsace and Lorraine

The Roussel law, which regulates in France the supervision of children placed for remuneration in ward or as nurslings, has recently been introduced in Alsace and Lorraine. The administrative departments of Haut-Rhin and Bas-Rhin have decided to enlarge the scope of this law and to establish as complete and as perfect a service of child welfare as possible. Their efforts coincide, in a measure, with the enterprises of the Red Cross Society, certain municipalities, health insurance societies and private benefactors; likewise with the Association alsacienne et lorraine de puériculture, the purpose of which is to group together the child welfare societies and to give them a uniform direction and a scientific guidance. The collaboration of all these elements interested in the movements for the protection of childhood, on the one hand, and of the medical syndicates, on the other hand, has resulted finally in the creation of centers of puericulture. These child welfare centers have their own independent administration. They can be created by municipalities, the Red Cross Society, health insurance societies or private industries. Each center becomes a constituent society of the Association alsacienne et lorraine de puériculture, of which it forms a local group and from which it accepts suggestions as to technical management. Irrespective of their origin, these centers should endeavor to interest in their organization the municipalities and all private societies that are concerned with child welfare.

The child welfare centers are charged with the control of the application of the laws pertaining to welfare work among mothers and children—free milk grants and the protection of young children. Besides this work of control, they must endeavor to reach individually every mother and every child that need counsel or help, in order to promote the application of the rules of public health and to emphasize the value of breast feeding. The practical work of the child welfare centers will be directed by a physician, who will have one or more visiting nurses to assist him. The appointment of medical inspectors, the character of their service, and their salaries are regulated by a special agreement between the prefectures and the medical syndicates.

The midwives must be the collaborators of the visiting nurse. The latter will inform the midwives of a district of her intended visit, and will call on them personally. The midwives will call the attention of the visiting nurse to the pregnant women whom the nurse ought to visit. The midwives will communicate to the visiting nurse, on special postal cards furnished them, every confinement at which they have assisted. If the mother is nursing her child, the visiting nurse will pay her the first visit when the midwife ceases her calls. However, the midwife will appeal to the visiting nurse whenever, during her attendance on the mother, difficulties with respect to feeding arise. For every case correctly reported to the visiting nurse, the midwife will receive a fee of three francs from the child welfare center.

Congress on Cancer Research

The central office of the Association française pour l'étude du cancer has decided that a congress on cancer research shall be held in Strasbourg, July 23-25, 1923. These three main topics will be discussed: (1) the experimental production of cancer, by Drs. Borrel, professor at the Faculté de

médecine of Strasbourg; Fibiger, professor at the College of Medicine, Copenhagen; Ishikawa, professor at the College of Medicine, Sapporo, Japan; Murray, director of the Imperial Cancer Research Fund, London, and Pentimalli, of the Institute of General Pathology, Naples; (2) the local and general reactions of the organism to cancer, by Drs. Rubens-Duval, Paris, and Woglom of the Crocker Institute of Cancer Research, New York, and (3) treatment of epitheliomas of the skin and the buccal cavity by radium and roentgen rays, by Drs. Bayet, director of the Institut du radium, Brussels, and Regaud, director of the biologic laboratory of the Institut du radium, at the University of Paris.

A Municipal Subvention to the Paris Faculty of Medicine

The municipal council of Paris has voted an annual subvention of 3,000 francs to the Paris Faculté de médecine, to be used toward the establishment of a professorship charged with theoretical and clinical courses in orthopedic surgery as applied to adults who are suffering from industrial accidents, war mutilations or merely ordinary infirmities.

Personal

Prof. Jules Bordet, director of the Pasteur Institute at Brussels, has been appointed foreign associate member of the Academy of Sciences, Paris.

BELGIUM

(From Our Regular Correspondent)

April 16, 1923.

Increased Supply of Radium

Since the discovery in the Congo region of important radioactive deposits, Belgium has acquired almost a monopoly of the radium market. Since the first discoveries of uranium in the Katanga copper mines in 1920, numerous researches carried out by the Union minière have made it possible to increase the output. The mines at Chinkolwbe (Kasalo) furnish the mineral substances from which the radium is separated in the new works at Oolen, near Antwerp, which are affiliated with the Société Générale Métallurgique of Hoboken. The Union minière has promised to reserve for the use of Belgium the first 8 gm. of radium that are produced at Oolen, so that the metal may be immediately distributed among the various hospitals and sanitary establishments throughout the country.

The Antivivisectionists

Many medical men and men of science have been waging an energetic fight for vivisection. A voluminous questionnaire covering a series of questions in regard to this method of research has been sent to all the physicians of Belgium. The Antivivisection League hopes in this manner to learn the opinions of the medical profession, and thus to be in a position to formulate definite conclusions based on public opinion. Also the four universities of Belgium have become interested in the question, and each university has elaborated a report. At present it may be affirmed that the general opinion is that vivisection is an experimental method of the greatest experimental value, and that it cannot be abandoned. It goes without saying that all exaggerations which, under color of experiments, allow the commission of veritable crimes against unanesthetized animals should be suppressed.

There are indications that the medical profession will not withhold its interest in the question and, possessing, as it does, a full comprehension of the usefulness of the method, will be willing to consider the adoption of proper regulations.

A Tendon Transplantation Procedure in Pes Cavus

Before the Belgian Surgical Society, Dr. Delchef discussed the difficulties of the treatment of pes cavus owing

to the obstacles in the way of reduction (lack of bony support, large mass of muscles, persistence of the paralysis causing the condition). Also, nonoperative reduction, with or without subcutaneous myotomy, often fails to achieve good results. Delchef presented a case in which he obtained a good result by means of his procedure, a modification of the Witeck method; Witeck first brings the pes cavus into a marked equinus position in order to reduce the calcaneum, and then does a tendon transplantation to maintain the result. Delchef, in the case referred to, changed this procedure as follows: A circular incision was made around the sole of the foot; extensive resection of the plantar aponeurosis was done; through buttonhole incisions over the malleolus, the tendons of the peroneus longus and flexor longus hallucis were detached from their insertions, drawn across the calcaneum and sutured to the periosteum. The foot was immobilized in a forced equinus posture by means of a plaster cast, for two months. When the cast was removed, manual reduction was very easily accomplished. At the present time both feet are almost flat, and the patient can rise vigorously on his toes. In this position the contraction of the transplanted tendons is easily visible.

Revision of the Medical Curriculum

The commission appointed to revise the medical curriculum, to whose deliberations I have already had occasion to refer, is continuing its investigations, and, at a recent meeting of the Academy of Medicine, it succeeded in having this resolution adopted which gives expression to some of the principles on which the elaboration of the proposed new medical curriculum will be based:

The instruction in the pathologic sciences, which form the central basis of the examination for the doctorate, should comprise at least three and a half years of study; that is, at least half of the total duration of the medical course. In order to attain this end, the curriculum should be simplified by a considerable reduction in the number of hours given to instruction in botany, zoology, mineralogy, geology, logic, ethics and psychology.

BUENOS AIRES

(From Our Regular Correspondent)

March 21, 1923.

Visit of American Surgeons

March 16 we welcomed the American surgeons who arrived on the *Van Dyck*. During their five-day stay, the travelers visited the hospitals and attended operations performed by Drs. Arce, Finochietto, Ceballos, Valdés, Solé, San Martín, Copello, Medina and others. They made a hasty tour of the medical school, then beginning its annual courses. In the afternoon of March 17 a meeting was held at the medical school at which the visitors donned their gowns and caps. As the costume is not worn in this country, this lent a certain color to the ceremonies. Dr. F. H. Martin nominated Dr. M. Herrera Vegas as an honorary member of the college, and Dr. McDougall welcomed the nominee amid much applause. Then Dr. Young delivered a lecture on the advantages of peritoneal approach in prostatectomy, and Dr. Case spoke in Spanish on the use of radiology in postoperative treatment.

The delegates attended excursions to Tigre and the race course, and took a sightseeing trip through the city. The Society of Radiology held a special meeting in honor of Dr. J. T. Case. Finally, on the 21st, the delegates were received in audience by the president. That evening they left for Montevideo.

Antituberculosis Campaign

The Buenos Aires Public Assistance has added two more Calmette tuberculosis dispensaries to the four previously established. The last will be in charge of Drs. Rodolfo Vacarezza and Luis Rabuffetti, respectively. It is planned to

open ten more such dispensaries at public bath-houses and sanitary stations. Vaccination stations will also be established in the same premises.

Plague

As happens every year at harvest time, some isolated cases of plague have been reported from rural districts. There was an outbreak in the race course district at Rosario, but it was eradicated through an energetic campaign by the local health authorities. In the other end of the country, at Jujuy, there were also reported several sporadic cases, and one death. The national health authorities have pushed the anti-rat campaign at all ports. They have also asked congress to extend their authority to the whole country, promising to put an end to the disease which every year causes isolated outbreaks.

Cancer Institute

The new cancer institute is showing considerable activity under the leadership of Dr. A. H. Roffo. The basic work is concerned with deep roentgen therapy and the use of a preparation of cosin-selenium-rubidium, the formula of which is kept secret. Dr. Beatti published an article recently in *La Semana Médica*, attacking this method.

Gift of a Maternity Hospital

There has just been opened at Rio Cuarto a maternity hospital, being a gift of Mr. and Mrs. Gardey-Kowak, who spent 200,000 pesos (about \$73,000) on the building and who, in addition, will bear the maintenance expenses. The hospital will admit both free and pay patients. The amount collected will be also spent for maintenance. Technical supervision has been entrusted to Dr. M. Noroña, assisted by a licensed midwife. This philanthropic spirit deserves mention, since, while not uncommon in this country, it is not often exhibited to such advantage.

PRAGUE

(From Our Regular Correspondent)

April 4, 1923.

Joseph Thomayer

Prof. Joseph Thomayer celebrated his seventieth birthday, March 23. The echo which this occasion found in the daily and professional press demonstrated the popularity which this founder of the Czech school of internists enjoys in public and professional estimation. Joseph Thomayer was born in Trhanov, a small village in southern Bohemia. During his student days he was active in literary circles and a close friend of many Czech writers. He graduated at Prague in 1876; and became instructor of pathologic anatomy under Professor Klebs. He studied surgery in Germany, but his life career was determined by his work under Professor Charcot in Paris. On returning to Prague in 1880, he became assistant to Professor Eiselt, and since has devoted himself to internal medicine. It was through his energy that the Scientific Association of Czech Physicians and the journal published by that body became popularized among the medical profession. After another trip to London, he became, in 1883, assistant professor at the Prague Medical faculty, where he remained throughout his life. In 1886, he published an "Introduction to the Practice of Medicine," which became the fundamental book for Czech medical practitioners. At the same time he became chief of the Prague "policlinic," an institution exclusively for ambulant patients. During the sixteen years which he spent in this institution he educated a great number of medical men. Although the polyclinic was located in a poor building and was badly equipped, the fame of Professor Thomayer was so great that students considered it an honor to be admitted to his sessions. His lectures were not obligatory for the students, yet he always had the largest

attendance of any professor. His lectures were fascinating both in content and in form; he was a master in the art of making lectures interesting to students, and knew how to impress on them the relative values of clinical signs. In 1902, he became chief of the institute for internal medicine in Prague and brought it to its eminence. There he educated Drs. L. Syllaba and J. Pelnář who now hold the chairs of internal medicine in Prague. Dr. R. Vanysek, who holds the chair of internal medicine at the newly established medical faculty in Brno, is also one of his pupils. His rich clinical experience has been preserved in the "Pathology and Therapy of Internal Medicine," which has become the standard textbook of this branch of medicine for Czech students. Last, but not least, it should be mentioned that even as professor of internal medicine he continued his interest in literature. He published several books of popular stories, and it was certainly partly due to this ability that he was always such an interesting lecturer and teacher. In 1921, he left the chair feeling that the time had come for younger people to succeed him. The Czech medical profession honored on this occasion a man who has the same significance for Czech medical sciences that Dr. William Osler had for Anglo-Saxon medicine.

Social Medicine

The annual meeting of the delegates of the Czechoslovak Association of Physicians, which took place in Prague, March 11, defined exactly the standpoint of the organized medical profession toward the new trends of social medicine. The after-war period brought about a rapid development of all sorts of dispensaries, health centers, etc., and caused some uneasiness to the members of the medical profession, who look on all such institutions with suspicion. Undoubtedly, improper management, in many instances, caused misunderstandings between the institutions and the physicians. The younger generation of physicians, which is more progressive and more familiar with the modern problems of social medicine, has worked out rules and regulations for the management of preventive dispensaries and health centers, which were submitted in the form of a resolution to the meeting of the delegates a year ago; but the resolution was defeated by the conservative delegates. It was only after a year of educational work with public opinion that the resolution, with but slight modifications, was put through at the last meeting. The resolution defines dispensaries as places for modern diagnosis, and institutions for sanitary and social prophylaxis. The dispensaries are open to everybody. It is also the duty of members of the association to support and cooperate with the institutions. All the functions of private health and social agencies are honorary, and should not be paid for. The rules contain also detailed instructions for the salaried officers of preventive dispensaries. Only regular physicians, selected by open competition, should be employed in these institutions. Treatment should be given not at all, or only exceptionally in the case of the poor. Members of insurance associations should not be considered as poor. In Slovakia and Ruthenia, where the situation is less organized and more primitive, treatment should be given according to circumstances. The resolution finally does away with the negative position in which the organized medical profession has stood as regards the new movements in social medicine; these resulted in many misunderstandings in public health administration.

Postgraduate Courses

Dr. F. Hamza of the Brno medical faculty will organize postgraduate courses for physicians in social medicine in cooperation with the ministry of health. The course will consist of a series of lectures during a period of six weeks, followed by practical experience in different public health

institutions for four and one-half months. The ministry of health is offering ten scholarships for physicians who desire to participate in the course.

BERLIN

(From Our Regular Correspondent)

March 31, 1923.

Incidence of Rickets in Large Cities

As the result of the food scarcity during the war, rickets became widespread and led to grave crippling among the children. Owing to the effects of the present distressful economic situation, many new cases have developed, and have added to the previous injuries. Professor Engel in Dortmund gave recently some useful statistics on the incidence of the disease. Of 1,384 children in Dortmund belonging to the 2-10 age group, 594, or 42.8 per cent., were suffering from rickets. The percentage of severe types of rickets was very large, approximately 21.3 per cent. of those affected, while 40 per cent. were of the moderate type. On an average, 10 per cent. of all children examined presented severe or extremely severe types of the disease. That is an extraordinarily high percentage, which is of serious moment in view of the sequels of the severe types of the affection. In an inquiry into the causes of rickets, the accompanying table, which appears to establish a connection between unfavorable housing conditions and rickets, may be of value.

Housing Conditions in Relation to Incidence of Rickets

Number of Rooms to Family	Number of Persons to One Room	Incidence of Rickets Among Children (Per Cent.)	In Relation to One Room
1	3.90	70	0.95
2	2.41	44.18	0.39
3	2.06	30.56	0.26
4	1.82	46	0.23
5	1.23	25	0.07
6	1.08	33.50	0.08

Infant Mortality in Previous Centuries as Compared with the Present

Hanssen in Kiel reports the results of his investigations on the infant mortality of Schleswig-Holstein in previous centuries, as shown by church registers. In several communes, the mortality was formerly lower than it is today. For instance, Eiche, with a present population of 2,900, had an infant mortality of 12 per cent. during the period from 1677-1722, whereas, during the period from 1900-1912, the mortality was 14.5 per cent. In other localities, and, strange to relate, in the very districts that today also show the highest mortality rates, there was an exceedingly high infant mortality during earlier periods. For example, in Wesselburen, province of Ditmarsh, the mortality rate in 1872 was 63.9 per cent., while in 1904 it was 18.3 per cent. The low rates are commonly ascribed to the wide use of breast feeding, and the high rates to epidemics—chiefly small-pox. It can be shown, however, that in former centuries the "summer peak" of infant mortality was not in evidence. For the present epoch, Hanssen was able to show that the infant mortality, as the especially critical year 1917 has proved, can be reduced by increasing the number of breast-fed infants, while in other localities (for example, in Mecklenburg), where the percentage of breast-fed infants is smaller, a correspondingly increased mortality has been established.

Tuberculosis Among Village School Children in Eastern Brandenburg

G. Hartwich, during his year's term of office as medical examiner of schools in a district of eastern Brandenburg, examined nearly 7,000 school children. He found that 14.7

per cent. of the boys and 15.2 per cent. of the girls presented suspicious signs of tuberculosis. Pronounced signs of tuberculosis or scrofula were noted in 4.2 per cent. of the boys and 3.8 per cent. of the girls. In comparing the different years, it was apparent, as has been noted elsewhere, that, in more recent years, there was a greater tendency to tuberculosis than formerly. In the period from 1913-1916, 17.8 per cent. of the boys and 18.4 per cent. of the girls showed signs of tuberculosis, while pronounced evidence of tuberculosis or scrofula was noted in 6.3 per cent. of the boys and 4.4 per cent. of the girls. During the period 1908-1912, however, there were in the first group only 10.8 per cent. of the boys and 12.4 per cent. of the girls, and in the second group, 3.7 per cent. of the boys and 3.5 per cent. of the girls. From these statistics we may assume that, in from ten to fifteen years, we may expect a three or four fold increase of pulmonary tuberculosis unless energetic action is taken to prevent it.

Opening of a School for the Training of Public Welfare Workers

In common with the Empress Augusta Victoria House, a government institution for the combating of infant and child mortality, the merger of the central federations of social hygiene has decided to open a school for the training of assistants in public health and public welfare work. In establishing this new training school, the thought uppermost in the minds of the founders has been that by far the greater portion of public welfare work has to do with public health, and that it is therefore desirable to make public health work the main consideration in the training of public welfare workers. It goes without saying that the young women attending the new institution will likewise receive training in the educational and the purely economic aspects of public welfare administration, so that they may be equipped with not only the theoretical but also the practical knowledge needed in their work. The aim is therefore to train persons who will be able, when and where it is necessary—more particularly in the rural districts—to attend to all branches of welfare work. In the training of the institution, the main emphasis will be placed on the most important practical features of the work. The institution plans to supply also another need by establishing short training and continuation courses for nurses, welfare workers and administrative officers for welfare work. At the end of a two-year course, the last semester of which will be devoted more especially to practical training, students will be admitted to a state examination, and on receiving their diploma their names will be placed on a list of eligibles for government positions.

Marriages

HOSEA WEBSTER McADOO, Berkeley, Calif., to Mrs. Maude Thormona Wentworth of Alexandria, Va., May 1.

CALVIN L. LONGSTRETH, Creston, Iowa, to Miss Carmen M. Post of Des Moines, at Cedar Rapids, recently.

WILLIAM MASON, Fall River, Mass., to Miss Nancy Campbell of Utica, N. Y., April 7.

JOHN G. SCIFRES, Indianapolis, to Miss Marguerite Schuck of Bridgeport, recently.

FRANK OLIVER NICHOLS to Miss Maybeth Dobbs, both of Etowah, Tenn., May 2.

GEORGE W. SMALLWOOD to Miss Caroline Ruth Bain, both of Boston, April 13.

FREDERICK E. GLAUNER, Marine, Ill., to Miss Morgan of Urbana, recently.

JOHN H. REGAN, Chadron, Neb., to Miss Irene Bennett of Omaha, April 26.

Deaths

James Macfarlane Winfield ☉ Brooklyn; Bellevue Hospital Medical College, New York, 1882; emeritus professor of dermatology, Long Island Medical College, Brooklyn; member of the New York Pathological Society; past president of the Kings County Medical Society; the New York Dermatological Society, and the American Dermatological Society; aged 63; died, April 22, of injuries sustained in an automobile accident.

Louis Laberge, Montreal, Que., Canada; Montreal School of Medicine and Surgery, Montreal, 1874; formerly chief medical officer for the city of Montreal; represented Montreal at the International Congress of Hygiene in Paris, 1889; at the Medical Convention, Glasgow, Scotland, 1908, and at the Tuberculosis Congress in Washington, D. C., in 1908; aged 72; died, recently.

Lea Marion Murphy, South Pasadena, Calif.; Northwestern University Medical School, Chicago, 1911; member of the Medical Society of the State of California; formerly a practitioner in Minnesota and Illinois; specialized in ophthalmology, otology, laryngology and rhinology; aged 38; died, April 18, following a long illness.

Alexander MacKay, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1895; served with the Canadian Army Medical Corps, in France, during the World War; formerly chief medical inspector of the Toronto Public Schools; inspector of provincial hospitals for the dominion of Canada; aged 53; died, February 18.

Frank Ward Ross, Elmira, N. Y.; Medical Department of the University of the City of New York, New York, 1883; veteran of the Spanish-American and World wars; formerly county coroner, and member of the board of education; at one time on the staff of the Arnot-Ogden Memorial Hospital; aged 63; died, April 21.

John Kelliper Tretton, Rochester, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1888; at one time city physician; formerly on the staffs of the Hahnemann Hospital (Highland Hospital) and the Homeopathic Hospital; aged 63; died, April 9.

Francis Emory Asbury, Ashboro, N. C.; Medical College of the State of South Carolina, Charleston, 1876; member of the Medical Society of the State of North Carolina; past president of the Montgomery County Medical Society; aged 77; died, April 11.

Elizabeth Frances Kearney, Los Angeles; Keokuk Medical College, Keokuk, Iowa, 1892; served as instructor with the American Red Cross, during the World War; formerly a practitioner in Chicago; aged 61; died, April 17, of cerebral hemorrhage.

Howard Charles Emons ☉ Chicago; Chicago College of Medicine and Surgery, 1917; served in the M. C., U. S. Army, during the World War; on the staff of the U. S. Marine Hospital No. 5, where he died, May 2, of pneumonia, aged 32.

Oscar F. McNabb, Whitwell, Tenn.; Chattanooga Medical College, Chattanooga, 1897; member of the Tennessee State Medical Association; aged 52; died, April 12, in Birmingham, Ala., of a bullet wound, inflicted, April 11, by a stranger.

Eugene S. Carroll, Center, Texas; University of Louisville Medical Department, Louisville, Ky., 1893; member of the State Medical Association of Texas; formerly county health officer; aged 57; died, April 10, following an operation.

William Henry Hawkins ☉ Lewiston, Me.; Jefferson Medical College of Philadelphia, 1893; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 52; died, April 14, following a long illness.

Clinton Edward Powell, Polo, Ill.; Marion-Sims College of Medicine, St. Louis, 1897; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 49; died, April 17, of chronic nephritis.

Samuel Lile, Lynchburg, Va.; University of Louisville Medical Department, Louisville, Ky., 1888; member of the Medical Society of Virginia; aged 62; was found dead in bed, April 15, of cerebral hemorrhage.

James Worthington Parshall, Uniontown, Pa.; University of Maryland School of Medicine, Baltimore, 1887; member of the Medical Society of the State of Pennsylvania; aged 60; died, April 14, of pneumonia.

William Thompson Burch, Washington, D. C.; Medical Department of Columbian University, Washington, 1894;

member of the Medical Society of the District of Columbia; aged 52; died, April 10.

Robert N. McMillen, Iola, Kan.; Louisville Medical College, Louisville, Ky., 1875; member of the Kansas Medical Society; aged 73; died, February 23, of cerebral hemorrhage, at Kansas City, Mo.

Joseph Leonard Norman Aus, Deer Park, Wis.; Illinois Medical College, Chicago, 1904; member of the State Medical Society of Wisconsin; aged 38; died recently, of acute articular rheumatism.

Andrew Jackson Boswell, South Bend, Ind.; Fort Wayne College of Medicine, Fort Wayne, 1882; Bellevue Hospital Medical College, New York, 1890; aged 68; died, April 19, of heart disease.

Roswell Barnum Raleigh, Los Angeles; Minneapolis College of Physicians and Surgeons, Minneapolis, 1894; formerly a practitioner in Iowa; aged 58; died, April 13, of heart disease.

Horace M. Stanley, Creston, Iowa; Ensworth Medical College, St. Joseph, Mo., 1907; member of the Iowa State Medical Society; aged 43; died, April 21, of cerebral hemorrhage.

Timothy Hartigan, Chicago; College of Physicians and Surgeons, Chicago, 1896; aged 62; was found dead in bed, April 23, of organic heart disease and chronic nephritis.

Thomas B. Rankin, Odon, Ind.; Medical College of Indiana, Indianapolis, 1880; member of the Indiana State Medical Association; aged 73; died, March 13, in Scotland.

Benjamin Thompson ☉ Tama, Iowa; Eclectic Medical College of Pennsylvania, Philadelphia, 1870; at one time mayor of Tama; aged 79; died, April 22, of senility.

Joseph Benson Kelsey, Deport, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1889; aged 67; died suddenly, April 10, of heart disease.

Lot Snoddy, Chicago; Jefferson Medical College of Philadelphia, 1880; member of the Illinois State Medical Society; aged 65; died suddenly, April 24, of heart disease.

David Monroe Buchan, Wray, Ga.; Georgia Eclectic Medical College, Atlanta, 1878; formerly member of the state legislature; aged 75; died, March 16.

Ernesto Conte Loffredo, Jamestown, N. Y.; Eclectic Medical College of the City of New York, New York, 1906; aged 47; died, March 14, of pneumonia.

Joseph E. Durr, Augusta, Ga.; Medical College of the State of South Carolina, Charleston, 1880; Confederate veteran; aged 82; died, April 16.

George W. Varner ☉ Evansville, Ind.; Kentucky School of Medicine, Louisville, 1886; on the staff of St. Mary's Hospital; aged 61; died, April 20.

Helen Louise Story, Boston; Tufts College Medical School, Boston, 1897; aged 62; died, February 15, of chronic endocarditis and cardiac asthma.

John Edward Ottaway, Rochester, N. Y.; University of Michigan Medical School, Ann Arbor, 1886; aged 61; died, April 12, of heart disease.

Harvey Edwin McIntire, Auburn, Wash.; Bellevue Hospital Medical College, New York, 1884; aged 66; died, April 2, of cerebral hemorrhage.

Robert E. Tolleson, Sperry, Okla.; University of Arkansas Medical Department, Little Rock, 1898; aged 47; died, February 13, of pneumonia.

Charles S. Lindsay, Pittsburgh; Western Reserve University School of Medicine, Cleveland, 1879; aged 66; died, April 10, of angina pectoris.

Walter T. Brodbeck, Beverly Hills, Calif. (licensed, years of practice); formerly a practitioner in Ohio; aged 60; died recently.

Jacob A. Thomas, Bybee, Tenn.; Chattanooga Medical College, Chattanooga, 1896; died, April 16, of cerebral hemorrhage.

Dorwin A. Cookingham, Topeka, Kan.; Kansas City (Mo.) Homeopathic Medical College, 1889; aged 73; died, April 14.

Jules Frederick Roth, Los Angeles; Baltimore University School of Medicine, Baltimore, 1892; aged 60; died, April 11.

J. K. L. Norvell, Beechgrove, Tenn. (licensed, Tennessee, 1889); aged 73; died, April 16, of cerebral hemorrhage.

Henry Newton Speer ☉ Philadelphia; Jefferson Medical College of Philadelphia, 1893; aged 53; died, April 19.

Annie M. Young, Chicago; Hahnemann Medical College and Hospital, Chicago, 1889; aged 65; died, April 13.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

FLEISCHMANN'S YEAST NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

In March, 1921, the Council took up the consideration of Fleischmann's Yeast on account of the extensive and extreme therapeutic claims which were made for this preparation. Since then the Council has given much attention to the subject of yeast therapy. The chairman called in consultation eminent students of nutrition and clinicians qualified to speak with authority on questions of nutrition, dietotherapy and pediatrics. The object was to determine whether the effects of yeast and yeast preparations on animals deprived of food containing vitamin B gave promise of having important therapeutic application. After a comprehensive discussion it was concluded that there is little likelihood that the administration of yeast or yeast preparations representing vitamin B concentrates will be of therapeutic value in many cases for which they are advertised. The view that there was no satisfactory evidence in favor of the therapeutic administration of yeast in most conditions for which it is advertised was concurred in by many of those who have contributed to the laboratory reports of the action of yeast or its vitamin in experiments on animals previously deprived of the growth-promoting constituents present in many foods and in yeast.

As a result of its inquiry, the Council adopted (THE JOURNAL, April 15, 1922, p. 1146) the following principles to guide in the consideration of yeast preparations and vitamin B concentrates:

1.—The claim that deficiency of vitamin B and diseases resulting therefrom are common conditions in the United States is not at this time supported by adequate, acceptable evidence.

2.—The claim that yeast preparations or extracts are, in principle or in general, essentially more effective or more practical or more available means of administering vitamins than the commonly available vitamin-containing foods is not at this time supported by adequate, acceptable evidence.

3.—The claim that therapy with yeast or yeast preparations has as yet more than an experimental status is not at this time supported by adequate, acceptable evidence.

Further, the Council has adopted (THE JOURNAL, July 8, 1922, p. 135) an article on yeast preparations for inclusion in New and Nonofficial Remedies in which, among other things, it is pointed out (1) that the opportunities to obtain vitamin B through the customary foods are so abundant as to make the demand from special sources of the vitamin limited at the present time; (2) that yeast is a mild laxative, but that the cause of this laxative action has not been determined so far as one can learn; (3) that the supposed beneficial effect of yeast administration on furuncles, acne, etc., lacks substantiating evidence; (4) that such laxative effects may be expected from an anticonstipation agent; (5) that it is not clear whether live cultures of yeast may be used to change the intestinal flora, if indeed such reaction becomes desirable, and (6) that many of the conditions for which yeast and yeast preparations have been proposed are so variable in their clinical courses and so likely to show improvement without special treatment that the elaborate claims that are made for yeast therapy for somewhat indefinite disorders must be largely discounted.

Many advertisements for Fleischmann's Yeast are misleading in that they tend to create the belief that many diseases are prevented or cured by its use. Advertisements

addressed to the medical profession, through one-sided quotations, are likely to lead physicians to believe that the efficacy of yeast therapy in many conditions has been established. Advertisements addressed to the public are bound to create the opinion in the mind of the lay reader that reliance may be placed on yeast in many conditions which call for therapeutic treatment, the neglect of which may often lead to serious and even fatal consequences.

A booklet which is offered "free, to physiological chemists, physicians and hospitals," the phraseology of which creates the impression of being scientific and conservative in tone, asserts that "dentists have used yeast to advantage in pyorrhea, supplementing the necessary local treatment," whereas it has been generally acknowledged that internal medication has not been found to influence the course of pyorrhea. It is asserted in this booklet that a "frequent cause of general debility is lack of a sufficient quantity of vitamin B in the diet." This is contrary to the conclusions arrived at by the Council, as stated under (1) in the report quoted above from THE JOURNAL of April 15, 1922.

Fleischmann's Yeast is advertised directly to the laity for the relief of boils:

"For pimples or boils eat 1 to 3 cakes of Fleischmann's Yeast a day."

The patient who treats himself for boils in this manner may later die of a carbuncle as the result of the neglect of proper treatment. Many of the advertisements cite experiments of well-known physicians who reported that sixty-six patients improved, or were cured, during the use of Fleischmann's Yeast in a total of seventy-six patients suffering with furunculosis, acne vulgaris, acne rosacea, constipation, gastro-intestinal catarrh, intestinal intoxication, eczemas, arthritis deformans, psoriasis, erythema and urticaria, bronchitis, urethritis, pruritus, folliculitis, conjunctivitis, duodenal ulcer and swollen glands. It is not at all remarkable that skilled physicians could choose so many patients who were suited for treatment by almost any means, for it is very well known that an equal number of patients suffering from these diseases could be chosen who would improve without any medication whatever, provided that suitable hygienic and dietary measures were observed. On the other hand, there is no evidence that Fleischmann's Yeast yields any better results in the majority of patients suffering with these disorders than are obtained with exactly the same treatment minus the yeast.

One advertisement contains the following:

"You who do the work of the world in the sweltering heat of the summer need food that nourishes but does not overheat. Fleischmann's Yeast added to your diet builds vitality, power and endurance. Eat two to three cakes a day and see how they increase your ability to withstand summer heat. You will also desire less of the rich, heat-producing foods that make you uncomfortable in your summer work."

If this means anything it means that Fleischmann's Yeast contributes energy, in important amounts, to those who do hard work. A cake of yeast weighs half an ounce and contains protein, fat, and glycogen sufficient to yield approximately 12 calories, or less than one-half of one per cent. of the energy requirement of one who does hard work; yet yeast is advertised as an ideal food. It might as well be argued that as coffee will cause a little child to "desire less of the rich, heat-producing foods that make you uncomfortable in your summer work," one would be justified in recommending an abundance of coffee for a little child!

The statement that "People who are adding Fleischmann's Yeast to their daily diet find that their body functions are kept normal and regular," is manifestly incorrect. It is general and inclusive. It does not say that some people find this to be the case, but it makes the comprehensive and inclusive statement that, in general, those who add it to their diet obtain this result. If it were true, then no one who added the yeast to the diet would become ill. Such a statement is obviously absurd. If, as claimed, it was made by a prominent physician, then, evidently, even prominent physicians may make careless statements.

An example of the misleading character of the advertisements for Fleischmann's Yeast without direct falsehood is afforded by the following:

"When the plane of metabolism first must be raised.—Hundreds of experiments in animal nutrition have proved the great value of yeast in the growth-producing dietary. One of the most striking descriptions

of its importance is given by a man pre-eminent in the field of physiological chemistry: 'A scrawny, lethargic animal, rapidly dwindling in size, with unsleek coat and evident malnutrition, will completely change its appearance and responses in a few days at most on a diet unchanged except for a tiny bit of yeast.'

That statement is not deliberately false, but taken without the context it is false. The previous diet of the "scrawny, lethargic animal" had been deliberately chosen for experimental purposes with a view to depriving the animal of one constituent which is present in a great variety of foods—and in yeast. One might conduct wholly analogous experiments in which anemic animals were deprived of food containing iron (rice and sugar, for instance, are free of iron) and by the addition of almost any suitable food known to contain iron, he could in a short time cause striking changes in the animal's condition. The advertisement is misleading in that it gives the impression that yeast is essential for this remarkable change in the condition of the animal. As a matter of fact yeast is merely one of a large number of the commonest articles of the daily diet that contain this vitamin.

The Council voted to refuse recognition to Fleischmann's Yeast (1) because it is advertised by means of unwarranted and misleading therapeutic claims and (2) because it is advertised to the public with unwarranted therapeutic claims that might become a detriment to the public health.

Correspondence

INTRAPERITONEAL INJECTION OF CITRATED BLOOD

To the Editor:—There is no doubt that the intraperitoneal method of giving citrated blood is unnecessary for some men. For the same reason, I very much doubt the ability of the average man successfully to expose and utilize the median cephalic vein in the new-born.

The mere fact that Helmholtz recommends the sinus route; Robertson, the internal saphenous vein; Falls, the jugular vein; and Sidbury, the umbilical vein shows that difficulties have been encountered.

The method was not intended as a substitute for Dr. Lewisohn's excellent pioneer work, but only as an addition of possible merit. I have never used the intraperitoneal route in hemophilia neonatorum, for I have found whole blood intramuscularly a satisfactory therapeutic agent. However, it is felt that this means of approach may be used. I know of no scientific reason why citrated blood in the peritoneal cavity should be dangerous, "especially in the new-born infant."

DAVID M. SIPERSTEIN, M.D., Minneapolis.

"THE INTRACUTANEOUS GUINEA-PIG TEST FOR HUMAN SUSCEPTIBILITY TO DIPHThERIA"

To the Editor:—In THE JOURNAL, April 7, is a communication from Dr. Zingher, criticizing rather forcefully my paper on the intracutaneous guinea-pig test for human susceptibility and immunity to diphtheria. Merited criticism should be accepted gracefully, and I am free to admit that the use of my name in association with the test does not have the appearance of good taste; however, there were reasons besides vanity that seemed at the time of the first printed use of the term (on forms for the transmission of specimens) to weigh against the selection of any other. These were, the early local use of the name, the confusion with other laboratory examinations which immediately occurred, and the apparent necessity, since the test was for general use by the profession, of deciding between various cumbersome designations, such as "guinea-pig test for diph-

theria immunity and susceptibility," or even just "diphtheria susceptibility reaction," the latter of which might do in the laboratory but would be too indefinite for general use. However that may be, I am at least open to no more serious accusation than an error of good form.

Dr. Zingher's statement in certain particulars will, if left unchallenged, leave the impression that the test described by me: (a) is an application of his modification of Römer's method; (b) is a crude application; (c) is a procedure intended for the same uses as his modification; (d) is subject to "various sources of error that may so easily creep in," and (e) is less reliable than the Schick test, all of which claims are not in accord with the facts, as I shall immediately show.

Römer's method of estimating the antitoxic content of serums was devised to take the place of the lethal test on guinea-pigs, whenever, in manufacturing and experimental work, the strength of antitoxins was to be found. It was never suggested as a means of determining natural immunity to diphtheria, as in the Schick test, and would not have been suitable for this purpose for various reasons. The same may be said of Zingher's modification of Römer's method. Römer's test never came into general use for the reason that it was worked out on a basis that did not admit of sharp, uniform and unequivocal results; too much depended on the personal equation of the users. Zingher's was in some respects better, but he perpetuated the same fault: a criterion of reaction that was dangerously indefinite. Doubtless, Dr. Zingher's opinion that my test is subject to "various sources of error that may so easily creep in" is based on experience with his own test.

A careful reading of both Dr. Zingher's article (*J. Infect. Dis.* 19:557 [Oct.] 1916) and mine (THE JOURNAL, June 10, 1922, p. 1782; March 17, 1923, p. 748) will show any one that my test is based on Römer's observation of the uniformity of reaction of the skin of the guinea-pig to diphtheria toxin in varying amounts, and on his application of this to the determination of small amounts of antitoxin in horse serum. To this extent it is a modification of Römer's test, as I clearly indicated in my first paper. In the same paper I also gave credit to Dr. Zingher for having previously modified Römer's method, although such reference was not required, as there is nothing in common in the use and application of the two procedures. I also called attention to the fact that my modification was the first application of a skin test in guinea-pigs for the detection of natural immunity in the human subject.

The statement that the test is a "crude application" of his own test is unwarranted. It is true that both modifications depart from Römer's test in that they use toxin on the standard L+ basis, but the plan is very different and the criterion of reaction totally different. My modification is so much simpler that it is applicable for general laboratory use for the purpose in view, which is not true of Zingher's test, as may be learned by referring the decision to any laboratory worker outside special research institutions, such as that in which Dr. Zingher labors. That this is true may also be surmised from the fact that my modification is already in use in three laboratories that I know of, besides its place of origin, whereas I am unable to find anywhere any evidence that Dr. Zingher's method has ever been adopted by any one, even for the purpose designed by him; certainly not for the routine test for natural immunity, preparatory to the administration of toxin-antitoxin. The relation of the two tests to each other and to the original of Römer is comparable to the relation between the test of Kolmer and of Craig to each other and to the original Wassermann test.

Leaving aside all quibbles as to differences or resemblances in technic, I believe my method has claims to simplicity, practicability, accuracy and originality of application that merit its separate identification and its general adoption for the purpose for which it is designed, i. e., the accurate determination of the immune status as regards diphtheria, of small groups of individuals, particularly those who are protein sensitive, and for the convenience of physicians who are not skilled in the use of the Schick test.

I will answer the claim that my test is not as reliable as the Schick test by referring to my two papers on the subject, in which certain errors in the interpretation of the Schick test are described, and further by asserting my entire willingness to demonstrate publicly to a gathering of medical men, and particularly immunologists, that my test, based on Römer's work, is *not* subject to the vague and unstated errors feared by Dr. Zingher, and is more accurate than the Schick test. Furthermore, I challenge any one to show how a false negative or a false positive result can be obtained through any cause inherent in the test.

W. H. KELLOGG, M.D., Berkeley, Calif.

"SUPERIOR METHOD OF STAINING TUBERCLE BACILLI"

To the Editor:—In THE JOURNAL, April 14, p. 1092, Dr. Peter Mjedloff requests some further information concerning a bacillary stain in general use at the Kula Sanitarium. The stain to which he refers apparently is the stain designated as Much's granular stain. The stain which is in use at the sanatorium is identical with Much's stain, differing, however, in the fact that the Lugol's solution is used first on the prepared smear and this is then followed by the gentian-violet stain. After destaining with acid in the usual way, counterstaining in Much's technic is by means of a 1 per cent. methylene blue solution, although any other counterstain or dye, such as pyronin, may be used. In the usual staining technic this method of staining the tubercle bacilli is not considered superior to the carbolfuchsin or Ziehl-Neelsen method for detecting the bacilli if in their integrity. It is only when the bacilli have undergone retrogressive changes, are dissociated, that Much's granular stain is more advantageous. The bacillary granules are not stainable with the carbolfuchsin stain but are definitely stainable with the Lugol-gentian violet stain.

JOHN RITTER, M.D., Chicago.

Clinical Instructor on Tuberculosis,
Rush Medical College.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EPINEPHRIN AND PITUITARY EXTRACT

To the Editor:—Can you furnish me with a succinct comparison between epinephrin and pituitary extract as regards (a) effect on blood pressure, (b) practical indications and (c) dosage and technic of administration?

JOHN W. BOYCE, M.D., Pittsburgh.

ANSWER.—(a) Both epinephrin and pituitary extract (posterior lobe) cause a rise in blood pressure. The former acts more promptly and vigorously, and its effects are of much shorter duration.

(b) Both preparations have been used in cases of heart failure and shock, but the pituitary is generally preferred because of its more prolonged action, though they have sometimes been combined. Epinephrin has been recommended especially for the asthenia from prolonged exertion in which suprarenal secretion is exhausted. But epinephrin is only

one element in suprarenal secretion, and its effects are transient. Pituitary extract stimulates the suprarenals, and is used especially in the later stages of labor, in properly selected cases, and also to stimulate the intestinal muscle in cases of postoperative bowel inactivity. Epinephrin is used particularly for its local effects in constricting arteries, thus diminishing swelling, arresting hemorrhage and diminishing absorption of local anesthetics.

(c) Epinephrin may be absorbed through the mucous membranes, e. g., of the tongue, and is then given in doses of from 5 to 10 drops of the 1:1,000 solution diluted with water. Pituitary extract solution (Liquor Hypophysis, U. S. P.) is usually given by injection into the muscles or subcutaneously. The dose of this solution and also of epinephrin (1:1,000) given in the same manner is from 0.5 to 1 c.c.

TREATMENT OF HOT FLUSHES OF THE MENOPAUSE

To the Editor:—Can you suggest some remedies other than corpus luteum which may influence the hot flushes of the menopause? Please omit name.

M. J., Missouri.

ANSWER.—In the field of organotherapy, the remedy frequently advised for the hot flushes of the menopause is whole ovary in doses of from 0.2 to 0.3 gm. (3 to 5 grains) three times daily by mouth. Corpus luteum should be restricted to the disturbances of menstruation during the menacme. Hot flushes are merely one of the many sympathetic nervous system disturbances of the menopause, and are believed to be due, not so much to atrophy of the ovaries, as to overactivity of the suprarenal glands. Calcium lactate, from 0.5 to 0.75 gm. (7 to 10 grains) three times daily by mouth with or without small doses of nitroglycerin has proved valuable. Hot baths, combined with a careful supervision of the daily hygiene of the patient, are possibly of even greater benefit than the medicinal treatment.

WHOLESOMENESS OF WATER FROM DEEP WELLS

To the Editor:—The town of Humboldt, Tenn., with a population of about 5,000, has a water supply which is drawn from wells about 350 feet deep and pumped directly into the mains. To insure enough water in case of fire or other emergency, it is proposed to build a concrete reservoir of 250,000 gallons capacity, through which the water will constantly flow. Is there any reason why such an arrangement might affect the wholesomeness of the water?

M.D., Tenn.

ANSWER.—There is no reason why deep well water stored in a reservoir in the way suggested should not remain perfectly wholesome, provided it is protected against contamination by surface wash. It sometimes happens that deep well waters stored in reservoirs exposed to sunlight develop algal growths; but while such a growth may lead to unpleasant odors, no danger to health is involved. The reservoir should, of course, be water tight, in order to prevent possible entrance of contaminated well water in case at any time the reservoir water should be drawn down below ground water level.

DEODORANT FOR PRIVY AND CESSPOOL

To the Editor:—What would be considered an economical and efficient deodorant for use in rural communities for water-closets and cesspools? These places are usually without a pit, and the excreta fall into a wooden box, which is more or less frequently emptied, or else on the ground at the same level as the building. Such conditions offer an attractive breeding place for flies, and also become very offensive in odor. I have not found lime or crude phenol quite satisfactory.

_____, Missouri.

ANSWER.—The U. S. Public Health Service (Bulletin 89) recommends compound solution of cresol for disinfecting privy vaults or privy cans, and finely powdered dry earth or wood ashes as drying powders. For privies not provided with removable cans, the use of wood ashes should be supplemented by sprinkling the deposits occasionally with 9 per cent. formaldehyd solution (Solution of Formaldehyde, U. S. P., 1 part; water, 8 parts). As deodorants and disinfectants for cesspools, compound solution of cresol, formaldehyd solution and chlorinated soda solution (sodium hypochlorite solution) are useful.

Patience and Observation in Obstetrics.—Patience in obstetrics is next to asepsis, but it must be the active patience of close observation; not the passive patience of ignorance, allowing the mother to become totally exhausted or the baby in imminent peril of death before determining on a line of action.—J. A. Harrar, *Am. J. Obst. & Gyn.* 5:251 (March) 1923.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.
FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.
IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
LOUISIANA: New Orleans, June 7-9. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.
MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.
MISSISSIPPI: Jackson, June 19-20. Sec., Dr. W. S. Leathers, University.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.
NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.
OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.
SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowc, Dallas County Bank Bldg.
VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.
WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.
WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

THE RELATION OF THE STATE UNIVERSITY HOSPITAL TO THE MEDICAL PROFESSION *

C. P. HOWARD, M.D.

Professor of Theory and Practice of Medicine, State University of Iowa College of Medicine
IOWA CITY

When I received the chairman's invitation to read a paper on the relation of the state university hospital to the medical profession, the first question I asked myself was: "Does a state university hospital bear any different relation to the medical profession from any other hospital?" At first I was inclined to answer this by an emphatic negative. On more mature consideration, however, I began to recognize several minor differences between the relation of a state university hospital and that of a privately endowed one to the medical profession. Possibly the best way to illustrate the various points will be to refer to our own experiences in Iowa. For example, while a state university hospital may be financially independent, it must offer a practical or scientific return to make it worth while for the general practitioner to refer cases which may prove of both an educational and clinical value to the student body. In other words, it must attract the clinically interesting types of disease and not merely the undesirable, as the epileptics, the advanced tuberculous, and the hopelessly crippled. We must admit that at first in Iowa it was just this undesirable class that came in greatest number. By the investigation of such cases from every possible angle and then by sending a written report of our conclusions and by advising the family physician how best to dispose of the patient, we began to win a certain measure of confidence on the part of our confrères in the state. Thus the ice was broken and friendly relations were established

which, we believe, have become closer and closer with each succeeding year.

In the second place, several prejudices had to be overcome, especially in relation to the laboratory service of the hospital. For example, because the state board laboratories, situated in Iowa City, under the direction of the department of pathology, make routine examinations of sputum for tubercle bacilli, and of the blood for the Wassermann complement fixation and typhoid agglutination, without even a clinical history of the patient, some practitioners formerly sent to the clinical laboratory urine samples with a request for information as to the probable existence of nephritis or diabetes, or brought patients for a roentgen-ray examination of the chest or gastro-intestinal tract with the expectation of an immediate diagnosis of the patient's malady by the actinographer. In spite of the fact that some commercial laboratories offer such facilities, our medical friends were immediately informed that our roentgen-ray department would not undertake such a dubious service except in conjunction with a clinician of the hospital staff, who obtained a complete history, made a general physical examination and performed the other necessary laboratory tests, after which he would be in a proper position to interpret the fluoroscopic and plate findings. This ultimatum had naturally to be uttered by the men in charge of the clinical laboratory and roentgen-ray room. However, as we in Iowa have learned always to expect, this lesson was surprisingly quickly appreciated by the medical practitioner and it seldom happens now that a patient is brought or sent directly to the roentgen-ray department without being first referred to the clinic.

What was harder for our profession to appreciate is our refusal to train technicians in blood counting, urinalysis and other diagnostic procedures. The medical man failed to realize that such a request from them showed how little they appreciated the value of these procedures and how unlikely they could recognize the pitfalls and fallacies that would beset the path of such a half-trained technician. Our reply, therefore, to such a request is the advice that the physician himself come and take the postgraduate course we offer each summer, and then teach the laboratory methods to his office assistant and so be in a position to evaluate rightly her findings. Even this startling advice seems to have borne fruit, for each summer we have from six to a dozen of the older practitioners taking our short postgraduate course of four weeks, in which five hours a week are devoted to the clinical laboratory diagnostic methods.

THE POSTGRADUATE COURSE

A short description of this postgraduate course may be of interest: In general, the course is very similar to that offered the senior medical student, with the omission of the lecture "quiz." The first hour of the day is spent in the clinical laboratory, making routine examinations of the urine, sputum, stools, gastric contents and blood. Each practitioner is given some laboratory task to perform under skilled direction. Then some special method, as the removal of a test breakfast, is performed before the entire class, and the various steps in the examination explained in detail, and the significance of the various findings dilated on. The meaning of occult blood in the stools, and the necessity of repeated sputum examinations for tubercle bacilli and elastic tissue are stressed. The students are then individually instructed in blood counting, and are encouraged to examine the blood smears from the various interesting cases in the hospital.

The class is then taken by the head of the department on the daily ward visit to the medical or surgical wards. The histories of the new cases are read, discussed and enlarged on. The clinician then makes the routine physical examination and explains the why and the wherefore of each step.

* Read before the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, Chicago, March 6, 1923.

On the discovery of something of clinical significance by the teacher, each postgraduate student is asked in turn to tell what he sees, feels or hears, and what the phenomenon signifies. A summary of the case is then given, and a diagnosis is expected from the class. If necessary, it follows the patient to the fluoroscopic room, or inspects the roentgenograms. The group then visits the old cases and watches the progress of the disease or the results of the therapeutic measures enforced. The morning's work closes with an amphitheater clinic in the various special branches, as neurology, pediatrics, and genito-urinary and orthopedic surgery and dermatology. At these special clinics, type cases are presented in a simple manner, and the treatment of cerebrospinal syphilis, epilepsy, marasmus, gonorrhea, flat foot, chronic eczema and the like is discussed in detail. In the head specialties, only the simplest diagnostic procedures are taught, as the examination of the sinuses, the ear drum and the eye grounds. In the afternoons the various laboratory courses are given, as surgical anatomy, operative procedures on the cadaver, postmortem technic and morbid anatomy. By 4 o'clock the program is over for the day, and the postgraduate can read in the library, or drop into the clinical laboratory to do some work or look on at the various operating rooms. Such, in brief outline, is the course offered each year by the university to the medical profession for a registration fee of \$25.

An annual clinic is held each winter for two days. To it every reputable medical practitioner of the state is invited. The program comprises amphitheater clinics, conducted by the entire clinical staff, with special demonstrations for those interested in some special field, as the head specialties, psychiatry, cardiology, actinography or cystoscopy. The first evening is devoted to a "smoker," at which addresses by the president of the university, the dean and prominent alumni are made. In this way the alumni, the faculty and undergraduate medical students are brought together and act as hosts to the graduates of other medical colleges practicing in the state. On the second day, some medical man of national repute lectures on his special field.

Naturally, the staff makes an attempt to accept all invitations to read papers or to hold clinics before the various county and district societies; this, of course, calls for a considerable expenditure of time and energy. Lastly, when needed, the clinical staff goes out in consultation to neighboring towns, provided such a journey will not interfere with its teaching and hospital duties. Daily, during certain limited hours, we see in our offices in the hospital private patients referred by outside practitioners.

For the clinical patients we have a fairly accurate follow-up system—more elaborate in some clinics, as psychiatry and orthopedic surgery, than in others.

LAWS FOR CARE OF INDIGENT

While we feel that a large part of the success of the University Hospital in Iowa City has been due to the practices described, we must not fail to mention the state laws for the care of indigent children and adults. Yet it must be evident to any fairminded critic that these laws would not have been enforced if there had not been a demand for such legislation on the part of the public and the profession. Prior to 1915, many patients presented themselves for treatment who were unable to pay the clinical rate of \$2.50 a day for the period necessary for their proper treatment; nor did the University Hospital have sufficient funds to care for them as free cases. Accordingly, in 1915 the Perkins law for indigent children was passed, and met with such approval that in 1917 a similar measure (the Klaus-Haskell Law) was introduced for the care of indigent adults.

The principle underlying each law is that any legal resident of a county desiring treatment at the University Hospital for himself or for any member of his family can make application through his physician, county supervisor, township trustee, public health nurse, overseer of the poor, policeman, priest or minister to the judge of the district or superior court. The latter then appoints a local physician to certify as to the nature of the applicant's disease and the possibility of its correction. A request by the court to the county attorney is also made to investigate the financial standing of the applicant. When the judge is satisfied with the medical and financial statements, the papers are forwarded to the superintendent of the University Hospital, who in turn refers them to the proper department, which, when a vacancy occurs, asks the patient to report for examination in the outpatient service. There the history is taken and a physical examination made by some duly authorized member of the department, who either recommends the patient for admission to the wards or returns him home in charge of his escort, if not amenable to treatment. In the case of acute surgical and medical emergencies, the patients are admitted to the wards before the papers have been received, on the understanding that the patient's family will be responsible for the hospital expenses if the papers are not forthcoming. As with all laws of their kind, they are open to abuses; yet, as time goes on, these abuses are being rectified.

Local pressure is no doubt sometimes brought to bear on either the physician or the county attorney to certify that a given case is either amenable to treatment or a true county charge. This complaint, unfortunately, has reached our ears on more than one occasion. We have naturally to accept the affidavits presented to the courts. On the other hand, the pay clinical cases are being more and more closely investigated by our social service department, which is gradually eliminating this abuse at least.

THE VITALIZING ELEMENT

Perhaps it would not be superfluous to close this rather rambling paper with a quotation from Osler, who, in his address on "Teacher and Student" in 1892, wrote:

"But it is a secondary matter, after all, whether a school is under state or university control, whether the endowments are great or small, the equipments palatial or humble; the fate of an institution rests not on these; the inherent, vital element, which transcends all material interests, which may give to a school glory and renown in their absence, and lacking which all the 'pride, pomp and circumstance' are vain—the vitalizing element, I say, lies in the men who work in its halls and in the ideals which they cherish and teach."

Connecticut November Examination

Dr. Robert L. Rowley, secretary, Connecticut Medical Examining Board, reports the written examination held at Hartford, Nov. 14-15, 1922. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 20 candidates examined, 15 passed and 5 failed. Six candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University	(1922)	78.2
University of Maryland	(1922)	75.6, 84.5
Harvard University	(1922)	83.7, 87.7
Tufts College Medical School	(1921)	77.1
Columbia University	(1920)	82.5, (1922)
Fordham University	(1919)	87.7
University of Buffalo	(1922)	75
Jefferson Medical College	(1922)	78.1
Vanderbilt University	(1916)	85.1
University of Vermont	(1922)	76.6
Medical College of Virginia	(1917)	77.8
University of Budapest, Hungary	(1919)*	75.4
			75

FAILED			
University of Vermont.....	(1899)	45.6,	(1918) 72, (1921) 70.9
National University of Athens, Greece.....	(1918)*	65.2	
University of Naples, Italy.....	(1920)*	60.2	

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Harvard University		(1897)	Mass.
Portsmouth Medical School.....		(1912)	New York
Columbia University (1903) Rhode Island, (1912) New York, (1915) North Carolina			
University College of Medicine, Richmond.....		(1905)	Virginia
* Graduation not verified.			

Delaware December Examination

Dr. Henry W. Briggs, president, Medical Council of Delaware, reports the examinations held by the regular and homeopathic boards, Dec. 12-14, 1922. The examinations covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Michigan Homeopathic Medical College..	(1922)	93	
Lahnemann Med. Coll. and Hosp., Philadelphia.....	(1921)	91, 91	
Jefferson Medical College.....	(1921)	79.7, (1922) 89.2	
Temple University	(1922)	80.7, 82.2	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Johns Hopkins University.....	(1918)	Minnesota	
Jefferson Medical College.....	(1912), (1920)	Penna.	

Kansas February Examination

Dr. Albert S. Ross, secretary, Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Feb. 13-14, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Eleven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University	(1922)	89.9	
University and Bellevue Hospital Medical College....	(1921)	89.3	
University of Pennsylvania.....	(1921)	91.2	
Dartmouth Medical College.....	(1906)	85	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery.....	(1917)	Illinois	
Northwestern University	(1921)	Illinois	
College of Physicians and Surgeons, Keokuk.....	(1889)	Iowa	
Keokuk Medical College, College of Phys. and Surg..	(1908)	Iowa	
Kansas City College of Medicine and Surgery.....	(1921)	Wyoming	
Missouri Medical College.....	(1882)	Missouri	
National University of Arts and Sciences.....	(1913)	Missouri	
St. Louis College of Physicians and Surgeons.....	(1892)	Nevada	
Washington University	(1921)	Missouri	
Eclectic Medical University.....	(1918)	Colorado	
University of Nashville.....	(1911)	Oklahoma	

North Dakota January Examination

Dr. G. M. Williamson, secretary, North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held at Grand Forks, Jan. 2-5, 1923. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University	(1922)	82.7	
State University of Iowa College of Medicine.....	(1921)	80.5	
Johns Hopkins University.....	(1921)	84	
University of Nebraska.....	(1922)	83.9	
University of Manitoba.....	(1921)	79.7, (1922) 80.5	
University of Toronto.....	(1922)	81.1	

FAILED			
Cincinnati College of Medicine and Surgery.....	(1900)	*	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
State University of Iowa College of Medicine.....	(1921)	Iowa	
University of Minnesota.....	(1922)	Minnesota	
* No grade given.			

Book Notices

DISEASES OF THE EAR, NOSE AND THROAT: MEDICAL AND SURGICAL. By Wendell Christopher Phillips, M.D., Professor of Otology, New York Post-Graduate Medical School and Hospital. Sixth edition. Cloth. Price, \$8 net. Pp. 880, with 578 illustrations. Philadelphia: F. A. Davis Company, 1922.

The sixth edition of this always reliable textbook approaches, in its present form, the dignity of a true treatise. The work has been modernized to within a few months of its issue, not only by extensive elaboration and illustration, but also by the elimination of numerous methods and procedures which, though obsolete, still appear as necessary material in the mediocre textbook. Particularly refreshing are the chapters on suspension laryngoscopy, bronchoscopy and esophagoscopy, and one reads with respect the monograph on the ethmoid. The subject matter covering diphtheria, syphilis, asthma, allergy and the pollen treatment of hay-fever is unusually up to date. The book is well planned and executed. There are numerous excellent illustrations of prepared specimens, modern instruments, and reproductions of instructive roentgenograms. The volume can be recommended to the student and practitioner as an ideal text and reference work.

CAROTINIDS AND RELATED PIGMENTS, THE CHROMOLIPOIDS. By Leroy S. Palmer, Ph.D., Professor of Agricultural Biochemistry, University of Minnesota. Cloth. Price, \$4.50 net. Pp. 316, with 6 illustrations. New York: Book Department, The Chemical Catalog Company, Inc., 1922.

This is one of the valuable series of monographs the American Chemical Society is promoting, in order to make available concise but complete statements of the existing knowledge in many fields of chemistry. This is among the several projected or published monographs that have value for medicine, since the carotinoid pigments occur in man and occasionally show modifications in disease. We may mention, for example, the fact that a condition resembling jaundice has been observed following a diet containing excessive quantities of carrots and other vegetable foods rich in these pigments, especially in children. The yellow skin of diabetics, described by von Noorden as xanthosis diabetica, seems also to depend on the vegetarian diet of these patients. The yellow color of the corpus luteum, of the fat tissues, and probably the animal pigments called lipochrome, in general, are merely stored vegetable pigments of the carotinoid group. As a complete and lucid discussion of the subject with full bibliography, this book is of great value as a statement of everything learned to date in this field.

MULTIPLE SCLEROSIS (DISSEMINATED SCLEROSIS). An Investigation by The Association for Research in Nervous and Mental Diseases. Report of the Papers and Discussions at the Meeting of the Association, New York City, December 27th and 28th, 1921. Editorial Board: Charles L. Dana, M.D., Smith Ely Jelliffe, M.D., Henry Alsop Riley, M.D., Frederick Tilney, M.D., Walter Timme, M.D. Cloth. Price, \$3.75. Pp. 241, with illustrations. New York: Paul B. Hoeber, 1922

This is the second volume of the transactions of the Association for Research in Nervous and Mental Diseases, and contains the latest work and views on the subject of disseminate sclerosis. These are not arranged as in a textbook, but practically every aspect of the disease is the subject of one or more articles, which are grouped according to topics and followed by the discussions that took place at the meeting. The volume has been carefully edited, and is well bound and illustrated; it lacks only an index. It cannot be equalled in any language, and can be heartily recommended to every neurologist.

TECHNIK UND METHODIK DER BAKTERIOLOGIE UND SEROLOGIE. Von Professor Dr. M. Klimmer, Direktor des Hygienischen Instituts der Tierärztl. Hochschule Dresden. Paper. Price, \$2.80. Pp. 520, with 223 illustrations. Berlin: Julius Springer, 1923.

This book contains a well selected, critically elaborated series of directions for bacteriologic and serologic examinations. It will be helpful to physicians, veterinarians, bacteriologists, food chemists and investigators. It is intended as a book of reference, and is provided with an extensive index. While not expressly indicated, it is evident even

from a cursory examination that it is principally German procedures that receive consideration; but this limitation in mind notwithstanding, the book is recommended heartily to all who have use for a handy source of reference and description of bacteriologic and serologic methods.

VERLETZUNGEN DES AUGES IN KLINISCHEN BILDERN. Für praktische Aerzte. Von Prof. Dr. Ernest Blessig, Direktor der Univ. Augenklinik in Dorpat. Paper. Pp. 43. Berlin: S. Karger, 1922.

This little pamphlet, printed on the cheapest kind of paper and without embellishments of any sort, proves on careful analysis to be of great value. It is merely a clinical record of thirty-six cases of eye injury, illustrating nearly all possible types. The conventional division of injuries into five main groups has been followed in the main, and to these have been added the various types of unusual war-time injuries. Unnecessary details have been eliminated, the essential phases of clinical description being left, so that a mental image of the case in question is readily formed. The medical and surgical treatment in each case is outlined in sufficient detail, and the immediate outcome of the case is mentioned. It is somewhat unfortunate that the author did not include the ultimate outcome after several years of observation. Although originally written in Russian (owing to the cost of publishing, it has been impossible to bring out a Russian edition as was planned), the German is excellent, being clear and concise without circumlocution.

TEXT-BOOK OF PEDIATRICS. Edited by Professor E. Feer, Director of the University Children's Clinic, Zurich. Translated and Edited by Julius Parker Sedgwick, B.S., M.D., Professor of Pediatrics, University of Minnesota Medical School, and Carl Ahrendt Scherer, M.D., F.A.C.P. Cloth. Price, \$8.50. Pp. 917, with 262 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

This is the first English translation of one of the most widely known continental volumes on pediatrics, a book now in its seventh German edition, from which the American translation is made. In translating the book, fifteen American and nine European contributors have collaborated, and the editor states in his preface that the collaborators have added much to the original subject matter, particularly in the way of original illustrations. The volume follows essentially the arrangement of most textbooks of pediatrics, taking up, first, general considerations, and following with the special diseases of the child. One of the faults of this, as of most similar works, is, of course, its unevenness, since the contributors naturally vary in the style of language and in the particular methods with which they are concerned. The book is perhaps open to the criticism that it does not represent any particular point of view but rather tends to represent all points of view. For this reason it is not so suitable as some of the special works of individual writers. On the other hand, it constitutes a vast storehouse of information regarding the diseases of infants and children. It has an elaborate index, and is an extraordinarily suitable reference work for both the student and the practitioner.

FOOD AND THE PRINCIPLES OF DIETETICS. By Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital. Fifth edition. Cloth. Price, \$5. Pp. 610, with 32 illustrations. New York: William Wood & Co., 1922.

This volume has had a special place among important books on dietetics, since it deals primarily with principles rather than with menus and preparations. The last previous edition was published in 1916, since which time the author has had the experience of aiding the British government in war rationing. Unlike most English authors, he has not been inclined to accept blindly the claims of manufacturers as to the special nutritive values of various proprietary preparations. For example, consider this statement: "Preparations, such as Bovril and Oxo, to which meat fibre has been added, may theoretically be regarded as food, but contain far too little protein to admit of their ever being able to contribute appreciably to nutrition." While there is a vast amount of tabular data, concerning both natural and artificial foods, the author leaves it largely to the reader to construct suitable menus and diets on the basis of the information provided. It is planned for study rather than for spoon-feeding of information.

Miscellany

TUBERCULOSIS AMONG THE NORTH AMERICAN INDIANS

The National Tuberculosis Association appointed a committee in 1921 to investigate tuberculosis among the North American Indians. Drs. G. M. Kober, G. E. Bushnell, H. E. Dearholt, J. A. Murphy and A. B. Tonkin, and Mr. W. H. Baldwin comprised the committee. In its recent report, it is said that the peak of excessive mortality among the Indians was reached in 1913, when the death rate was 32.24 per thousand. This was gradually reduced until, in 1920, the rate was 22.33 per thousand. Of the total number of deaths of Indians in 1911 tuberculosis caused 32 per cent., in 1920, 27 per cent. Scrofula and consumption were observed among the Indians of North America as early as 1635-1658, in which period the prevalence of tuberculosis among the Indians was no greater than among the white race, and perhaps not as great. It appears that there has been a progressive increase in the prevalence of the disease since their contact with the white race. The variations in the prevalence of tuberculosis among the different tribes today are great: some are thoroughly tuberculized; others show the characteristics of recent acquaintance with the disease. Among the five civilized tribes of Indians in Oklahoma, tuberculosis is no more prevalent than among the white people of the state who live on the same industrial plane. The Indian has passed through a state of decadence when his disappearance was imminent. Medical science and a humanitarian government have overcome his downward trend, and there is now a hopeful outlook. The records of the Census Bureau indicate that there has been an increase in the Indian population of 7,241 since 1900.

The first hospital for Indians was established in 1882. In 1922, there were seventy-three hospitals, 200 physicians, 100 nurses, 100 hospital employees, ninety field matrons, and other employees in the Indian medical service. The committee says that, with few exceptions, the spirit which animates the work of the physicians, teachers and other employees in the conservation of the health of the Indians is worthy of commemoration and praise, and that the most urgent need today are provisions for adults in the incipient and advanced stages of tuberculosis. There are needed two or three sanatoriums, one of them for hopeless cases, where an adult Indian can die in peace and comfort without jeopardizing the lives of those to whose care he is committed. This sound policy, the committee continues, is absolutely essential for anything like reasonable success in mitigating the spread and ravages of the disease.

In some states, notably New York, there is a conflict of opinion as to whether the federal or state government is responsible for the health of the Indians. It appears that the federal government has never made any appropriation for the health service of the New York Indians, because the treaties between the Six Nations of New York and the United States have no reference to the Indians' health. The committee urgently recommends in justice to the tribes of New York that the conflict of jurisdiction be brought to the attention of the Department of Justice with a view of settlement. While there are a good many Indians who are citizens and taxpayers, it should be remembered that the majority of the 336,337 Indians in the United States are poor and scattered. The policy of the Bureau of Indian Affairs has been to make them self-supporting by teaching them how to work. Their employment unfortunately is often of a temporary character, and their income wholly inadequate to maintain a proper standard of living. Thus, their vitality is often so reduced they are unable to do a full day's work, and they are cruelly accused of being lazy, when in truth they have not sufficient food. The bureau is aware that insufficient food is an important cause of the undue prevalence of tuberculosis, and yet, sometimes in extreme emergencies, it is difficult, if not impossible, to meet the situation, owing to a lack of funds.

Medicolegal

Correctness of Instructions to Jury in Fracture Case

(*Huber v. Hamley et al. (Wash.), 210 Pac. R. 769*)

The Supreme Court of Washington says that the plaintiff contended that the defendant physicians negligently reduced a fracture in his right arm, and negligently treated the fracture after the reduction. On the trial, the following instruction to the jury was requested:

You are instructed that, where a physician undertakes the treatment of a patient, not only must he use reasonable but ordinary skill and care in said treatment at the time he takes charge of said case, but also he must use ordinary skill and care in the subsequent treatment of the case, and it is his duty to give the patient such attention after the first examination or reduction of the fracture as ordinary physicians and surgeons, possessing ordinary skill and intelligence, practicing in the same general locality, would deem necessary in a similar case, and, if you find from the evidence that the defendants attempted to reduce the fractured radius for said plaintiff, but did not thereafter use reasonable care and skill in the subsequent treatment of said fractured bone, or such care as is imposed on physicians holding themselves out as physicians and surgeons possessing the ordinary knowledge and skill of the physicians and surgeons located and practicing their profession in the same general locality; and, if you further find from the evidence that because of such failure to use reasonable care and skill in the original treatment or subsequent treatment of the injured arm the plaintiff was permanently injured or suffered pain, injury and damage, then you will find for the plaintiff in such sum as you deem just and proper.

It was conceded by the defendant that this instruction properly stated the law, but it was argued that the substance thereof was given in other instructions; and the court says that were the refusal to give it the only error assigned, the case would not be reversed, yet this instruction would be proper to be given on a new trial. Error was assigned on the giving of the following two instructions:

I instruct you that the burden of proof is on the plaintiff, and in order that the plaintiff recover in the action he must prove by preponderance of the evidence the following: first, that the defendants did not with medical skill and care properly treat plaintiff and his fractured arm; second, that such failure so to treat plaintiff with reasonable and ordinary skill, as defined in these instructions, resulted in the injury complained of; third, the said alleged injury is due to lack of the exercise of ordinary skill and care and not otherwise; fourth, that the plaintiff was not guilty of negligence contributing to such injury. And a failure to establish any of these matters required that the jury shall find a verdict for the defendants.

The court instructs the jury that the only question in this case for your determination is whether the defendants, when the plaintiff called on them, properly reduced the fracture in the plaintiff's forearm, and gave him proper and necessary directions and instructions for the care of the same. If they did, then they cannot be held liable for any injury resulting from any redislocation of the said fracture that may have afterward occurred.

The first of these two instructions was erroneous for the reason that it placed the burden of proof on the plaintiff to establish the fact that he was not guilty of contributory negligence. The second instruction was erroneous for the reason that the jury was there instructed that the only question for its determination was whether the defendants had improperly reduced the fracture, whereas, as a matter of fact, the most important issue before the jury was the question of the defendants' responsibility for failure to treat the fracture after its reduction. Neither of these instructions should have been given, and they so vitally affected the plaintiff's rights that the giving of them was prejudicial, and for that reason the judgment of the lower court in favor of the defendant physicians is reversed, and a new trial granted.

Manager of Farm Not Liable for Medical Services

(*Whitney & Chadbourne v. Holloway (Iowa), 190 N. W. R. 930*)

The Supreme Court of Iowa, in reversing a judgment obtained by the plaintiffs for services rendered by Dr. Whitney, says that the defendant was in the employ of the owners of certain farms, having charge and management of the farms. Another employee, while assisting the defendant in hauling logs, sustained a fracture of one leg, and was taken to the office of a physician. That physician testified that he sent for the defendant and told him that he would have to engage some other physician. The defendant said, "All right." When asked who should be engaged, he answered, "Whoever

you think best." The physician said, "I will get Dr. Whitney by telephone," and the defendant replied, "All right, get him." The physician called Dr. Whitney, and told him about the conversation with the defendant. The injured man testified about the conversation—that the physician told the defendant that he would have to have some help; he wanted to know whom he should get, and said, "We would get Whitney"; and the defendant said to get Whitney. Dr. Whitney testified that the other physician explained to him that the man had been injured during a logging operation on the Whiteis estate, and that the defendant, their agent, had instructed the physician to send for Dr. Whitney and have him take charge of the case, which he did. At the close of all the testimony the plaintiffs dismissed their petition against the owners of the farms.

The principal and primary question, then, was whether or not, on the record disclosed above, the defendant manager could be held liable for the value of the services rendered to the injured man by Dr. Whitney. This defendant was under no legal obligation to employ a physician for the injured man, or to become personally liable for the services of a physician rendered to him. He could have bound himself by an express contract to pay for such services. There was not sufficient evidence of the making of any such express contract to carry that question to the jury. Giving to the evidence the most favorable construction of which it was capable, there was no proof whatever of any express promise on the part of this defendant to pay for the services of Dr. Whitney or to become liable for them. This left the question of whether or not there was sufficient evidence of an implied promise on the part of this defendant, from what he said and did in connection with the matter, to carry the case to the jury and to sustain a finding of such implied promise on his part.

The general rule has been recognized by this court, in *Holmes v. McKim*, 109 Iowa, 245, 80 N. W. 329, wherein the court said:

Where one merely calls a physician to attend on another, the law raises no implied promise to pay, on the part of the person making such request, unless the latter's relation to the patient is of such a character as imposes on him the duty to supply a physician, and the relation of employer and employee is not sufficient to do this.

This is a salutary and beneficent rule. Not every one who summons a physician to attend the sick or injured should be held personally liable by an implied contract to pay for the services rendered. It is readily within the power of the physician to secure an express contract in such a case. Otherwise he must look to the patient for his compensation. In the present case the defendant was under no legal obligation whatever to pay for the services that were rendered to the injured man. He did not agree to pay for the same. The fact that he was the superintendent of the work in which the employee who was injured was engaged created no legal obligation on the defendant's part to pay for the services that were rendered to the injured man by the physician. The defendant was liable only in the event of an express contract. There was no such contract proved. The trial court should have sustained the defendant's motion for a directed verdict at the close of the evidence.

Physician Not Qualified to Testify as to Tuberculin Test on Cattle

(*Buerkli v. Carstens Packing Co. (Wash.), 210 Pac. R. 798*)

The Supreme Court of Washington says that in this case, which involved a charge of misrepresentation with regard to certain cattle having been given the tuberculin test a few days before they were sold, a witness who was not allowed to testify was a physician and surgeon, but not a veterinary surgeon. He had never qualified in the veterinary science and had never treated cattle or animals, and knew nothing about the effect of the tuberculin test on cattle or other animals. He testified that he had never gone into the science or studied diseases of cattle. The trial court was right in rejecting his testimony. While a general physician may have some knowledge as to the effect of tuberculin tests on either human beings or other animals, this witness could not be said to have so qualified himself as to diseases of cattle and testing them for tuberculosis that he was a competent witness.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.
- American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
- American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
- American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
- American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
- American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
- American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
- American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
- American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
- American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
- American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
- American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.
- American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
- American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
- Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
- Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
- California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
- Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
- Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
- Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
- Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
- National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York.
- Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
- New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
- North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
- Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
- Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
- Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
- Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
- West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
- Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.
- Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

TENNESSEE STATE MEDICAL ASSOCIATION

Nineteenth Annual Meeting, held at Nashville, April 10, 11 and 12, 1923

The President, DR. H. M. TIGERT, Nashville, in the Chair

Three Years' Experience with Radium

DR. J. HOWARD KING, Nashville: Radium has its greatest value in the treatment of carcinoma of the cervix, uterine bleeding with or without tumors, and other mucous membrane malignancies in this order: mouth, rectum and vagina; in superficial malignancies, angiomas, and in benign excrescences, such as nevi, keloids and warts. Needle implantation is superior to surface application. Malignant cases in which one uniformly heavy dose is given do better than those in which repeated light dosage is employed. Some malignant cases that seem hopeless at first respond well later. This is especially true in older patients. In rectal cases, a permanent

colostomy should first be established in order to permit sufficient irradiation without causing distressing symptoms. Indications are that results of much greater promise will be obtained by the aid of deep roentgen-ray therapy.

Acute Brain Injuries

DR. H. H. SHOULDERS, Nashville: When the destruction of brain tissue is not sufficient of itself to cause death, increased intracranial tension may prove fatal or produce a serious change in mentality. The condition of increased intracranial tension must be determined by the spinal mercury manometer. The symptoms of slow, full pulse, slow, deep breathing, increased blood pressure and choked disk appear too late to be of much value. Lumbar drainage, when performed with due caution, is a safe procedure in acute brain injuries. The relief of increased intracranial tension by lumbar drainage is possible in a large percentage of cases.

Lesions of the Stomach

DR. E. STARR JUDD, Rochester, Minn.: The characteristic symptoms of gastric ulcer are well known: chronicity; periodicity; seasonal incidence; hunger pain, relieved by food, alkali and vomiting; and rarely hemorrhage, perforation or obstruction. It is impossible to differentiate a benign from a malignant gastric ulcer by roentgen-ray examination. Therefore, patients with gastric ulcer should not be treated medically, and in the operative procedure the ulcer should be removed or destroyed, if possible, and a microscopic examination made. The type of operation will depend on the size and location of the ulcer, and whether or not hour-glass deformity or multiple ulcers are present. If the operation is simple exclusion, a gastro-enterostomy must also be performed; otherwise the emptying of the stomach may be impaired. If a sleeve resection is performed, gastro-enterostomy will not be necessary. There are two types of duodenal ulcer, the crater and the duodenitis. Surgical treatment is the same for the two types of ulcer. If the ulcer is accessible and there is not too much deformity of the duodenum, the lesion may be excised; excision is especially indicated if there is a history of hemorrhage. Some surgeons prefer a form of pyloroplasty with excision, but I do not believe this is necessary unless there is obstruction or marked spasm. Gastro-enterostomy has been a very successful operation for duodenal ulcer, but occasionally it results in the formation of a jejunal ulcer, which is a formidable complication. One great advantage of excision is that it is not followed by secondary ulcer. The symptoms of gastric syphilis are not definite. The average age of the patients is about 35 years. The prognosis depends on the duration of the symptoms. Clinical improvement is often prompt. Anatomic cure depends on the amount of sclerosis that has occurred. Free hydrochloric acid has appeared in the gastric secretion of patients who, before treatment, had achlorhydria. Benign tumors of the stomach are rare, comprising about 1.3 per cent. of all gastric tumors that come to operation. They are myomas, fibromas, angiomas, dermoids, polypi, adenomas and polyposis. Myomas are most common; gastric polyposis the most rare. It is not possible to determine the kind of growth by inspection, except in cases of gastric polyposis, which shows characteristic mottling. The surgical end-results are excellent. The immediate results of the radical operations for carcinoma of the stomach have been improved by better preoperative preparation of starved and anemic patients as well as by recent improvements in technic. The ultimate results compare well with those of operations for carcinoma of other regions. Sarcoma of the stomach is rare, occurring about once to sixty-seven carcinomas. The most common symptoms of lymphosarcoma of the stomach are loss of weight, pain, vomiting, bleeding and anemia. Occasionally there is an ulcer syndrome. The average age of the patients is 46 years, although the lesion has been found in persons aged 16 and 62 years. The only treatment is resection, if possible, but the ultimate results are very poor.

Comparison of the Wassermann Test with the Kahn Flocculation Test in One Thousand Cases

DR. WILLIAM LITTERER, Nashville: The Kahn reaction is distinguished from other precipitation tests by these salient

features: 1. The serum is employed without dilution, Kahn having shown that diluting the serum with salt solution delays the rapidity of the reaction. 2. The antigen is prepared so as to have a high antigenic titer. This is attained by using an alcoholic extract of dried heart muscle, which has been previously extracted with ether, thus removing fat and other nonspecific substances. 3. The antigen is diluted for the test with approximately the smallest amount of physiologic sodium chlorid solution that will hold it in solution, rendering it thereby susceptible to precipitation when mixed with positive serum. 4. The antigen and serum are employed in that relationship which will, in Kahn's opinion, result in maximum precipitation. Agreement with the Wassermann reaction was surprisingly accurate, in view of the simplicity and economy of materials and time. The test or its modification may be used with advantage to check the Wassermann reaction, especially in doubtful cases. I do not feel that the test should supplant the Wassermann reaction, but the two should be run conjointly to insure more accurate reports. It certainly deserves serious consideration on the part of serologists.

Deductions from a Review of One Thousand Roentgen-Ray Examinations of the Gastro-Intestinal Tract

DR. S. W. COLEY, Memphis: Simple gastric ulcers have been of rare occurrence in this series. There were eight simple gastric ulcers, and two gastrojejunal ulcers, a total of 1 per cent. of the series; the average age was 50 years, and the cases are equally divided between men and women. In this consecutive series there were eighteen gastric carcinomas, nine in men and nine in women; the average age was 60 years, the youngest a man, aged 31, the oldest, a woman, aged 73; eleven of these were diagnosed from the anatomic location and probable amount of involvement. By far the most frequent gastric and upper abdominal lesions revealed by the roentgen ray are the duodenal ulcers. The diagnosis of these ulcers in a typically deformed bulb is not a difficult matter, but not all duodenums are so situated as to be easily seen; nor are they when deformed in a typical manner. Proper and adequate screen facilities must be available. The diagnosis depends wholly on the efficient use of the fluoroscopic screen. We have incidentally found a few cases of gallstones during the process of our gastro-intestinal examinations. One interesting case was that of combined gallstones and duodenal ulcer, both of which were confirmed at operation. Studies of the colon have been interesting and illuminating in that most findings have been of functional nature with few organic lesions. By far the greater number of cases examined showed some degree of hypertonicity; atonic colons were exceptional. Coincident disease of the tract, such as appendicitis, cholecystitis, gastric or duodenal ulcer and postoperative adhesions, has been assigned as the cause of the spasticity in most cases. In this series there were six cases of carcinoma of the colon, four in men and two in women. The barium enema has proved the best method for locating these growths; the ingested meal has proved unreliable. The appendix was seen in about 35 per cent. of all cases examined; but unless it presented some abnormality in mobility, fixation or was obstructed by some foreign substance, no attention was paid to it.

Peptic Ulcer

DRS. R. L. SANDERS and C. C. KING, Memphis: In our clinic, 1,000 gastro-intestinal cases were studied during the last three years. All the patients complained sufficiently of stomach trouble to warrant a thorough gastric analysis and roentgen-ray examination. We found 118 positive cases. Of this number, eighty-seven were duodenal ulcers, nine gastric ulcers, twenty carcinomas and two syphilis of the stomach. This is about the average proportion reported from other clinics. Gastric hemorrhage has been looked on for many years as a sure sign of ulcer, but less reliance is now placed on this symptom alone. Vomiting and hemorrhage may be features, but when they are the only symptoms, ulcer is rarely found. If the ulcer is treated surgically after the patient has been properly prepared, the simplest and most applicable method should be used. There is a tendency

toward radicalism, which we do not accept. It is rarely necessary to resect the ulcer-bearing zone in duodenal ulcers. There is no tendency to cancerous degeneration, the results after gastro-enterostomy or pyloroplasty are usually good and the mortality is not high; with resections, the risk is great. In gastric ulcer cases, when the ulcer is small, the simple method of cautery excision, as pointed out by Balfour, with gastro-enterostomy, will usually cure the disease, and the mortality is from about 3 to 5 per cent. If the ulcer is large and located near the pylorus, resection of the Billroth or Polya type should be done. The large ulcer near the middle of the stomach may best be treated by sleeve resection. Much has recently been written about the marginal or gastro-jejunal ulcers that form after gastro-enterostomy. In our series we have two such cases, both of which have been relieved entirely by proper medical management. We believe that new ulcers probably came from the same source as the primary ones, and to prevent such recurrences, we remove all possible foci of infection as a part of the treatment. Trauma produced by the improper use of clamps in doing a gastro-enterostomy may be a factor, and on this account we either do not use them or use them with much care. Failures in the relief of symptoms by surgical treatment may also be due to unremoved abdominal disease.

Version

DR. R. O. TUCKER, Nashville: Potter has rendered a distinct service in reviving the operation of version, and it should be used more often than it is; when possible, it should replace high or even medium forceps operations. The indications have been much broadened, but I do not believe it should be used in normal left occipito-anterior positions.

Wassermann-Fast Syphilis

DR. BRYCE W. FONTAINE, Memphis: The best course to pursue in the treatment of Wassermann-fast cases of syphilis depends on the clinical appearance of the patient and the urgency of the symptoms. If the patient's physical condition is good, antisyphilitic treatment should not be pushed further than that ordinarily used in the treatment of resistant cases. Should there be present, with a persistently positive blood or spinal fluid Wassermann reaction, active and progressive involvement of the liver, aorta or cerebrospinal system, there should be no hesitation in continuing indefinitely the treatment with mercury, arsphenamin and the iodids. During this time, every precaution should be observed to prevent untoward results from the treatment. These cases should be under constant observation, with repeated and searching clinical examinations, and frequent microscopic examinations of the urine. The treatment should be carried on at proper intervals with arsphenamin, mercury and iodids in the interim, and there is no limit to the amount or number of doses than can be given before the Wassermann reaction finally becomes negative, and the symptoms that have demanded the urgent treatment subside. In resistant cases, it has been suggested that other drugs be tried. Kolmer prefers to use bismuth, according to the plan of Emery and Morin of Paris. The two most suitable preparations are hydrated bismuth oxid, which may be given intramuscularly, and colloidal bismuth, which may be given intravenously. The action of bismuth resembles that of mercury, and it is suggested that it be used in conjunction with an arsenical preparation. Sutton and others have obtained good results with silver arsphenamin; but the danger of producing argyria should not be overlooked.

Polycystic Kidney

DR. JOSEPH H. SMITH, Memphis: In polycystic tumors of the kidneys, the parenchyma of the kidney is generally entirely destroyed, the cystic degeneration filling the entire capsule. The cysts vary in size and, not being urinous in nature, have no communication with the sinus of the kidney. Their contents vary, some containing pus, some coagulated blood and others a watery or gelatinous substance. Most authorities contend that this condition is always bilateral. The case reported is doubly interesting from the fact that roentgenograms and kidney tests do not show that the opposite kidney is affected.

It is possible that the opposite kidney has undergone some degeneration which is not discernible. This condition is not surgical in nature when the cystic change is bilateral and the function of both kidneys is greatly impaired. In the bilateral cystic kidney some relief can be obtained by puncture of the cysts.

Intraperitoneal Injections in Children

DR. OLIVER W. HILL, Knoxville: In many hands, intraperitoneal injections have proved a safe and efficient way to furnish fluid. This method of combating loss of water is not to be used only as a last resort, but should be employed before dehydration has resulted in such serious damage to the kidney that it cannot resume its function, and before marked metabolic changes and protein destruction have occurred in the body. The indication for intraperitoneal injection is present in any condition that is accompanied by dehydration. In gastro-intestinal diseases, whether acute or chronic, that are characterized by vomiting and diarrhea of sufficient intensity to cause rapid loss of fluid from the body, dehydration of some degree is always present. Other conditions which are not primarily gastro-intestinal will frequently produce grave dehydration. To the solution injected into the peritoneal cavity, various substances have been added. Ten per cent. glucose has been used and also from 2 to 3 per cent. sodium bicarbonate. The use of glucose has been recommended because it is easily utilized and has a definite caloric value. As a carbohydrate, glucose also spares protein destruction. It has been asserted that sodium bicarbonate used in intraperitoneal injections has an effect on acidosis. Some authors recommend Ringer's solution. The majority of pediatricians find that as good results are obtained by the use of simple physiologic sodium chlorid solution as when other substances are added. With the salt solution alone there is less tendency to abdominal distention after the injection. In the light of present knowledge, it is better to introduce glucose or sodium bicarbonate intravenously if their use is so urgently indicated that administration by mouth will not suffice.

Traumatic Peritonitis from Nonpenetrating Violence

DR. E. H. BAIRD, Dyersburg: In three cases there was no rupture of the intestines, but severe peritonitis was present in all. In such cases there seems to be a paralysis of the intestines, sometimes accompanied by dilatation of the stomach, with the usual train of symptoms: shock, vomiting of black liquid, rapid pulse, drawn expression, etc. In spite of the most energetic treatment, one patient in whom perforation did not occur died with the clinical picture of acute intestinal obstruction. In such cases there is doubtless a disturbance of the nerve control of the intestinal musculature producing a sort of paralytic ileus. The postoperative treatment is as important as the operative, and must be directed toward combating the paralysis of the intestinal wall and overcoming the effects of sepsis. The usual measures employed for this purpose, such as strychnin and other stimulants, proctoclyses of soda or other substances used by the operator, intravenous glucose injections or intravenous saline solution if there has been much hemorrhage, or even transfusion, must be faithfully and energetically carried out. Gastric lavage frequently and high enemas are essential. Morphin, according to indications, for pain and shock is advocated; also the position of the patient in bed most favorable to drainage should be maintained, as in any peritonitis, and the usual precautions as to undue pressure on viscera from drainage tubes, the time of their removal, etc., should be employed as indicated in each individual case.

Pelvic Infections

DR. H. M. TIGERT, Nashville: The vast majority (perhaps from 80 to 85 per cent.) of all cases of chronic pelvic infections from an etiologic standpoint fall into one of two classes: the gonococcic, which is by far the larger, or the streptococcic group. The biologic and pathologic manifestations of these two micro-organisms differ widely, and a full understanding of these differences is essential to the intelligent and successful surgical management of women affected with them. The majority of gonorrheal infections are arrested at the internal os, where they may remain latent for long periods awaiting

a favorable opportunity for further extension. The endometrium, when infected, shows remarkable recuperative powers, whereas the converse is true of the oviducts, with their ciliated epithelial lining. Indiscriminate curettage is not infrequently the determining factor in a fateful extension. Once past the bar of the internal os, from whatever cause, one may expect to find endometritis, salpingitis, pelvic peritonitis and oophoritis, in varying degrees of intensity, with later pyosalpinx or ovarian, tubo-ovarian, or pelvic abscess. Unlike the gonococcus, the streptococcus penetrates the walls of the uterus and attacks the connective tissue. Thence it often spreads into the peritoneum, and produces peritonitis which is often fatal. Occasionally it may happen that the streptococci extend directly from the uterine cavity into the peritoneal cavity by way of the tubes, but such cases are exceedingly rare, and are usually fatal. If a patient survives such an attack and later presents herself for examination, it will be found in almost every case that the pelvic connective tissue has become involved in the process. It has been demonstrated that nearly all streptococcic masses in the pelvis are parametrial in whole or in part. The parametric mass is usually situated low down in the base of the broad ligament, is very hard and dense, and appears to blend with adjacent structures. At times the density may be almost of cartilaginous consistency. Streptococci do not spontaneously invade the nonpuerperal uterine cavity, but in virtually every instance can be traced directly to labor, abortion, miscarriage or intra-uterine manipulation.

The Hypophysis and Some of Its Disorders

DR. M. L. GRAVES, Galveston, Texas: Efforts to discover the function of the gland and its active principles have been made by many experimenters in animal and man. Feeding experiments with the whole gland or its constituent portions have been undertaken with some degree of success. In 1916, Robertson isolated tethelin, and demonstrated by feeding experiments that it produced the same effects on growth as anterior lobe and also increased tissue repair and stimulated the growth of pathologic tissues, such as carcinoma. In summing up the work of various authors, the weight of evidence inclines to the belief that the anterior lobe and particularly its active principle, tethelin, have a very large influence in body growth, sexual development and certain other functions. The posterior lobe has perhaps definite, though disputed, influence on carbohydrate metabolism, the secretion of urine, the equilibrium of vascular tension, the activities of the smooth muscles of the body, the stimulation of mammary secretion, and perhaps in conjunction with the anterior lobe, effects on the chemistry of the body not yet clearly understood. Clinical phenomena have been accumulating for many years and point with great emphasis to disorders in structure and function of this important little gland in the production of several well-known and other ill-defined diseases.

Carbon Monoxid Asphyxiation.—The Ohio State Department of Health reported eighty-one cases of carbon monoxid asphyxiation with thirty-four deaths during the first ten weeks of the past winter. The most frequent source of the carbon monoxid is the incomplete combustion of coal gas, natural or artificial, in domestic heating appliances. Regulation of the proportion of air to gas is of the greatest importance. Artificial gas requires about five times, and natural gas ten times, as much air as gas for complete combustion. The pressure under which gas is delivered from the mains may vary sufficiently, from hour to hour, to disturb the proportion of air-gas mixture; hence it is never safe to leave even a well adjusted burner operating for any length of time without efficient ventilation. Devices of the so-called "smoke consuming," "odorless" and "chimneyless" type for gas heaters are absolutely unreliable; in fact, no heater can be considered safe from the danger of pouring carbon monoxid into the air unless it is provided with a flue, though open windows and free draft lessen the danger. There is some evidence to show that if amounts of carbon monoxid, insufficient to be immediately fatal, are absorbed over an extended period, the result will be exhaustion and lowered vitality with increased susceptibility to disease, especially pneumonia.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

64: 1-181 (March) 1923

- Conditions Determining Suprarenal Secretion. F. A. Hartman, H. A. McCordock and M. M. Loder, Buffalo.—p. 1.
- *Effect of Restricted Diet. II. On Pubescence and Menopause. J. R. Slonaker and T. A. Card, San Francisco.—p. 35.
- *Supposed Relation of Suprarenals to Blood Pressure Response During Cerebral Anemia. J. M. Rogoff and H. C. Coombs, New York.—p. 44.
- *Laxative Action of Yeast. J. R. Murlin and H. A. Mattill, Rochester, N. Y.—p. 75.
- Relative Physiologic Value of Spectral Lights. III. Pupillomotor Effects of Wave Lengths of Equal Energy Content. H. Laurens, New Haven, Conn.
- Effects of Extirpation of Embryonic Ear and Eye on Equilibration in *Amblystoma Punctatum*. W. F. Greene and H. Laurens, New Haven, Conn.—p. 120.
- Influence of Hydrogen Ion Concentration on Fertilization and Growth of Certain Marine Eggs. G. H. A. Clowes and H. W. Smith, Woods Hole, Mass.—p. 144.
- Blood Clotting in Mammals, Birds and Reptiles. S. E. Dorst and C. A. Mills, Cincinnati.—p. 160.
- Effect of Restricted Diet. III. On Number of Litters and Young Born. J. R. Slonaker and T. A. Card, San Francisco.—p. 167.
- *Influence of Antineuritic Vitamin on Internal Organs of Single Comb White Leghorn Cockerels. A. J. Souba, St. Paul.—p. 181.

Effect of Restricted Diet on Sexual Life of Rat.—Slonaker and Card noted that, in rats, a restricted diet delayed pubescence, shortened the period of sexual activity, and increased sterility.

Blood Pressure During Cerebral Anemia.—Rogoff and Coombs investigated the supposed relation of the suprarenals to the vasomotor phenomena brought about by cerebral anemia induced by occluding the head arteries for short periods. They found that the number of vasomotor responses to cerebral anemia that can be elicited in an animal depends greatly on the basal level of blood pressure that is maintained in the intervals between occlusions of the head arteries. When the basal level of blood pressure approaches or reaches the spinal level, and occlusion of the head arteries fails to elicit a vasomotor response, it is possible to improve the condition of the bulbar centers by elevating the blood pressure through intravenous injection of Ringer's solution, and again to obtain the usual response to cerebral anemia. This can, frequently, be repeated successfully a number of times in the course of an experiment. The so-called "dissociation" or "double" curve is not a constant phenomenon. It may appear and disappear (and again reappear) at various periods in the course of an experiment, or it may be entirely absent. There is no significant difference, in the ordinary average number and the usual character of the responses to occlusion of the head arteries, between normal animals and animals in which the epinephrin secretion is interfered with by ligating, excising or clipping off the suprarenals in acute experiments, or that have survived operations for interference with epinephrin secretion. The so-called "dissociation" or "double" curve is elicited as frequently after interference with epinephrin secretion as in normal animals. It is evident, therefore, that "suprarenal activity" (epinephrin secretion) is not necessary for eliciting any of the vasomotor effects which result from acute cerebral anemia.

Laxative Action of Yeast.—The plan of investigation followed by Murlin and Mattill contemplated the use of both human and animal subjects. In the first series, ten students were placed on a nearly constant diet alternately in periods with and without yeast. In the second series five human subjects were placed on a more rigidly constant diet and in the same manner periods with yeast added alternated with periods in which no yeast was used. In the first series there was a measurable increase in the bulk of stool, which persisted for several days after the ingestion of yeast was stopped. In the second series a laxative effect was proved both by increased weight in the great majority of the tests and increased moisture in two thirds of the tests. The esti-

mation of phenols in the feces and urine indicates that putrefaction is somewhat diminished by the ingestion of yeast. Boiled yeast does not produce so much laxative effect (moisture and weight) as raw yeast. It is more easily digested than raw yeast.

Influence of Antineuritic Vitamin on Cockerels.—Single comb white leghorn cockerels, on a diet deficient in vitamin B and apparently adequate in all other particulars, showed a decrease in the size and weight of organs in the following order: testes, spleen, heart, liver, kidneys, pancreas and thyroid gland. A diet deficient in vitamin B and apparently adequate in all other particulars gave rise to an increased weight of suprarenals when computed per kilogram body weight. The testes of single comb white leghorn cockerels were affected to a greater extent than the other organs by a diet low in vitamin B. These organs not only failed to develop but there was also an ultimate atrophy. The observations of Karr and Cowgill, that some relationship exists in animals between desire to partake of food and water soluble vitamin, has been confirmed in Souba's study on poultry.

American Journal of Tropical Medicine, Baltimore

3: 73-158 (March) 1923

- *Dengue Fever. Report of Galveston Epidemic of 1922. L. Rice, Galveston, Texas.—p. 73.
- Ticks of Panama, Their Hosts, and Diseases They Transmit. L. H. Dunn, Ovid, N. Y.—p. 91.
- *Yellow Fever in Mexico. M. E. Connor, New York.—p. 105.
- *Pathology of Leishmaniosis of Nose. O. Klotz and H. Lindenberg, São Paulo, Brazil.—p. 117.
- Bronchial Spirochetosis. L. S. Huizenga, Nanking, China.—p. 143.

Dengue Epidemic in Galveston.—About 30,000 cases of dengue occurred in Galveston during the summer and fall of 1922, and observations on this epidemic form the basis of Rice's report. He studied 565 cases. The diagnosis is made on five principal points: (1) sudden onset with fever and a chill or chilly sensation; (2) aching pains which may be general, or localized in the head, back or legs; (3) suffused face and eyes; (4) normal or low leukocyte count with a relative lymphocytosis; (5) absence of jaundice and albuminuria. In addition to these fairly constant symptoms, there are usually noted: (1) soreness of the eyeballs and skeletal muscles; (2) prostration and loss of appetite; (3) alteration of taste. The symptoms should be confirmed by: (1) the appearance of a toxic rash; (2) termination of fever within three to seven days, and (3) the absence of any other disease to explain the symptoms. Pregnancy was not disturbed. Convalescence was slow and attended by a sense of weakness, fatigue, and soreness of the muscles, which lasted from one to six weeks. Immunity, at least partial, must be conferred, since only 108 recurrences were discovered. Treatment is simple and unsatisfactory. Salicylates, acetphenetidin, and codein sulphate for the pain; sponges, ice-caps, free intake of fluids, laxatives (not purges) and rest in bed constitute the known treatment. Drugs really have a doubtful place. The attack is self-limiting, and those who are carefully nursed do as well as those who take sedatives. All should remain in bed for two or three days after the temperature has subsided.

Yellow Fever in Mexico.—It is Connor's belief that yellow fever was present in Mexico long before the coming of the Spaniards, and that there have been in recent years at least three areas in which this disease has been to all intents and purposes, permanently endemic, namely, Yucatan, Vera Cruz and Colima. Probably there have been other endemic and pseudendemic areas. In this class Connor would place Campeche and Tabasco as centers which were at one time very active foci of infection, but from which the disease eliminated itself as the decadence of commerce caused migration of the population, thus bringing into play the principle of the failure of the human host. This principle was first developed and announced by Carter and has been of inestimable aid to the epidemiologist in shaping campaigns to eradicate yellow fever.

Pathology of Leishmaniosis of Nose.—This report comprises a study of fifteen cases of leishmaniosis of the nose, representing all stages of the disease from early nodular

swelling of the nasal mucosa to the late destruction of septum and alae. The lesion is one of a peculiar granuloma, having individual and characteristic tissue reactions, and passing through successive stages. The manner of development of the lesion of the nose suggests a metastatic distribution from the primary ulcer on the arms or legs. On the other hand, the centrifugal spread from the earliest point of infection, and the microscopic character of the local process suggests a lymphatic dissemination of the immediate neighborhood. The granuloma, beginning as a perivascular lymphocytic infiltration of the submucosa, passes through stages in which the plasma cells and endothelial cells gradually gain dominance and ends with the development of nodules largely composed of endothelial cells. These nodules may show central necrosis, or may undergo fibrosis. In the late stages, the accompanying endarteritis of the neighboring vessels leads to extensive ulceration and necrosis. The leishmania are almost constantly intracellular, within endothelial cells.

Archives of Internal Medicine, Chicago

31: 303-433 (March) 1923

- *Roentgen-Ray Treatment of Toxic Goiter. J. H. Means and G. W. Holmes, Boston.—p. 303.
- Correlation of Vital Capacity with Stem Height. W. L. Rogers, San Francisco.—p. 342.
- *Clinical Report on Use of Quinidin Sulphate. L. E. Viko, H. M. Marvin and P. D. White, Boston.—p. 345.
- Enlargement of Ileal Nodes. M. Lederer, Brooklyn.—p. 364.
- *Detoxification of Cyanids. I. Factors Influencing Detoxification of Cyanids in Health and Disease. M. Bodansky and M. D. Levy, Galveston, Texas.—p. 373.
- *Blood Gases in Case of Paroxysmal Tachycardia. E. P. Carter and H. J. Stewart, Baltimore.—p. 390.
- *Cardiovascular System in Thyroid Disease. W. J. Kerr and G. C. Hensel, San Francisco.—p. 398.
- Case of Rheumatic Fever with Cerebral Symptoms Simulating Encephalitis Lethargica. L. F. Frissell, New York.—p. 411.
- *Gravimetric Estimation of Phosphates of Blood. Phosphates in Nephritis. W. J. Fetter, Pittsburgh.—p. 413.
- Increase of Certain Vagal Effects with Increased Age. N. C. Gilbert, Chicago.—p. 423.
- Exophthalmic Goiter and Involuntary Nervous System. L. Kessel, C. C. Lieb and H. T. Hyman, New York. III. Fifty Consecutive Cases of Exophthalmic Goiter. L. Kessel, H. T. Hyman and H. Lande, New York.—p. 433.

Roentgen-Ray Treatment of Toxic Goiter.—The data presented by Means and Holmes are interpreted as showing that the roentgen ray probably has a beneficial effect in cases of toxic goiter, and that for that reason it has its place in the armamentarium for treating these diseases. About two thirds of the patients with exophthalmic goiter so treated show either recovery or improvement coincident with the treatment. The remaining third neither improve nor grow worse. In exophthalmic goiter, when treated by the roentgen ray, if good results are not secured in a few months, surgery should be employed. Prolonged roentgen-ray treatment in patients showing no response is undesirable. Some patients with exophthalmic goiter who are not cured by the roentgen ray are, perhaps, made better operative risks by it. A combination of the two forms of treatment may sometimes accomplish more than either alone. In toxic adenoma there seems to be a similar improvement to that noted in exophthalmic goiter, but so far the authors have used it only with patients who have refused operation. In toxic adenoma, in contrast to exophthalmic goiter, surgery probably removes the actual cause of the disease, the adenoma. The indication for surgery would, therefore, seem more definite than in exophthalmic goiter. Even in toxic adenoma, however, in certain cases that are too thyrotoxic for safe operation, the roentgen ray may be used to advantage. To make a proper use of the roentgen ray in the management of toxic goiter of either variety, its limitations should be recognized and it should be correlated intelligently with other therapeutic measures, as the individual case may demand.

Quinidin Sulphate in Nonparoxysmal Auricular Fibrillation.—Of the seventy-five largely unselected cases of non-paroxysmal auricular fibrillation or auricular flutter in this series reported by Viko, Marvin and White, approximately two thirds were restored to normal rhythm by quinidin and approximately one third (twenty-six cases) still maintain normal rhythm. Other factors being equal, the rheumatic

and arteriosclerotic types of heart disease respond to the drug equally well. The presence or absence of valvular disease in itself is not an important factor in determining response to quinidin. The duration of the heart symptoms is of importance as a factor in determining response only so far as it is associated with two other factors: the duration of auricular fibrillation and the degree of congestive failure. The most important factor in determining both restoration of normal rhythm and its maintenance is the duration of the auricular fibrillation. Cases with fibrillation of short duration (under six months) are not only more likely to be restored to normal but are much more likely to maintain it even without rationing, and, as a rule, give the best clinical results. The second most important factor in determining response to quinidin is the presence or absence, past or present, of objective congestive failure. Cases with objective failure are restored to normal rhythm about as frequently as those without such failure; the former, however, relapse very much more frequently. All cases showing objective congestive failure or tachycardia should probably be digitalized before beginning quinidin treatment. Though most cases responding to quinidin do so with small dosage, many of the most satisfactory cases require large dosage. This is apparently independent of the duration of fibrillation. Proper rationing with quinidin after restoration of normal rhythm will reduce the number of relapses. Embolism and sudden death (possibly also due to embolism) occurring under quinidin therapy are probably most likely to occur in cases with fibrillation of long duration and those where there is objective congestive failure at the time or in the past. Hence, the cases most likely to yield serious untoward results are the cases least likely to obtain a maintained normal rhythm from quinidin. A fair percentage of cases, particularly those with recent fibrillation and little or no objective congestive failure, receive definite benefit from restoration of normal rhythm—benefit apparently additional to that obtainable from digitalis alone. The clinical results appear to justify the use of the drug in cases with fibrillation of short duration and with little or no congestive failure. For the present quinidin should probably not be used in a routine way in other types of cases. For the present, at least, quinidin should be used in hospitals where careful observation and electrocardiographic control is possible. Quinidin will probably prove of much value in the prevention and treatment of paroxysmal auricular fibrillation. The data at present available are inconclusive regarding the value of quinidin in treating cases with premature beats. Quinidin is not indicated for the treatment of heart block.

Detoxification of Cyanids.—A functional test is proposed by Bodansky and Levy for the determination of the "cyanid detoxifying capacity" in man.

Blood Gases in Paroxysmal Tachycardia.—A case of auricular paroxysmal tachycardia was studied by Carter and Stewart from the point of view of the blood gases. The findings include: (1) Marked decrease of the arterial oxygen saturation without demonstrable pulmonary congestion to account for this. (2) Extremely low carbon dioxide content of the arterial blood during the paroxysm. (3) Very low oxygen saturation of the venous blood, part of which was attributable to the anoxic anoxemia, but the greater part was a true stagnant anoxemia due to slowing of the circulation. This stagnant anoxemia had entirely disappeared one hour after the end of the attack. (4) Greatly increased coefficient of utilization during the paroxysm, indicating a very slow circulation rate. (5) Decrease in vital capacity immediately following the paroxysm. In addition, there appeared to be a close connection between an acute infection and the disturbance of the cardiac mechanism. It was also noted that during quinidin sulphate therapy ectopic beats which had been numerous and troublesome disappeared.

Cardiovascular System in Thyroid Disease.—Kerr and Hensel report the cardiovascular condition of 181 patients with thyroid disease, 123 being classified as cases of adenoma and fifty-eight as cases of hyperplasia. It was evident that the cardiac signs and symptoms in toxic adenoma and hyperplasia differ only by the degree of toxicity. The vascular

changes are more marked in the cases of hyperplastic goiter. Cardiac irregularities are more common than is generally recognized. Auricular fibrillation or auricular flutter, usually paroxysmal in type, occurred in about one-third of all toxic cases. The authors believe that such paroxysmal attacks explain the periods of palpitation which are described by a large percentage of patients. The prognosis depends in large measure on the condition of the circulation. If surgical treatment is to be carried out, the "time and extent of the operation should be governed by the circulatory condition." Treatment of the thyroid heart depends on the stage of the disease. In all cases every measure should be employed to relieve the myocardium. Rest is essential. Sedative drugs are of some value. Elimination should be kept up. Digitalis is of great value in controlling auricular fibrillation and may be of value in preventing paroxysmal attacks. The amount required in controlling auricular fibrillation is usually less than in ordinary cardiac cases. It should be continued over long periods. Decompensation should be treated as in other myocardial cases. The electrocardiogram is of value in recognizing myocardial changes, in differentiating the types of irregularities and in prognosis.

Gravimetric Estimation of Phosphates of Blood.—A gravimetric method for the estimation of the inorganic and total phosphates in whole blood is described by Fetter. The results are recorded of a number of analyses carried out on normal persons, in cases of chronic nephritis and in cases of nephritis with acidosis. A suggestion is put forward as to the line of treatment to be adopted in relation to the findings of blood phosphates.

Archives of Ophthalmology, New Rochelle, N. Y.

52: 105-170 (March) 1923

- Virus of Herpes Simplex. J. S. Friedenwald, Boston.—p. 105.
Case of Mesoblastic Leiomyoma of Iris. F. H. Verhoeff, Boston.—p. 132.
Case of Amaurotic Family Idiocy in Infant Not of Jewish Parentage. M. Cohen, New York.—p. 140.
Tuberculoma of Orbital Cavity. D. Roy, Atlanta.—p. 147.
Therapeutic Use of Weak Atropin Solution in Asthenopia. W. E. Gamble, Chicago.—p. 160.
Oil Cyst of Orbit. Removed by Krönlein's Operation. A. Knapp, New York.—p. 163.
Blocking Main Trunk of Facial Nerve in Cataract Operations. R. E. Wright, Madras, India.—p. 166.
Case of Melanosarcoma of Conjunctiva. A. S. Fernando, Manila.—p. 168.
Survey of Cases in Free Dispensary of Philippine General Hospital. A. S. Fernando, Manila.—p. 170.

Boston Medical and Surgical Journal

188: 477-522 (April 5) 1923

- Postoperative Swelling of Upper Extremity, Following Operations on Breast and Axilla. W. E. Hartshorn, New Haven, Conn.—p. 477.
Diabetes Mellitus Complicating Surgery. A. T. Jones, Providence, R. I.—p. 483.
Postoperative Intra-Abdominal Adhesions. R. H. Seelye, Springfield, Mass.—p. 489.
*Clinical and Pathologic Study of Tonsils Subjected to Roentgen Ray Treatment. C. R. C. Borden, Boston.—p. 493.
Prompt Action of Radium Radiations in Treatment of Small or Large Infected Tonsils and Lingual Tonsils. F. H. Williams, Boston.—p. 497.
*Nontuberculous Pulmonary Abscess. W. Whittemore, Boston.—p. 499.

Effect of Roentgen Ray on Tonsils.—Fourteen cases of diseased tonsils irradiated with the roentgen ray from one to four times failed to show any clinical or pathologic changes as a result of the irradiation, except that during the times the radiations were being given many of the tonsils seemed to be smaller and more normal in appearance, but when subsequently removed by dissection no real change in size appeared to have taken place. After irradiation many of the tonsils appeared to be normal in size and color, but at the time of operation a number of them were found to be filled with pus or cheesy debris. As a method of reducing bleeding and assisting dissection at the time of operation, Borden says, such irradiation is useful. By diminishing over-secretion from the mucous surfaces of the throat it decidedly decreases the possibility of postoperative pneumonia or lung abscess following throat operations. In cases wherein diseased tonsils may justly be suspected of producing secondary infections in the joints, heart, kidney or other important organs, roentgen-ray irradiations are inadequate.

Treatment of Nontuberculous Pulmonary Abscess.—Whittemore prefers to give each patient a chance to cure himself by postural drainage and by building up his general condition before operation is advised. But, if at any time the patient's condition ceases to improve or becomes worse, operation should be performed. If there is not any improvement in three or four weeks, operation should be considered. Whittemore believes that the chances for a permanent cure are much better if the patient is operated on while the condition is subacute rather than if surgical treatment is delayed until the condition becomes chronic.

Journal of Experimental Medicine, Baltimore

37: 303-395 (March) 1923

- *Experimental Studies of Nasopharyngeal Secretions from Influenza Patients. XI. Antibodies in Blood After Recovery from Epidemic Influenza. P. K. Olitsky, and F. L. Gates, New York.—p. 303.
*Cultivation of Anaerobic Treponemata on Surface of Blood Agar Plates. F. L. Gates, New York.—p. 311.
*Changes Produced by Roentgen Rays in Inflamed Connective Tissue. A. A. Maximow, Chicago.—p. 319.
Etiologic Significance of Vibrio Fetus. T. Smith, Princetown, N. J.—p. 341.
Increased Absorption of Roentgen Rays by Vitrally Stained White Rats. W. M. Baldwin, Albany.—p. 357.
*Chemical Changes in Blood of Dog After Intestinal Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 365.
*Chemical Changes in Blood of Dog After Pyloric Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 377.
*Immunity Studies of Rocky Mountain Spotted Fever. I. Usefulness of Immune Serum in Suppressing an Impending Infection. H. Noguchi, New York.—p. 383.
Studies on Total Bile. I. Effects of Operation, Exercise, Hot Weather, Relief of Obstruction, Intercurrent Disease, and Other Normal and Pathologic Influences. P. D. McMaster, G. O. Brown and P. Rous, New York.—p. 395.

Bacteriologic Study of Nasopharyngeal Secretions in Influenza.—Although *Bacterium pneumosintes* is a stable organism which agglutinates only in low dilutions of the serum of actively immunized rabbits, Olitsky and Gates have always found the serologic reactions of this micro-organism to be consistent and specific. The results of the agglutination and precipitation reactions described by them indicate that the serum of normal persons does not contain demonstrable agglutinins or precipitins for *B. pneumosintes*. By contrast, agglutinins have been demonstrated in the serum of seventeen persons among nineteen who were examined from ten days to five months after recovery from epidemic influenza. The serum of ten persons who had influenza, followed in three instances by pneumonia, from two and one-half to three and one-half years before, proved negative. In one instance the appearance of specific agglutinins against *B. pneumosintes* was found to be coincident with an attack of uncomplicated influenza. In twelve of fifteen instances in which agglutinins were found, precipitins against *B. pneumosintes* were demonstrated also. It is noteworthy that these antibodies may persist in the blood at least five months after recovery from the disease.

Cultivation of Anaerobic Treponemes on Surface of Blood Agar Plates.—By a method of anaerobic cultivation that proved successful with *Bacterium pneumosintes*, characteristic surface colonies of old saprophytic strains of *Treponema pallidum* and *Treponema calligyrum* have been obtained by Gates. The medium used consisted of ordinary nutrient agar, made with beef infusion peptone broth, to which from 5 to 7 per cent. of fresh, sterile, unheated, defibrinated rabbit blood was added just before the plates were poured.

Changes Produced by Roentgen Rays in Inflamed Connective Tissue.—Maximow studied the reaction of inflamed tissue, the result of a foreign body, to the roentgen ray. He noted that irradiation produced a considerable depression of the usual reaction on the part of the fibroblasts. They remain idle, do not multiply at all, or start very late and often the division is abnormal. Simultaneously with these changes of the fibroblasts, an intensive edema of the connective tissue surrounding the foreign body is to be noted and in the immediate neighborhood of the latter a thick layer of netlike clotted fibrinous exudate is formed. No distinctive qualitative changes could be found in the leukocytes and polyblasts. The rate and the duration of the emigration of all the cells coming from the blood were increased, and there

was always a distinct delay in the process of the common transformations usually undergone by the polyblasts on the field of inflammation. The transformation of the polyblasts into fixed resting forms seems above all to be delayed. In the blood vessels swelling of the endothelial cells, with fragmentation of the nuclei, and, in the striated muscles, degeneration of the fibers can be detected. In the latter there occur partly typical coagulation necrosis, partly atrophy, accompanied by loss of striation, separation of fibrillae from one another, relative increase of sarcoplasm, and amitotic division of nuclei. These results seem not to agree with the predominating views on the action of roentgen rays on cells.

Chemical Changes in Blood After Intestinal Obstruction.—

A study of the nonprotein nitrogen, urea nitrogen, uric acid, creatinin, amino-acid nitrogen, sugar and chlorids of the blood, and the carbon dioxid combining power of the plasma, in normal dogs, and in dogs after different types of intestinal obstruction, is reported on by Haden and Orr. Following ligation of the duodenum, ligation of the duodenum with gastro-enterostomy, and ligation of the upper half of the ileum, a fall in chlorids and a rise in the nonprotein nitrogen and urea nitrogen of the blood and in the carbon dioxid combining power of the plasma occur. The uric acid, creatinin, amino-acid nitrogen and sugar show no significant changes. The fundamental change is a fall in chlorids followed by an alkalosis. The degree of alkalosis depends on the rate of formation of carbonate, rate of excretion by the kidneys, and extent of neutralization of the carbonate by acid bodies formed during the intoxication. The fall in chlorids is probably due to utilization of the chlorin ion in the course of the intoxication. It is suggested that this use of chlorin is a protective measure on the part of the body. There are indications that high intestinal obstruction should not be treated by the administration of alkalies. The urea nitrogen is a good index of the protein destruction. Ligation of the ileum at the ileocecal valve is followed by little increase in nitrogen and no change in the chlorids or carbon dioxid combining power of the plasma. The close similarity of the blood findings in intestinal obstruction, acute lobar pneumonia, and serum disease suggests that these widely different conditions may have a common chemical basis.

Chemical Changes in Blood After Pyloric Obstruction.—

The observations of other workers that a fall in chlorids and a rise in carbon dioxid combining power of the plasma occur, are confirmed by Haden and Orr. There is also a marked rise in the nonprotein nitrogen of the blood, consisting mainly of urea nitrogen and undetermined nitrogen. The fall in chlorids is not due to the loss of chlorids in the gastric juice. The chlorin is probably bound somewhere in the process of protein destruction. There is a close relation between the fall in chlorids and the protein destruction. The chemical changes following pyloric obstruction are essentially the same as those following high intestinal obstruction.

Immunity Studies of Rocky Mountain Spotted Fever.—

From the results of the experiments presented by Noguchi it is evident that in guinea-pigs an early administration of immune rabbit serum will suppress the infection; that is, if it is given within the period of incubation, the effect being proportionately greater the earlier the serum is administered. Almost no beneficial effect is observed when the serum is given after the onset of the disease. In view of the comparative susceptibility of man and the guinea-pig it is recommended that in every instance when the bite of a tick gives reason to suspect a possible infection with spotted fever, or when a person accidentally inoculates himself with the virus, about 0.2 c.c. of the serum per kilogram of body weight (or 0.1 c.c. per pound) be injected immediately, preferably intravenously. For the average adult about 16 c.c. should be given.

Journal of Infectious Diseases, Chicago

32: 175-246 (March) 1923

Factors Controlling Intestinal Bacteria. Influence of Hydrogen-Ion Concentration on Bacterial Types. P. R. Cannon and B. W. McNease. University, Miss.—p. 175.

Paths of Infection by Bacterium Abortus in Rabbits, Guinea-Pigs and Mice. E. S. Sanderson and L. F. Rettger. New Haven, Conn.—p. 181.

Structure of Complement. I. L. Kritchevsky and A. I. Douchowsky, Moscow, Russia.—p. 187.

*Relation of Immunity Reactions to Biogenetic Law. Investigations of Chemical Structure of Protoplasm of Animals During Embryonic Development by Means of Heterogeneous Hemolysins. I. L. Kritchevsky, Moscow, Russia.—p. 192.

*Heterogenous Anaphylaxis. I. L. Kritchevsky, Moscow, Russia.—p. 196.

*Fusiform Bacilli and Spirochetes. III. Occurrence in Normal Women About Clitoris and Significance in Certain Genital Infections. I. Pilot and A. E. Kanter, Chicago.—p. 204.

*Bacillus Welchii in Bread. S. A. Koser, Washington, D. C.—p. 208.

*Bacteriostatic Action of Dyes on Streptococcus Viridans and Pneumococci. J. F. Norton and G. E. Davis, Chicago.—p. 220.

*Weil-Felix Reaction in Rocky Mountain Spotted Fever. F. L. Kelly, Berkeley, Calif.—p. 223.

*Invasion of Body by Bacteria from Intestinal Tract. W. B. Moody and E. E. Irons, Chicago.—p. 226.

Studies in Comparative Immunity. I. Resistance of Frog to Staphylococcus Aureus. F. L. Pickof, Chicago.—p. 232.

Growth of Pfeiffer Bacillus in Mixed Culture in Blood-Free Medium. A. F. Reith, Chicago.—p. 243.

Immunity Reactions and the Biogenetic Law.—Investigations were made by Kritchevsky of the chemical structure of the protoplasm of animals during embryonic development by means of heterogeneous hemolysins. He found that the hen's egg and the formative yolk do not contain heterogeneous sheep antigen. In earlier phases of the development (two days), the protoplasm of the hen embryo does not possess heterogeneous sheep antigen. The heterogeneous sheep antigen producing hemolysins against red corpuscles of sheep appears only in relatively advanced periods of the development of the hen; that is, not before four days after the division of the egg began. Therefore, Kritchevsky says that the biochemical properties of animal cells are subject to transformation during ontogenetic development.

Heterogenous Anaphylaxis.—Kritchevsky's belief that rabbits immunized with red corpuscles of the hen should produce not only hemolysins, but also heterogenous anaphylactic antibodies, as occurs with homologous antibodies, was confirmed by experiments. The animals that presented the picture of heterogenous anaphylaxis always possessed heterogenous hemolysins, and in the majority of cases the anaphylactic phenomena were directly connected with the degree of the hemolytic titer.

Fusiform Bacilli and Spirochetes About Clitoris.—Fusiform bacilli and spirochetes were found by Pilot and Kanter in the normal smegma secretions of twenty-one of thirty-six pregnant women. In their morphology, they appeared to be identical with similar organisms in the preputial secretions of men. Associated with these bacteria were pyogenic organisms, including staphylococci, colon bacilli, diphtheroids and streptococci. The occurrence of fusiform bacilli and spirochetes with pyogenic bacteria in certain genital lesions is held to indicate that these organisms may be primary and secondary infecting agents causing ulcerative and gangrenous processes. The presence of these organisms normally would indicate that such processes may result, especially under conditions of lowered general resistance, and do not entirely depend on the introduction of these bacteria from other sources.

Bacillus Welchii in Bread.—A commercial bread starter, recommended for the purpose of securing a constant inoculum of a gas forming bacterium in the preparation of salt rising bread, was found by Koser to contain organisms of the *Bacillus welchii* type in numbers of about 1,000 per gm. The addition of this "starter" to milk, followed by an overnight incubation in a warm place, as called for in the directions for use, results in a light, frothy, gaseous mass. The predominating organism was found to be *B. welchii*, which was present in numbers of from 1,000,000 to 100,000,000 per gm. of material. Loaves of salt rising bread prepared by several bakeries using the starter in question contained spores of *B. welchii* in considerable numbers. Small quantities of bread from the interior of the loaves yielded the gas bacillus in almost every instance, in decided contrast to the results secured from the interior of the loaves of ordinary yeast bread in which the Welch bacillus was found rarely. Several cultures of the organism isolated from the starter and from the baked loaves were found to be in agreement in morphologic, cultural, and biochemical properties with a strain of *B. welchii* obtained originally from a wound and also with the published descriptions of this bacillus. The cultures obtained from the bread possessed only a low grade of viru-

lence for guinea-pigs, while the type *B. welchii* originally obtained from a wound and used for comparison was highly pathogenic. All available evidence indicated that the *B. welchii* incorporated in the "starter" is the active agent concerned in the preparation of the salt rising bread. This was substantiated by the fact that on substitution of an authentic *B. welchii* strain (with a history of wound infection for the strain) in the bread starter, loaves of salt rising bread were prepared comparable to those obtained by the use of the starter.

Bacteriostatic Action of Dyes on Streptococcus Viridans.—Of the forty-one dyes used by Norton and Davis in their experiments only sixteen showed bacteriostatic action in dilutions of 1:1,000 or greater. Of the sixteen dyes which showed bacteriostasis, eight belonged to the triphenylmethane group and six to the diphenylamines. Of the two remaining, one was an azo and the other a diazo compound. Of the eight triphenylmethanes, six were triamino compounds and two were diamino compounds. There was no difference between the action of the dyes on the strains of *Streptococcus viridans* and those of the pneumococci. A survey of the chemical structure of these dyes shows that, with one exception, all contained three benzol rings, either attached to a single carbon atom as in triphenylmethane, or connected as in anthracene. In some cases, a ring carbon atom is substituted by nitrogen. In addition to the three benzol rings, all these active dyes contain two or more amino groups. The hydrogen atoms in these groups were all substituted with alkyl radicals in those dyes showing the greatest inhibitory action. In most instances, this alkyl radical is the methyl group, but in brilliant green—the most active dye—ethyl groups are present. Acid dyes or salts of acid or basic dyes were inert. The substitution of an hydroxyl radical for a methyl group decreases the inhibitory power.

Weil-Felix Reaction in Rocky Mountain Spotted Fever.—The tests made by Kelly suggest that the Weil-Felix reaction is negative in Rocky Mountain spotted fever and may be of value in differentiating between this disease and typhus fever.

Invasion of Body by Bacteria from Intestinal Tract.—There seems to be no question, Irons says, as to the passage of certain resistant organisms, such as tubercle and anthrax bacilli, through the intact intestinal mucosa. Less resistant organisms rarely pass the intestine of healthy animals. Under conditions in which resistance to infection is decreased or when unusually hardy organisms enter the bowel, or when lesions of the bowel are present, Moody and Irons believe it is reasonable to suppose that bacteria may enter the blood stream from this source.

Journal of Nervous and Mental Disease, New York

57: 105-208 (Feb.) 1923.

*Total Immobilization in Extremities Through Hypertonia After Epidemic Encephalitis. K. Petrén and L. Brahme, Lund, Sweden.—p. 105.

*Cerebellar Syndrome Resembling Multiple Sclerosis. M. Q. Howard, Pueblo, Colo.—p. 128.

Pathology of Senile Psychosis. Differential Diagnostic Significance of Redlich-Fischer's Miliary Plaques. S. Uyematsu, Boston. (To be continued).—p. 131.

Immobilization of Extremities Following Encephalitis.—Petrén and Brahme observed a case of epidemic encephalitis, in which there was present almost complete immobilization of the body (only the ocular, respiratory, and swallowing movements being conserved). Though no true paralysis existed, as a consequence of the hypertonia no movements could be performed, nor were passive movements possible. A case of hemiplegia in which neither active nor passive movements were possible also was due to the hypertonia and not to a paralysis. In these two cases no reasons were found for a lesion of the pyramidal tracts. Babinski's sign was never present. In the second case the motility returned in some weeks, at first distally and then progressing in a proximal direction (in the lower extremity the dorsal flexion of the foot was the first returning function). It is assumed that the symptoms were due to a lesion of the extrapyramidal motor system.

Cerebellar Syndrome Resembling Multiple Sclerosis.—A case is reported by Howard which resembled both multiple sclerosis and the cerebellar syndrome called dyssynergia cerebellaris progressiva. Unlike the latter, there was a positive Babinski sign, cerebellar fits, greatly exaggerated tendon reflexes and an absence of vertigo. Sensory changes were present. Yet all the clinical manifestations of that condition, dyssynergia, dysmetria, hypotonia, adiadokokinesis and asthenia, as well as the intention tremor, were present. Howard believes that the case is probably one of atypical multiple sclerosis with more than the usual cerebellar involvement.

Maine Medical Association Journal, Portland

13: 195-214 (March) 1923

Colles' Fracture. C. C. Morrison, Jr., Bar Harbor.—p. 195.

Clinical Significance of Hematuria. C. H. Jameson, Thomaston.—p. 202.

Minnesota Medicine, St. Paul

March, 1923, 6, No. 3

Future of Southern Minnesota Medical Association. W. F. Braasch, Rochester.—p. 127.

Congenital Hypertrophic Pyloric Stenosis. A. C. Strachauer, Minneapolis.—p. 131.

Use of Paravertebral Nerve Block Anesthesia in General Surgery. W. R. Meeker, Rochester.—p. 138.

*Nonspecific Irritation: Precipitating Cause of Anaphylactic Diseases of Infancy and Childhood. W. R. Shannon, St. Paul.—p. 154.

*Milk Transmission of Pollen Hay-Fever. E. T. Herrmann, St. Paul.—p. 161.

Relation of General Hospital to Tuberculosis Problem. A. T. Laird, Nopeming, Minn.—p. 162.

*"Local" Wassermann Reaction: New Diagnostic Aid in Primary Syphilis. D. Stern and H. Rypins, Minneapolis.—p. 167.

Results Obtained in Elephantiasis Through Kondoleon Operation. W. E. Sistrunk, Rochester.—p. 173.

Causes, Repair and Management of Cases of Postoperative Hernia. A. E. Benjamin, Minneapolis.—p. 178.

Chronic Intestinal Indigestion in Early Childhood. R. Taylor, Minneapolis.—p. 183.

Future of Medicine. J. C. Jacobs, Willmar.—p. 184.

Nonspecific Irritation Cause of Anaphylactic Diseases in Childhood.—Attention is directed by Shannon to the frequency with which certain diseases, alleged to be anaphylactic, are precipitated by local irritation of nonspecific nature. Experimental work on rabbits by Auer is quoted to show that the anaphylactic state increases the response of the animal tissues to local irritation. Analogous cases in man are cited in which neither the local irritation nor the anaphylactic state alone were sufficient to produce symptoms but in which the combination of the two produced the disease picture. In two cases local irritation did not produce symptoms after the anaphylactic state had been removed. In another case the reduction of local irritation did not permit relief from symptoms until the factor of anaphylaxis was cared for. It is therefore contended that the condition of anaphylaxis is the underlying factor which is responsible for the conditions mentioned and that the local irritation is merely a precipitating factor which would go unnoticed were its effects not augmented by the presence of the anaphylactic state.

Milk Transmission of Pollen Hay-Fever.—Herrmann asserts that ingestion of milk from a cow that has eaten ragweed tops produces clinical hay-fever within one-half hour after ingestion of the milk. Absence of gastro-intestinal symptoms following ingestion of one glass of milk and the appearance of selective anaphylactic phenomena in the upper respiratory tract may be due to chronic irritation and decreased resistance of tissues involved. Ragweed pollen protein is found apparently unchanged in the milk of cows that have eaten ragweed tops some hours earlier.

"Local" Wassermann Reaction New Diagnostic Aid in Primary Syphilis.—Stern and Rypins report the results they have obtained with the Klander and Kolmer "local" Wassermann test made on the surface serum of primary chancres. Out of forty-three cases, the blood Wassermann was positive in only thirteen and negative in thirty, or 69.8 per cent. The dark field was positive in all but two cases and negative in only two cases. The "local" Wassermann was positive in all cases, or 100 per cent., not only in the cases with positive dark fields, but also in the two cases with negative dark

fields, whose subsequent course showed them to be cases of primary syphilis. The test was negative on the serum from five proved nonsyphilitics. Treatment of the lesions with antispirocheticide, even when the spirochetes have disappeared, does not interfere with the reaction. The authors hold that the "local" Wassermann is a simple and practicable diagnostic procedure in primary chancre, and the reliability of the results obtained is comparable to those obtained by the dark field microscope.

Pennsylvania Medical Journal, Harrisburg

March, 1923, 26, No. 6

- Urinary Calculi and Sarcoma of Kidney in Children. H. T. Price, Pittsburgh.—p. 355.
Symposium on Headache. Headache from Ophthalmologic Standpoint. J. M. Griscom, Philadelphia.—p. 359.
Headache from Standpoint of Otologist. G. W. Mackenzie, Philadelphia.—p. 360.
Headache from Standpoint of Rhinologist. G. B. Jobson, Franklin.—p. 362.
Headache from Neurologic Point of View. C. W. Burr, Philadelphia.—p. 363.
Prognosis in Myocardial Disease. B. S. Oppenheimer, New York.—p. 371.
Vascular Hypertension; Etiologic Factors. J. Barach, Pittsburgh.—p. 373.
Practical Points in Diagnosis and Treatment. H. A. Hare, Philadelphia.—p. 377.
Epigastric Angina. R. Burns, Scranton.—p. 379.
Differential Diagnosis of Some Parasitic Infections of Hands and Feet. W. H. Guy and F. M. Jacob, Pittsburgh.—p. 384.
Behavior Disorders in Children. J. H. W. Rhein, Philadelphia.—p. 388.
Migraine. H. L. Foss, Danville.—p. 394.
Recent Developments in Surgical Research. J. E. Sweet, Philadelphia.—p. 396.

Philippine Islands Medical Association Journal, Manila

3: 1-18 (Jan.-Feb.) 1923

- Splenic Enlargements in Malarious District of Philippines. R. G. Padua.—p. 1.
History of Medicine. F. H. Garrison.—p. 6.
Malaria in Children. I. Rosal, Manila.—p. 11.
Medical Impressions from Japan. O. Schobl.—p. 15.
Education Among Prostitutes. O. Alejandrino, Manila.—p. 18.

Public Health Journal, Toronto

14: 99-146 (March) 1923

- Community Responsibility with Regard to Tuberculosis. A. F. Miller.—p. 99.
Clinical Aspects of Industrial Poisoning. N. C. Sharpe.—p. 110.
Child Health Program in British Columbia. V. S. MacLachlan.—p. 119.
Mental Hygiene in Toronto Public Schools. E. K. Clarke.—p. 127.

South Carolina Medical Association Journal, Greenville

19: 422-440 (March) 1923

- Does Adult Tuberculosis Begin in Infancy Always? W. P. Cornell, Columbia.—p. 422.
Medical Practitioner and American Society for Control of Cancer. J. E. Rush.—p. 429.
Radiation. L. J. Ravenel, Florence.—p. 432.
Spinal Fluid and Syphilis. H. M. Smith, Columbia.—p. 437.
Tuberculosis as Public Health Problem in South. E. O. Knotts, Newberry.—p. 440.

Wisconsin Medical Journal, Milwaukee

21: 435-466 (March) 1923

- Challenge of Chronic Patient from Public Health Standpoint. M. P. Ravenel, Columbia, Mo.—p. 435.
Relationship of Fatigue to Chronic Patient. E. H. Ochsner, Chicago.—p. 439.
Diverticulum of Stomach. Review of Literature with Report of Case. E. E. Tupper, Eau Claire.—p. 442.
Fractures of Anatomic and Surgical Necks of Humerus. V. F. Marshall, Appleton.—p. 446.
Medical Men and Institutions of Petrograd in 1917 and 1922. M. M. Zlatovsky, Duluth, Minn.—p. 452.
Decreased Intraocular Tension in Diabetic Coma. W. S. Middleton, Madison.—p. 458.
Pulmonary Syphilis with Associated General Arthritic Involvement. Report of Case. R. L. Gilman, Madison.—p. 459.
Multiple Toxic Adenoma of Thyroid. A. S. Jackson, Madison.—p. 461.
Studies on Heart Size. W. J. Meek, Madison.—p. 462.
Postmortem Acidosis. E. L. Severinghaus and A. E. Koehler, Madison.—p. 463.
Medical Practitioner and American Society for Control of Cancer. J. E. Rush.—p. 464.
Water-Borne Diseases with Relation to Public Water Supplies. W. W. Bauer, Milwaukee.—p. 466.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

March, 1923, 7, No. 3

- Case of Secondary Carcinomatous Infiltration of Pia-Arachnoid of Brain, Presenting Exclusively Ocular Symptoms During Life: Meningitis Carcinomatosa. F. M. R. Walshe.—p. 113.
Importance of Radiography in Doubtful Cases of Optic Atrophy with Special Reference to Pituitary Disease. R. E. Wright and T. W. Barnard.—p. 123.
Ladd Franklin Hypothesis of Color Vision. H. Hartridge.—p. 139.

British Medical Journal, London

1: 543-578 (March 31) 1923

- The Drug Habit. W. E. Dixon.—p. 543.
Man's Posture: Its Evolution and Disorders. A. Keith.—p. 545.
Nature of Arteriosclerosis. G. Evans.—p. 548.
Ancylostome Infestation. C. Lanc.—p. 551.
*Influence of Intestinal Bacteria on Thyroid Gland. D. J. Harries.—p. 553.
Treatment of Incipient Phthisis. W. Gordon.—p. 555.
Acute Puerperal Inversion of Uterus. C. S. L. Roberts.—p. 557.

Intestinal Bacteria and Thyroid Gland.—Harries summarizes his observations as follows: Exophthalmic goiter is due to the excessive absorption of tryptophan from the intestine; this, in turn, is traceable to the absence of the indol producers from the intestine. The absence of indican from the urine indicates the absence of indol producers from the intestine. In exophthalmic goiter the early disappearance of indican from the urine is of a serious prognostic importance. Operative surgery has a definite place in the treatment of exophthalmic goiter. Medically, much can be done by suitable dietetic measures. Diffuse parenchymatous goiter is characterized by an excess of indican in the urine, suggesting an excessive destruction of tryptophan. If this excess gives place to a diminution or complete disappearance of indican, it suggests that the case is assuming the exophthalmic form. Myxedema is due to atrophic changes in the thyroid gland, which loses its capacity for dealing with the circulating tryptophan, whether that substance be excessive, deficient, or normal in amount. The disease is thus compatible with the presence or absence of urinary indican.

Calcutta Medical Journal

17: 10-48 (Jan.) 1923

- Kala-Azar. R. H. G. Bahadur.—p. 10.
Toxicity of Some Antimonial Compounds and Their Value in Treatment of Kala-Azar. U. N. Brahmachari.—p. 1.
Transmission of Kala-Azar. L. E. Napier.—p. 6.
Kala-Azar. D. Banerji.—p. 7.

Glasgow Medical Journal

17: 145-180 (March) 1923

- Surgical Treatment of Uterine Fibroids. J. N. Stark.—p. 145.
Roentgen Rays in Treatment of Uterine Fibroids. J. R. Riddell.—p. 151.
Etiology of Eczema. J. F. Smith.—p. 160.
Glasgow Eye Infirmary: Story of Its Beginning. L. Buchanan.—p. 169.

Journal of Laryngology and Otology, Edinburgh

38: 109-146 (March) 1923

- Neuro-Otologic Examination in Eleven Verified Cases of Brain Tumor. D. E. S. Wishart.—p. 109.
Cases of Otosclerosis Showing an Uncommon Symptom; Otosclerosis Paradoxus. A. A. Gray.—p. 141.
Malingering and Allied Conditions of Deafness. T. B. Layton.—p. 146.

Journal of State Medicine, London

March, 1923, 31, No. 3

- Antitoxic Treatment. T. Madsen.—p. 101.
Need for Research in Framing Tuberculosis Schemes. S. L. Cummins.—p. 120.
Pathogenicity and Treatment of Flagellate Dysentery. H. E. Whittingham.—p. 126.

Journal of Tropical Medicine and Hygiene, London

26: 71-86 (March 1) 1923

- White Settlement in Tropical Australia. W. H. W. Cheyne.—p. 71.
Leptospira Icterohemorrhagiae in Wild Rats of Warsaw. L. Anigstein.—p. 81.

26: 87-102 (March 15) 1923

- Association of Certain Common Complaints as Seen in Native Hospital Patients with Presence of Microfilariae in Blood. B. J. Courtney.—p. 87.

*Epidemic Occurring Among Recruits in Training Station in Siam. M. C. Thavara.—p. 89.

Epidemic Resembling Plague Among Recruits in Siam.—The cases reported by Thavara resembled plague, dengue and typhus but could not be classified specifically. The clinical history is reviewed.

Lancet, London

1: 579-630 (March 24) 1923

*Nature of Arteriosclerosis. G. Evans.—p. 579.

Treatment of Epithelial Tumors of Urinary Bladder. F. Kidd. (To be continued).—p. 582.

*Intracardiac Injection of Epinephrin. C. Bodon.—p. 586.

*Extreme Dilatation of Left Auricle. J. G. Emanuel.—p. 591.

*Heredity in Alcaptonuria. C. F. Cuthbert.—p. 593.

*Liquid Petrolatum. H. B. Russell and P. C. Brett.—p. 594.

Tracheotomy in an Infant. E. Thorp.—p. 594.

Case of Craniocleido Dysostosis. A. B. Cocker and H. S. Sims.—p. 595.

Nature of Arteriosclerosis.—The problem of arteriosclerosis is stated by Evans as follows: Arteriosclerosis is a lesion characterized by pathologic thickening of arterial coats, particularly of the intima; inflammatory reaction is of first importance; degenerative changes are an essential part of the picture; hyperplastic and involutionary processes play a part; no unit factor is responsible for its causation. Its development in extent and form depends on a balance between the action of toxic agents and the power of resistance of the vessel wall to their attack.

Intracardiac Injection of Epinephrin.—A case of life-saving by an intracardiac injection of epinephrin is quoted by Bodon. A man, aged 56, suddenly developed cardiac dyspnea. He was in serious condition. Bodon administered 1.5 cg. morphin subcutaneously with no visible effect. As the patient began to sink rapidly, Bodon gave him every minute one or two hypodermic and intramuscular injections of camphor oil (0.2 gm.) accompanied by hypodermic applications of ether, caffein, and one of epinephrin, to the number of eight to nine injections. No improvement could be effected, and the radial pulse became impalpable. An attempted intravenous injection of strophanthin and epinephrin proved impracticable. Bodon then resolved to try an intracardiac injection—hurried to his rooms to provide himself with a long needle, and, returning within a few minutes, found that the patient had nearly passed away in the meantime. He lay relaxed and apparently lifeless in his chair, with head fallen backward; the cyanosis of lips and skin had given place to a deathlike pallor. The eyes were widely open, with largely dilated pupils; corneal reflexes were absent; there was complete loss of consciousness. Shallow inspirations at long and irregular intervals carried the air only as far as the larynx or bronchi. The radial and carotid arteries were not palpable. The systolic murmur over the heart was to be heard intermittently and the diastolic murmur was inaudible ("woodpecker's rhythm"). Respiration ceased completely, the patient passed stools and urine involuntarily, and the action of the heart definitely stopped. Bodon considered him to be dead; there was no possibility of doing any harm by an intracardiac injection. The needle, thrust cautiously through the fourth left intercostal space exactly at the sternal border, glided easily into the heart. A light, short contraction caused by the irritation of the needle touching the heart muscle was felt. Bodon emptied the syringe, which contained 1 c.c. of 1:1,000 epinephrin solution, and extracted it quickly; not a drop of blood was to be seen on the needle or at the site of injection. A few seconds later a steady improvement of the heart beat was noted, which proved regular and effective in less than half a minute. The radial pulse not only regained palpability, but was more satisfactory than when first examined. Simultaneously with the improvement of the heart's action, respiration set in with inspirations progressively deeper and more regular. Some minutes later the corneal reflexes returned, and the formerly widely dilated pupils contracted. The extreme pallor of lips and face subsided and was replaced by a dark bluish-red color, which subsequently lost its cyanotic hue as a deep, snoring respiration became established. The patient did not recover consciousness for two hours. On awakening he remembered nothing of what had happened. Two and a half hours after the injection, he could walk with assistance the few steps to his bed, feeling

tolerably well but very tired. Three months after the injection, the patient felt perfectly well, as he is now in every respect. Bodon is convinced that the intracardiac injection saved this patient's life.

Extreme Dilatation of Left Auricle.—Emanuel records a case in which the heart was of such enormous size as to appear to fill the entire thorax. The great size was due to auricular dilatation and, in the main, to dilatation of the left auricle. This had dilated, for the most part, in a horizontal direction, so that during life it presented in the right axilla beyond the right edge of the right auricle and was tapped under the belief that it was a pleural effusion. Emanuel believes that the dilatation is an expression of a pathologic condition that may affect the mitral valve and myocardium at the same time, and that condition is a carditis, frequently of rheumatic origin. Pericardial adhesions are always present in these cases. The dilatation is not the result of these pericardial adhesions in the sense that the adhesions act mechanically by traction on the auricle, for the dilatation is uniform. The pericardial adhesions, like disease of the mitral valve, are merely the permanent indications of an erstwhile carditis, the brunt of which, for some unknown reason, fell on the myocardium of the auricles. The auricular walls thus weakened by an attack of myocarditis give way under the intra-auricular pressure.

Heredity in Alcaptonuria.—The father and mother in the instances cited by Cuthbert were first cousins, the father's mother and the mother's mother being sisters. The parents know of no case of alcaptonuria among their forbears. They have had six children, all of whom are alive and in good health. There have been no miscarriages or stillbirths. None of the children exhibit any structural malformation. Neither parent is alcaptonuric; of their six children, three (two boys and one girl) exhibit the anomaly. The blood Wassermann in all these cases was negative.

Liquid Petrolatum.—A report is made by Russell and Brett on the action of liquid petrolatums of widely varying viscosities. He states that a product of viscosity 230 gave more satisfactory results than one with a viscosity of 130. The authors strongly recommend that a viscosity standard of not less than 180 should be adopted. The viscosity figure is the time in seconds taken by 50 c.c. of oil maintained at 100 F. to flow out from a Redwood viscometer.

1: 631-680 (March 31) 1923

*Treatment of Duodenal Ulcer. B. Moynihan.—p. 631.

*Treatment of Epithelial Tumors of Urinary Bladder. F. Kidd.—p. 636.

*Therapeutic Action of Bismuth in Syphilis. C. Levaditi.—p. 639.

Serum Dosage in Diphtheria. C. B. Ker.—p. 642.

*Syphilis and Marriage. A. Routh.—p. 644.

*Case of Middle Meningeal Hemorrhage. A. B. K. Watkins.—p. 646.

*Case of Acute Nontraumatic Bilateral Suprarenal Hemorrhage. A. G. M. Severn.—p. 647.

Sudanese Albino. H. E. S. Stiven.—p. 648.

Treatment of Duodenal Ulcer.—More than 90 per cent. of the patients on whom Moynihan performed a gastro-enterostomy for duodenal ulcer are in excellent health. In the remainder the discomforts may almost be regarded as negligible, especially by comparison with the protracted suffering before the operation. One patient is known to have developed a jejunal ulcer subsequently. Moynihan has operated in six cases of jejunal ulcer in which no ulcer was found in the stomach or jejunum at the time the operation of gastro-enterostomy was performed. The treatment of jejunal ulcer is very difficult. Moynihan has no knowledge of an undoubted case in which the symptoms have disappeared entirely and have long remained absent after medical treatment. The immediate results of medical treatment are good, but relapses are, perhaps, invariable. The operations which may be practiced are: (1) excision of the ulcer with local repair of the anastomosis; (2) excision of the ulcer with closure of the anastomosis; (3) excision of the ulcer, closure of the anastomosis and the making of a new anastomosis, anterior or posterior; (4) excision of the ulcer, closure of the anastomosis and the performance of gastroduodenostomy; (5) gastrectomy (Moynihan has performed this operation more frequently as his experience of the condition enlarged); (6) jejunostomy. Moynihan is convinced that the operation of gastro-enterostomy has been greatly discredited in con-

sequence of its performance in grossly unsuitable conditions. The results, when the operation is undertaken for an appropriate reason, and in a suitable case, are unequalled by those of any other of like magnitude in surgery. Speaking of the after-treatment of patients on whom any gastric operation has been performed, Moynihan states that among the most harmful of habits for all these patients is smoking. An "attack" of duodenal ulcer often follows an orgy of tobacco; and many attacks are checked by abstinence from it. "Attacks" ascribed to duodenal ulcer are sometimes due only to nicotin poisoning. The close mimicry of "hunger-pain" in nicotin intoxication appears to have escaped notice.

Treatment of Epithelial Tumors of Urinary Bladder.—In cases of papilloma of the bladder of a benign type, Kidd says, diathermy, as applied through the cystoscope, holds out at least a 90 per cent. chance of cure without the risk of opening the bladder. In cases of papilloma of the bladder of doubtful malignancy, it is possible to obtain a certain number of cures by means of diathermy applied through the cystoscope. In cases of malignant papilloma, early papilliferous carcinoma, and even of very early ulcerating carcinoma of the bladder, subtotal or partial cystectomy marks a great advance in bladder surgery. It should render the old intravesical operation obsolete, except in a few isolated cases. Total cystectomy has been rendered almost obsolete by partial cystectomy, diathermy and radium. It should be reserved for cases of multiple malignant papilloma that defy other treatment, and for a few favorable cases of early carcinoma involving both ureteric openings. Ureterostomy presents almost as great risk to life as total cystectomy. When successful, it brings great relief, and it may be used as a preliminary to total cystectomy in a few favorable cases. In Kidd's opinion radium has not yet justified its claim to supersede surgery.

Syphilis Treated by Bismuth.—Investigations made by Levaditi into the toxicity of bismuth in the rabbit have shown that it required 200 mg. sodium potassium bismuthotartrate per kilogram, given subcutaneously, to kill a rabbit; intravenously, only 5 mg. were required. In oily suspension this preparation is no longer toxic. Insoluble preparations should be used for intramuscular injection. Injections should be made with a 5 c.c. syringe and a sufficiently large needle, as the liquid is sometimes thick. The most favorable region for injection is the superior gluteal area. Injections should be made alternately into either side, not too close to the site of previous injections. The intravenous route is too dangerous. The dose should be 2 c.c. (0.2 gm. of the active preparation), repeated every three or four days, until a total dose of 2.8 or 3 gm. has been reached. The series of injections should be repeated after an interval of a month, until the Wassermann reaction becomes negative. On the basis of his experience and that of others, Levaditi feels that he can maintain that sodium potassium bismuthotartrate and metallic bismuth achieve rapid cicatrization of syphilitic lesions at all stages of the disease. When used early and in sufficient quantity bismuth will cure syphilis. The absence of recurrences of the disease, and the effect on the Wassermann reaction, confirm this opinion. Equal, from a therapeutic point of view, to arsenical preparations, better than mercurial preparations, bismuth is a valuable antisiphilitic remedy, particularly in those manifestations of the disease which resist the action of arsenic and mercury.

Syphilis and Marriage.—The association of syphilis and marriage, Routh points out, is the cause of more individual, social, and national trouble than any other disease affecting family life. Obviously, syphilis and marriage should never be associated, and yet, though this is realized by health authorities, physicians, and legal experts, it is only beginning to be realized by the state and by the nation at large. The difficulties, therefore, which physicians experience when they try to prevent a syphilitic patient from marrying are largely due to the absence of general education on the subject, the inadequacy of the law of libel to protect them, and to the absence of legal penalties for one person infecting another. Routh discusses the pros and cons of notification of syphilis and of health certificates. Closing, he says, that these results prove conclusively that even if infected men and women can be

prevented from marrying and having children (for syphilis does not tend to sterilize either men or women), it is possible, by treatment of the mothers during pregnancy, to have healthy children born and by continuing the treatment of the mothers and children after parturition, it is possible, in each such family, to prevent the occurrence of congenital syphilis almost entirely. Probably, this success would be rendered more certain if the father were also treated.

Bilateral Middle Meningeal Hemorrhage.—The interesting points in Watkins' case were: (1) bilateral hemorrhage; (2) laceration of the artery at the foramen spinosum; (3) ligature of the external carotid controlled the hemorrhage; (4) orbital hematoma, and (5) hyperpyrexia.

Acute Nontraumatic Bilateral Suprarenal Hemorrhage.—The symptoms in Severn's case were: sudden collapse of a woman, aged 59, who had appeared well during the early part of the day. She seemed profoundly asthenic; her temperature was 102.2 F. Face and extremities were cold and somewhat cyanosed; radial pulse was 126 per minute, irregular, "thready," and almost imperceptible. There were very marked flatulent distension of abdomen, and general loss of muscular tone. There was no vomiting, no apparent pain or localized tenderness. The heart sounds were feeble; blood pressure was greatly diminished. Her condition grew worse and death took place within three hours. Both suprarenals contained an unorganized blood clot. Microscopic examination of both suprarenals showed recent hemorrhage into the medulla causing complete disorganization of the cells, and the thin cortical layer was infiltrated with blood.

Medical Journal of Australia, Sydney

1: 225-252 (March 3) 1923

Use of Sugar Injections in Pulmonary Affections, Including the Tuberculous. J. E. F. Stewart.—p. 225.

Differential Diagnosis of Dengue Fever and Influenza. E. P. Thurston.—p. 227.

Medical Aspects of Life Assurance. R. S. Skirving.—p. 227.

*Strangulated Hernia in Infant. I. McNeil.—p. 235.

Tuberculosis of the Skin. C. Joyce.—p. 236.

Strangulated Hernia in Infant.—McNeil reports a case of strangulated inguinal hernia in a child, 6 days old, which proved to be a congenital inguinal hernia of the vaginal type. The sac contained about 5 cm. of cecum and 5 cm. of small intestine and the appendix. The child made an uninterrupted recovery.

South African Medical Record, Cape Town

21: 97-120 (March 10) 1923

Treatment and Tests Employed in Gonorrhea and Syphilis. B. Bernstein.—p. 99.

Hospital Control. R. P. Mackenzie.—p. 106.

Postpartum Hemorrhage. A. Abelheim.—p. 109.

*Removal of Uterine Polypi from Child Aged One Year and Seven Months. C. de W. Gibb.—p. 111.

Experimental Infection of Some Animals with Cercaria from Fresh-Water Snails. F. G. Cawston.—p. 112.

Removal of Uterine Polypi from Child Aged One Year and Seven Months.—When Gibb's patient was 3 months old, a vaginal discharge was noticed. This discharge continued until the patient was 8 months old, when for the first time a mass appeared at the vulva. This gradually enlarged. The growth arose from the inner surface of the posterior wall of the cervix uteri. It was amputated. Sections of this growth showed it to consist of a number of polypi, which structurally were composed of nonstriped muscle, similar to that of the normal cervix. These polypi contained abundant wide but very thin-walled blood vessels, and there had been extensive hemorrhages from many of these into the stroma of the polypus. There was no indication of anything of a malignant nature about the growth. The case is said to be especially unique because it is the only one on record.

Annales des Maladies Vénériennes, Paris

18: 97-176 (Feb.) 1923

*Urinary Elimination of Arsenicals. Lévy-Bing and Féron.—p. 97.

*Endocrine Disturbances and Nitritoid Crises. G. Lévy et al.—p. 127.

Chronic Gonorrhea without Acute Stage. Mouradian.—p. 132.

Soft Chancre with Phagedenic Bubo. Oudard and G. Jean.—p. 143.

Urinary Elimination of Some Arsenical Compounds.—Lévy-Bing and Féron studied the elimination of different

compounds of arsenic related to arsphenamin. They found that amino-arseno-phenol and the diglucosid of arsphenamin are not indicated for intravenous use, because they are too diffusible. Distribution to the body is better if they are given by mouth.

Endocrine Disturbances and Nitritoid Crises.—Lévy, Juster and Lafont found that accidents in arsphenamin injections are more liable to occur in patients with endocrine troubles. Changes in the thyroid gland may occur during treatment. Irregular menstruation, fleeting edemas, other vasomotor disturbances, and endocrine symptoms should put the physician on his guard against arsphenamin accidents. Epinephrin is an excellent remedy against them. Asthenia, fatigue in the morning, and apathy are among the minor signs of insufficiency of the suprarenals.

Bulletin de l'Académie de Médecine, Paris

89: 187-222 (Feb. 6) 1923

*Preventive Serotherapy in Measles. Méry et al.—p. 194.

*Fever and Arthropathies Due to Proteins. M. F. Bezançon.—p. 205.

*Home for Nursing Mothers in Department of Rhône. Commandeur.—p. 215.

A Physiologic Adjuvant in Treatment of Tuberculosis of Lungs. A. Knopf (New York).—p. 220.

Convalescents' Serum in Prophylaxis of Measles.—Méry, Gastinel and Joannon used inactivated serum taken from convalescents about the fifteenth day. The preventive injection is effective if given before the sixth day of incubation; otherwise it seems at least to diminish the severity of the infection. The dose for infants is 2 c.c.; 4 or 6 c.c. for older children. The dose should be larger in the later stages of incubation. They draw attention to the necessity of regulating the use of this prophylactic, and avoiding useless generalization.

Fever and Arthropathies Due to Proteins.—Bezançon and co-workers report a case of diarrhea, arthropathies and fever, which were connected with ingestion of proteins. The passage through the intestines was very quick, and the meat was not sufficiently digested. Peptone (0.2 gm.) taken one hour before the meals had a favorable influence. Another case reported was in a man suffering from gout and a pleural exudate. The punctures of the pleural cavity and especially subcutaneous injection of the fluid caused conditions resembling serum sickness.

Home for Nursing Mothers.—Commandeur reports on the home for nursing mothers at Vinatier. Only two conditions are required for admission: The girl has to acknowledge her child and has to nurse it, until it can be weaned. Absolute secrecy is kept, if desired by the mother. The home has forty-nine beds for mothers and sixty beds for infants. It is well situated, and under daily medical supervision. Motherless infants are also accepted, though they have a greater mortality than the other children.

Néoplasmes, Paris

2: 5-48 (Jan.) 1923

*Multiplex Pathology and the Cancer Problem. W. S. Bainbridge.—p. 5.

Italian Works on Cancer in 1922. G. Bolognesi.—p. 13.

*Pathogenesis of Cancer. J. Stefani.—p. 20.

Multiplex Pathology and the Cancer Problem.—Bainbridge analyzes nine cases of malignant tumors, and comments on the difference in malignancy in the course of cancers of the same structure. This may be due to a difference in their pathogenesis or to other unknown factors. A short historical survey shows that a number of other diseases have at one time been considered to be cancer.

Pathogenesis of Cancer.—Stefani exposes briefly his theory of the origin of malignant disease. He believes in the existence of unicellular germs which he calls hybridzoa because, according to his conception, they conjugate with the tissue cells of the host. The cells of the resulting tumor would thus be hybrids.

Paris Médical

13: 97-128 (Feb. 3) 1923

*Radiotherapy of Brain Tumors. A. Bécélère.—p. 97.

*Inhalation of Thorium Emanations. Cluzet and Chevallier.—p. 105.

*Roentgen-Ray Treatment of Hypertrophied Tonsils. T. Nogier.—p. 109.

*Radium Treatment of Hypertrophied Tonsils. F. H. Williams.—p. 110.

*Radium Treatment of Metrorrhagia. A. Siredey.—p. 113.

*Secondary Infection of Cancers. C. Regaud and S. Mutermileh.—p. 121.

*Roentgen-Ray Treatment of the Eye. Japiot and Bussy.—p. 126.

Radiotherapy of Brain Tumors.—Bécélère considers the results of this treatment of tumors of the pituitary as excellent. One girl whom he treated in 1908 is well today except for reduced visual acuity. Yet vision improved after the radiotherapy to such an extent that she can do fine work. She had a pituitary tumor with gigantism, genital infantilism, obesity, headaches, dizziness and blanching of the optic papilla. About fifty cases are on record of roentgen-ray treatment of pituitary tumors. New researches have demonstrated that the pituitary itself cannot be incriminated for several syndromes formerly attributed to it. Acromegaly and gigantism are the only syndromes left to it. The other syndromes (adiposogenital dystrophy, diabetes insipidus, glycosuria) are due to compression of the base of the brain, and may subside after treatment. Radium does not compete successfully with roentgen rays in these cases. The most important aid in diagnosis is the measuring of the field of vision.

Among the tumors of the brain itself, gliomas are amenable to irradiation, while fibromas are not influenced. Tumors of the brain proper present three distinct advantages for radiotherapy: They grow slowly; they do not induce metastasis, and the normal brain cells are extremely tolerant of radiation. The limits of radiotherapy are given by the uncertainty of the localization and the difficulty of distinguishing between tumors and other affections. It should be the rule to think of syphilis first. If the Wassermann reaction in the blood or spinal fluid is positive, antisyphilitic treatment is imperative. If the reaction is negative, the physician has the right to try antisyphilitic treatment. If it fails, roentgen rays should be tried early and before the knife, except in emergency, especially in neglected cases. Irradiation may follow the operation. The introduction of radium requires extreme asepsis and an open wound. It can be applied only to exactly localized tumors, while the roentgen rays may be given a trial even in less well diagnosed cases.

Inhalations of Emanations of Thorium.—Cluzet and Chevallier's experiments demonstrated the action of thorium emanations by inhalation. They induce in rabbits an increase in the numbers of erythrocytes and polymorphonuclears, and a decrease in the monocytes and especially in lymphocytes. After a few days the number of blood corpuscles decreased.

Roentgen Ray in Treatment of Hypertrophied Tonsils.—Nogier reports permanent results with this treatment of soft enlarged tonsils. It is the method to be used in hemophilia, cardiovascular disease and nephritis.

Radium in Treatment of Hypertrophied Tonsils.—Williams prefers radium to roentgen rays in treatment of enlarged tonsils, because the dosage is exact and the radiation is absorbed almost entirely by the tonsils.

Radium Treatment of Uterine Hemorrhage Not Due to Cancer or Fibroma.—Siredey emphasizes the impossibility of limiting the action of penetrating rays to the pathologic process. Therefore he urges the necessity for restricting the indications for this treatment. Metrorrhagia may be due to general conditions, especially in young girls, and the treatment should be appropriate. Organotherapy may give excellent results. Radiation is contraindicated in metrorrhiagias for which syphilis or lesions in the adnexa are responsible (ovarian cysts, salpingitis, etc.). Frequent hemorrhages following marriage stop with rest. More important are the sequelae of nondiagnosed early abortions; these are also a contraindication for radiotherapy. The latter is indicated in hemorrhagic metritis and recurring polyps near the menopause. The dose required differs in every woman: 4 millicuries may be sufficient in some while menstruation may persist in others after exposure to 16 millicuries. In women under 40, the dose at first should be 3 to 6 millicuries. This treatment should be used in young girls only in very exceptional cases, yet in one of his cases thus treated a healthy infant was born some years later after several preceding miscarriages.

Secondary Infection of Cancers from Standpoint of Radiotherapy.—Regaud and Mutermileh do not consider superfi-

cial ulceration as a contraindication to radiotherapy. Deep suppuration, however, may progress dangerously under the exposures, and may poison the whole organism. Hence it is necessary to treat the suppuration first. Staphylococcus infection is influenced better by vaccines than streptococcus or pyocyanous infection. They never witnessed any benefit from intercurrent erysipelas in cancer of the face. In cancer in the mouth, spirilla and fusiform bacilli are a frequent cause of suppuration. Local and general arsphenamin treatment is indicated in such cases. A very important point is the occurrence of local infections and ulceration in tissues that have been exposed to the rays. As this may occur even after an interval of several months (they publish three instances) it may be mistaken for recurrence of the cancer, and this might lead to a new irradiation, which would increase the injury. These lesions heal spontaneously. A histologic examination may be indispensable. Whenever signs of periuterine infection are found, which is frequent in advanced malignant disease of the uterus, radiotherapy should not be tried. Even an old infection of the kind may flare up and prove rapidly fatal (two observations). Superficial ulceration of the uterine cancer does not contraindicate radiotherapy.

Roentgen-Ray Treatment of Certain Inflammatory Affections of the Eye.—Japiot and Bussy in four years' experience have gained a favorable impression of the action of the roentgen rays in this field. The best results were obtained in interstitial keratitis, especially in its more inflammatory forms. Four or five exposures might be tried in the treatment of trachoma. Corneal lesions may occasionally improve under radiotherapy, yet the question remains whether the same results might not have been obtained without the roentgen rays.

Revue Franç. de Gynécologie et d'Obstét., Paris

18: 145-176 (March 10) 1923

*Rupture of Uterus After Pituitary Treatment. L. Pouliot and J. Truchard.—p. 145.

*Treatment of Gangrene from Criminal Abortion. G. de Rouville.—p. 157.

*Fibromas in Lower Segment of Uterus. P. Balard and J. Dehan.—p. 159.

Rupture of Uterus After Pituitary Treatment.—Pouliot and Truchard criticize the article by Rucker and Haskell in THE JOURNAL, May 21, 1921, p. 1390, "The Dangers of Pituitary Extract." They assert that the commotion which the article has caused in obstetric circles is unjustified. To begin with, they show that of the 53 observations of rupture of the uterus after pituitary treatment, which Rucker and Haskell cite, a number are duplicates, so that the actual number is only 33. In 16 of this group of 33 no particulars are specified as to the shape of the pelvis, the cervix, the presentation, etc. Excluding these 16 cases, there are 17 left which they proceed to analyze: In 9 of the cases the pelvis was not a normal pelvis; in 2 the head was not engaged in the pelvis; in one instance each the presentation was transverse, or the woman had borne an unusual number of children, or there was albuminuria in addition to the multiparity, and in 2 cases there was stenosis or rigidity of the cervix. There are thus a total of 16 cases in which the use of pituitary extract was contraindicated. This leaves only one of the total "53" compiled in which the pituitary treatment can be incriminated for the rupture of the uterus. Pouliot and Truchard remark, "This case is much to be regretted, but should we renounce the benefits of organotherapy in obstetrics on the basis of a single case?" It should be applied only when the pelvis is normal; the presentation longitudinal; the fetus completely engaged; the cervix supple, the lower segment stretched very thin; the uterine musculature not weakened by multiparity or by a preceding cesarean section; the woman free from any complications on the part of the heart or kidneys, and, finally, the uterus in *inertie utérine caractérisée*. Ability to recognize all of these conditions is not to be expected of the average midwife, and hence they reiterate the necessity for officially restricting to physicians the right to use pituitary extract in obstetric cases. This demand has already been presented to the authorities by the French Société d'obstétrique. In short, they add, "Pituitary

extracts are dangerous only in the hands of those who do not know how to use them."

Gangrene from Attempted Criminal Abortion.—De Rouville reports a case of perforation of the uterus, with numerous complications, in which he succeeded in saving enough of the ovaries and uterus to enable menstruation to continue although total castration seemed inevitable.

Fibroma Praevia.—A medium sized fibroma growing from the inferior segment of the uterus may interfere with delivery or it may work upward out of the way and allow delivery to proceed unhampered. Balard and Dehan found that this latter occurred in 75 per cent. of 8 and 13 cases in which the fibroma was located in the anterior or lateral walls but only in 25 per cent. of 39 cases in which the fibroma grew from the posterior wall. Further analysis of these 60 cases suggests the wisdom of waiting for labor to decide the question. If the fibroma then shows no signs of working upward and if it is implanted on the posterior wall, it is better to operate at once; if implanted on the anterior or lateral wall, we ought not to wait for its ascent longer than three hours. A woman at term with a fibroma of the kind should be placed in an environment that will allow proper treatment of any eventuality.

Pediatria, Naples

31: 105-168 (Feb. 1) 1923

*Enuresis and Deformity of Lower Spine. O. Cozzolino.—p. 105.

Hereditary Syphilis in Naples. Ivo Nasso.—p. 125.

*Metastasis in Joints of Gonococcus Ophthalmia. V. Di Bella.—p. 146.

Ether Treatment of Whooping Cough. G. Castorina.—p. 151.

Treatment of Postdiphtheric Paralysis by Large Amounts of Antitoxin. C. Benedetti.—p. 157.

Enuresis with Deformity of Lower Spine.—Cozzolino examined the lower spine in seventeen children with enuresis and twenty-five other children normal in this respect. Occult spina bifida or other deformity was found in a large proportion of the children with enuresis. He considers this a predisposing factor for enuresis and also for pains in the region and sciatica, although the essential basis of the enuresis seems to be a neurosis. In Provinciali's case there had been enuresis in childhood, and sciatica developed later; roentgenoscopy showed spina bifida in the sacral region.

Gonococcus Ophthalmia with Metastases in Joints.—The gonococcus ophthalmia in the new-born infant was followed by swelling and pain of the joints in the hand on the eleventh day and in the ankles two days later. Other joints then became affected, but under vaccine therapy the cure was complete by the twentieth day. Gonococcus affections of the joints in infants seem to have a favorable prognosis.

Policlinico, Rome

30: 45-100 (Feb.) 1923. Medical Section

*Epidemic of Asthma from *Pediculoides Ventricosus*. G. Ancona.—p. 45.

*So-Called Anaphylactic Asthma. G. Petragani.—p. 70.

Pleural Pressure and Collapse of Lung in Artificial Pneumothorax. G. Breccia.—p. 89.

Epidemic of Asthma from *Pediculoides Ventricosus*.—Ancona describes an epidemic of asthma resembling hay-fever among millers and peasants, who worked with corn which was infested with *Tinea granella*. Yet neither the corn nor these weevils were the cause of the disease. He was able to prove that a species of acarus (*Pediculoides ventricosus* New), a parasite of the weevils, produced the sensitization. Cutaneous reactions and a hemoclastic crisis proved valuable in differentiation. Desensitization was tried in two patients and gave favorable results. The sensitization occurred very probably by inhalation, as the millers did not eat bread from the spoiled flour. All the persons, who came repeatedly into close contact with the antigen, became sensitized.

Experimental Research on So-Called Anaphylactic Asthma.—Petragani found in experiments on guinea-pigs that extracts of hair and pollen do not induce anaphylaxis. The leukopenia caused by intravenous injections of pollen extract is more marked, but the diminution of complement is much less pronounced than in real anaphylactic shock induced by serum. The so-called anaphylactic asthma occurs only in predisposed individuals. It is a much more complex phe-

nomenon than anaphylaxis. The hypersensitivity is natural, due to a predisposition, and is not produced by sensitization. Asthma is a derangement of the metabolism with dysfunction of endocrine glands. The predisposition is essential, but only some of the persons thus predisposed are sensitive to certain asthmogenic (not anaphylactogenic) substances. Treatment should aim to modify the general condition and thus reduce the predisposition to the asthmogenic (not anaphylactogenic) substances. General treatment, he says, does not have the slightest effect on true anaphylaxis.

Arquivos do Inst. Bact. Camara Pestana, Lisbon

5: 133-256, 1922

*Intermediate Host of *Schistosoma*. A. Bettencourt and I. Borges.—p. 133.

*Biologic Reactions in Congenital Syphilis. L. de Castro Freire and A. Antunes de Menezes.—p. 137.

*Bilharziasis in Portugal. A. Bettencourt and I. Borges.—p. 189.

*Antirabies Treatment in Portugal. E. Pereira da Silva and L. Figueira.—p. 231

Louis Pasteur A. Bettencourt.—p. 245.

Experimental Bilharzia Infestation.—Bettencourt and Borges report that adult schistosomes developed in mice which they had exposed to the schistosome larvae, cercaria, from snails taken from the focus of endemic bilharziasis at Tavira in Portugal. The adult schistosomes were found in the portal vein of three of the mice, and seemed to be *Schistosoma haematobium*. The snail intermediate host was *Planorbis metidjensis*.

The Sachs-Georgi Reaction in Congenital Syphilis.—A number of tables are given showing the findings with the Wassermann and the Sachs-Georgi tests applied parallel to more than 100 children, including a number of the new-born. In the children with simple dystrophia, the response was generally negative to both tests. In the differential diagnosis of congenital syphilis, the Sachs-Georgi test seems to be less sensitive than the Wassermann, but it does not give so many nonspecific positive reactions. With active congenital syphilis, the reaction was positive with both tests in 100 per cent.

Bilharziasis in Portugal.—The discovery of the endemic focus at Tavira has already been mentioned in these columns. This is the official and illustrated report of the commission sent by the Lisbon Bacteriologic Institute to investigate it. The water from a thermal spring is used by the local washerwomen, who stand in the warm water. It provides tropical conditions for the schistosomes. The snail found to be the intermediate host is a different species from that noted elsewhere. No other focus has been discovered, although schistosomes are frequently brought into the country from Africa. See second abstract above.

Rabies in Portugal.—The report of the Lisbon institute, 1893-1920, shows 17,609 persons treated after having been bitten by animals suspected of rabies. Among the 56 deaths occurring more than fifteen days after the treatment, 3 were in adults who had been bitten by a cat. In five of the years since 1900 none of the patients died more than fifteen days after the treatment; in the other years this death rate ranged from 0.077 to 0.23 per cent. In two recent years the Högyes method was applied, but the death rate increased, and the ordinary technic was resumed. It is described in detail.

Crónica Médica, Lima

39: 507-560 (Dec.) 1922

*Polymorphonuclear Leukocytes in Sputum. E. Escomel.—p. 507.

*Prophylaxis of Peruvian Verruca. J. Arce.—p. 510.

*Chicha, the Alcoholic Beverage of Peru. N. E. Cavassa.—p. 512.

*Influenzal Colitis in Infants at Lima. O. Botto.—p. 522.

Need for Teaching Mental Hygiene. C. A. Bambarén.—p. 539.

Polymorphonuclear Leukocytes in Tuberculous Sputum.—Escomel has long made it his routine practice to examine with the microscope the sputum of every patient who has been coughing for more than two weeks. This has demonstrated that the leukocytes in the sputum are more or less degenerated early in tuberculosis. This polymorphonucleolysis may occur alone or may be accompanied with abnormal proportions of mononuclears, especially lymphocytes. The fragments of the disintegrated polymorphonuclears may be

incorporated by phagocytes in the sputum. If the polymorphonucleolysis is pronounced and the polymorphonuclear regeneration scanty, the prognosis is grave. Intense polymorphonucleolysis with mononucleosis indicates that the organism is rallying its forces for the defense against chronic infection, tuberculosis or syphilis. With increasing weakness, loss of flesh, tenacious cough and morning expectoration, the absence of tubercle bacilli from the sputum does not exclude tuberculosis if the polymorphonuclears are seen to be disintegrated and dissolved and the mononuclears abnormally numerous. The absence of syphilis, and of other diseases inducing mononucleosis suggests possible tuberculosis.

He adds further that this diagnosis was confirmed in many cases by the appearance of tubercle bacilli in the sputum in two or three months. Hence he urges vigorous treatment at once on discovery of this polymorphonucleolysis with mononucleosis in the sputum of a patient who is growing weak, losing flesh and coughing. "By prompt action we can block the invasion, as tuberculosis in its incipency is the most easily cured of all diseases."

Prophylaxis of Peruvian Verruca.—Arce calls attention to this disease as peculiarly favorable for research on the conditions favoring and checking it. It is restricted to a certain small region, and intensive study of this region and of adjacent free regions may reveal the factors responsible for the prevalence of this disease and possibly of others. By stamping out this disease in its stronghold not only Peru would be benefited but other countries would be protected against invasion by it.

The Corn Liquor of Peru.—This communication was read at the recent Latin-American Medical Congress at Havana. It is a complete study of chicha and its evils.

Influenzal Colitis in Infants.—Botto relates that influenzal colitis at Lima is more prevalent during the winter and is graver than food disorders in the summer. He advises change of air and treatment with vaccines. It is graver the younger the child.

Prensa Médica Argentina, Buenos Aires

95: 685-712 (Jan. 20) 1923

*Hydatid Cysts of Brain and Spinal Cord. R. Chiappori.—p. 685.

*Infection of Enlarged Prostate Gland. A. Astraldi.—p. 692. Cone'n p. 758.

*Sciatica from Inherited Syphilis. S. Libarona Brian.—p. 699.

Pathologic Physiology of Retention of Urine in Women. A. Calmens.—p. 702.

Hydatid Cyst in the Brain.—Chiappori never fails to suspect echinococcus disease when a child shows signs of a brain tumor and comes from a cattle-raising district. Children present hydatid cysts in the brain much more frequently than adults. In Argentina the proportion is as 6 to 2. Besides the primary hydatid cyst, there may be secondary or metastatic involvement of the brain.

Infection of Hypertrophied Prostate.—Astraldi has found eosinophilia a valuable symptom of this condition, in contrast to the low numbers of eosinophils in cases of cancer of the prostate. Figures above 1.5 per cent. testify to simple infected adenoma when palpation through the rectum gives dubious findings.

Sciatica from Tardy Inherited Syphilis.—The man, aged 36, had complained for twelve years of intermittent pain and tenderness in the fifth lumbar vertebra, the pain spreading to the groin and scrotum and to the right sciatic domain and becoming continuous. For twenty years, bending and flexing the lumbar spine had been painful or impossible. Rheumatism seldom affects one joint alone, and an infectious process in the vertebra would probably have spread during this long period. The disturbances were ascribed to kidney disease by three consultants. There was nothing to suggest syphilis in the family, but under tentative treatment for syphilis all the pains permanently disappeared.

Revista de la Asoc. Médica Argentina, Buenos Aires

35: 739-869 (Nov.) 1922

Recurring Inguinal Hernias. M. Balado.—p. 739.

Hydatid Cyst in Hip Bone. A. Buzzi.—p. 756.

Retroperitoneal Fibroma in Woman. A. Gutierrez.—p. 761.

- *Retrobulbar Optic Neuritis. E. B. Demaria and J. Layera.—p. 769.
- *Grave Iridocyclitis. A. Gowland and J. A. Gallino.—p. 788.
- *Hydrocephalus Simulating Brain Tumor. J. M. Obarrio.—p. 791.
- Perception and Association in Aphasia. G. Bosch and A. Mo.—p. 809.
- *Tumor in Cow Embryo. V. Widakowich.—p. 817.
- *Action of Snake Venom on the Heart. M. A. Magenta.—p. 824.
- *Bacteriophagy Without the Bacteriophagic Virus. C. E. Pico.—p. 860.
- Anaerobe Found in Gas Gangrene. A. Sordelli.—p. 864.

Retrobulbar Optic Neuritis in Sinusitis.—Demaria and Layera describe a case which illustrates the necessity for consultation with the ophthalmologist and the rhinologist when there is a suspicion that retrobulbar neuritis is traceable to posterior sinusitis. They discuss the literature, diagnosis and treatment. In case of doubt it is better to open up the sinuses to drain freely into the nose.

Grave Iridocyclitis.—Gowland and Gallino were contemplating enucleation of the eye, as no measures had proved effectual. At the sixth day a daily parenteral injection of milk reduced the pain somewhat, but no benefit was apparent otherwise. Then they injected 1 c.c. of turpentine to induce a fixation abscess, and a turn for the better was manifest by the next day. By the ninth day thereafter conditions in the eye had returned clinically to normal, with vision 1/10. The fixation abscess supplicated profusely, with slight fever. It was evacuated the third day.

Lateral Internal Hydrocephalus Inducing Focal Symptoms in Rolandic Region.—Obarrio's diagnosis was confirmed by the operation. The release of the accumulation of fluid in the left lateral ventricle was followed by subsidence of all the symptoms in the girl, aged 10. The diagnosis had been based on the intracranial hypertension and hemiplegia in extension. Lumbar puncture had given no relief, and a decompressive operation alone would probably have been futile likewise. The communication between the lateral ventricle and the subarachnoid space was restored, and this provided the outlet for the superfluous fluid. The moment this communication had been made, the paralyzed leg was drawn up. The fluid was normal and the cause for the obstruction of the foramen of Monro could not be discovered. Vision had been lost in this case before the child had been brought to the hospital.

Tumor in Embryo.—Widakowich illustrates an abnormal collection of cells forming an evident tumor found in a very young bovine embryo.

Action of Snake Venom on the Heart.—Magenta's research was mostly on the frog heart, but a number of electrocardiograms are reproduced showing the action of snake venoms on the mammalian heart (dogs).

Bacteriophagy Without the Bacteriophage.—Pico reports experiments showing transmission of autolysis for the anthrax bacillus without the intervention of the supposed bacteriophagic virus. The lysant principle seems to be in the bacilli themselves. It is merely an exaggeration of the normal autolysis of the bacteria.

Archiv für klinische Chirurgie, Berlin

123: 1-864 (March 15) 1923

- *Rare Surgical Affections of Bile System. Klose and Wachsmuth.—p. 1.
- Drainage or Suture After Cholecystectomy? A. H. Hofmann.—p. 31.
- *Erosion of Vessels by Drainage Tubes. Schönbauer and Gold.—p. 43.
- *Furuncles on the Face. W. Hofmann.—p. 51.
- *Testis Grafting. H. F. O. Haberland.—p. 67.
- Functional Importance of Levator Ani. A. W. Fischer.—p. 105.
- *Operative Treatment of Incontinence of Urine. Brjosowsky.—p. 116.
- Operative Treatment of Prolapse of Rectum. H. Finsterer.—p. 124.
- Surgical Anatomy of Phrenicocostal Sinus. A. Melnikoff.—p. 133.
- Rupture of Dorsal Aponeurosis. G. Hauck.—p. 197.
- Tendovaginitis and Snapping Finger. G. Hauck.—p. 233.
- *Occupational Tendon Sheath Inflammation. E. Sattler.—p. 259.
- *Operation for Cleft Palate. O. Stahl.—p. 271.
- *Intravenous General Anesthesia. A. Lehnbecher.—p. 317.
- Inflammation in Costal Cartilage After Typhus. E. Busch.—p. 330.
- *Caries of Costal Cartilages. Jassenzki-Woino.—p. 345.
- Surgery of Prescapular Region. Ssosen-Jaroschewitsch.—p. 378.
- Traumatic Dislocation of Both Shoulders. W. Pilz.—p. 400.
- *Postoperative Tetanus. K. Wohlgemuth.—p. 409.
- Pepsin as Resolvent of Scar Tissue. L. Frankenthal.—p. 415.
- Intestinal Disturbance After Operations on Stomach. Lehmann.—p. 433.
- Subsidence of Grave Brain Symptoms After Resection of Carotid Aneurysm. E. Glass.—p. 502.
- Callus Formation in Relation to Anemia and Splenectomy. Schönbauer.—p. 510.
- *Choice of Tracheal Cannula. P. J. Mink.—p. 516.

- *Gas Peritonitis. H. Stegemann.—p. 523.
- Regeneration Processes in Long Bones. C. Rohde.—p. 530.
- Research on Greater Omentum in Man. E. Seifert.—p. 608.
- Aneurysm of Superior Mesenteric Artery. L. Kolin.—p. 684.
- Coxa Valga Luxans: Loose Hip Joint. W. Block.—p. 704.
- *Genital Tuberculosis in Men. F. Rydgaard.—p. 758.
- *Physical Chemistry and Surgery. H. Schade.—p. 784.
- "Bone Regeneration." Böker.—p. 796. Reply. Martin.—p. 804.
- *Bone and Joint Tuberculosis in Children. S. Simon.—p. 807.
- Circumscribed Retroperitoneal Processes. D. Juhl.—p. 821.
- *Wound Diphtheria. C. Uhlhorn.—p. 833. Idem. H. Landau.—p. 716.
- Parenteral Protein Nonspecific Therapy. R. Lauenstein.—p. 842.
- Fibrous Osteitis of the Skull. N. N. Petrow.—p. 849.
- Operative Treatment of Esophagus Diverticulum. G. Spiess.—p. 856.
- Improved Technic for Artificial Respiration. G. Kelenen.—p. 858.
- Improved Technic for Suturing Bladder. C. Kamogawa.—p. 861.

Polyposis of the Gallbladder.—In the case described, the polyposis was diffuse, but one polyp acted like a valve, obstructing the cystic duct.

Klose reports that five cases of so-called white bile were encountered in 638 operative cases of disease of the biliary apparatus during the last ten years at the Frankfurt clinic. It is a sign of obstruction of the bile ducts, and removal of the gallbladder does not do away with this obstruction. He advises cholecystenterostomy by the Kausch method if the obstruction in the common bile duct cannot be removed. If the obstruction is centrad from the gallbladder, hepaticoduodenostomy is preferable.

Erosion of Blood Vessels by Drainage Tubes.—The experimental research reported indicates that there is no danger of erosion in aseptic conditions in animals.

Furuncles of the Face.—Hofmann discusses the reasons for the peculiar gravity of furuncles and carbuncles in the face. The mortality was 8.2 per cent. in the 182 cases of furuncles of the face given operative treatment during the last fifteen years at the Berlin surgical clinic in charge of Bier. The upper lip was the site of the furuncle in more than half the cases, and formed a third of the fifteen fatalities, including one of the two diabetics. Furuncle of the face may run a rapidly fatal course from the start, with thrombosis of the cerebral sinuses, uninfluenced by treatment. Conservative treatment, with hot cataplasms, possibly with Bier's passive hyperemia from a constricting band around the neck, is the treatment advised. With a large furuncle, the patient should stay in bed and the region be spared all mechanical strain. Above all, speaking should be forbidden. Physicians should inform patients of the gravity of face furuncles, and warn against picking and squeezing the furuncle. Friedemann has recently reported the success of conservative treatment in seventeen cases, including one with thrombosis of the cavernous sinus. In Hofmann's fifteen fatal cases, in three the furuncle had been incised by others, and in five the patients themselves had squeezed or otherwise maltreated the furuncle. Omitting these cases, the mortality of the 174 treated by conservative measures alone was only 4 per cent.

Testis Grafting.—Haberland reports experiments on 56 animals including 2 pigs, 3 cats and 5 dogs, giving photomicrographs of the findings in some of the animals. In connection with this report he gives a table of the known instances of testis transplantation in man, with the outcome, from Lespinasse and Lydston to Gregory and Stabel in 1922. His conclusion from all this material is that we must constantly bear in mind that the glands with an internal secretion, the testes included, form a system, a whole. If any part of this system drops out, the whole—if conditions are favorable—may be able to compensate vicariously the missing function. "If this theory of suggestion and vicarious compensation does not appeal to the reader, there is a further assumption possible, namely, that the wound hormones from the engrafted testis may have a stimulating action on the entire organism, and hence on the other glands of the endocrine system."

Operative Treatment of Incontinence of Urine.—Brjosowsky slits a strip up from the levator ani on each side and overlaps and sutures to the opposite side these pedunculated strips. They thus form an elastic band pressing on the urethra. This method can be applied to both the male and female urethra. The technic is illustrated.

Tendon Sheath Inflammation as Occupational Affection in Hand or Foot.—Sattler describes a large variety of synovial disturbances liable to develop from occupational strain. The

affection is observed in locksmiths, joiners and brakemen, in women who do much pressing or rubbing, and in children learning to write. He gives details of four clinical cases. Even a history of syphilis and positive Wassermann reaction do not stamp the affection as of syphilitic origin; in one such case the lack of benefit from antisiphilitic treatment finally cleared up the case. Then treatment was begun according to Calot's methods: The fluid was released by puncture, and a solution injected of guaiacol, 2 parts; creosote, 8; iodoform, 20; ether, 65, and oil of sweet almonds, 100 parts. In one case the fluctuating swelling over the metatarsophalangeal bursa in the young woman had recurred at intervals during two years. The diagnosis of hygroma bursae hallucis is generally made in such cases, and resection is advised; this leaves cicatricial changes which are often the cause of disturbances. After two or three days of rest for the foot, Sattler merely punctured and injected 1 c.c. of the Calot solution, and the cure was prompt and permanent, without cicatricial tissue.

Cleft Palate.—Stahl gives the ultimate outcome in forty-two cases recently reexamined after a plastic operation according to Langenbeck. In 54.7 per cent. the results were excellent; in 49.5 per cent. the cleft was only partially closed, and in 4.8 per cent. the operation was a failure. In one case the defective speech of the boy aged 9, after unsuccessful attempt to correct the deformity, was duplicated by a younger brother whose palate was normal, but the defective speech was functionally reproduced by imitation. Between the third and sixth year seems the most favorable period for the operative correction of cleft palate, and the Langenbeck method the preferable technic. He describes it in detail.

Intravenous General Anesthesia.—Lehrnbecher reports on 850 cases in which the Burkhardt method of intravenous anesthesia has been applied at Nürnberg. He says it is harmless; the drawbacks are the rather complicated technic and the slight exaggeration of the tendency to bleed.

Operative Treatment of Caries of Costal Cartilages.—The usual methods of treating progressive necrosis of the costal cartilages entail fistulas, and less than half of the patients are finally cured, after long martyrdom. Woino attacks the process radically from the first, removing the entire set of cartilages with one or two beyond the diseased ones, far into sound tissue. The incision for this is a deep semicircle, extending from the middle of the sternum vertically two fingerbreadths below the costal arch and then swinging up and out to the side. He has thus operated eighty times in a total of sixty-five cases, with ten deaths. All the other patients with two exceptions—who refused the complete operation—were promptly and permanently cured.

Tetanus After Operations.—Wohlgemuth relates that tetanus developed in two cases after an operation on the small intestine in Unger's surgical service at Berlin. The tetanus was speedily fatal. Mice inoculated with feces from one of the cases, a woman aged 27, developed tetanus; no bacteriologic examination was made in the male case. His study of the literature seems to show that postoperative tetanus is most liable to develop after operations on the intestines, and he suggests that the infection is traceable to tetanus bacilli already in the bowel at the time. Under ordinary conditions they are harmless saprophytes, but the trauma of the operation rouses them to virulence. He urges in consequence that at all operations severely injuring or opening the bowel, tetanus antitoxin should be injected beforehand as a routine prophylactic measure.

Choice of Tracheal Cannula.—Mink's article was summarized recently on page 1280 when published elsewhere.

Gas Peritonitis.—Stegemann adds a new case to the three—which are all that he has been able to find on record—of accumulation of gases in the abdominal cavity to such an extent as to threaten life. The gases had developed in his case in the course of gangrene of the abdominal walls, but the pulse remained good. The incision for enterostomy released an enormous amount of odorless gases. The bowel seemed to be normal although squeezed nearly flat.

Tuberculosis of Genital Organs.—Rydgaard analyzes the experiences in Rovsing's service at Copenhagen with 77 cases

of tuberculosis of the male genital organs given operative treatment. The superior advantages of epididymectomy are established by the outcome, but the epididymis must be removed as a whole and the central end of the vas deferens sutured to the skin. The earlier the operation is done the better the outlook for preventing spread of the process to the other side. Trauma seemed to have been a predisposing factor in a number of the cases, but not preceding gonorrhea. Epididymectomy on one or both sides did not seem to affect the sexual life, but unilateral castration with epididymectomy on the other side had a depressing influence on the sexual sphere. No light is thrown by these experiences on the question as to a rejuvenating influence from the operations.

Physical Chemistry in Relation to Surgery.—Schade points out that the colloidal state of the fluids of the body and the condition of the ions are of extreme importance to surgery. "We should turn from research on the cells and their granules to study the colloids and the ions." As an instance of what we can expect from this, he recalls that by freshening with a knife the rudimentary eyes of an embryo and pushing the two into contact, a single eye results, a cyclopean eye. But what is realized here with the knife can be done equally well by physical chemistry: Addition of a certain proportion of magnesium chlorid to sea water containing fish embryos, induces colloidal changes which result in the development of a cyclopean eye. The knife and the ions thus accomplish the same result by different means.

Tuberculosis in Bones and Joints.—Simon states that 126 were discharged from the children's sanatorium as cured, of the 357 that have been under treatment; 22 have died, and 82 failed to complete the course. Of the 33 who have been kept under observation for years since their discharge, only 2 have shown any signs of recurrence.

Wound Diphtheria.—Uhlhorn insists on the importance of early recognition and antitoxin treatment of diphtheria infection of a wound, as the diphtheria is liable to entail post-diphtheric paralysis, besides the danger of infecting others. If bacteriologic examination gives dubious findings, inoculation of animals should not be omitted.

Münchener medizinische Wochenschrift, Munich

70: 105-136 (Jan. 26) 1923

*Blood Circulation and Nutrition of Tissues. A. Bier.—p. 105.

*The Menopause. J. Halban.—p. 110.

Treatment of Septic Conditions. H. Eufinger.—p. 112.

*Thyrogenous Constipation. G. Deusch.—p. 113.

Spasm of Sphincters of Digestive and Urogenital Tracts. K. Helly.—p. 115.

Treatment of Stasis in Lower Extremities. H. Fischer.—p. 116.

Separate Opening for Drainage, Especially in Gallstone Operations. H. Hans.—p. 117.

Tuberculin Injury. F. Hamburger.—p. 119.

"Torsion of Internal Organs." H. Sellheim.—p. 119.

Systematic Eugenics. F. Hueppe.—p. 122. Idem. Lenz.—p. 123.

Diagnosis of Ileus from Strangulation. A. Krecke.—p. 123.

Blood Circulation and Nutrition of Tissues.—Bier adheres to Galen's, Bichat's and Virchow's opinion that the organs attract to themselves the necessary blood supply. The common opinion postulates that "naturally" the arterial blood is essential and the venous injurious to a good nutrition. He discovered that things which are considered natural, even by scientists, are frequently very unnatural. Nature has with its investigators, the same troubles as the Creator with his theologians: Nature and the Creator have to behave as these people prescribe. But in reality they don't. There is a difference between nutrition of a working organ (muscle), which needs a quick stream of highly arterialized blood, and the nutrition which serves to conserve and recuperate existing tissues. The recuperating tissues get along very well with a slow stream. The blood supply is only a secondary factor in the nutrition and regeneration of tissues. The primary agent is a pathologic stimulus. An organ which is in danger from lack of nourishment, draws blood forcibly from the general circulation. This capacity is independent of the blood pressure or the size of the afferent artery, and of the nervous system. He recalls his old experiments on pigs with severed arteries, and adds several new on arterio-

sclerotic limbs. The wound on an extremity which has been treated with a constricting band bleeds only after the previously anemic tissue has supplied itself with blood. In a limb that has not been constricted, the arteries bleed immediately. The general assumption is the contrary of these facts.

He takes up again his old term "blood sense," *Blutgefühl*, and finds that it is restricted to the external parts of the body, which are more liable to get injured or have their blood supply impaired. The internal organs, especially the intestines, have no blood sense. Therefore the internal organs (heart, kidney, brain) suffer from arteriosclerosis more than the extremities, even if the latter are more severely affected. Organs without blood sense have no sensibility. The attraction of the blood by the blood sense is more efficient, and requires less energy than the pumping of the blood by the blood pressure.

The Menopause.—Halban has found that older women, as a rule, bear stronger children than young ones. He ascribes it to the increase in the size of the ova which he found in lower animals. The teleologic view would relate the menopause to the fact that children need care much longer than young animals. An old mother could not provide for them long enough. The loss of ovarian secretion causes certain disturbances in the metabolism, especially of calcium and fat, and the irritability of the sympathetic nervous system is increased. Psychic changes are not only of pathologic nature. Hysterical symptoms may disappear about this time in women. The bleeding in the preclimacteric period is important. If there are symptoms of a diminished ovarian function only between the bleedings, one may assume menstruation and not metrorrhagia. Yet a curettement is frequently necessary for diagnosis. Venesection has a favorable action on hot flashes. Hydrotherapy, theobromin and organotherapy may give good results. The ovaries should be respected and treated as conservatively as possible.

Thyrogenous Constipation.—Deusch finds that constipation may be due to hypothyroidism.

Zeitschrift für Geburtshilfe und Gynäk., Stuttgart

85: 469-672 (Feb. 10) 1923

- *Obstetric Examination Through Rectum. W. Fürst.—p. 469.
- *Hemeralopia of the Pregnant. E. Klasten.—p. 485.
- *Local Anesthesia in Operative Gynecology. R. Zimmermann.—p. 502.
- *The Interstitial Ovarian Gland in the New-Born. J. Matsuno.—p. 523.
- *Ratio of Sexes at Birth. R. Tauber.—p. 539.
- *Origin of Genital Flora. III. R. Salomon.—p. 554.
- *Asphyxia of Cesarean Section New-Born Infants. H. Küstner.—p. 567.
- *Placenta Praevia. R. Freund.—p. 581.
- *Pregnancy Cardiac Arrhythmia. Schubert.—p. 593.
- *Hydrops and Eclampsia. Zondek.—p. 600.
- *Fatality from Transfusion of Own Blood. Schäfer.—p. 607.
- *Permanent Cure of Ovarian Cancers. Schäfer.—p. 613.
- *Paravaginal Radium Treatment. Bumm.—p. 624.
- *Rehabilitation of Alexander-Adams Operation. Bumm et al.—p. 631.

Obstetric Examination Through the Rectum.—Fürst outlines the conditions in which the examination must be vaginal: disproportion between the size of the presenting part and the lumen of the pelvis; essential hemorrhage and erythrocytes in the urine during delivery (as this indicates crushing of the bladder mucosa). Under other conditions, examination through the rectum is sufficiently informative; it is fully as instructive as a vaginal examination with two fingers. He advises using half the hand or the whole hand for vaginal examination. He reiterates that hemorrhages with pathologic childbirth entirely exclude rectal examination. He makes a practice of testing the vaginal secretions for the gonococcus as soon as the woman enters the maternity ward. If the gonococcus is found, the rectum is left unmolested. This practice has the further advantage of often explaining eventual fever. Students should be taught the exact indications for and limitations of examination by rectum and vagina.

Pregnancy Hemeralopia.—Klasten cites some cases from the records, and gives the details of seven personally observed. The night blindness usually develops during the last few weeks or days before delivery, but in two of his cases it began early and persisted throughout the pregnancy. It always subsided harmlessly after delivery. Protection against the light may be advisable.

Local Anesthesia in Operative Gynecology.—Zimmermann reviews the aims and limits of local anesthesia, his conclusion being that for laparotomies general anesthesia is preferable. Infiltration anesthesia has special advantages for vaginal operations, but the intraspinal, paravertebral and nerve blocking technics have too many drawbacks, or are ineffectual for gynecologic operations.

Ratio of the Sexes at Birth.—Tauber includes the miscarriages and abortions in a total of 89,071 births at Vienna. The figures do not differ essentially from the usual average 100: 106 ratio.

Origin of the Genital Flora.—Salomon has continued his bacteriologic research on new-born infants, examining the vulva, mouth, rectum and vagina at brief intervals.

Asphyxia of Infants Delivered by Cesarean Section.—Küstner's experiments on rabbits have apparently established that the anesthetic given the mother for the cesarean section is responsible for the condition of the offspring delivered in this way. The respiration is shallow and infrequent and the heart action may be modified—all resembling the condition in adults given too much anesthetic. The anesthetic reduces the sensibility of the nerve centers to carbon dioxid, so that when the child is extracted, the physiologic process of respiration does not come properly into play. This occurs in an even more pronounced form when the mother has been given morphin (twilight sleep), as the new-born are more susceptible to morphin than to ether and chloroform. A third factor also cooperates to induce asphyxia in the cesarean section infants: In normal deliveries, the circulation in the uterus, and hence the supply of oxygen to the fetus, is shut off more or less during the labor pains. The blood is overloaded with carbon dioxid, and this would stimulate the respiration center to initiate respiratory movements if it were not that, as the labor contraction subsides, the blood and oxygen reach the fetus. There is thus an intermittent stimulation of the respiration center which, he argues, acts as a kind of preliminary training of the respiratory apparatus, which facilitates the child's breathing when it finally emerges into the atmosphere. Children delivered by cesarean section lack all of this preliminary training. They are born unprepared, and have not learned how to breathe. Successful treatment of the asphyxia requires artificial respiration (Schultze swinging).

Hydrops and Eclampsia.—Zondek presents evidence to refute the assumption that water is the essential eclampsia toxin, inducing the convulsions by the edematous swelling of the brain. He describes cases of eclampsia in which there was apparently no tendency to hydrops.

Fatal Outcome of Retransfusion of Own Blood.—Schäfer comments on the often life-saving action of reinfusion of the woman's own blood after ruptured tubal pregnancy. The procedure has been applied in his service in twenty cases, and in three of them the women would evidently have succumbed otherwise. It is not always harmless. Besides slight disturbances, Opitz has reported jaundice in one case, and Bumm, chills and fever in two; Arnim a case with cyanosis and chills, and Schweizer a case of fatal hemoglobinuria. Schäfer adds another fatal case to the list. The woman aged 40 reached the hospital unconscious. Puncture of the abdomen showed a large quantity of fluid blood. The pulse was still imperceptible after intravenous injection of 300 c.c. of saline; then 500 c.c. of citrated blood from the abdomen was filtered through gauze and transfused in a vein in the arm. The pulse did not improve but the lips showed a better color. A severe chill followed, that lasted for an hour and a half, followed by transient hemoglobinuria. The condition gradually improved, but the next day the pulse ran up to 140 and the heart grew progressively weaker. The transfusion seemed to be responsible for this fatality. Probably the blood had been shed too long, although Lichtenstein has been successful with transfusion from four to nine days after the first extravasation. In Schäfer's case, the interval after the first hemorrhage had been forty-eight hours, and only a few hours after the hemorrhage that had rendered the woman unconscious. As the blood looked rather dark, he tried saline infusion first. Only after this failed, the blood was trans-

fused as a last resort. The liver and kidneys showed evidences of recent degeneration which he ascribes to the toxic action of the transfused blood.

Permanent Cure of Ovarian Cancer.—Schäfer relates that of ninety-nine women given operative treatment for ovarian cancer from five to ten years ago, 13.13 per cent. have been permanently cured to date.

The Alexander-Adams Operation and Ventrifixation.—Bumm and others spoke at the meeting of the Berlin Gynecologic Society on the rehabilitation of the Alexander-Adams operation and ventrifixation. A lively discussion followed; the whole is reproduced.

Zentralblatt für Chirurgie, Leipzig

59: 377-424 (March 10) 1923

Interpretation of Roentgenogram in Hallux Valgus. Weinert.—p. 377.

*Dilation of Esophageal Stenoses. H. Kurtzahn.—p. 381.

*Bismuth Stone in the Appendix. A. Mülleder.—p. 384.

Idiopathic Hyperplasia of Spleen Follicles. L. Fiedler.—p. 385.

Flooding of the Pulmonary Circulation with Mercury. Esau.—p. 388.

Secondary Cysto-Urethrectal Fistula After Suprapubic Prostatectomy. E. Stark.—p. 389.

"Incarceration of Intestine in Glass Tube." F. Franke.—p. 392.

Treatment of Postoperative Intestinal Paralysis. F. Franke.—p. 392.

"Deutschländer's Tumors of the Metatarsus." Blencke.—p. 395.

Dilation of Esophageal Stenosis.—Kurtzahn recommends metal olive-shaped beads for dilation of the stenosis. The polished metal is smoother, is more easily sterilized, and is cheaper than bone or ivory, which have been formerly employed. The long olives are strung on a string, each bead being slightly larger than the last, until a size is reached that will just pass the stenosis without too much traction; other olives are then added in the reversed order of sizes. The symmetrical arrangement on either side of the largest olive makes it possible to use the see-saw movement to advantage. Kurtzahn regards the blind use of a sound in any serious stenosis of the esophagus, without the employment of a pathfinder, as a gross violation of technic, since the danger of perforating the wall of the esophagus is very great. Also in stricture of the urethra, he has found this necklace bougie occasionally of great value.

A Bismuth Calculus in the Appendix.—Mülleder reports the case of a man aged 43 who when admitted to the hospital complained of general abdominal pain attended by vomiting. As was learned later, two years previously he had been examined with the roentgen rays for gastric ulcer. He was operated on for appendicitis; when cut open the appendix was found to contain, enclosed in a membranous capsule, a whitish yellowish calculus, 1.5 cm. thick and 4 cm. long, apparently encapsulated bismuth. Mülleder refers also to Kummant's finding of a bismuth calculus in the stomach during gastric resection. He reports also the formation of a calculus in a physician aged 73, following a bismuth meal for roentgen examination. Three days after the examination the patient brought to him a bismuth calculus as large as a man's fist, which he had removed from the rectum himself after two hours of effort with the aid of an instrument, not without considerable injury to the anal opening.

Zentralblatt für Gynäkologie, Leipzig

47: 337-384 (March 3) 1923

*Rectal Injection of Ether in Childbirth. Thaler and Hübel.—p. 338.
Anatomic and Topographic Considerations for My Operative Method in Vaginal Defect. G. Schubert.—p. 347.

*Spontaneous Intra-Uterine Rupture of the Cord. Geller.—p. 353.

*Retention of Umbilical Cord. F. Heinlein.—p. 356.

Myomas and Carcinomas of the Tubes. P. Schäfer.—p. 357.

Treatment of Prolapse of Female Genitals by Wertheim-Schauta Method. Goldberg.—p. 362.

Extraperitoneal Exposure of Ruptured Uterus. Lemperg.—p. 367.

"Rupture of Uterus without External Sign." Neuwirth.—p. 369.

Oil-Rectal Administration of Ether in Childbirth.—Thaler and Hübel report the results in 100 cases of childbirth in which a mixture of 90 gm. of ether and 120 gm. of olive oil was employed. In 88 of the cases the results were very satisfactory, and in only 4 cases did the method prove an absolute failure. In 80 of the 100 cases normal or very strong labor contractions were noted. In some cases the labor seemed to be even improved by the injection of the ether-oil mixture. In the other 20 cases labor was reduced

by the injection. In these cases, quinin or pituitary extract was used as an adjuvant, mainly in order, by shortening the duration of the birth, to lessen the consumption of ether. The average duration of the birth was for the 73 primiparas 20¾ hours; for the 27 multiparas, 10¼ hours. In all cases in which the sleep was profound, the women did not strain, and consequently the expulsion period was no doubt prolonged. No anomalies of the afterbirth period were observed; 84 of the children were in normal condition at birth and cried immediately; 14 were apneic for a short time, though they looked well and began to breathe normally at the end of five minutes, at the most, without any special attempts at resuscitation being necessary. In 2 cases the infants were suffering from typical asphyxia. Of these, one (a spontaneous birth) was revived in a short time; the second (a forceps delivery) could not be resuscitated. In the majority of cases, during the intervals between labor contractions the patients lay as if asleep, but during the labor contractions they were slightly restless and would groan occasionally. As during twilight sleep, the women received physical impressions but could not retain them in the memory. Ether-oil injections should be given only in hospitals where the patient can be under constant observation and any emergency promptly met.

Spontaneous Intra-Uterine Rupture of the Cord During Labor.—Geller reports a case of spontaneous rupture of the cord, and in that connection recalls the causes and circumstances surrounding such cases. It occurs most frequently in precipitate labor; according to Winckel in 19 per cent., and, according to Hellhake, in 34 per cent. of such cases. Favoring circumstances, aside from precipitate labor, are abnormal shortness, looping of the cord about the fetus, velamentous insertion of the cord, knots or varices of the cord, and reduced resistance of the umbilical cord to traction, which according to recent investigations is doubtless dependent on the nature and the filling of the vessels and not on the amount of whartonian jelly present, as older writers believed. Of course, the cords of premature and macerated children are more easily ruptured than those of mature infants. The site of the tear varies. The mother also incurs a certain danger, since the same factors that lead to the rupture of the cord may bring about a premature total or partial loosening of the placenta or, in very rare cases, inversion of the uterus.

Retention of the Umbilical Cord.—Heinlein reports a rare instance in which the umbilical cord remained in the uterus although the placenta had been expelled without difficulty by the Credé method. The placenta itself was intact, but showed no place of insertion of the cord, so that it was evident that it was a velamentous insertion. The retention of the cord was caused by adhesion of the fetal membranes to the uterine wall in the region of the insertion. The adhesion was so firm that the fetal membranes with their blood vessels were torn loose at the margin of the placenta, when the placenta was expelled. The cause for this occurrence must doubtless be sought in inflammatory changes in the decidua and the other fetal membranes; the premature rupture of the fetal membranes was probably due to the same cause.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1074-1188 (March 17) 1923

*Digestion Leukocytosis and Leukopenia. J. C. Schippers and Cornelia de Lange.—p. 1074.

*Intra-Ocular Pressure in the Two Eyes. E. Marx.—p. 1082.

*Exostosis on Os Calcis. C. B. Tilanus, Jr.—p. 1095.

*Intracardiac Injection of Epinephrin. J. Exalto.—p. 1098.

Case of Atresia Ani Vesicalis. J. P. Asjes.—p. 1106.

Share of Syphilis in Progressive Spinal Muscular Atrophy. Bolten.—p. 1107.

Functional Tests of the Liver. J. Hekman and J. J. van Leeuwen.—p. 1111.

*Measures Needed for Fight Against Tuberculosis. J. Sanders.—p. 1150.

Digestion Leukocytosis and Digestion Leukopenia.—Schippers and de Lange present here their second report on research in this line. They tabulate the findings including the Arnet differential count, every twenty minutes in five infants and three older children, all healthy. There does not seem to be any regular standard either for the leukocytosis

or the leukopenia. The white blood picture seems to be subject to so many influences, mechanical and others, that only extreme variations can be regarded as significant if at all. "In these days of relativity," they remark in conclusion, "the leukocyte findings can be considered only in connection with all the other possible data."

Difference in Tension of the Two Eyes.—Marx had occasion to measure the intra-ocular pressure of large numbers of healthy eyes, and was struck by the difference in the tension of the two eyes in many persons. He noted also that the tension was highest in the left eye as a rule. He discusses the reason for this, both in righthanded and lefthanded persons. In 41 cases of primary glaucoma, the left eye was affected first in 16, the right in 17, and both together in 4. Embolism in the retinal arteries occurs more frequently in the right than in the left eye. These two paradoxical facts show that other factors besides the primary tension are involved.

Exostoses on Os Calcis.—Tilanus describes a few cases in which the pain and discomfort from the "calcaneum spur" were cured by an insole and recess in the shoe, relieving the spur from pressure. In some of the cases the cause of the discomfort was first revealed by the roentgen rays. In several cases he removed the exostosis.

Intracardiac Injection of Epinephrin.—Exalto relates that an infant aged 6 months collapsed during general ethyl chlorid and ether anesthesia while an extensive angioma on the forearm was being cauterized. Artificial respiration and massage of the heart for four minutes failed to restore the breathing or heart action. The child was livid, the intensely dilated pupils did not react to light, and dejecta escaped from the sphincters. As a last resort, he injected 0.7 c.c. of a 1:1,000 solution of epinephrin directly into the heart, introducing the needle in the fourth interspace, close to the sternum. He turned to lay the needle aside and when he looked at the child again, the livid color had given place to the natural tint, and in a few seconds the heart began to beat forcibly, the pupils contracted, and respiration became regular. He reviews the cases on record of resuscitation after intracardiac injection of epinephrin. When the heart had been arrested for ten or fifteen minutes, the damage had been irreparable and although the subject was revived, the resuscitation was only transient. Six minutes seem to be the longest interval that allows of recuperation; two minutes was the shortest in which the injection was made. The dangers of the procedure are the possibility of injuring the internal mammary artery or a coronary artery and the pleura. In Esch's case the patient was resuscitated by the injection but succumbed seven hours later to the effects of the pneumothorax which had been induced; it is easy to avoid this. It seems best to inject the drug directly into the ventricle. The aspiration of blood shows when the ventricle is reached; it was at a depth of 2 cm. in this infant; in adults the depth is about 4 or 4.5 cm. In the permanently successful cases, epinephrin had always been used.

The Fight Against Tuberculosis.—Among the seven measures which Sanders considers indispensable is that the sputum of elderly persons with chronic bronchitis should be rendered harmless as if certain that it contained tubercle bacilli, which it often does. Other measures are the optional segregation of bacilli spreaders, the creation of sanatoriums convenient to the cities, compulsory notification even of the suspects, and provision of school lunches.

Hospitalstidende, Copenhagen

66: 153-168 (Feb. 21) 1923

*Abortive Treatment of Syphilis. H. Boas.—p. 153.

Abortive Treatment of Syphilis.—Boas classifies, according to the treatment applied, several hundred cases of incipient syphilitic infections given abortive treatment with arsphenamin alone or with mercury. All have been under supervision since for from two to eleven years. His data prove the incorrectness of the assumption that the disease can be considered cured when two years have elapsed without serologic or clinical manifestations of the infection. He has witnessed recurrence of symptoms after a free interval of

seven years. The only certain sign that the disease is cured is reinfection, with a typical primary lesion. This occurred in twelve of his patients; eight had been treated with a total of 1 gm. of arsphenamin and fifty mercurial inunctions. The interval before the reinfection ranged from nine months to seven years. The fact that the spinal fluid is apparently normal after the abortive treatment does not exclude neurosyphilis later. A later preventive course of mercurial treatment seemed to reduce slightly the proportion of recurrences but the number is too small to be decisive. His final conclusion is that the experience to date in all countries is in favor of as vigorous treatment as possible, begun as early as possible, with arsphenamin or silversalvarsan supplemented by mercurial treatment. Neo-arsphenamin did not prove so effective in abortive treatment in his experience, but this may have been due to inadequate doses.

Hygiea, Stockholm

85: 33-64 (Jan. 31) 1923

*Pulmonary Edema After Thoracocentesis. S. H. Lindblom.—p. 36.

*Case of Spirochetal Jaundice in Sweden. H. Lapidus and A. Flaum.—p. 40.

*Queckenstedt's Sign of Compression of Spinal Cord. E. Sahlgren.—p. 53.

Pulmonary Edema After Thoracocentesis.—Lindblom released about 2 liters of effusion from the right pleura in the young man. He had been confined to bed for several months with pericarditis. The pericarditic effusion had been gradually resorbed. The thoracocentesis had been done in the home and two and a half hours later emphysema and pulmonary edema developed. Lindblom had no apparatus for artificial pneumothorax and the emergency called for quick work. He therefore plunged an ordinary cannula into the needle hole, and, after a few drops of fluid had escaped, air streamed into the pleura. When the patient coughed, he shut off the air with his finger on the cannula, as an improvised valve. The patient was given injections of camphor and morphin, and the cough was arrested at once. In an hour Lindblom withdrew the cannula and injected with a syringe more air, to induce a little overpressure. A tight bandage was applied to the chest, with a pad to press on the needle hole. The coughing after the thoracocentesis had expelled the air and the negative pressure in the pleura exaggerated the cough, a vicious circle which entailed pulmonary edema, or it may have followed at once on the change in pressure after the thoracocentesis. Treatment should aim to restore the previous pressure conditions in the chest. With heart disease, extreme caution is necessary with thoracocentesis; it might be better to release only a little fluid at a time. In this case the thoracocentesis had been done very cautiously, taking nearly an hour for it.

Spirochetal Jaundice in Sweden.—Lapidus and Flaum found *Spirochaeta icterohaemorrhagiae* in a case of Weil's disease at Lund. It was the first time this spirochete has been discovered in Sweden. It was not isolated directly, but only from the guinea-pigs inoculated with the urine, the animals all developing typical spirochetal jaundice.

Sign Revealing Compression of the Spinal Cord.—Sahlgren gives the details of six cases of tumors or inflammatory processes compressing the spinal cord in which the Queckenstedt sign was pronounced, and afforded valuable information. In some of the cases it was the only diagnostic sign available. The patient reclines for the lumbar puncture. Then the veins in the neck are compressed on one or both sides. In normal conditions the spinal fluid shows an abrupt rise in pressure as this is done, but with a tumor or other process compressing the spinal cord and obstructing the passage there is no or very slight and sluggish rise in the pressure. This sign occurs very early. Long before there is actual compression of the cord, the swelling of the tissues closes the lumen of the spinal canal more or less completely, and the Queckenstedt sign is positive.

Ugeskrift for Læger, Copenhagen

85: 161-184 (March 8) 1923

Epidemic Meningitis in Greenland, 1920. F. Wirring.—p. 161.

Viscera-Skin Zones of Anemia. T. B. Wernøe.—p. 166.

Intestinal Infection as Cause of Diabetes. O. M. Henriques.—p. 171.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 20

CHICAGO, ILLINOIS

MAY 19, 1923

THE DIAGNOSIS AND TREATMENT OF STONE IN THE URETER*

HERMAN L. KRETSCHMER, M.D.

CHICAGO

The high plane of efficiency that has been achieved in the treatment of stone in the ureter is directly due to the splendid developments in the field of roentgenology, the perfection of urologic diagnostic instruments and the results derived from the combination of these two factors. With the improved technic in roentgen-ray examinations, recently fortified by the new Potter diaphragm, stones in the ureter are being more and more frequently demonstrated. As for the perfection of the various types of urologic instruments, this scarcely needs comment at this time.

The treatment of stone in the ureter has passed through three more or less arbitrary periods. The first period began about the time the use of the roentgen rays was introduced as a diagnostic measure. Many shadows were found that were wrongly interpreted, and it is unpleasant to record that as a result patients were subjected to a needless open operation which failed to show the presence of a stone.

The second period dates from the introduction of the shadowgraph catheter, by means of which many of the shadows hitherto misinterpreted were proved to be of extra-urinary origin; that is, a free interval was demonstrated between the shadowgraph catheter and the shadow under suspicion (Fig. 1). It goes without saying that, following the introduction of this diagnostic aid, many unnecessary operations were avoided, though mention should be made here that at this time a diagnosis of stone in the ureter was synonymous with an open operation. Despite the fact that the shadowgraph catheter was a definite advance in excluding the various extra-ureteral shadow-producing bodies, there still remained a small number of cases which involved a doubt as to the exact location of the shadow-producing body. The possibility of error in this matter was the incentive to the introduction of stereoscopic roentgenograms. Braasch was one of the early advocates of the employment of ureterograms to overcome this difficulty.

In order to reduce the possibility of error still further, I described a new method for the localization of stone in the ureter, in which a double exposure is made on a single plate with a shift in the tube, a procedure that is of much aid in the technic of determining the origin of the suspicious shadow, and can be applied in the routine study of cases. I have found this process

extremely valuable in certain doubtful cases. In a case in which a diagnosis of possible ureteral stone has been made, the shadowgraph catheter is passed in the usual way, and an exposure is taken with the catheter in place. A second exposure is made on the same plate without changing the position of the patient and without changing the position of the plate; but the position of the tube is changed, so that one obtains a double exposure on one plate. If the shadow under discussion and the shadowgraph catheter lie within the ureter, that is, in the same body plane, they will both move in the same direction and remain in contact with each other and will be seen in contact on the plate (Figs. 2 and 3). If the shadow and shadowgraph catheter do not lie in the same body plane, there results a definite interval between the shadowgraph catheter and the shadow.

Recently, Bransford Lewis suggested a new procedure in the diagnosis of ureteral stone. In cases in which he finds a questionable shadow apparently in contact with the shadowgraph catheter contained in the ureter, he withdraws the catheter and replaces it with a metal ureteral dilator, and makes another exposure of the same field. If the shadow is that of stone, it still shows in contact with the instrument within the ureter; but if it is a phlebolith, it is now seen to be distinctly separated from the ureter.

Although during the second period more accurate diagnoses were made, and the number of surgical errors were greatly reduced, the consensus of opinion was that the treatment of ureteral calculus was surgical.

Braasch, in a recent article, likewise emphasizes the necessity of conservatism in handling these cases. He says:

The majority of stones will probably pass within three or four months following the first symptom. It may be stated, therefore, that it is usually inadvisable to operate for a stone either in the kidney or ureter until at least three months, and possibly six months, have elapsed since the onset of the symptoms. Immediate operation for stone following the first or second attack of pain without evidence of other complications is strongly to be condemned.

DIAGNOSIS

The various abdominal lesions producing pain of a colicky nature must be considered in a differential diagnosis. Perhaps the greatest source of error arises in cases in which the stones occur on the right side, since right-sided abdominal pain associated with nausea and vomiting is most frequently mistaken for an attack of appendicitis, many patients having had their appendixes removed without obtaining the desired relief. In this series, fifteen patients underwent appendectomy. Next in point of frequency is error in confusing stone in the ureter with lesions of the female pelvic organs. Because of abdominal pain, with or without bladder

* This article has been abbreviated in THE JOURNAL by the omission of four illustrations. These appear in the author's reprints.

distress, a hurried and incomplete pelvic examination is made, and tubes and ovaries are needlessly removed. Next in frequency, lesions of the gallbladder give rise to diagnostic errors, but this occurs only at long intervals. In four cases, the symptoms were attributed to various rectal conditions, but no relief resulted from:



Fig. 1.—Free interval between shadow and catheter.

dilatation of rectum (one case); fistula in ano (one case); hemorrhoidectomy (two cases).

While not attempting to discuss all of the various abdominal lesions for which stone in the ureter has been mistaken, the foregoing citations will suffice to emphasize the fact that no patient suffering from indefinite abdominal colic should be operated on until a careful urologic study has been made.

TABLE 1.—Points of Radiation

	Number of Cases		Number of Cases
Groin	10	Hip and penis.....	1
Penis	10	Hip and bladder.....	1
Penis and testes.....	3	Above pubes	2
Penis and bladder.....	2	Leg	2
Glans penis	1	Along sciatic nerve.....	1
Root of penis.....	1	Appendix	1
Penis and groin.....	1	Stomach	1
Bladder	9	Across transverse colon.....	1
Bladder and penis.....	2	Thigh	1
Bladder and perineum.....	1	Pelvis	1
Hip	4		

SYMPTOMS

In this series of 140 cases, pain was the most constant symptom, and in the largest number it was described as being of a colicky nature. In eighty-nine cases, the patients gave a history of typical renal colic; hence, it was evident that there was a lesion of the urinary tract. In these cases, the pain began in the back along the course of the ureter, passed downward and forward along the ureter and often radiated into the groin. In some instances, the pain did not radiate into the groin, and some rather unusual points as regards radiation were noted.

Table 1 presents the points of radiation in those cases with a typical history of renal colic, as well as in those lacking in this history.

Of the urinary symptoms, frequency headed the list, being present in seventy-two cases. Next in point of frequency was hematuria, noted in forty-five cases. Other urinary symptoms are presented in Table 2.

URINALYSIS

The value of urinalysis in cases of ureteral stone cannot be overemphasized. An ordinary specimen taken at random and examined but once may not yield much information, but in a large majority of suspected cases of stone in the ureter, if repeated careful examinations are made, one will be rewarded by finding an occasional red blood cell, some pus or perhaps both blood and pus in the urine. The presence of a few blood and

TABLE 2.—Urinary Symptoms

	Number of Cases		Number of Cases
Frequency	72	Tenesmus	12
Hematuria	45	Difficulty	11
Nocturia	38	Retention	11
Burning	32	Dribbling	4
Dysuria	22	Incontinence	3
Urgency	17		

pus cells is not always pathognomonic of stone in the ureter. Nevertheless, in a given case of indefinite pain in which a careful urinary examination shows the presence of some of these elements, this should be of sufficient moment to direct attention to the possibility of a lesion in the urinary tract; and, furthermore, these patients should be given the benefit of a careful roentgenographic examination before operation. One cannot but feel that if careful examinations are made of all specimens passed by patients during an attack of severe abdominal colic, the amount of evidence obtained will call attention to the urinary tract, and hence the patient



Fig. 2.—Stone shadow in same relation to catheter before and after shifting of roentgen-ray tube.

will be given a careful urologic examination. Records are available in 110 cases as shown in Table 3.

Bacteriologic studies, for various reasons, could not be carried out in all cases, since some of the patients were seen but once, either in their homes, in other hospitals or in the country. The data are summarized in Table 4.

The point which should be emphasized here is that careful repeated urinary examinations yield information of great help in localizing the origin of the patient's symptoms, and, as previously stated, may be the means of preventing an unnecessary operation.

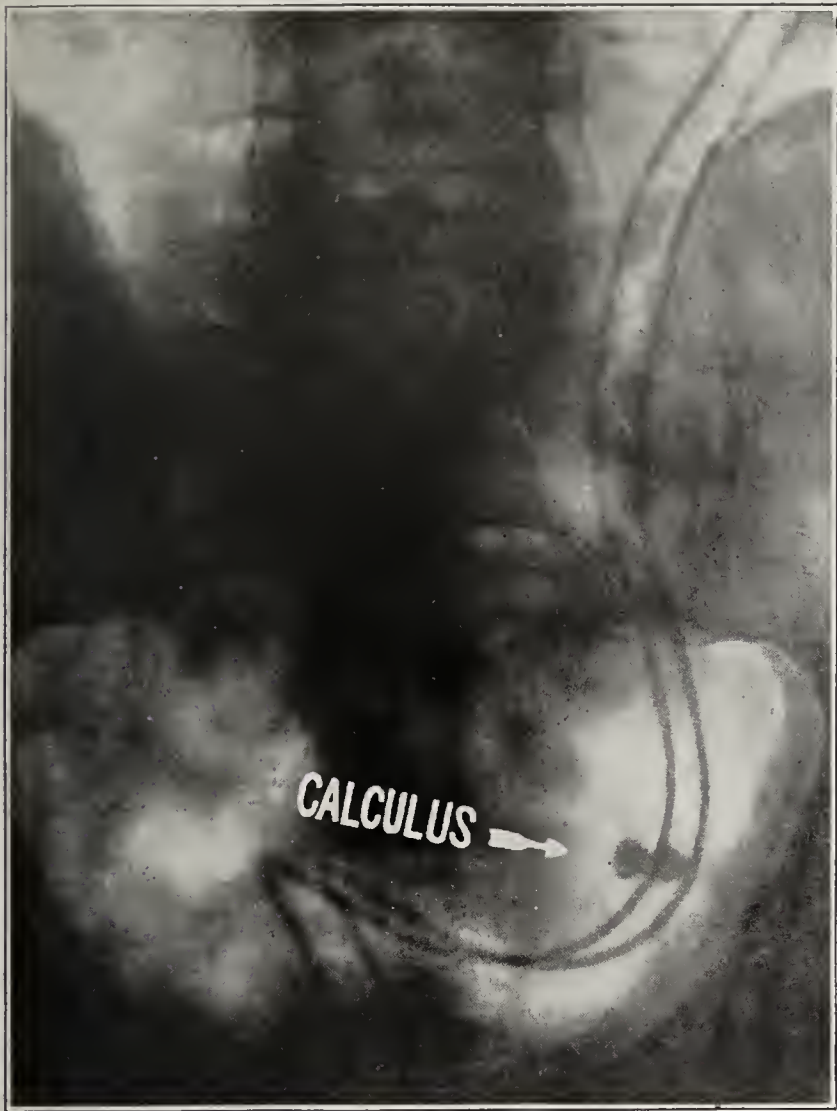


Fig. 3.—Calculus in right ureter: a double exposure on a single plate with shift in tube; stone shadow in contact with catheter in both exposures.

GASTRO-INTESTINAL SYMPTOMS

Reflex nausea and vomiting are the accompanying symptoms of calculus disease of the kidney and ureter, and also of the gallbladder, and it is rare not to find one

TABLE 3.—Findings in Urinalysis

	Number of Cases		Number of Cases
Pus cells only.....	48	Negative urines	7
Red blood cells only.....	9	Casts only	1
Pus and red blood cells.....	45		

TABLE 4.—Results of Bacteriologic Studies

Organisms Found	Number of Cases	Organisms Found	Number of Cases
Sterile	45	Staphylococci and diphtheroids	1
Staphylococci	15	Streptococci	1
Bacteria (in smears).....	20	Streptococci and staphylococci	1
Colon bacilli	11	Staphylococci and Bacillus pyo-	
Colon bacilli and staphylococci	3	cyaneus	1

of these symptoms or both present during a severe attack. This statement is borne out by the experience in this series. Table 5 shows the number of cases presenting gastro-intestinal symptoms.

ROENTGEN-RAY DATA

At times, the question asked by the patient concerns the possible source of error to which the roentgen ray may be subject in the diagnosis of stone in the ureter.

The percentage of error, as given by various authors, is variable. Geraghty and Hinman state that the roentgen rays failed to show the presence of stone in 15 per cent. of their cases.

In this series, positive evidence of stone was obtained in 89.28 per cent. of the cases. In several instances, the plates were reported negative at first, and subsequently small stones were passed. This led to a careful rereading of the plates, and we were then rewarded by being able to see shadows that corresponded in size and shape with the stones passed by the patients. This happened in cases in which a plain plate was made, and also in plates from cases in which a shadowgraph catheter had previously been passed. The most frequent source of error was our failure to recognize small shadows lying over bony structures.

TABLE 5.—Gastro-Intestinal Symptoms

	Number of Cases		Number of Cases
Nausea and vomiting.....	51	Constipation	18
Nausea	5	Diarrhea	2
Vomiting	9		

The roentgen-ray exposure should include both kidneys and both ureters, in order that stones in the kidneys be not overlooked (Figs. 4 and 5).

The presence of calculi in other organs of the genito-urinary tract were noted in fifteen cases. The calculi were distributed thus: the kidney in nine cases; the prostate in four, and the bladder in two.

TREATMENT

Once the diagnosis has been made, and the question of treatment is under consideration, it is well to bear



Fig. 4.—Stone in right kidney with impaction of sand in right ureter; small calculus in left ureter.

in mind the fact that a large number of these calculi will pass unaided. This is a very important fact to remember, since the patient should be given the benefit of this knowledge.

The number of cases in which stones pass unaided is variable. In my own series, 26.428 per cent. of the patients passed the calculus unaided. Judd states that

12 per cent. of a group of about 400 persons responded in the affirmative when questioned with regard to passing of stones.

NONOPERATIVE TREATMENT

The removal of calculi from the ureter by means other than an open operation has been advocated for many years both in this country and abroad.

1. *Simple Ureteral Catheterization.*—Of the various methods at our disposal, ureteral catheterization is the simplest. The mere passage of an ureteral catheter has been followed at times by the passage of calculi whose presence had not been suspected or demonstrated before ureteral catheterization was carried out for diagnostic purposes.

2. *Ureteral Catheterization and Injections of Various Drugs.*—The use of local anesthesia in the ureter to relieve pain, to overcome spasm and to aid in passing the catheter above the stone has been in vogue for a great many years. Bugbee, Nitze, Casper, Bevan and Kretschmer, Crowell, Bransford Lewis, Geraghty, Young and many others have advocated it in published

3. *Fulguration.*—The use of the frequency spark to aid in removing stones from the ureter has been advocated by Buerger, Furniss and Young.

4. *Operative Procedures Through the Cystoscope.*—Various operative procedures have been advised. In instances in which the ureteral orifice is small, so that the stone cannot enter the bladder, it may be cut with either the knife or scissors through the operating cystoscope. Dilatation may be carried out with a Garceau catheter or with a Bransford Lewis ureteral dilator. By these procedures, the lower ureter is enlarged to allow free passage of the stone into the bladder. On a number of occasions, I have succeeded in grasping the stone with the Buerger forceps when it seemed to be caught within the ureteral orifice itself.

ECONOMIC ADVANTAGES

In cases that can be managed in the manner outlined above, there are these definite advantages:

1. The patient avoids a major operation and the incident anesthesia.

2. Even though stricture of the ureter following ureterotomy is rare, it should be reckoned with, and this applies equally well to stricture with destruction of the kidney, which, though rare, can and does occur.

3. The procedure does not necessitate a stay in the hospital, or if the patient does remain in the hospital, his stay is generally not longer than twelve hours. Furthermore, if this procedure is carried out, a larger number of hospital beds are available for other cases, and last, but not least, the patient loses but little time from his work.

INDICATIONS FOR SURGICAL INTERVENTION

The indications for an open operation are variable, but in general can be clearly outlined in practically every case.

Size of the Stone.—It is obvious that, in cases in which there are large stones, which cannot pass through the ureter, the patient should be operated on (Fig. 6). This statement should not stand unqualified, since patients often bring in large stones which, from their size as shown by the roentgen ray, had appeared impossible of passage through the intramural part of the ureter.

Number of Stones.—When stones in the ureter are multiple, it is generally considered better judgment to perform an open operation, although I have seen one instance in which a patient had three large stones on one side and two large ones on the other, and passed them unaided.

Location of Stone.—In stones of the lower ureter, nonoperative measures should be tried repeatedly before open operation is resorted to, because there is a better chance for passage when stones are in the lower ureter than when they are in the upper ureter.

Impacted Stones.—If, according to the history, the stone has remained in one position, and this can be verified by roentgen rays, the possibility of success with nonoperative measures is not very great; for not infrequently at operation the stone is found firmly imbedded in the ureter, and at times it may be situated in a diverticulum.

Failure of Careful Nonoperative Treatment.—To determine what is responsible for the failure of this treatment is difficult, but its success depends in part on the patient's willingness to cooperate, as well as the surgeon's desire to carry out the treatment. Not infrequently the patient is given an injection of oil, and,



Fig. 5.—Large collection of stones left in ureter after nephrectomy for renal calculus.

articles. Nevertheless, as far as I know, it has not been practiced as a routine procedure except by Crowell, who has recently reported that he was able to remove the stone in seventy-six of seventy-eight consecutive cases of ureteral calculi, without a fatality.

Injections of various oily solutions, such as olive oil, sweet almond oil and liquid petrolatum, have been advocated, to aid in the passage of the stone. These may be injected either with or without local anesthesia. In order to obtain relaxation of the ureter and thereby facilitate the passage of the stone, intra-ureteral injections of papaverin have been advised, but our experience shows that this preparation has not yielded the results claimed for it. There has always been a question in my mind as to how much benefit should be attributed to the various drugs employed, and how much credit should be given to the passage of the catheter, as a result of which the stone no doubt is quite frequently dislodged. Passage of the catheter may also produce a certain amount of dilatation of the ureter, thus facilitating the passage of the stone.

if the stone is not passed immediately, he is told that the condition will never respond to treatment and an operation must be performed. Again, some are willing to carry out the treatment a certain number of times, and if this fails, operation is advised.

Suppression of Urine.—This condition calls for immediate surgical operation, especially if one kidney has been previously removed, or if it is the seat of extensive destruction due to calculous disease, and the stone is in the opposite ureter.

Acute Pyelonephritis.—Repeated attacks of acute pyelonephritis are of sufficient moment to warrant immediate operation, especially if the attack follows each instrumental manipulation.

Reaction to Treatment.—Certain patients, for one reason or another, do not tolerate instrumentation, so that following each treatment they suffer from severe pain, chills and fever, and sometimes bleeding and severe bladder distress. In this group of cases, the cure is worse than the disease, and it seems wise to lose no time with instrumental treatment, but to operate as soon as possible (Fig. 7).

RESULTS

In presenting this series of cases, it was the purpose to study and compare the results obtained by means of the various forms of nonoperative treatment. Although much has been written on the subject of the treatment of stone in the ureter, publications dealing with a critical review of the various forms of treatment,

TABLE 6.—Results in Author's Cases

	Number of Cases	Percentages
Calculi passed without treatment.....	37	26.428
Calculi passed after manipulation and oil injections	46	32.857
Operations	16	11.428
Stopped treatment.....	13	9.285
No treatment instituted.....	26	18.571
Under treatment	2	1.428

carried out in a large or small series of cases, are rather rare. To go over the records and tabulate the results of treatment was a primary object of this paper.

In Table 6, the number of cases treated and the results, as well as the percentages, are given.

From a perusal of the table, it will be seen that 26.428 per cent. of these patients passed the stones without the aid of surgery of any sort, a figure slightly higher than figures given by Judd.

In forty-six cases, or 32.857 per cent., the stones were passed following various types of nonoperative treatment, which consisted in thirty-five cases of the passage of ureteral catheters and injections of sterile oil into the ureter, and, in the eleven remaining cases, of simple passage of the ureteral catheter, slitting of the ureteral orifice and injection of papaverin. In some of these cases, local anesthesia of the ureter preceded the oil injections.

Open operations were performed in sixteen cases, or 11.510 per cent. Five of these cases had previously been subjected to nonoperative treatment, as described above. This treatment was discontinued after prolonged use, because of the onset of acute pyelonephritis, or because the patients did not tolerate instrumentation; and open operation was subsequently carried out. In the eleven remaining cases, operation was instituted without previous cystoscopic treatment.

Thirteen patients, or 9.285 per cent., stopped treatment for various reasons, and the result could not be determined. It is reasonable to assume that a certain number may have eventually passed the calculus.

No treatment was instituted in twenty-six cases, or 18.571 per cent. Some of these patients were seen in consultation; some lived out of town, and some refused treatment.

Two cases are still under treatment.

122 South Michigan Avenue.

THE DIAGNOSIS OF SARCOMA IN BONE

REPORT OF CASE

EUGENE H. EISING, A.M., M.D.

Surgeon, Hospital for Joint Diseases and Sydenham Hospital

NEW YORK

The vast amount of information revealed to us by means of the roentgen ray in the diagnosis of pathologic conditions of bone still leaves us at the threshold of a proper understanding of this field of medicine.

A confused terminology, incomplete clinical reports, too few histologic examinations and single roentgeno-

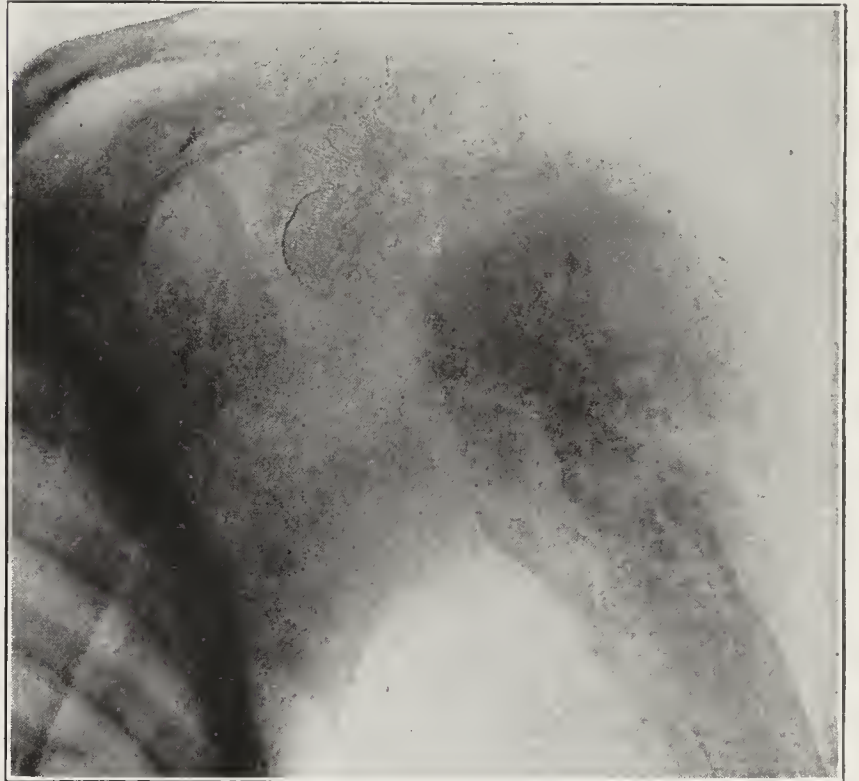


Fig. 1.—The growth is limited to the diaphysis, and it will be noted that throughout the series of roentgenograms the epiphysis remains uninvaded by the tumor; the cortex is already broken, and there is new formed periosteal bone. Cartilage, having neither blood nor lymph vessels, is not attacked by neoplastic processes. Undeveloped epiphyses, such as occur in the young, are therefore not invaded.

grams, when a series should have been made, are what one finds in a fairly voluminous literature.

Many attempts have been made to correlate these bone lesions pathologically, from their roentgenographic appearance. Such classification is peculiarly difficult, and as yet no satisfactory grouping has been made. Much of the difficulty is a consequence of our attempt to translate at once the roentgenographic plate into terms of pathology; in other words, to seek on the plate the markings that spell sarcoma or osteomyelitis.

I believe there never will be found any hard and fast lines or infallible marks of differentiation in the roentgenographic diagnosis of bone lesions, on account of the nature of the medium in which the pathologic process occurs. Bone has a certain definite way of responding to irritation, it makes no difference whether the provocative be of a malignant or of a benign nature; bone can only do what bone can do. If periosteum is

irritated from a benign or a malignant cause, it will form new bone; if it is irritated from an inflammatory process or from a traumatic cause, it will form new bone.

The presence of the new bone itself is not indicative of the nature of the process stimulating its production.



Fig. 2.—Advance in growth of tumor, and the disposition of new formed bone to be laid down in spicules at right angles to the axis of the bone.

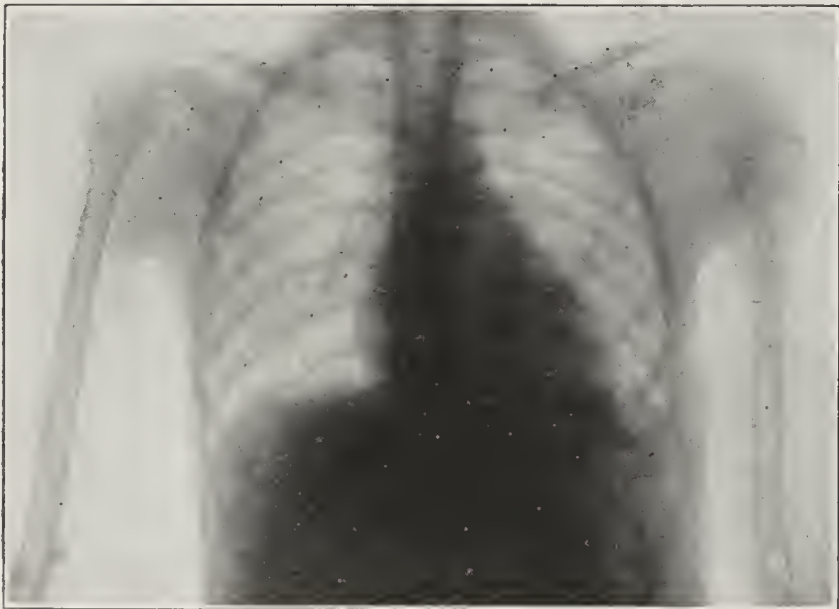


Fig. 3.—Appearance of centrifugal growth and metastasis in the mediastinum, Oct. 16, 1921. The medullary canal was nearly completely involved in the tumor. The epiphysis was still not invaded by the growth. There was noticeable relative shortening of the humerus on the affected side as compared with that on the normal side, even though the epiphysis was apparently not involved, indicating that its growth controlling function had been intercepted.

The distribution and the manner in which the new bone is laid down will, however, often suggest the nature of the pathologic process.

There are various other reactions in bone that manifest themselves in the roentgenogram. These are

atrophy, sequestrum formation, cloaca formation, absorption areas and cortical thickening, each one of them of considerable aid in establishing the diagnosis.

In order to correlate the roentgenologic finding with the pathologic process, we must read the roentgenogram by an intelligent interpretation of the various signs of bone reaction as portrayed therein.

Of the reactions mentioned, all are late manifestations except new bone formation; which is also the most constant of these pathologic changes.

It may be stated that generally when new bone is developed as a result of an inflammatory process it is laid down parallel to the axis of the bone, and when developed as a result of neoplastic irritation, it is laid down in plaques or spicules at right angles to the axis of the bone.

In medullary neoplasm, before there is any evidence of new bone formation, the bone cortex will be found fissured, as though from some powerful centrifugal force. This is a result of extension of the growth along the haversian canals, producing the appearance of a bomb at the moment of bursting.

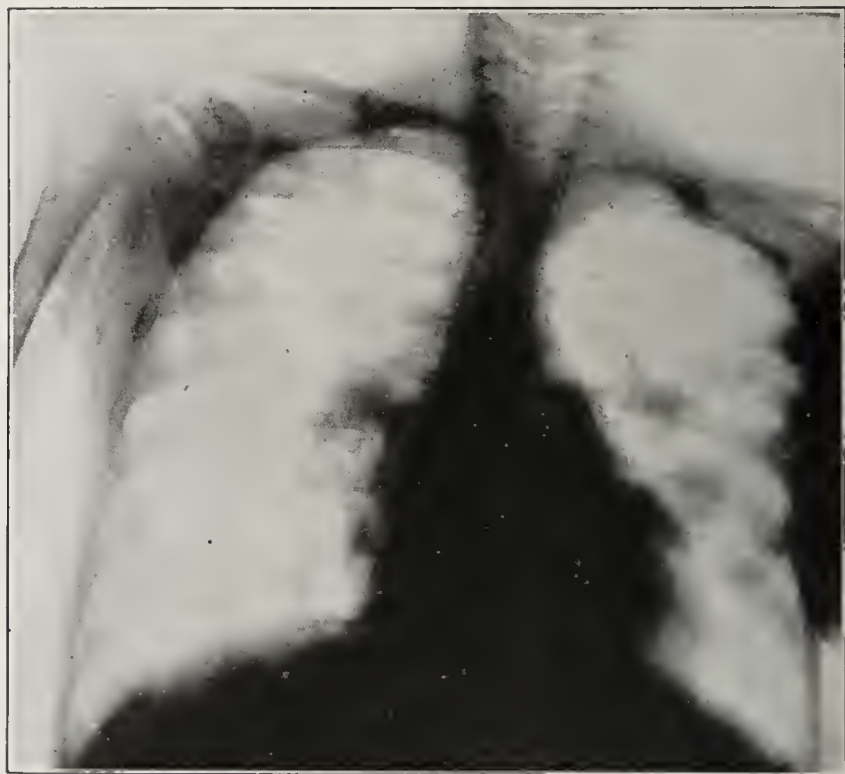


Fig. 4.—Further growth of mediastinal metastases, October 22.

Figure 1 shows this exceedingly well. This centrifugal growth is manifest in the entire series of roentgenograms.

In examining a roentgenogram of bone sarcoma, we must realize that we are not looking at the roentgenogram of the tumor but of a bone struggling in its way to protect itself from the invasion of disease, and that the shadows that we see must be interpreted much in the way that the roentgenologist interprets the roentgenogram of a bismuth meal. From the shadows that he sees, which are of a material entirely foreign, he interprets the nature of the disease; and so I believe that, until we examine our roentgenograms from this standpoint, we are not going to make definite advances in roentgen-ray diagnosis.

In very early lesions of bone, the roentgen ray is inevitably going to fail us in diagnosis (fractures and dislocation do not enter into this discussion), for the reason that the changes in bone that can be shown by the roentgen ray take a definite time to occur. Acute osteomyelitis or acute epiphysitis shows no definite lesion

until after one week at least, and neoplasm in bone after a much longer time.

I have had the opportunity to observe the course of a rapidly growing and fatal medullary sarcoma of the humerus in a child.

REPORT OF CASE

A girl, aged 7 years, whose father was 34 years old, living and in good health, whose mother died at the age of 29 years, following burns, but was healthy preceding this accident, and who had two brothers and one sister, living and well, in July, 1921, was struck on the shoulder while playing. She did not complain of any pain at that time, but a swelling was noticed at the upper third of the humerus. July 19, she was brought to the Hospital for Joint Diseases. The swelling was readily detected. It was fusiform in outline, occupying the entire circumference of the humerus in its upper third, but not including the epiphysis.

A roentgenogram was taken at once. The upper third of the humerus was found to be enlarged. The cortex was

condition, we discontinue its use. That was done with this child.

August 17, the child was again examined by roentgen ray. The growth showed a rapid advance for one month. The

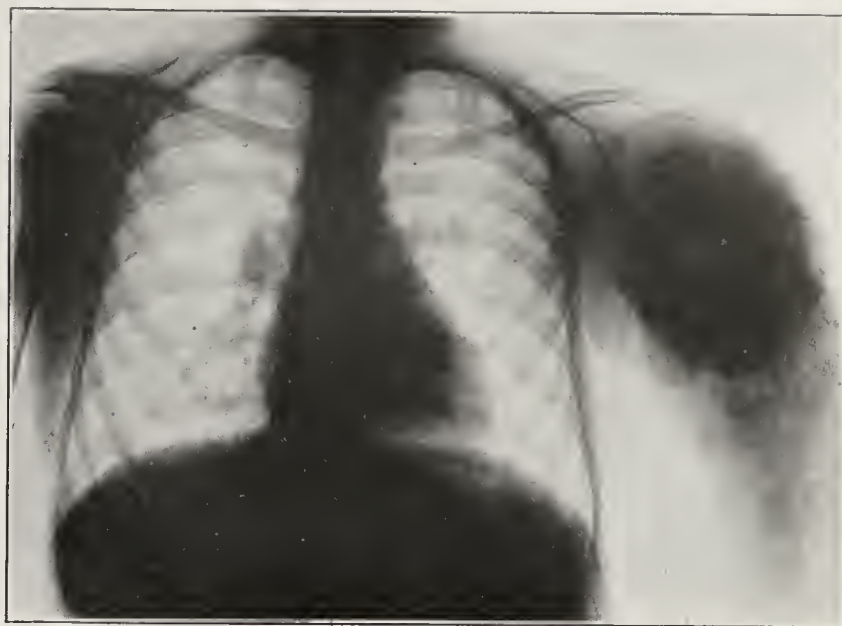


Fig. 6.—Advance of the thoracic metastasis (Jan. 24, 1922). In this enormous growth, the epiphysis seems still able to resist the neoplastic invasion.



Fig. 5.—Great mass of centrifugal bone formation, November 18. The epiphysis apparently was still uninvolved, but the entire diaphysis is involved. It will be noticed that the new bone is arranged in spicules laid at right angles to the shaft of the humerus. This is typical of neoplastic bone formation. It is asserted that in round and spindle cell sarcoma, the destructive process is so rapid that new bone formation cannot occur. This statement seems not to be universally true, at least not in the later stages of the growth.

fissured. The epiphysis was not involved, and there was no new bone formation or periosteal thickening. We felt reasonably certain that we were dealing with a malignant growth of considerable virulence, probably sarcoma of the small round cell type.

It is our routine to place all these patients under a rigorous antisyphilitic treatment, regardless of the Wassermann reaction, which in this case was negative. In bone and joint cases, we do not use arsphenamin, as we find it less effective than mercury. In using mercury, we attempt to force it speedily to a point of saturation (salivation), then wait a couple of weeks, and salivate a second time.

If the clinical symptoms are markedly alleviated, we continue with mercury. If the mercury has not affected the



Fig. 7.—Appearance of growth toward the fatal termination.

question of amputation was considered, and the father was consulted. On being told of the extent of the deformity following amputation at the shoulder, he was definitely opposed to it.

Even at this time, we believed that the growth had advanced beyond the limits of operability.

The blood showed a secondary anemia throughout the course of the illness. The urine was normal. The child was then referred to Dr. H. B. Philips for roentgen-ray therapy. In the last two weeks of August, 1,000 mg. hours of radium was administered by cross fire through the upper humerus, and intensified roentgen-ray cross fire irradiation of the chest. The first two weeks of September, about 1,500 mg. hours was administered by cross fire through the upper humerus and the same roentgen-ray cross fire given the chest. During the month of October, the patient received interstitial irradiation.

October 11, four radium needles of 12.5 mg. each were inserted into different portions of the tumor for twenty-four hours. This was repeated at weekly intervals, so that in a month every portion of the tumor was irradiated, and a total of 5,000 mg. hours was given interstitially in the course of about five weeks.

As the chest metastases and the primary tumor progressed unfavorably notwithstanding this extremely heavy treatment, it was discontinued at this time.

The growth assumed enormous proportions, as will be seen from the photograph. The child suffered comparatively little. Death ensued, and necropsy was not permitted.



Fig. 8.—Appearance of growth, indicating its size.

COMMENT

This case is typical of rapidly growing bone sarcomas.

From the standpoint of malignancy, there is probably no neoplastic process more rapidly destructive. Metastases occur early, usually in the mediastinum. The roentgen ray and radium are of very questionable benefit. Our sole resort is amputation at the earliest moment.

35 West Eighty-First Street.

Relation of Hospital Personnel.—The purpose or function of an institution should determine not only the type but the relation and distribution of its personnel. Whatever may be the process or processes through which the result sought may ultimately be effected, it is desirable that a person seeking such result through an institution created for the attainment of that end should be as immediately as possible related to those whose discernment in the matter has been "sharpened to a point" through training and experience. The failure to appreciate the importance of such adjustments has been, and still is, one of the outstanding weaknesses of hospitals and dispensaries, owing mainly to an inadequacy of funds and, ipso facto, an insufficient and inefficient personnel.—A. W. Goodrich, *Hospital Social Service* 7:170 (March) 1923.

CONGENITAL TOTAL HEMIHYPERTROPHY

REPORT OF CASE *

JAMES N. STANTON, M.D.

AND

LOUIS TUFT, M.D.

PITTSBURGH

Congenital total hemihypertrophy, characterized as the name implies, by symmetrical enlargement or hypertrophy of the whole side of the body, is one of the rarest anomalies known to medicine. Its rarity can be appreciated by the fact that, in a complete survey of the literature on this subject, but forty-one cases of true hemihypertrophy could be collected. An example of this curious anomaly of development came under our observation recently, and it is because of its rarity and interest that we wish to report it here, with a brief review of the literature.

REPORT OF CASE

History.—A. P., a white girl, aged 16, admitted to the service of Dr. Stanton at the Passavant Hospital, June 12, 1921, complained of a small tumor in the left breast which she had noticed for a month previously. In the course of a routine physical examination, it was noticed that the entire left side of the body was more developed than the right. This condition, the patient stated, had been present since birth and had caused her little inconvenience. Since the right leg was shorter than the left, she was forced to limp slightly.

When younger, on account of the increased size of the left side of her tongue, she had had difficulty in talking, and especially in pronouncing "th's." As she grew older, this became less and less noticeable, until at present it is very slight. The right side of the body seemed to her to be the stronger side, and she seemed to be able to lift and carry things better with the right hand than with the left. Other members of the family verified the fact that this condition was congenital, and also stated that it was most marked in her tongue, often causing difficulty in swallowing and later in talking. This condition became greatly improved as the child grew older.

The delivery of the child had been perfectly normal, and the pregnancy uncomplicated. As a child, she had always been well, except for measles and whooping cough. She was alert mentally. She graduated from public school, and had finished two years of high school at the age of 16. At



Appearance of patient with hemihypertrophy.

* Read before the Pittsburgh Academy of Medicine, Feb. 6, 1923.

this time, she was employed as a stenographer. Her mother had died of tuberculosis. Her father was an alcoholic. She had four sisters and four brothers, all of average size. Nowhere in the family was there a history of a similar condition. When admitted to the hospital she felt perfectly well and, except for the lump in her breast, had no complaints. There was no menstrual irregularity.

Physical Examination.—The patient was well nourished, weighing 118 pounds (53.6 kg.), with a height of 5 feet and 5 inches. There was a distinct difference in size between the right and the left side of the body. Measurements were taken to verify this: Differences in size noted are given in the accompanying table. The left cheek was bigger than the right and the left half of the tongue distinctly larger than the right. The thyroid gland was slightly enlarged, probably of a juvenile type. The breasts were well developed, and the left contained a small, freely movable mass in its lower and inner quadrant. The pubic hair was feminine in type and the external genitals were well developed, there being no evidence of sexual dystrophy, suggestive of pituitary disturbance. To compensate for the increased length of the lower extremity, the right shoulder was drooped and scoliosis was present. Aside from these findings, the examination was negative. The accompanying illustration shows the character of this anomaly.

Laboratory findings in this case were negative. Roentgenograms were taken of the entire bony skeleton, revealing the fact that the enlargement was present not only in the soft structure but also in the bones of the left half of the body. The pituitary fossa was found to be normal.

Operation and Course.—The small tumor in the left breast was removed without difficulty. It proved to be a fibroadenoma. The patient made an uninterrupted recovery, and left the hospital, June 24.

Variation in Measurements of Right and Left Sides

Part Measured	Right Inches	Left Inches	Difference Inches
Head, circumference.....	10½	11½	1
Width of orbit.....	2¼	2½	¼
Width across shoulders.....	8½	9	½
Arm length.....	12½	13	½
Forearm length.....	8¾	9	¼
Arm girth.....	7¼	8¼	1
Forearm girth.....	7¾	8½	½
Wrist girth.....	6	6¼	¼
Middle finger, length.....	3¾	4¼	¾
Chest, breadth.....	5½	6½	1
Abdomen, circumference.....	12	15	3
Abdomen, umbilicus to anterosuperior spine	5	6	1
Pelvis, circumference.....	15	18	3
Lower external anterosuperior spine to internal.....	32	34	2
Thigh, girth.....	17	19	2
Leg, girth.....	12¾	14	1½
Foot, girth.....	9¾	10	¼
Leg, length.....	14¼	15¼	1
Tip of big toe to heel.....	10¼	10¾	½

REVIEW OF LITERATURE

Probably the earliest case of true hemihypertrophy on record was reported by Desvouses ¹ in 1856. Since then, forty-one others have been reported by various authors, only seven of which were found recorded in American literature. Various names have been used to describe it: unilateral macrosomia, hemimacrosomia and unilateral gigantism, but congenital total hemihypertrophy seems to be the most popular term. The exact nature of the factors causing this curious developmental anomaly is as yet obscure. That it is congenital and not hereditary, most authors agree. The family history in these cases is usually satisfactory, especially as to history of deformities. Various theories have been advanced as to its origin. Some suggest that the condition resembles acromegaly, but no evidence of pituitary disease has been found in any of the reported

cases. Mummery ² believes it to be due to one half of the body growing faster than the other half, and that this unequal growth is progressive. This has not been the experience of other authors, who found that the hypertrophy was usually stationary, any increase being very inappreciable. Thus Ahlfeld, ³ Wagner ⁴ and Moebius ⁵ reported a case which they separately observed over a period of eleven years, and found no difference in the measurements of the two sides of the body. That it is truly a hypertrophy and not a hemiatrophy can be readily seen by observation, for the tissues on the unaffected side are well developed and of normal size and structure.

Other theories, attributing it to diseases of the central nervous system, to trophic influences or to enlargement of the blood vessels on the affected side, with corresponding increase in blood supply and overnutrition on this side, have also been advanced, but these theories have few supporters. Probably the most logical explanation of its origin is that it consists in an erroneous deviation from the normal course of development in the embryonic period (Gesell ⁶), probably in the cleavage stage.

Pathologically, the condition consists of a unilateral hypertrophy of the soft structure vessels and bones, and occasionally of the paired organs. Necropsy in several cases has shown that such paired organs as the kidneys, brain or testes are enlarged correspondingly on the affected side; also that the larger blood vessels, such as the carotid and subclavian, show enlargement on the affected side. In one case (Gordinier ⁷) which came to necropsy, examination of the pituitary body and sella showed that these organs were normal.

Hornstein ⁸ examined the tissues microscopically in two cases and found that the hypertrophy was limited to the soft parts, i. e., the subcutaneous tissues, muscles and, to a less extent, the skin; and that the thickening of the bones, especially the epiphyses, was chiefly due to an increase in interstitial connective tissue. He also found an increase tissue in the peripheral nerves.

The characteristics of this curious anomaly are well brought out in the case reported above. The case differs a little from the average in that it occurred in a girl and the left side was affected. The majority of cases reported occurred in males, and the right side was usually affected. As in our case, aside from a slight limp in walking, the condition usually occasioned little inconvenience. The patients were quite healthy and of good intelligence usually, although in several cases the anomaly was associated with definite mental defect (Gesell's case ⁶).

A very common finding in the reported cases is the presence of nevi in the skin. Simple capillary nevi are the most common type, but at times larger telangiectases are present. These nevi are not limited to the affected side alone but are generalized over the body, although the right side is most often affected. These nevi become more marked when the child cries; at times, instead of definite nevi being present, large areas of the skin

1. Desvouses: Bull. Soc. anat. de Paris 31: 510, 1856.

2. Mummery, P. L.: A Case of Hemihypertrophy, Proc. Roy. Soc. Med., London, Clinical Lecture 61 1, 1907-1908.

3. Ahlfeld, T.: Die Missbildungen des Menschen, Leipzig, F. W. Grunow, 1880-1882.

4. Wagner, P.: Zur Casuistik des angeborenen und erworbenen Riesenwuchs, Ztschr. f. Chir. 26: 281, 1887.

5. Moebius: Ueber Hemihypertrophie, München med. Wehnschr. 37: 751, 1890.

6. Gesell, Arnold: Hemihypertrophy and Mental Defect, Arch. Neurol. & Psychiat. 6: 400 (Oct.) 1921.

7. Gordinier, H. C.: A Case of Unilateral Hypertrophy of the Whole Left Side, with Necropsy, Albany M. Ann. 39: 47 (Feb.) 1918.

8. Hornstein, S.: Ein Fall von halbseitigen Riesenwuchs, Virchows Arch. f. path. Anat. 133: 440, 1893.

would become congested when the child cried, as in a case reported by Finlayson.⁹

In some of the cases, other peculiarities not already noted have been observed; for example, excessive secretion of the sebaceous and sweat glands, a thicker growth of hair, more rapid growth of nails, higher temperature by a degree or two and earlier eruption of teeth, all on the affected side. In a few cases, enlargement of fingers and toes on the otherwise normal side have been noted. No abnormality in position of any of the viscera has ever been detected in any of the cases.

The diagnosis of this condition offers no difficulty. Observation is usually sufficient to distinguish it from any other condition which might in any way resemble it. From hemiatrophy, it is readily differentiated by the fact that the unaffected side shows no signs of atrophy but is normally formed in every respect. Acromegaly should offer no difficulty either, since it is bilateral, confined chiefly to the hands, face and feet, and is not congenital. Often, too, changes in the sella turcica and pituitary can be found by the roentgen ray. This does not occur in hemihypertrophy.

The prognosis in these cases is always good. The condition is usually nonprogressive; hence, patients or relatives can be told that the deformity is unlikely to become worse and that it will not seriously interfere with the child's future. The limp may be overcome by means of an extension shoe. Except for the correction of this deformity, no treatment is required.

IMPORTANCE OF PHRENIC SHOULDER PAIN IN DISEASE INVOLVING THE DIAPHRAGM *

THOMAS G. ORR, M.D.

Associate Professor of Surgery, University of Kansas School of Medicine
KANSAS CITY, KAN.

Pain produced by irritation of the diaphragm is never localized within the diaphragm, but is always referred to some distant portion of the body. When one considers the frequency with which disease occurs in the region of the diaphragm, the importance of a familiarity with the locations of the referred pain from this organ is quite apparent.

ANATOMY AND PHYSIOLOGY OF THE PHRENIC NERVE

The phrenic nerve has its origin from the third, fourth and fifth cervical nerve roots. The largest number of its fibers arise from the fourth cervical root. There has been some doubt and some difference of opinion in regard to the distribution of the phrenic nerve. It is known to have both motor and sensory fibers. Ferguson,¹ in 1891, proved experimentally that the phrenic nerve contains sensory fibers, but the extent of its innervation has not been accurately determined. It has, however, been fairly well established that the nerve supplies sensory branches to both the pleural and the peritoneal surfaces of the diaphragm except at the rim, where both surfaces to some extent receive sensation from the sixth to the twelfth intercostal nerves. Experimental and clinical observations have very definitely proved that the pleural pericardium

is supplied with sensation by the phrenic nerve. Sensory fibers also reach as far as the suprarenal bodies. The coronary ligament of the liver, and possibly the liver itself, is also supplied by this nerve. It communicates with the diaphragmatic plexus, which in turn communicates with the semilunar ganglions of the solar plexus.

The embryology of the diaphragm and phrenic nerve is of interest in this connection. Mall² has stated that, in its development, the whole diaphragm wanders from the head to the abdomen, passing by, as well as modifying, the structures and organs along the way. In the head region of the early embryo lies the anlage of the diaphragm, together with those of the heart and liver. In fact, the three embryonic body cavities, pericardial, pleural and peritoneal, arise from the embryonic head and neck region, and descend to their anatomic positions during development. The phrenic nerve, which arises in the cervical region, enters the diaphragmatic anlage and, as the organ descends, lengthens to give it innervation. A study of the development of the heart, liver, diaphragm, lungs and stomach explains the passage of the phrenic and vagus nerves through the thorax. With this in mind, the innervation of the pericardium, diaphragmatic pleura and peritoneum, liver and suprarenals by the phrenic nerve are quite well understood.

In a consideration of the physiology of the phrenic nerve and other nerves supplying the diaphragm, the general laws of the production and distribution of visceral pain, as outlined by Head,³ have here direct practical application. Referred pain from the viscera has been summarized in these four statements:

1. It is often remote from the site of the irritation.
2. It follows lines on the skin of the spinal segmentation rather than the course of the peripheral nerves.
3. It is usually associated with cutaneous hyperesthesia and tenderness to pressure.
4. Often the pain fails to involve the whole segmental area of the skin, but finds expression in one or more points of maximal tenderness and spontaneous pain.

In 1911, Capps⁴ of Chicago made an experimental study of the pain sense in the pleural membranes. This was an excellent piece of work and, if correct, clears up to some extent the innervation of the diaphragm. His observations were made in cases of pleurisy with effusion, by introducing a wire through a cannula into the pleural cavity and noting the location of the pain when various parts of the parietal, visceral and diaphragmatic pleura were irritated. He concluded that the visceral pleura is not endowed with pain sense. The parietal pleura is supplied by the intercostal nerves, and irritated points on its surface are accurately localized, by the person, over the spot touched. Such irritations never give rise to referred pain in the neck or abdomen. The diaphragmatic pleura receives its sensory supply from the phrenic nerve and lower six intercostal nerves. The central portion of the diaphragm is innervated by the phrenic nerve, and irritation of this portion causes pain in the neck and shoulder on the corresponding side. The peripheral rim of the diaphragmatic pleura for a distance of 2 or 3 inches in front and lateral, and for about one third of the distance posterior is innervated by the sixth to twelfth intercostal nerves. Pain in this area causes referred

2. Mall, F. P.: On the Development of the Human Diaphragm, *Bull. Johns Hopkins Hosp.* **12**: 158, 1901.

3. Head, Henry: Disturbance of Sensation, with Special Reference to Pain of Visceral Disease, *Brain* **16**: 1, 1893; On Disturbances of Sensation, with Especial Reference to the Pain of Visceral Disease (Part II Head and Neck), *ibid.* **17**: 339, 1894.

4. Capps, J. A.: An Experimental Study of the Pain in the Pleural Membranes, *Arch. Int. Med.* **8**: 717 (Dec.) 1911.

9. Finlayson, J.: On the Case of a Child Affected with Congenital Unilateral Hypertrophy and Patches of Cutaneous Congestion, *Glasgow M. J.*, Series 4, **22**: 327, 1884.

* Read before the Kansas City Academy of Medicine, April 6, 1923.

1. Ferguson, J.: The Phrenic Nerve, *Brain* **14**: 282, 1891.

pain to the lower thorax, lumbar region and abdomen. This is a true referred pain. It is distributed in segmental areas over the regions noted. Irritation of the pericardial pleura causes pain in the neck in a location the same as that produced when the central portion of the diaphragm is irritated.

Capps and Coleman⁵ have recently studied the pain produced by irritating the under surface of the diaphragm by means of a wire introduced through a cannula in patients having ascites or pneumoperitoneum. They conclude that pain produced by stimulation of the diaphragm is never located in the diaphragm itself, but is referred to some distant part. Stimulation of the central portion of the diaphragm produces pain along the trapezius ridge. Stimulation of the outer diaphragm margin causes pain over the lower costal region and subcostal abdominal wall.

CLINICAL OBSERVATIONS

It seems quite evident, in talking with my medical and surgical confrères, that the shoulder and neck pain frequently produced in disease involving the diaphragm is not given its proper importance as a diagnostic aid. On the other hand, clinicians are constantly on the alert for referred pain to the abdomen in chest conditions, and all enlightened medical men consider such pain in their differential diagnoses. The following is a list of conditions in which phrenic shoulder pain or neck pain has been described: pneumonia, pleurisy, pericarditis, pulmonary infarct, actinomycosis of lower right lung, liver abscess, perforated gastric or duodenal ulcer, subphrenic abscess, cholecystitis with peritonitis, perforation of gallbladder, perisplenitis, rupture of spleen (spontaneous), acute pancreatitis, appendicitis, ruptured extra-uterine pregnancy, pressure of drainage tube, and suprarenal tumor.

Referred pain to the shoulder or neck is characterized by its spontaneous appearance, and its accurate localization in the distribution of a spinal segment or to a small portion of the segmental sensory distribution, by accompanying hyperesthesia and hyperalgesia, and often by increase of pain during deep respiration, cough or change of position. At times the pain is quite severe. It has been described by patients as feeling as if a nail were driven into the joint. In one of Oehlecker's⁶ cases of old tuberculous pleurisy with empyema, the pain was so severe that he was led to section the phrenic nerve in the neck on that side.

Pain referred to the abdomen from the diaphragm is in the abdominal wall and not in the viscera. Here hyperesthesia and hyperalgesia are a differential feature. As a rule, deep pressure is well borne in referred pain, a fact that is not the case in disease involving the abdominal viscera.

Capps⁷ has reported sixty-one clinical cases with diaphragmatic pleurisy, in which fifty-four patients had

referred pain to the abdomen. Thirty-three had referred pain to the neck and shoulder, which was more than 50 per cent. of the total number.

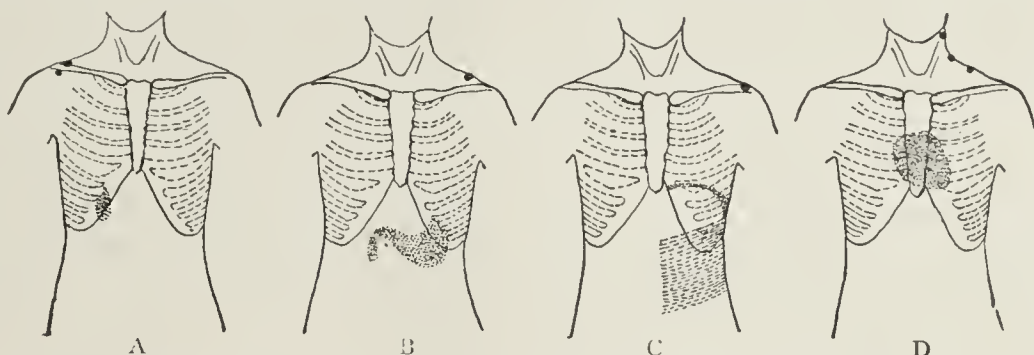
Cope⁸ of London, in 1922, presented a clinical study of phrenic shoulder pain, and attempted to establish a localizing correspondence between the part of the diaphragm irritated and the part of the shoulder to which the pain is referred. He presented cases to show that irritation of the anterior part of the diaphragm causes pain in the anterior part of the corresponding shoulder, and irritation of the posterior part of the diaphragm supplied by the phrenic nerve causes pain in the supra-scapular region. The experimental work of Capps⁴ is contradictory to these clinical findings of Cope. Capps writes: "The maximum pain point in a given individual was the same from whatever part of the diaphragm it was elicited."

Regardless of the exact location of the pain point in disease involving certain portions of the phrenic sensory distribution, the value of the symptom is not lessened. In many diseases, especially those in the abdomen, the existence of a shoulder or neck pain is a distinct adjunct in diagnosis. Waring⁹ reports a case of amebic abscess of the liver, in which pain in the shoulder region was the only symptom indicating the location of the disease. Its presence is definite evidence that the sensory distribution of the phrenic nerve is involved in the irritation. To be of value, referred neck

and shoulder pains must be carefully differentiated from pain due to disease in and about the shoulder.

In those diseases having a direct contact with the diaphragm, it is quite clear that the pain is referred through the phrenic nerve to the spinal cord and out

into the neck and shoulder region through the third, fourth or fifth cervical nerves. In such conditions as appendicitis, ruptured ectopic pregnancy, suprarenal tumor, gallbladder disease, perforated gastric or duodenal ulcer, acute pancreatitis and pressure from drainage tubes, a word of explanation may be advisable. Shoulder pain in acute appendicitis is rare. To produce such pain it is, of course, necessary for infection to come in contact with the phrenic nerve. The length and location of the appendix may be factors in this involvement. It is well known how frequently subdiaphragmatic inflammation follows suppurative appendicitis. Evidence of phrenic nerve irritation in such a condition may be of great value. Pain in the shoulder region associated with rupture of an extra-uterine pregnancy can be caused only by a flow of blood to the subdiaphragmatic region. In suprarenal tumor, the cause of the referred pain is more direct, since the suprarenal capsule receives sensory fibers from the phrenic. Mayo-Robson¹⁰ has reported three clinical cases of suprarenal tumor in which this symptom was well developed. It is quite probable that cholecystitis, stone in the cystic duct and stone in the common duct



Location of referred pain to neck and shoulder region: A, gallbladder disease; B, perforated duodenal ulcer; C, pneumonia with diaphragmatic pleurisy; D, pericarditis.

5. Capps, J. A. and Coleman, G. H.: Experimental Observations on the Localization of Pain Sense in the Parietal and Diaphragmatic Peritoneum, *Arch. Int. Med.* **30**: 778 (Dec.) 1922.

6. Oehlecker, F.: *Zur Klinik und Chirurgie des Nervus phrenicus*, *Zentralbl. f. Chir.* **40**: 852, 1913.

7. Capps, J. A.: A Clinical Study of Pain Arising from Subphrenic Inflammation and Diaphragmatic Pleurisy, *Am. J. M. Sc.* **151**: 333 (March) 1916.

8. Cope, Zachary: Clinical Study of Phrenic Shoulder-Pain, *Brit. J. Surg.* **10**: 192 (Oct.) 1922.

9. Waring, E. J.: An Enquiry into the Statistics and Pathology of Some Points Connected with Abscess in the Liver as Met with in the East Indies, 1854.

10. Mayo-Robson, A. W.: Three Cases of Removal of the Suprarenal Capsule, *Brit. M. J.* **2**: 1100 (Oct. 21) 1899.

do not cause the phrenic nerve shoulder pain here considered, unless there is associated with these diseases some peritonitis, congestion or edema of the adjacent parts which come in contact with the phrenic nerve endings. This type of shoulder pain in gall tract disease is not to be confused with the textbook "shoulder pain," which is pain referred to the region of the scapula. It is not quite clear what tissues in the region of the gallbladder are innervated by the phrenic nerve. Clinical observations indicate that the right crus of the diaphragm and perhaps other tissues about the cystic duct receive phrenic nerve supply. Perforations of the stomach and duodenum cause diaphragmatic irritation by direct extension of the alimentary tract contents or a subsequent peritonitis to the diaphragmatic region. This is true also of acute pancreatitis, although here the left semilunar ganglion may receive the irritation. Mayo-Robson relates two cases in which pressure from a drainage tube to a gallbladder stump caused pain in the right supraspinous fossa. These were explained by pressure on the right crus of the diaphragm and the vena cava. Removal of the tubes gave prompt relief.

REPORT OF CASES

CASE 1.—B. B., a man, aged 41, was admitted to Bell Memorial Hospital, Dec. 20, 1922, with a diagnosis of perforated gastric or duodenal ulcer that had occurred five hours before. He had intense epigastric pain, vomiting and board-like rigidity of the upper abdomen. There was a history of stomach trouble extending over a period of several years. Soon after the onset of the abdominal symptoms, a persistent pain developed in the left shoulder region, which continued without interruption until operation. It was not again noticed after operation. Operation was performed eight hours after perforation. The patient recovered.

CASE 2.—H. R., a man, aged 27, was admitted to the Veterans' Hospital, Nov. 22, 1921, with a complaint of severe pain in the left chest, upper left abdomen, head, left shoulder and back. He gave a history of a chill two days before, followed by a high fever. On admission to the hospital, he appeared quite ill. His chief pain was in the left lumbar region, left upper abdomen and left shoulder. He had a leukocytosis, and albumin and pus in the urine. On examination, he was quite tender in the left lumbar region and upper abdomen along the costal margin. Perinephric abscess had been diagnosed by the physician who made the first examination. On careful examination, however, the day after admission, the foregoing findings were noted and, in addition, a few moist râles were found at the base of the left lung in the midaxillary line. A slight cough had also developed. The pain continued for three or four days in the left upper abdomen and loin, and was also quite severe in the region of the left acromion process. A diagnosis of pneumonia involving the diaphragm was made and confirmed by the later clinical course.

CASE 3.—C. F., a woman, aged 34, was admitted to the Bell Memorial Hospital for a gallbladder operation. The history corresponded to that of gallbladder disease which had lasted for one year. During some of the attacks in the gallbladder region, there was a definite pain in the region of the right shoulder, located by the patient near the acromioclavicular joint and just above the coracoid process. This was always associated with pain in the gallbladder region, and was increased by deep breathing and lying on the left side. At times the pain in the shoulder region was much more severe, and disturbed the patient much more than the abdominal pain. There was not at any time any pain referred to the scapular region. There was, however, a pain which seemed to extend around the costal margin from the gallbladder to the upper part of the right flank. At operation, a gallbladder was found with slightly thickened wall and definitely involved in adhesions over its lower half and about the cystic duct. There were no shoulder pains after the removal of the gallbladder.

CASE 4.—A girl, aged 11, whom I observed during my intern service in St. Mary's Free Hospital for Children in New York in 1912, had been admitted to the hospital several times for heart disease. She had both endocarditis and pericarditis. During her stay in the hospital, she complained bitterly on many occasions of pain in the left shoulder region and neck. This we interpreted as due to the pericarditis, since there was no evidence of local disease in or about the shoulder.

COMMENT

The four cases here briefly reviewed are typical examples of what may be observed by clinicians at any time. In Case 1, the location of the pain was unusual for perforated duodenal ulcer, since it was on the left side. Perforations of the lesser stomach curvature or near the cardia are more apt to cause left-sided shoulder pain. Perforation of the duodenum usually causes irritation of the right diaphragm. In this case, the pain did not reappear after the operation. Case 2 was a typical case of acute inflammation of the diaphragmatic pleura with pain most intense over the left lumbar muscles, left upper abdomen and left shoulder. There was definite tenderness in the left upper abdomen and in the left lumbar region. The definitely localized pain and tenderness and the urinary findings led to an early diagnosis of perinephric abscess. The third case gave a typical history of gallbladder disease with shoulder pain increased by deep breathing and lying on the left side. At operation, inflammation outside the gallbladder was found, which bears out the observations of Mayo-Robson that, to produce shoulder pain, the gall tract must have some peritonitis, congestion or edema outside of the tract disease. In the fourth case, the pericarditis was an outstanding feature and produced typical burning pains along the side of the neck below the mastoid and extending out a short distance along the trapezius ridge. This area was also quite sensitive.

CONCLUSIONS

1. Referred pain to the shoulder region in diseases involving the diaphragm is a fairly common occurrence.
2. The importance of this clinical symptom is probably not sufficiently emphasized by the average clinician.
3. The diagnostic value of phrenic shoulder pain is definite. When typical, it is a positive indication of an irritation to the phrenic nerve and should be sought where disease is suspected in the upper abdomen or lower chest.

Nutrition and Tuberculosis.—The well fed resist tuberculosis well; the underfed yield readily. Every attack of indigestion, every missed or partially consumed meal has its adverse effect on nutrition at any age of life. . . . The rich business man who hastily consumes a scanty breakfast of toast and coffee and works hard all day in an office with only a hasty lunch at noon cannot consider himself well fed even though he consumes a full meal in the evening. His child who refuses at table wholesome articles of food, such as bread and butter, vegetables and meat, cannot maintain a satisfactory degree of nourishment. . . . A lack of knowledge of food values is very common, especially in cities where delicatessen products made to tempt the eye and palate too often in the busy urban life take precedence over wholesome soups, roasts, and stews from the home kitchen. It should not be forgotten that the fatty articles of food, including butter, fat meats, cream and olive oil, are especially valuable in building up resistance to tuberculosis; but the diet must be suited to the age of the individual. Bread and butter, meat, and abundant vegetables must not be slighted simply because milk and eggs are so commonly mentioned as ideal foods.—F. C. Smith, *Pub. Health Rep.* 38:779 (April 23) 1923.

THE INTESTINAL LESION IN
ANAPHYLAXIS

W. H. MANWARING, M.D.

Professor of Bacteriology and Experimental Pathology, Stanford University School of Medicine

A. C. BEATTIE, A.B.

AND

R. W. McBRIDE

STANFORD UNIVERSITY, CALIF.

One of the characteristic features of canine anaphylaxis is the development of a hemorrhagic lesion in the intestinal mucosa. This lesion is usually confined to the upper half or two thirds of the small intestine, but occasionally it extends as far as the ileocecal valve. It is always most marked in the duodenum. In the milder type of anaphylactic shock, although the mucosa is markedly hemorrhagic, little or no blood escapes into the intestinal lumen. In severer shocks the lumen may be filled with extravasated blood.

It is currently assumed that this hemorrhagic lesion is due to an intestinal engorgement, caused by an increased resistance to blood flow through the liver.¹ A mechanically increased hepatic resistance, however, sufficient to raise the portal blood pressure to the maximum portal pressure observed during anaphylactic shock does not produce this hemorrhagic change.² It seems probable, therefore, that factors other than passive congestion of hepatic origin play a rôle in its production. We have endeavored to determine these factors by histologic and physiologic methods.

HISTOLOGIC STUDY

To prepare material for histologic study, the intestines were fixed, at various stages of anaphylactic shock, by injecting nonacid Zenker's solution³ plus 4 per cent. formaldehyd into the intestinal lumen. At the four to ten minute stage, the intestinal villi are markedly edematous, with stasis in the majority of their blood vessels. The epithelium is usually separated from the central portion of each villus by edematous fluid. The separation is often so marked that the epithelium is inflated to form a small bladder protruding into the intestinal lumen.

At the thirty to ninety minute stage, the epithelium is usually lost. The villi are now reduced to naked connective tissue structures. The outer portion of each structure in immediate contact with the intestinal contents shows altered staining reactions suggesting necrosis.

PHYSIOLOGIC REACTIONS

Marked changes were noted in the tone of the intestinal musculature during the anaphylactic reaction. In order to follow these changes, a cannula was tied in one end of a duodenal loop and connected with a mercury manometer. Changes in intra-intestinal pressure were then recorded, following intravenous injection of specific foreign protein. A typical record is shown in the accompanying tracing.

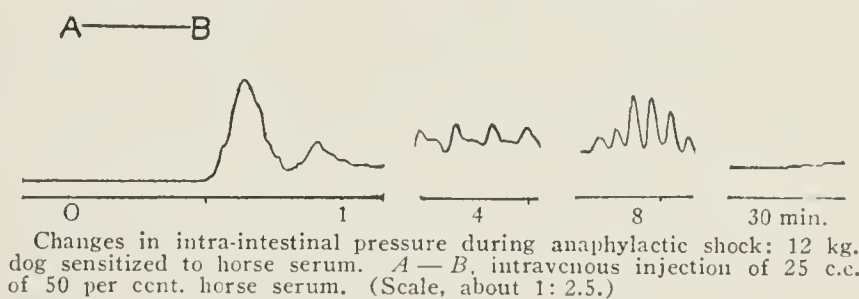
The intraduodenal pressure recorded with the abdomen open is usually about 7 mm. of mercury. On

throwing the dog into shock, the pressure usually rises to from 40 to 100 mm. of mercury by the end of forty-five seconds. The pressure then falls to about 20 mm. by the end of ninety seconds, and then gradually increases to about 30 mm. by the end of four minutes. After the fourth minute, the pressure very slowly decreases, reaching about 15 mm. by the end of thirty minutes. Rhythmic contractions of varying strength are usually recorded during the first ten minutes of the test.

PHYSIOLOGIC DEDUCTIONS

The effect of this prolonged increase in intra-intestinal pressure must be interpreted in the light of the parallel changes in arterial blood pressure. During typical anaphylactic shock, the aortic pressure falls to about 40 mm. of mercury by the end of ninety seconds, and then gradually sinks to about 28 mm. by the end of ten minutes. During the recovery period the pressure slowly rises, and is usually restored to normal in from forty to ninety minutes, depending on the severity of the shock.

An uninterrupted intra-intestinal pressure of 20 mm. of mercury, supplemented by the normal intra-abdominal pressure, would presumably completely stop the circulation in the intestinal mucosa during the period of low arterial blood pressure. In a shock of average severity, this stasis would probably last about twenty minutes. It would be followed by a stage of progressively decreasing passive congestion during the recovery



period. Even a marked passive congestion of the intestinal mucosa for this length of time would presumably be sufficient to account for the characteristic histopathologic findings.

The cause of this prolonged increase in intra-intestinal pressure has not yet been determined. It is, of course, conceivable that it is due to muscular contractions caused by intestinal anemia (low arterial blood pressure). It may possibly be partly due to increased tissue pressure from the local edema.⁴ In the light of the findings of Schultz, Dale and others, with isolated intestinal strips, however, one is inclined to attribute the reaction to a direct toxic stimulation of the intestinal musculature or of the local nerve endings. An analysis of the factors entering into the reaction will be reported later.

SUMMARY

1. The characteristic intestinal lesion in canine anaphylaxis is a stasis and marked edema of the intestinal mucosa, followed by epithelial desquamation, hemorrhage and superficial necrosis during the later stages of the shock.

2. This lesion is due to a prolonged contraction of the intestinal musculature, increasing the intra-intestinal pressure sufficient completely to stop the circulation in the mucosa during the period of low arterial blood pressure.

4. Manwaring, W. H.; Chilcote, R. C., and Hosepian, V. M.: Capillary Permeability in Anaphylaxis, *J. A. M. A.* **80**: 303 (Feb. 3) 1923.

1. Weil, Richard, and Eggleston, Cary: Anaphylaxis in Dogs, a Study of the Liver in Shock and Peptone Poisoning, *J. Immunol.* **2**: 525 (Oct.) 1917. Simonds, J. P.: The Fundamental Physiologic Reactions in Anaphylaxis and Peptone Shock, *J. A. M. A.* **73**: 1437 (Nov. 8) 1919. Wells, H. G.: The Present Status of the Problems of Anaphylaxis, *Physiol. Rev.* **1**: 44 (Jan.) 1921.

2. Manwaring, W. H.; Brill, S., and Boyd, W. H.: The Hepatic Mechanical Factor in Peptone Shock, *J. Immunol.* **8**: 121, 1923.

3. Stock Zenker's solution; acetic acid not added before using.

THE RÔLE OF THE CIVILIAN PHYSICIAN IN THE TRAINING OF CITIZEN SOLDIERS

M. W. IRELAND, M.D.

Surgeon General, U. S. Army

WASHINGTON, D. C.

The scientific advances of the last century have served to render the science and art of medicine an essential and inherent part of the military art, and no feasible plan for national defense can be devised and carried to a successful conclusion without the cooperation of the medical profession. The individual soldier constitutes the basic unit of any fighting force, and his ability to perform the duties that he may be called on to undertake in the defense of his country is fundamentally dependent on his physical fitness. Of all men, only the physician possesses the knowledge that will enable him to select from the great mass of the national man power those individuals who are physically fit for military service, and to eliminate the incompetents whose presence would tend to prevent the successful outcome of military operations. However, the responsibilities of the medical profession do not terminate with the proper selection of recruits, but on the medical officers of all component parts of the army must devolve the duty of guarding these soldiers against disease until they return again to civil life.

By the enactment of the National Defense Act of June 4, 1920, the people of the United States have for the first time in the history of the nation inaugurated a definite and comprehensive military policy. While provision is made for a small regular army, the major element for defense in time of war will be a force of citizen soldiers, trained during peace, and comprising, at least theoretically, all that part of the population who are eligible for military service. Thus, whereas in the past only professional soldiers and members of the National Guard were, during peace, trained for war, the present plan involves the participation and training of citizens from all walks of life, and this training must be accomplished without undue interruption of their civilian vocations. While the administration of the National Defense Act is, as yet, far from perfect, the experimental stage is past and it can now be definitely stated that the effective development of its provisions will serve to prevent the repetition of many of the unfortunate experiences of past wars, and will provide an army of trained citizens ready and capable of meeting any emergency that may arise in the future.

THE CITIZENS' MILITARY TRAINING CAMPS

By a wise and important provision, the National Defense Act provides short periods of military training for the youths and young men of the country through the medium of the Citizens' Military Training Camps. This feature of the defense plan is one that should appeal to every physician, not only as a valuable means of training men for the performance of their duties as protectors of the nation, should the need arise, but also as a public health measure. The training period consists of thirty days each year, and camps were operated for this length of time in 1921 and 1922. The experiences gained during the thirty days spent in camp under a military regimen exert a decided influence for good on the health of the trainee, who, on his return home,

serves to promulgate the gospel of good health among his friends and associates.

The cooperation of the physicians throughout the country is an essential factor in the success of the Citizens' Military Training Camps, actually to a much greater extent than is now realized by the medical profession, in general. The methods employed in selecting applicants for admission to camp and the nature of the training necessitate the close contact of the trainee with the physician from the time he makes application for training until he leaves the camp at the end of the training period.

It is quite apparent that, under the present conditions, the successful operation of any Citizens' Military Training Camp must depend to a very considerable degree on the selection of suitable men as candidates for training; and the responsibility for this selection rests, in the ultimate analysis, on the shoulders of the physician who conducts the preliminary physical examination, by which otherwise qualified applicants are tentatively accepted for training. This examination may be made either by a medical officer of the Army, Navy, or U. S. Public Health Service, or by a civilian physician located in or near the community in which the applicant resides. However, in actual practice it is, as a rule, performed by a civilian physician who may, or may not, hold a commission in the National Guard or Officers' Reserve Corps, but who, in any event, is willing to devote a small part of his time to assisting in the selection of individuals suitable for training.

PHYSICAL EXAMINATIONS

The procedures by which applicants for training are admitted to Citizens' Military Training Camps is now decentralized to the various corps areas. The military organization within the continental United States is divided into nine corps areas, and the operation of the Citizens' Military Training Camps within a corps area is under the direct control of the commander of that corps area. The young man who decides to apply for training in one of these camps obtains an application blank from one of the several agencies to which these blanks have been distributed by the corps area headquarters. He then presents this application blank to his family or other local physician, or to a medical officer of one of the federal services, who conducts the physical examination in accordance with the physical standards specified in the instructions printed on the blank. On completion of the examination, if the examining physician finds that the applicant meets the physical requirements for training, he certifies to that effect on the application blank, which is then returned to the applicant, who forwards it to the corps area commander.

IMMUNIZATION

In addition to complying with the physical standards, it is also required that each accepted applicant be immunized to smallpox and to typhoid and paratyphoid fevers, within the three-year period preceding the day he reports at a training camp. If, on receipt of the report of his preliminary physical examination at corps area headquarters, it is found that he has not been so immunized, but is otherwise acceptable, the necessary typhoid-paratyphoid vaccine is forwarded from corps area headquarters to the physician who conducted the preliminary examination, and the applicant is notified that he should report to him for vaccination against typhoid and paratyphoid fevers. Smallpox vaccine is

not, however, furnished to the applicant by the corps area headquarters because of the difficulties attending its distribution by ordinary mail. If it is determined that the applicant requires vaccination against smallpox, he is notified that he should obtain the vaccine at his own expense, or from local health authorities, and be vaccinated by a physician, preferably the one who performed the preliminary physical examination.

IMPORTANCE OF PRELIMINARY EXAMINATION

This method of provisionally designating and immunizing candidates for admission to a camp possesses many advantages for the applicant and for the physician. To the applicant it affords the opportunity of receiving at the hands of his family physician a thorough physical examination, which, should physical abnormalities be revealed, will provide the basis for the application of corrective measures for the purpose of alleviating or removing such defects. Furthermore, should disqualifying physical abnormalities be detected, a fruitless journey to the training camp is prevented. The preliminary examination provides for the civilian physicians an opportunity to receive training in the requirements and the technic of performing a physical examination for military service, and the vaccinations connected therewith; training which will be of great value to them and to the nation should it ever be necessary again to mobilize the man power of the country to meet a national emergency. Through these examinations, the physician, if he so desires, can advance the cause of public health in his own community by focusing public attention on the importance of the physical examination as a health-conserving measure, and by emphasizing the value of vaccination in the prevention of disease. The importance attached by the government to these two fundamental methods of maintaining physical fitness will, if supported by the local physicians, aid in fostering in the public mind a true conception of good health.

Under the present law, no funds are available out of which physicians can be paid for rendering to the government this most valuable service. However, the physician, by the very nature of his profession, assumes certain patriotic duties, and by making the preliminary physical examination of applicants for training he is, in this manner, enabled to participate in the defense of his country, to do his share in furthering the best interests of his community and of the nation, and to prepare himself partially for the duties that would be required of him in a national emergency.

If the preliminary physical examination is to be of value, and serve the purposes for which it is intended, it must be conscientiously and intelligently conducted. The applicant who is passed as physically fit at the preliminary examination is transported at government expense to a training camp, where he is given a final physical examination before being definitely accepted for training. The final physical examination is thorough; and, should it reveal the presence of disqualifying defects, the applicant is returned to his home, and his return transportation must also be paid for by the government. The results of the final physical examination at the opening of the camps in 1922 indicate all too plainly that a few of the physicians who performed the preliminary examination of the applicants did not fully realize the necessity of making a thorough physical survey. In all, 23,330 applicants were passed as physically qualified at the preliminary examination and

were sent to camps for training. On their arrival there, the final physical examination showed that 957, or 4.1 per cent., of these men were physically unfit for service. Although in each instance the examining physician had certified that the applicant did not possess disqualifying defects, nevertheless, fully 75 per cent. of the physical abnormalities found during the examination at camp were of such a nature that they should have been easily detected.

CAUSES OF REJECTION

Table 1 gives the common causes of rejection at camp and the relative frequency of their occurrence.

TABLE 1.—Disqualifying Defects Found Among 23,330 Applicants for Training at Twenty-Eight Citizens' Military Training Camps in 1922

Defects Causing Rejection	Number	Per Cent. of Total Number
Defective vision	131	13.7
Hernia	123	12.8
Organic heart lesions.....	66	6.9
Underweight	66	6.9
Pes planus	60	6.3
Venereal disease	49	5.1
Otitis media	34	3.6
Deficient mentality	24	2.5
Scabies	23	2.4
Ankylosis	17	1.8
Other defects	364	38.1
Total	957	100.00

During 1922, the average cost of transporting an applicant from his home to the camp and return was \$25; therefore, the rejection of 957 men caused a money loss to the government of approximately \$24,000. The expense of transporting the applicant to the camp and back again to his home is a matter of considerable moment, since the funds available for all expenditures connected with training in these camps are limited and must be disbursed with care. Also, when a physically defective individual is allowed to pass the preliminary physical examination and proceed to camp, not only does the government lose the money expended for his travel expenses, but the applicant is subjected to the disappointment, chagrin and inconveniences that must necessarily follow his rejection at camp. Nor can the rejected man be replaced by a physically fit applicant, as the money appropriated for his transportation has been spent, and the training schedule of the camp is by that time well under way.

Defective vision and hernia proved to be the most frequent causes for rejection. Such conditions are, as a rule, easily diagnosed, and should seldom pass unnoticed at the preliminary physical examination. Their detection in men of this age is also of great importance because of their tendency to impair the future success of the man in civilian pursuits, and the ease with which they can in many instances be partially or wholly removed. The majority of the other disqualifying defects were likewise found to be susceptible of ready diagnosis, and to consist of types that were amenable to remedial measures.

The available records indicate that a few examining physicians did not appreciate the necessity for exercising care in making these examinations. Some of the applicants asserted that they had been certified as physically qualified by a physician without any physical examination being made. When a physician does not desire to conduct a thorough physical examination, he should, in justice to himself, to the applicant, and to the

government, refuse to sign the certificate stating that the applicant is physically fit for military service.

DEFECTS THAT DID NOT DISQUALIFY

It is believed that the physical requirements for admission to a Citizens' Military Training Camp are just and not unduly high. Physically defective men are acceptable when their defects are minor in character and cannot reasonably be expected to impair their future usefulness as soldiers. Among the 22,373 men who were finally accepted for training in 1922, there were found 11,109 defects, none of which were considered to be disqualifying in character. The types of such defects and their distribution is shown in Table 2.

TABLE 2.—Nondisqualifying Defects Found Among 22,373 Trainees in Twenty-Eight Citizens' Military Training Camps in 1922

Defects	Number	Per Cent. of Total Number
Pes planus	2,427	21.85
Defective vision	1,643	14.79
Varicocele	1,032	9.23
Underweight	953	8.58
Ancylostomiasis	463	4.16
Defective physical development	248	2.23
Deviation nasal septum	191	1.72
Tachycardia	96	0.86
Cardiac murmurs not organic	76	0.68
Curvature of spine	58	0.52
Atrophy of testicle	44	0.40
Cryptorchidism	44	0.40
Cicatrix	41	0.37
Hydrocele	40	0.36
Hallux valgus	38	0.34
Scoliosis	37	0.33
Ingrowing nail	35	0.32
Defective hearing	19	0.17
Mitral regurgitation	10	0.09
Other defects	3,614	32.53
Total	11,109	100.00

It will be noted that, as was the case with the disqualifying defects, the greater proportion of the nondisqualifying defects were susceptible of improvement or cure by proper remedial treatment. In view of this, whenever a physical abnormality, whether disqualifying or not, was diagnosed by the examining officers at the camp, the applicant was so informed; and, if treatment was indicated, he was urged to consult his physician after he returned to his home. As an additional precaution, the parents of the applicant were, when practicable, communicated with by letter and informed of the presence and nature of the defect in order that corrective measures might be instituted by the family or other local physician.

IMPORTANCE OF CAMPS AS HEALTH MEASURE

There can be no doubt that the physical examinations, the immunizations to disease, the emphasis laid on the desirability of obtaining treatment for many of the minor physical abnormalities, and the instruction in hygiene received at the training camp will serve to render the Citizens' Military Training Camp policy a public health measure of national importance, not only by reason of its direct effect on the health of the trainee, but also through its educational value to the population of the country as whole. During the last two years, civilian physicians throughout the country have ungrudgingly given their time and skill to the furtherance of this work, and the nation's thanks are due them for this assistance, as without it progress would be impossible of attainment. It is confidently expected that their continued cooperation will be forthcoming not only during the year of 1923 but for the years to come.

ETHYLENE AS A GAS ANESTHETIC

PRELIMINARY COMMUNICATION *

ARNO B. LUCKHARDT, PH.D., M.D.
AND
J. B. CARTER, B.S., M.S.
CHICAGO

In our first communication¹ we published results showing that ethylene gas in proper concentration and admixture with oxygen possessed marked analgesic and anesthetic properties when administered to the usual laboratory animals. We likewise published results showing that man was as susceptible to its influence as the laboratory animals. On the subjective side it was readily established that analgesia and surgical anesthesia are induced very rapidly "without any sense of asphyxia, but, on the contrary, with a sense of well-being and comfort"; and that, on recovery, which is very rapid, many volunteers experienced only a very temporary nausea, others experiencing no ill effects whatsoever, except for a slight and temporary sense of weakness even under conditions which are known to favor untoward effects.

These preliminary experiments were performed on normal, healthy men. Further extension of the work demanded actual operative work in a hospital and on patients requiring surgical interference; for we had gone as far as it was possible to go in a physiologic laboratory.

We therefore arranged for a further demonstration on ourselves of the anesthetic properties of a suitable ethylene-oxygen mixture before a group of surgeons, physicians and professional anesthetists, Dr. Carl Dragstedt administering the gas.² Within several days after this demonstration (March 14, 1923), surgical work with its use was begun at the Presbyterian Hospital, Chicago. All precautions were taken to give the gas a fair but adequate trial. After it had been used in simple and uncomplicated cases with gratifying results, more extensive and prolonged operations were undertaken with similar success. Impressed with its many desirable properties, other staff surgeons at the hospital began to use it. From March 14 to April 26, 106 operations were performed.

CLINICAL ASPECT OF THE WORK

We offer a brief analysis of the clinical aspect of the work in the form of a short report, which we recognize as quite superficial and incomplete.

Sex.—Of the 106 patients operated on, forty-two were males and sixty-four were females.

Age.—The average age of the patients was 39.8 years. The youngest patient was a boy, aged 10; the oldest, a man, aged 64.

Nature of Operations.—We have grouped the operations as occurring on the head, thorax, abdomen, perineum or extremities. In addition, ethylene has had some use in obstetrics. This is a highly arbitrary system of grouping, and not above criticism. It allows, however, of a rapid enumeration of the various operations that have been performed:

* Read before the Chicago Institute of Medicine, April 27, 1923.
* From the Hull Physiological Laboratory, University of Chicago, and the Presbyterian Hospital.
1. Luckhardt, A. B., and Carter, J. B.: The Physiologic Effects of Ethylene, a New Gas Anesthetic, J. A. M. A. 80: 765 (March 17) 1923.
2. There were present, at this demonstration, Drs. Lester R. Dragstedt, A. D. Bevan, Dean Lewis, Gatewood, H. L. Jones, G. Hovnanian, A. E. Kanter, Isabella Herb, Mary Lyons and Frances Haines.

(a) Head: Removal of a wen; excision of a carbuncle; abscess of the jaw; mastoid operation; removal of tonsils; osteomyelitis of jaw with removal of sequestrum; opening of abscesses of neck and in axilla; drainage of cervical abscess.

(b) Thorax: Two excisions of breast tumors; two radical breast removals.

(c) Abdomen: Six herniotomies (one double); three exploratory laparotomies; six appendectomies; operation for undescended testicle; a cystostomy; cholecystectomy; two operations for shortening the round ligament of the uterus.

(d) Extremities: Reduction of a dislocated shoulder; five operations consisting of the amputation of a toe; operation on fractured and dislocated ankle; manipulation of shoulder for breaking up of adhesions; aspiration of a knee joint; osteomyelitis of tibia; osteomyelitis of femur (three operations); stretching of the sciatic nerve; bilateral amputation of thighs; osteomyelitis of ileum; removal of a sequestrum from the tibia; two operations for bunions, two operations on varicose veins; an astragalectomy; operation on a double fracture of the leg and dislocation at ankle of six months' duration.

(e) Obstetrics: Ethylene was used in four normal deliveries with very satisfactory results. It was found better than nitrous oxid used the preceding hour or hours. An 80 per cent. concentration was employed. The color of the patient remained good. The fetal heart tones remained unchanged.

(f) Perineum: Dilatation of cervix and curettage (nine); two radium needles into cervix uteri; pelvic examination; double rectal fistula; two prostatectomies; two operations for removal of hemorrhoids; cystoscopy; five operations in which radium needles were introduced into the prostate; ureteral catheterization; anal fissure; vaginal cesarean section; perineal incision prior to delivery and subsequent repair; insertion of Voorhees bag; amputation of cervix uteri; perineorrhaphy; manual exploration of uterus; incision of pelvic abscess; colpotomy.

Concentration of Ethylene Used.—The average concentration of ethylene used in 101 operations (in which a record was kept) was 81.9 per cent., the other gas, as with nitrous oxid administration, being oxygen. Individual variation exists as with other anesthetics, regardless of the nature of the operation. Whereas a 77 to 80 per cent. ethylene and a 23 to 20 per cent. oxygen mixture sufficed to render some patients analgesic or even anesthetic, others were not in a state of surgical anesthesia unless the ethylene was given in a concentration of 90 or even 95 per cent. The latter patients were exceptionally resistant, and were few in number. Otherwise the percentage of ethylene necessary for the 101 patients as a whole would not average down to 81.9 per cent. ethylene. Such a concentration allows, as will be noted, of the simultaneous administration of about 18 per cent. oxygen.

Duration of the Operations.—The length of the operations varied considerably—from a few minutes to one hour and fifty minutes. The average length of ninety-two operations was 27.8 minutes.

Recovery from the Anesthetic.—In the entire series of ninety-two cases in which ethylene was the sole anesthetic used, we find no record that the patient had not recovered his senses within five minutes after discontinuance of the anesthetic. Following the shorter operations, recovery was almost immediate. But even

after very long operations the patients were usually quite rational within three minutes after ceasing to breathe the ethylene-oxygen mixture.

Nausea and Vomiting.—Three of the ninety-two patients felt nauseated, and fourteen vomited. The retching or vomiting was of short duration, occurring when the patient was but lightly anesthetized or for a very brief time immediately on recovery from the anesthetic. It consisted very often of a few retching movements, and was never serious.

Evaluation by the Surgeon.—Nineteen surgeons operating with ethylene as the anesthetic agent have made this preliminary study possible.³ Their verdict was not only that the gas was "good" or "very satisfactory," but that it produced in a given type of operation or manipulation a decidedly better relaxation than was possible with nitrous oxid. Upper or lower respiratory infections were not brought on by its administration, nor were such, when existent at the time of operation, made worse.

Opinion of the Anesthetists.—The administration of ethylene was almost exclusively in the hands of Drs. Isabella Herb and Mary Lyons. Whether used to induce anesthesia in an ethylene-ether sequence (fourteen cases) or as the sole anesthetic agent, these well known anesthetists felt very well satisfied with it, as the following quotations, culled from the protocols of various patients will prove:

Unable to hold under nitrous oxid in similar operation. Better relaxation than with nitrous oxid. (Herb.)

Sequence easier than with nitrous oxid. (Herb.)

Much better than nitrous oxid. Patient given nitrous oxid several times before—always unsatisfactory. (Herb.)

Have given him six anesthetics before, always with excitement. None this time. (Herb.)

Quieter induction. (Lyons.)

Very satisfactory. (Lyons.)

Patient with hemoglobin of 35 per cent. This type does poorly under nitrous oxid. Used ethylene with complete relaxation. (Lyons.)

Less bleeding—no cyanosis. (Lyons.)

More satisfactory than nitrous oxid. (Herb.)

Perfect relaxation. Excellent color. (Gaston.)

Opinion of the Patients.—Many volunteers for the preliminary work and some patients stated that ethylene was the best anesthetic they had ever had.

In our first publication we mentioned the possible advantages of ethylene over nitrous oxid. These advantages were surmises based solely on experiments with normal animals and healthy men. Each of these predictions was verified when put to the test in the clinic. For purposes of emphasis and as a partial summary, we repeat them here:

1. Anesthesia may be maintained:

(a) In the absence of all signs of asphyxia.

(b) In the absence of effects on blood pressure.

(c) In the absence of dyspnea.

(d) With complete muscular relaxation.

2. It may be used in obstetrics, a state of complete analgesia being possible at a concentration of 80 per cent. ethylene.

3. There is rapid recovery after long continued administration without evidence of after-effects.

3. They are, with the number of operations performed by each: Dr. Dean Lewis, twenty-nine; Dr. A. D. Bevan, sixteen; Dr. N. S. Heaney, twelve; Dr. D. B. Phemister, eleven; Dr. H. L. Kretschmer, eleven; Dr. G. L. McWhorter, three; Dr. E. D. Allen, three; Dr. Gallagher, three; Dr. Montgomery, four; Dr. Gatewood, one; Dr. C. B. Davis, two; Dr. Edward Miller, two; Dr. F. B. Moorehead, two; Dr. Edwin McGinnis, one; Dr. H. H. Everett, one; Dr. Kellogg Speed, one; Dr. Carey Culbertson, one; Dr. G. E. Shambaugh, one, and Dr. Vernon David, two.

Failures.—We frankly admit, however, two failures. In one the failure was complete, a concentration of from 90 to 95 per cent. producing in this young man marked cyanosis without the slightest relaxation. The other patient was rendered analgesic by a 95 per cent. ethylene-oxygen mixture, but was never profoundly anesthetized. At a subsequent operation under apparently identical conditions (except for the nature of the operation), surgical anesthesia was induced, together with complete muscular relaxation.

Such refractory cases are known to occur occasionally with nitrous oxid. In the past, no attempts have been made to determine why some patients are refractory to nitrous oxid, or even to ether anesthesia. It seems to us that a group of such cases should receive a most careful study by all available means with the hope that such a study might possibly furnish evidence as to the mechanism of anesthesia.

COMMENT

On the basis of this clinical study, comprising a series of 106 patients with and without cardiovascular, renal and other complications, we can state briefly that ethylene-oxygen anesthesia is very satisfactory. Since it is possible to administer with the ethylene, on the average, as much as from 16 to 18 per cent. oxygen, asphyxia and its consequences are avoided, and cyanosis, so commonly seen with nitrous oxid, is conspicuously absent. Analgesia comes on surprisingly early. Considering, furthermore, that the relaxation is more complete than with nitrous oxid, we find that ethylene compares most favorably with ether. In fact, the impression is gaining ground that ethylene has some of the advantages of ether, without many of its troublesome after-effects. The very prompt recovery points to a rapid elimination of the ethylene, and may necessitate the administration of morphin immediately on the conclusion of an operation.

CONCLUSION

We append a note of warning to those who contemplate using ethylene in the clinic. Ethylene gas is inflammable. It forms, moreover, with air (or oxygen) an explosive mixture in a concentration of four volumes of ethylene with ninety-six volumes of air. Until further work, now in progress, has been performed on its explosive properties, we warn surgeons and anesthetists not to use the gas in the presence of an electric spark, the actual cautery or a free flame.

Satisfied that, under proper conditions of administration (soon to be published by Drs. Herb and Lyons), ethylene gas produces in most individuals not only analgesia but also a state of surgical anesthesia incomparably better than with nitrous oxid for any kind of surgical work, we offer the gas to the medical profession for further trial in the clinic.

We feel that others who use it will be impressed with the rapidity and ease with which anesthesia is induced, with the slow and regular respiration, with the dryness and warmth of the skin, with the generally pink coloration of the skin and viscera, with the slowness and regularity of the pulse, with the absence of salivation, with the absence of blood pressure changes during or following considerable trauma and manipulation, with the complete muscular relaxation, and, finally, with the remarkably rapid recovery without serious sequelae after even a prolonged anesthetization.

In the meantime, we are continuing our investigations in the laboratory and clinic on various aspects which are of immediate importance.

ABORTIVE TYPE OF TUBERCULOUS
HIP-JOINT DISEASE

REPORT OF TWO CASES

A. L. NIELSON, M.D.

HARLAN, IOWA

Tuberculosis of the hip-joint is a disease entity with well-established diagnostic features in etiology, history, symptoms and signs, as well as definite principles of treatment. It is a condition marked by a long-continued, progressive course, unless halted by proper treatment, which of necessity requires a long time.

Abortive types of tuberculous hip-joint disease are unusual, and there is considerable question whether or not abortive types occur. Theoretically, it might seem very possible for a tuberculous infection in the hip-joint, though well started, to become overwhelmed by body resistance, in an early stage, and be cured. The possibility of an immunity to the infection being established, however, is much less in a joint infection than in a lung infection, for example, because of the comparatively poor blood supply to the joint.

In the few articles found in the literature that discuss the question, there is practically an agreement that abortive types do not occur. Friedländer¹ describes cases of ephemeral coxitis which apparently are abortive types of tuberculosis, but concludes that these cases cannot be proved to be tuberculous. Again, Friedländer² states that he believes one group of cases represents an abortive tuberculosis. Sundt,³ in a study of thirteen cases of obscure hip affections, whose later histories ruled out a typical tuberculosis, concludes that tuberculosis could be excluded in twelve cases and, though in the thirteenth case it could not be excluded, the condition probably was nontuberculous. Sundt states that while it is impossible to disprove the existence of abortive joint tuberculosis, he doubts whether it ever occurs in the hip. Rogers⁴ mentions the case of a man, aged 21, who at operation showed a definitely proved tuberculous synovitis of the hip-joint, with no involvement of bone; this, however, would not necessarily be an abortive type.

Among the conditions that might be considered as abortive tuberculosis of the hip-joint is nontuberculous synovitis, which, judging from a search of available literature, is very rare in the hip-joint. Keen⁵ mentions an acute synovitis of the hip in children that might give symptoms of hip-joint tuberculosis. Etiologic factors, such as injury or focal infection, should be fairly clear in a nontuberculous synovitis. Acute arthritis may be eliminated by its usual feverish, acute course, and by the rarity of its location in the hip. Pseudocoxalgia, Perthes' or Legg's disease, should be considered, but can be excluded by the roentgen ray, as a flattening and irregularity of the head of the femur is very constant in this condition. Also the symptoms and findings are typically different from those of tuberculosis. To mention other possible simulants of hip disease, Sundt gives coxa vara, epiphyseolysis coxae, fracture of the neck of the femur, arthritis deformans, osteomyelitis, and hysterical joint.

1. Friedländer: Wien. klin. Wchnschr. **26**: 1022 (June 19) 1913.
2. Friedländer: Koxalgische Attacke im Kindesalter, Wien. klin. Wchnschr. **32**: 811 (Aug. 7) 1919.
3. Sundt, H.: Tubercle **2**: 289 (April) 1921.
4. Rogers, M. H.: J. Bone & Joint Surg. **4**: 679 (Oct.) 1922.
5. Keen, W. W.: Surgery, Philadelphia, W. B. Saunders Company **2**: 325.

The lack of definite roentgen-ray findings in an early tuberculosis of the hip-joint does not preclude the diagnosis; for though, often, the tuberculous involvement is first located in adjacent bone, a primary tuberculous synovitis is recognized. Murphy⁶ states that in infants primary tuberculosis develops in the synovia.

The occurrence of two very similar cases of clinically definite tuberculosis of the hip-joint, both of which cleared up with practically no treatment and in a comparatively short time, brought up the question of an abortive type, and I wish to record the findings for what bearing they may have on the subject.

REPORT OF CASES

CASE 1.—M. F., a boy, aged 2½ years, whose past history was uneventful and whose family history was not pertinent examined, Oct. 23, 1920, complained of lameness of the right leg and pain above the right knee. The onset was two days previously, when he awakened and cried out with pain in the knee, and it was found that he could not stand on the right leg. The child had been healthy and vigorous, but, on question, the father recalled that, for a month before, the boy had often asked to be carried after walking a few blocks, and had said that his knee hurt him. There was no history of injury, but the child cried out often in his sleep.

Pain was localized in front of and just above the knee joint. The right leg was held with the knee flexed and the foot everted. The posterior gluteal sulcus was obliterated on the right. Motions of the hip were limited, the muscles being spastic; measurement showed no shortening. The temperature was 98.6 at 10 a. m. The roentgen-ray report was negative. The Pirquet skin test was markedly positive in twenty-four hours.

A diagnosis of tuberculosis of the hip-joint was made, and hospitalization for treatment by immobilization advised. The parents wished to wait a few weeks and, against the recommendation for immediate treatment, rest and hygienic measures were carried out. One week later, the condition was unchanged; the temperature had been up to 99 or more each evening. Three weeks after the examination, the child was able to walk, had but little pain, and limped slightly. In view of the improvement, it was decided to wait, and six weeks after the onset, recovery was complete, symptomatically and as to examination. A recent report states the child has remained well.

CASE 2.—M. L., aged 3 years, examined, Sept. 26, 1921, whose past history was negative, as was the family history, had complained of pain in the knee, beginning four days previously, and when walking, he limped and dragged the right foot. He had night cries, but there was no injury. Examination of the right hip showed a picture similar to that in Case 1. There was spasticity of the muscles, limitation of movements, and obliteration of the posterior gluteal fold, and the leg was held in flexion. Roentgen-ray examination was negative. The Pirquet test was positive in twenty-four hours.

In view of the course in Case 1, rest and hygienic measures were advised, with a request for a report each week. After two weeks there was slight improvement, and six weeks after the onset, there was complete relief of symptoms, and examination was negative. A report in January, 1923, shows the child free from trouble. During the October following the examination, two cows of the herd from which the family obtained milk were condemned for tuberculosis.

COMMENT AND CONCLUSION

In these cases we have, in favor of a diagnosis of tuberculosis, (1) etiologic factor; (2) typical history and symptomatology; (3) typical objective signs; (4) positive Pirquet tests (in children of these ages, the positive skin test should have considerable weight), (5) lack of any other diagnosis except acute synovitis,

the occurrence of which is unusual, and for which we have no etiology.

Against the diagnosis of tuberculous joint disease, we have (1) the lack of bacteriologic proof of the organism, and (2) the course and outcome, for the recovery of a so-called tuberculous hip-joint in a few weeks is a strong argument against the diagnosis.

Though not definitely proved, it would seem that there is an abortive type of hip-joint tuberculosis.

THE DIFFERENTIAL DIAGNOSIS OF NEURITIS AND CONDITIONS SIMULATING IT

WITH ESPECIAL REFERENCE TO POSTINFLUENZAL
MULTIPLE NEURITIS AND ATAXIA *

GEORGE WILSON, M.D.

PHILADELPHIA

Perhaps no diagnosis is made with less foundation in fact and made so loosely as the diagnosis of neuritis, a term that is usually applied by the physician and the layman to connote a variety of conditions, the chief symptom of which is pain. If neuritis is of the mixed variety, that is, both motor and sensory, or if of the sensory type, it will be associated with pain; however, the two commonest types of neuritis seen in civil practice are instances of motor neuritis and hence are unassociated with pain. These two conditions are involvement of the seventh nerve and of the musculospiral, and are usually due, in the first instance, to exposure to a draft, and in the second, to pressure. A mononeuritis involving a mixed nerve and hence a condition which gives rise to pain, is extremely uncommon, the ulnar, median and sciatic nerves being only rarely so affected.

If a neuritis is present, producing pain, it must necessarily be of a sensory nerve, or of a nerve that contains both motor and sensory fibers. Such a disease should have as its chief symptoms pain along the course of the nerve, tenderness on pressure, weakness in the muscles supplied, a diminution of all forms of sensation in the distal parts of the nerve involved, depression or loss of the deep reflexes, and, if the condition is of any severity at all, muscular atrophy with a change in the electrical reaction. If the nerve involved is only a motor nerve, pain will be absent, as in the case of an ordinary Bell's palsy or of a musculospiral paralysis.

Granting that the foregoing remarks are true, what are the conditions which, when present, are so frequently thought to be neuritis, when, as a matter of fact, no such condition primarily exists? Given a patient with pain in any part of the body as his chief complaint, a methodical and systematic order of investigation should be instituted in every case in order to arrive at a proper diagnosis. I believe the fact is frequently overlooked that the pain complained of may be due to irritation of a nerve trunk or root much higher up than the site of the patient's pain. To paraphrase a line in an old poem, "the doctor properly to unravel the pain should begin at the cord," and thence work toward the periphery. The pain pro-

* From the Neurological Department of the University of Pennsylvania School of Medicine.

* Read at the Seventh Annual Clinical Session of the American Congress on Internal Medicine, Philadelphia, April 4, 1923.

duced by disease of or irritation of a posterior root is variously described as sharp, shooting, cutting or burning, and is often increased by sneezing, coughing or jarring. The fact that a root pain is often increased by sneezing or coughing frequently leads to an incorrect diagnosis of pleurisy (which may also exist) in the patient suffering from involvement of a posterior root in the dorsal region.

The chief conditions that irritate or destroy a posterior root are, in order of their frequency, syphilis, disease of the vertebrae, herpes zoster, spinal tumor and tumors, including aneurysms, growing outside the spinal canal.

Syphilis causes involvement of a posterior root by the production of a low grade of meningitis, such as is seen in tabes dorsalis and in meningomyelitis. Diseases of the vertebrae, of which osteoarthritis, Pott's disease and carcinoma are the chief offenders, cut down the size of the vertebral foramina and also impinge directly on the roots. Herpes zoster is an involvement of the posterior root ganglion and, according to some investigators, is the analogue of acute anterior poliomyelitis. The pain of herpes zoster, as is well known, may persist for months after the eruption has disappeared. Tumors of the cord, which are usually benign, frequently grow from a posterior root or involve it by pressure. Tumors outside the vertebral canal involve the roots by pressure.

As a rule, a posterior root neuritis is not associated with tenderness at the site to which the pain is referred, although such a condition may exist. Whenever the disease of the root is of any severity, the so-called anesthesia dolorosa is present, in which case a paradoxical situation is seen; viz., the patient, although suffering from an intense pain in an area, is unable to differentiate the point from the head of a pin in this painful zone. It is needless to say that very often the conditions mentioned above will have other signs and symptoms than pain and a disturbance of sensation.

Posterior root disease may produce pain in any part of the body, yet how often does the examining physician who is called to treat a pain in the chest, abdomen or in any one of the four extremities think of the spinal cord and its posterior roots as the possible origin of the pain? I will not venture a reply.

After disease of the vertebrae, the cord and its coverings have been eliminated, one should try to visualize the course of the nerves, an involvement of which may give rise to pain. In the case of pain in or around the chest and the abdomen, a careful effort should be made to find the organ at fault, if the conditions mentioned above have been ruled out.

Pain in an extremity is only on the rarest occasion due to a neuritis; for ulnar neuritis, median neuritis and real sciatica are extremely uncommon conditions which should never be diagnosed until all the evidence in the case has been carefully sifted. The chief causes of pain in an extremity, in addition to posterior root involvement, are arthritis and disease of the vessels. I believe that the condition most frequently called neuritis in an extremity is in reality arthritis, the joint disease usually striking the shoulder or the hip. In addition to the changes as shown by the roentgen ray and the absence of any disturbance of sensation, joint disease produces an atrophy of the muscles that move the joint, especially the extensors, the atrophy being often rapidly produced and usually associated with

increased reflexes in contradistinction to the lost reflexes that occur in neuritis. This type of atrophy is not associated with fibrillary tremors or with changes in the electrical reactions.

Disease of the vessels as a cause of pain in the extremities is usually easily recognized, and in this condition a neuritis may come on because of interference with the nutrition of the nerves.

Multiple neuritis may be of the sensory, motor or mixed types, the mixed variety being the commonest and due, as a rule, to alcohol. The signs of neuritis as outlined above will be present over many nerves instead of over one. Occasionally, any one of the acute infections may produce a multiple neuritis which may be in no way different from that produced by alcohol, but which, occasionally, is of an unusual type resembling in some of its manifestations tabes dorsalis and frequently referred to as pseudotabes. The sensory loss in this type of multiple neuritis may simulate closely those seen in the cord changes occurring in the course of severe anemia. In 1919, I called attention to this condition occurring in three cases of post-diphtheric ataxia.

Through the kindness of Dr. Spiller, I present two instances of postinfluenzal multiple neuritis and ataxia from the University Hospital.

REPORT OF CASES

CASE 1.—History.—A white man, aged 24, unmarried, referred to the hospital, March 15, 1923, by Dr. J. W. Mitchell of Lewistown, Pa., complained chiefly of numbness and loss of power in the legs and arms. He had never had scarlet fever, diphtheria or pneumonia. He had a chancre in May, 1921, and was treated with mercury and six injections of arsphenamin. He was also given three injections of arsphenamin three weeks before admission, because his present trouble was thought to be tabes. He was well until three months before admission, when he had an attack of the grip, with cough and fever, the whole thing lasting about four weeks. Shortly after this he noticed a tingling sensation in his tongue, a condition which persisted ten days. A few days later he noticed that he staggered when walking. This difficulty in locomotion gradually progressed, and about two weeks before admission it became so severe that he could not walk, and had to remain in bed. At the time of examination, his legs were so weak that he could not bear his body weight on them. The upper extremities had been involved in the same manner as the legs, and he had very little use of his hands and arms. He had had no pain, and he had never been completely paralyzed in any muscle or group of muscles. He had had no eye symptoms and no relaxation of the sphincters.

Physical Examination.—The man was well developed and well nourished, was confined to his bed because he was unable to walk or stand, and sat up only with great difficulty. The pupils were equal and regular, and reacted somewhat sluggishly to light, but better in accommodation. The cranial nerves were normal, and hemianopia, exophthalmos and nystagmus were absent. The upper and lower extremities were well developed, and no atrophy was seen. All of the muscles of the upper and lower extremities were extremely weak. The biceps, triceps, patellar and Achilles reflexes were absent on both sides. Plantar stimulation produced flexion. Pain, touch, heat and cold were diminished in the distal portions of the upper and lower extremities. The sense of position and the sense of vibration were greatly impaired in all four extremities, and stereognostic perception was lost in both hands. Deep pressure was markedly involved in the hands and feet. The nerve trunks were tender on deep pressure. The electrical reactions showed normal faradic response and slight diminution of galvanic excitability.

The blood, spinal fluid, urine and gastric contents were normal.

CASE 2.—History.—A white man, aged 40, referred to the hospital by Dr. J. B. Nutt of Williamsport, Pa., March 16, 1923, had never had scarlet fever, diphtheria, rheumatism or tonsillitis. He was married and had six children, all whom were living and well. He stated he had never had venereal disease, and that he did not use alcohol. The patient was perfectly well until the latter part of December, 1922, when he contracted influenza, associated with high fever, headache and pains in the extremities, symptoms that persisted for three weeks. A few days later he noticed a tingling in the ends of his fingers and a marked defect in vision for near objects. After a few days' rest, he felt better and returned to his work for several days. The latter part of January, his legs suddenly became too weak to bear his weight, and his hands became weak and numb. He went to bed for three days, improved, and tried to walk, a feat that he did with a great deal of difficulty and staggering. His vision became normal after the first of February. The weakness of his four extremities continued, and gradually involved them to a marked degree. Three weeks before he was admitted, he again collapsed when walking. At the time of examination, he could walk with support. He had lost about 20 pounds (9 kg.) since the onset of his illness. He had had no pain or sphincter disturbance.

Physical Examination.—All of the muscles of the extremities were extremely weak, but no atrophy was made out. He could walk for a short distance, showing an ataxic gait. Romberg's sign was present. The biceps, triceps, patellar and Achilles reflexes were lost. Plantar stimulation produced flexion on both sides. Touch, pain, heat and cold were slightly involved in the distal portions of the extremities. The sense of position and the sense of vibration were lost in the hands and feet. Deep pressure sense was normal. Intense pain was produced when the nerves of the extremities were palpated. The blood and urine were normal in every respect. The electrical reactions showed no changes.

COMMENT

These two cases represent an unusual form of multiple neuritis in which ataxia and a loss of deep sensibility are prominent physical findings. In the first case, a diagnosis of tabes dorsalis had been made, although this diagnosis is certainly untenable because of the rapidity of the onset, the absence of shooting pains, sphincter disturbance, and eye signs, the presence of normal reactions of the blood and spinal fluid, and because of the marked weakness which is not a symptom of tabes dorsalis. The history of the onset coming closely after an attack of influenza makes a diagnosis of postinfluenzal multiple neuritis and ataxia a likely one. The second case, similar in a great many respects to the first, also developed on the heels of an attack of influenza and showed much the same clinical picture.

It is extremely unusual that in a case of multiple neuritis the sense of position and the sense of vibration should be lost with relatively little involvement of the other forms of sensation. This naturally suggests the possibility of posterior columns of the cord being involved, as well as the peripheral nerves. The resemblance of this sensory loss to that occurring in the cord changes seen in the course of severe anemia is very striking, but the absence of pyramidal tract symptoms and the presence of a normal blood and gastric contents rule out such a possibility.

The diagnosis made in these two cases, therefore, is postinfluenzal multiple neuritis, with a possibility of involvement of the posterior columns of the cord as well as of the peripheral nerves. Both patients are rapidly improving and each should make a complete recovery.

1909 Chestnut Street.

THE ADMINISTRATION OF HYPERTONIC SALT SOLUTIONS FOR THE RELIEF OF INTRACRANIAL PRESSURE*

TEMPLE FAY, M.D.

PHILADELPHIA

The use of magnesium sulphate to assist in controlling intracranial tension was first introduced into this clinic a little more than two years ago. During this time, certain observations as to its effects and mode of administration have been recorded, and the conditions in which its use is beneficial will be noted. It was adopted by the neurosurgical service as a means of reducing intracranial pressure and volume, following my observation that infants showed a marked retraction of the fontanels after its use, because of the dehydration that it produces throughout the cerebral system.

At the time a method brought forward by Cushing and Foley¹ of the intravenous injection of 35 per cent. sodium chlorid solution was in use, but since that time this method has been replaced in the majority of cases by the easier and more satisfactory administration of magnesium sulphate solution, either by rectum or by mouth. The intravenous method of sodium chlorid administration is still found to be of great value in cases in which rapid reduction of intracranial pressure and volume is necessary on the operating table.

Magnesium sulphate has been found of decided value in the preoperative study of cases presenting intracranial pressure. The patients have been relieved of headache, vomiting, choke disk, medullary depression and coma. Their symptoms and responses could be more carefully observed when the intracranial tension was relieved, and they could be kept in comfort for several days previous to operation. Dangerous medullary symptoms may be relieved long enough to permit time for the proper localization of a lesion before an operation is undertaken (Chart 1). The use of magnesium sulphate as a routine measure before operation in cases of suspected intracranial tension has permitted exposure of the cortex otherwise unsafe in the presence of decided pressure.

In the postoperative treatment of the so-called medullary edema, magnesium sulphate had been found indispensable. Cases in which stupor supervenes following intracranial exploration, with marked fall in respiration and pulse, rapid dehydration will check the pressure on the basal centers and allow a return of the respiration and pulse to normal (Chart 2).

In cases of traumatic injuries to the brain in which fracture of the skull or concussion is associated with marked stupor, respiratory and cardiac depression due to intracranial pressure and "medullary edema," dehydration by magnesium sulphate is followed by marked relief of these symptoms (Chart 3).

MODE OF ADMINISTRATION

Magnesium sulphate is best given by rectum. We have found 3 ounces (90 gm.) of the crystals dissolved in 6 (175 c.c.) ounces of warm water and introduced by means of a soft rubber catheter and syringe the most effective and the simplest method. The effects become apparent in about an hour. The patient is

* Read before the Philadelphia Neurological Society, Jan. 26, 1923.

* From the neurosurgical clinic of Dr. Charles H. Frazier, University Hospital.

1. Cushing, Harvey, and Foley, F. E. B.: *Proc. Soc. Exper. Biol. & Med.* 17: 217, 1920.

saved the distress of active catharsis, and, in cases of vomiting, the administration of the salt by mouth may increase emesis, and the value of the drug will then be lost to the patient.

When given by mouth, 1½ ounces (45 gm.) of the crystals in 8 ounces (235 c.c.) of water brings relief a little sooner but is not without its disadvantages from the standpoint of the patient. This dose may be repeated every fourth hour until the desired dehydration is obtained.

bowel for the reduction of intracranial pressure. Foley and Putnam³ also confirmed this work, and a clinical application was made of these findings by Haden,⁴ Cushing and Foley¹ and Sachs.⁵ In a more recent article, Dowman⁶ points out his use of magnesium sulphate in cases of intracranial tension, with marked success.

The use of sodium chlorid in solution by mouth (or in 2-gram capsules coated with phenyl salicylate), if given in sufficient quantities to produce dehydration,

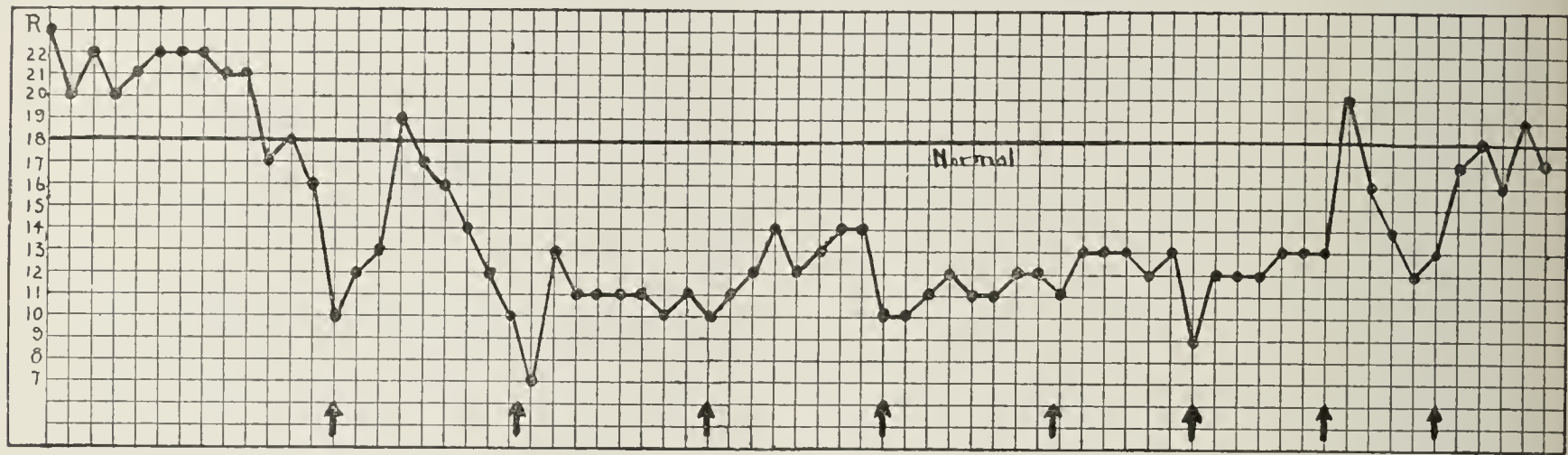


Chart 1 (M. S.).—Respiration of patient admitted with increased intracranial pressure for study and localization of lesion; sudden attack of medullary depression with stupor; patient relieved by administration of magnesium sulphate; safe and satisfactory condition maintained until lesion could be localized and removed: R, respiration; arrows, magnesium sulphate.

When given by rectum, no discomfort has been noted, and the accumulated fluid is siphoned off from time to time. The dose may be repeated in four hours and until the desired effect is produced. If more than 6 ounces of fluid is used, the patient may expel the solution, owing to its volume. In cases in which the patient is irritable, a dram (4 c.c.) of camphorated tincture of opium added to the salt solution may be of great benefit in assisting him to retain it. Fluid intake should, of course, be restricted to a minimum.

was found by us to be attended with vomiting and much distress, such as thirst and gastritis, so that this method has given way to the use of magnesium sulphate in this clinic. From a physiologic standpoint, the action of sodium chlorid is due not only to the presence of hypertonic saline solution within the bowel, but also to absorption of salt into the blood stream, the hypertonic solution of blood thus created causing a withdrawal of fluids from tissue spaces and especially the ventricular system. Hypertonic sodium chlorid solu-

COMMENT

Weed and McKibbin² were the first to show the value of hypertonic sodium chlorid solutions by vein, and sodium sulphate and sodium chlorid by rectum and

2. Weed, L. H., and McKibbin, P. S.: *Am. J. Physiol.* **48**: 512 (May) 1919.

3. Foley, F. E. B., and Putnam, T. J.: *Am. J. Physiol.* **53**: 464 (Oct.) 1920.

4. Haden, R. L.: *Therapeutic Application of Alteration of Brain Volume by Injection of Glucose*, *J. A. M. A.* **73**: 983 (Sept. 27) 1919.

5. Sachs, Ernest, and Belcher, G. W.: *Use of Saturated Salt Solution Intravenously During Intracranial Operations: Preliminary Report*, *J. A. M. A.* **75**: 667 (Sept. 4) 1920.

6. Dowman, C. E.: *Management of Head Injuries with Real or Potential Brain Damage*, *J. A. M. A.* **79**: 2212 (Dec. 30) 1922.

TABLE 1.—Results of Giving Magnesium Sulphate by Mouth and by Rectum

Case	Method	Amount, Ounces	Effect	Lesion
1	Rectal	2½ every other day	Respirations restored to normal; relief of headache and vomiting; great relief of tension; vision improved; kept comfortable for 10 days until subtemporal decompression	Tumor ?, unverified
2	Mouth and rectal	1 every 4th day	Headache relieved; vomiting relieved; postoperative respiratory drop; restored; palliative	Pituitary syphilis
3	Mouth	1 in the a.m.	Entire relief of intense headaches, vomiting, and became less irritable, so examination could be made	Cerebellar tumor
4	Rectal	3	Respirations raised from 12 to normal; headache and stupor relieved	Brain abscess
5	Mouth	1 every 4th hr.	Relief of headache, vomiting and dimness of vision; palliative until operation	Cerebellar tumor
6	Mouth	1½ every 4th hr.	Some relief of symptoms; toward the last there was no relief from headache and marked retraction of neck; cerebellar tumor had extended down the neck through an old decompression opening; tumor as large as a grapefruit found	Cerebellar tumor
7	Mouth	1 in a.m.	Relief of headache, vision better, vomiting ceased	Brain abscess; lateral sinus thrombosis
8	Mouth and rectal	3; 1 by mouth	Respirations returned from 9 to 18; some improvement of stupor and mental condition; examination made possible	Temporal lobe tumor
9	Mouth	1 every 4th hr.	Relief of headache and vomiting	Pituitary
10	Mouth	1	Relief of headache and vomiting	Frontal lobe tumor
11	Mouth	1½ every 4th hr.	Relief of headache and vomiting	Glioma, frontal
12	Rectal	1 every 4th hr.	Respirations restored from 14 to normal	Parietal lobe tumor
13	Mouth	1½ every 4th hr.	Respiration restored to normal; headache and vomiting improved; vision improved; died, sudden respiratory failure after 3 days	? Pituitary
14	Mouth	1½ every 4th hr.	Respiration restored to normal; vomiting, headache and restlessness relieved; sleep induced	Temporal lobe tumor
15	Mouth and rectal	3, 1½	Edema of lungs cleared up.....	Trans. myelitis, 5th cervical segment
16	Mouth	1½ q. s.	Headache such that patient rolled about on the floor; relieved completely	Subcortical glioma

tion is dialyzable, and in the increased chlorid content of the blood leads to a temporary secondary tissue retention with a rapid return of pressure symptoms some hours after its administration. Magnesium sulphate, on the other hand, is nondialyzable, and produces its action by a rapid dehydration of blood plasma fluids solely through the intestinal walls, with a compensatory absorption on the part of the blood from the fluid spaces, especially the ventricular system, in order to maintain normal blood volume.

chlorid solution while on the table, in order to facilitate exploration. In all but two cases, pressure was found to be rapidly relieved so that the dural incision could be made without herniation of the cortex. In several cases, at the close of exploration, the administration of the solution while on the table allowed the operator to close the dura safely.

During the early use of this solution, 30 c.c. of a 35 per cent. sodium chlorid solution was used intravenously causing a slight reduction in intracranial ten-

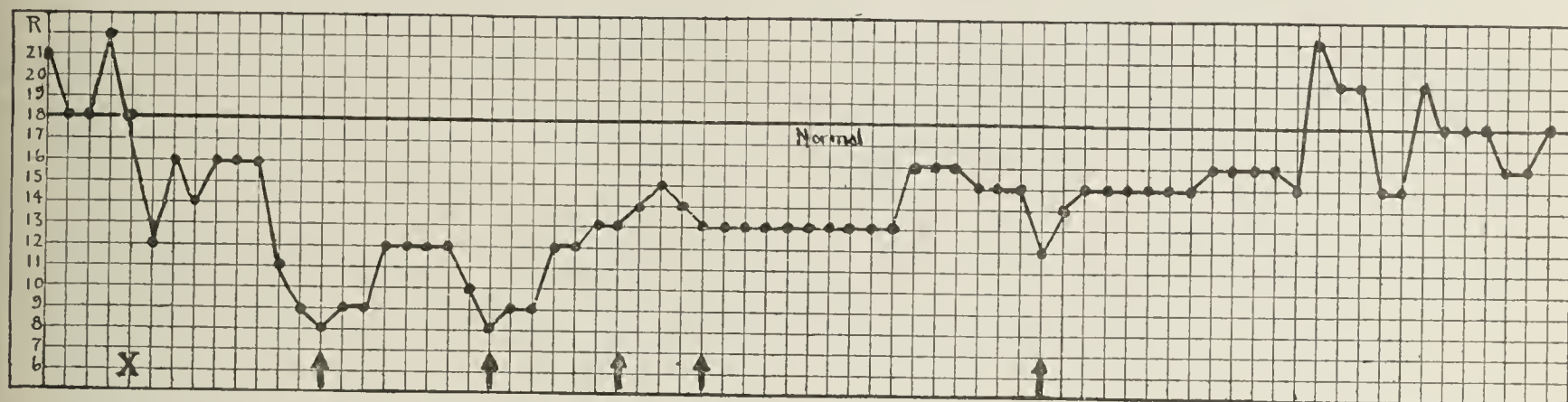


Chart 2 (I. R. S.).—Rapid postoperative fall in respiratory rate due to medullary pressure, relieved by magnesium sulphate, with eventual recovery: R, respiration; X, exploratory craniotomy; arrows, magnesium sulphate.

No ill effects from its repeated use have been noted by us.

A wider application of our method for the administration of magnesium sulphate has been noted by other services of this hospital, and the results so far reported have been very satisfactory. Spiller has found the use of this salt very effective in reducing the papilledema seen in certain forms of encephalitis. In several of his cases, the swelling of the optic disks has been reduced from 5 diopters to less than 2. Thompson has suggested its use in glaucoma, and de Schweinitz and Baer have noted that appreciable reduction of intra-ocular tension has followed its administration. Ravdin was able to control an edema of the glottis following Lud-

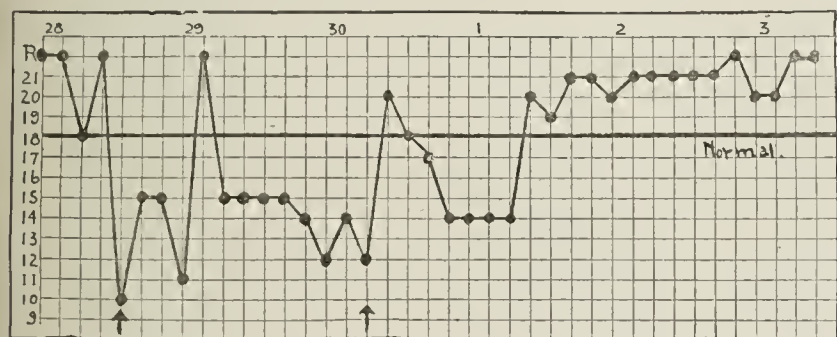


Chart 3 (H. S.).—Respiration after concussion resulting from blow on head; medullary depression relieved by magnesium sulphate with rapid return of respirations to normal: R, respiration; arrows, magnesium sulphate.

wig's angina in a case in which a tracheotomy seemed imminent. We found it of marked value in clearing up what appeared to be a fatal edema of the lungs appearing a few hours after injury, in a case of traumatic transverse myelitis at the fifth cervical segment. These are merely possibilities for its use whenever active reduction of edema seems necessary. Further investigation along the lines suggested is needed before the exact value of the drug may be determined in other branches.

INTRAVENOUS HYPERTONIC SALT SOLUTION

Of the exploratory craniotomies performed in this clinic in the last two years, 17 per cent. of the patients received an intravenous injection of hypertonic sodium

sion. Later, when larger amounts of a 15 per cent. solution were used, the reduction of pressure became more marked, and led to the adoption of from 50 to 120 c.c. of 15 per cent. solution, by vein, as that which would yield the best results in the shortest period of time.

TABLE 2.—Results of Intravenous Injection of Hypertonic Sodium Chlorid Solution

Case	Size of Ventricle	Type of Tumor	Salt Solution	Results (Cortical Pressure)
1	?	Pituitary, suprasellar	32 c.c. 35%	No change
2	Large	Glioma, cerebellum	30 c.c. 35%	Reduction of intracranial pressure
3	One large, other collapsed	Subcortical glioma	30 c.c. 35%	Very slight reduction of pressure
4	Small	Cortical adenocarcinoma	40 c.c. 35%	Slight reduction of pressure
5	One large, other collapsed	Subcortical glioma	120 c.c. 18%	Marked reduction so dura could be opened
6	Large	Cerebellar tumor?	140 c.c. 15%	Roused from stupor
7	?	Subcortical tumor	30 c.c. 15%	No effect
8	Large	Subcortical glioma	35 c.c. 15%	Intracranial pressure reduced
9	Small, 5 c.c.	Endothelioma	60 c.c. 15%	Pressure reduced enough for exploration and removal
10	?	Subcortical gliomatous cyst	10 c.c. 15%	Pressure reduced by evacuation of cyst as salt was being given
11	? Moderate	Subcortical glioma; cortical invasion	40 c.c. 15%	Marked reduction in pressure
12	Enlarged	Postchiasmal tumor	60 c.c. 15%	Pressure reduced
13	Small	Subcortical?	60 c.c. 15%	Pressure reduced
14	Large	Pituitary	90 c.c. 15%	Pressure reduced
15	Small	Temporal lobe tumor	100 c.c. 15%	Pressure reduced slowly; exploration possible

Its immediate value to the surgeon is clearly shown by extracts from the operative notes, relative to the effect of intravenous salt solution:

CASE 5.—On reflection of the osteoplastic flap, the dura was found to be under great tension, too great to warrant opening the dura until pressure had been relieved. An attempt was made by direct ventricular puncture and by colossal puncture to evacuate fluid from the ventricle, without effect.

Two or three incisions were made in the dura on the superior and anterior margins of the opening to see whether the tumor presented on the surface. None could be seen.

Meanwhile 80 c.c. of 15 per cent. solution of sodium chlorid was given intravenously in about twenty minutes, and during this time there was a very decided reduction of tension, so much so that there seemed to be no impropriety in opening the dura. This was done, and the surface of the brain subjected to inspection and palpation.

The exploration was concluded, and some difficulty was experienced in closing the dura, as during the manipulation, the brain had become somewhat swollen. It became necessary to give 40 more cubic centimeters intravenously of 15 per cent. sodium chlorid before the dura could be safely closed.

CASE 9.—Tension was so great that it was thought unwise to reflect the dural flap unless it could be relieved temporarily at least. Almost simultaneously a direct ventricular puncture was made along with the intravenous injection of 60 c.c. of 15 per cent. sodium chlorid solution covering twenty minutes. Very little fluid escaped from the ventricular puncture needle, perhaps only 4 or 5 c.c.; but because of this or because of the effect of the salt solution, the tension diminished appreciably so that we proceeded at once to reflect the dural flap. When about halfway open, the tumor was discovered, involving the cortex, etc.

CASE 8.—To determine what might be expected from the use of salt solution, 35 c.c. of 15 per cent. sodium chlorid solution was given intravenously, and the pressure was reduced by this enough to warrant an exploration.

CASE 4.—To facilitate closure at the conclusion of the operation, the patient received 60 c.c. of 15 per cent. sodium chlorid solution intravenously.

CASE 11.—Before the wound was closed, an attempt was made to determine how much relief might be obtained by the use of sodium chlorid solution. Forty cubic centimeters of a 15 per cent. solution was introduced intravenously in fifteen or twenty minutes. There was decided reduction of pressure by the time the sutures were in place.

Sachs⁵ showed that there was no increase in fragility of red blood cells with the introduction of this hypertonic salt solution. No reaction following its use has been noted in the neurosurgical service. Observations here showed that the most marked dehydrating effects were noted in cases of dilated ventricles with hydrocephalus and less so in those presenting large infiltrating growths. However, there was a marked reduction in nearly every case; and the use of this method as a diagnostic sign between an obstructive hydrocephalus and a large infiltrating tumor, although not at all conclusive, may point toward one or the other, depending on the time necessary for the dehydration to occur, large infiltrating growths requiring the longer time.

CONCLUSIONS

1. Hypertonic salt solutions are of great value as dehydrating agents for the rapid reduction of intracranial tension.

2. Magnesium sulphate solution, 1½ ounces of crystals in water by mouth or 3 ounces of crystals in 6 ounces of water by rectum, has given marked relief from symptoms of intracranial pressure and "medullary edema."

3. It is of assistance in eliciting symptoms, otherwise masked by intracranial pressure.

4. The routine administration of magnesium sulphate solution two hours before operation in cases with increased tension has been of decided value.

5. It is of assistance further in checking the rapid advance of papilledema, and in relieving the coma and respiratory depression seen in cases of marked intracranial pressure.

6. In traumatic head injuries in which the pulse and respirations fall below the normal, its use is very effective, so that surgical intervention in this group of cases has been found unnecessary.

7. Rapid dehydration of other fluid collections in the body, as in edema of the lungs, may also be accomplished by this agent.

8. The intravenous injection of from 50 to 120 c.c. of 15 per cent. sodium chlorid solution, covering a period of twenty minutes, has been found a great adjunct in exploratory craniotomies, especially when the dura is tightly distended and ventricular puncture is unsatisfactory or cannot be effected.

FACTORS IN THE ETIOLOGY OF TRAUMATIC APPENDICITIS

WITH CERTAIN CLINICAL OBSERVATIONS

NELSON AMOS LUDINGTON, M.D.

NEW HAVEN, CONN.

The comparatively infrequent, but obvious, association of acute appendical attacks with some form of strain or injury immediately preceding the attack has forced on clinicians the question of there being a true relationship of cause and effect present in this repeatedly observed sequence of events. The question has two parts: one having to do with the initiating of an original inflammation in a previously healthy appendix, and the other, with the establishing of an acute exacerbation of a previously existing inflammation.

Concerning the first part of the question there is a unanimity of authoritative opinion to the effect that trauma does not initiate an original inflammation in the healthy appendix; concerning the last part of the question there is a great diversity of opinion. Two factors appear to be responsible, in large measure, for this situation. The first factor is the oft repeated dogma of the textbooks that the appendix is immune to the effects of external violence or muscular strain on account of its deep-seated position in the abdomen and its free mobility.

The deep location and the mobility of the appendix would, indeed, be safeguards against injury if the abdomen were a solid body and, in obedience to the laws of physics, transmitted a received force only in the direction in which the force was applied. But the abdomen is not a solid body. It is essentially a liquid and gaseous mass and is subject to the laws governing the transmission of force by liquid and gaseous mediums, i. e., the pressure exerted on it is transmitted equally in all directions. The deep location of the appendix, therefore, is not a factor that contributes either to the liability of the appendix to damage resulting from external violence, or to its immunity in such an accident.

Concerning the mobility of the appendix, it is reasonable that this factor should facilitate its escape from the area of impact of a force locally applied. But that such escape is of any material moment is doubtful, as will appear later.

The second of the two factors responsible for the previously mentioned diversity of opinion as to the causal relationship of trauma and appendicitis is the variety of meanings with which the word "trauma" is invested, and the absence of histologic proof of mechanical injury to the tissues from without. To illustrate: An acute appendicitis follows the reception of a heavy blow over the right lower quadrant of the abdomen. An appendix, containing a coprolith, is removed, acutely inflamed and about to perforate. The clinician speaks of "traumatic appendicitis." The pathologist returns

his findings as "perforative appendicitis." In another case, appendicitis develops quite in an ordinary manner. There is no suggestion of any violence or untoward incident. The removed appendix with its concretion is sectioned, and minute abrasions of the mucosa, caused by crystallized particles of vegetable iron or by the sharp vegetable hairs described by Shattock,¹ afford obvious portals of entry for micro-organisms. The report from the pathologist is "traumatic appendicitis."

The net result is that any quotation involving the word "trauma" in this connection must, to be intelligible, define the sense in which the word is used. In the present article the word "trauma" is intended to indicate the results of gross violence, or of untoward or unusual muscular action.

There will probably be no question that appendicitis is an infectious disease; that the causative agent gains access to the lumen of the appendix by way of the gastro-intestinal tract,² and finds lodgment in the depths of the glands of the appendical mucosa, where it may remain inactive for an undetermined length of time; that the contents of the appendix are received from the cecum; that they are retained in the appendix for a time and then again expelled by it into the cecum; and that the cecal and appendical contents are at all times laden with organisms capable of invading the appendical wall under favorable conditions.

The wide use of the barium meal and the barium enema for diagnostic purposes has made it a matter of common knowledge that cecal contents can be forced into the appendix by relatively slight pressures. Fürbringer and von Hansemann³ were able to express the contents of a full cecum into the appendix by light manual pressure over the cecum, by light manual pressure over the ascending colon and by the introduction of air into the rectum. They used colored fluids as an indicator.

To reason that a blow on the abdomen or a muscular strain which increases intracecal pressure would probably force cecal contents into the appendix is both logical and in harmony with the observations noted above. If the appendix were normal and its lumen unobstructed through its extent, the appendix would empty itself and the incident would be closed. If the appendix should be unable to empty itself in any portion or throughout the whole of the extent of its lumen, fecal stasis would result. And fecal stasis is a condition well recognized as favorable to infection.

Since the damage comes to the appendix through overdilatation of, and fecal stasis in, its lumen, the mere escape of the appendix from the actual impact of a blow on the abdomen is of slight moment. Moreover, it is apparent that it is the ability of the appendix to discharge its contents that determines the future course of events.

Adhesions that compress or angulate the lumen, scars of healed mucosal lesions, fibrous replacement of the musculature of the wall, and, most important of all, coproliths, are the principal lesions that are to be considered in this connection.

Brunig⁴ states that while concretions were present in 35 per cent. of his cases of appendicitis, they were found in 65 per cent. of those cases of appendicitis which followed trauma.

The coprolith has for a long time been recognized

as conclusive evidence of preexistent appendical disease. It is composed of fecal material mixed with bacterial masses and inspissated mucus, formed in the hypersecretive stage of an inflammation, and remaining throughout the subsidence of the inflammatory reaction to become hardened by chemical change and absorption. Its surface is usually smooth, and it flattens out the mucosa with which it comes in contact, so that the mucosal crypts in the area in contact with the coprolith are obliterated and no longer afford lodgment to organisms. Aschoff⁵ states that the primary or most active focus of infection is just distal to the coprolith, and a focus of secondary importance is found at the proximal end of the concretion. The intervening area of mucosa in contact with the concretion is usually free from actual foci of infectious material.

Here, then, we have every condition favorable to the development of a traumatic appendicitis. We have an appendix (a) with the lumen obstructed by a coprolith; (b) with fecal stasis in, and defective drainage of, the distal segment, and (c) with an increase of the virulence of the contained organisms due to their confinement.

If, now, an excess of cecal contents is forced into the appendix, it must either push the coprolith farther toward the tip of the appendix, or flow over and around the obstruction, filling and distending the terminal segment. The immediate result of this afflux of cecal contents is pain, from the distention of the appendix and from its efforts to empty itself. The distended appendical wall is rendered anemic by pressure, particularly in its mucosal layer; an excess of toxin is forced into the tissues by dialysis under pressure; and the virulence of the organisms is heightened by the establishment through the fecal stasis of conditions favorable to their development. These factors eventuate in an immediate and destructive invasion of the appendix wall. This type of appendical disease may be likened to a loaded weapon, the distal segment representing the cartridge and the coprolith representing the firing pin, actuated by the force from behind. The resultant explosion in each is dependent on the amount and character of the confined contents. Clinical experience has well demonstrated the danger from active purgatives in appendicitis. Sir Berkeley Moynihan's⁶ alliterative sequence of "pain, aperient, perforation" represents the same mechanism as that obtaining in a traumatic case, but substitutes as the propelling force the hypermotility of the stimulated intestine in the place of direct external pressure.

EVIDENCES OF TRAUMA

In these circumstances there is no finding of free blood in the peritoneum, or histologic evidence of direct trauma to the appendix (with the connotation that has been assigned above to the word "trauma"), both of which findings are urged as essential to the proof of a traumatic appendicitis by Sprengel⁷ and other opponents of the idea of a traumatic origin of this affection. Dr. Sprengel's contention that there has never been a case of traumatic appendicitis scientifically proved is undoubtedly correct. The morphologic proof which he demands cannot be adduced because it never exists, and there is no reason why it should exist. In those rare instances in which enveloping adhesions about the appendix have been torn by direct external violence, or

1. Shattock, S. G.: Proc. Roy. Soc. Med., Sec. Path. **13**: 105 (July) 1920.

2. Hematogenous and lymphatic infections are purposely omitted.

3. Quoted by Emil Schepelmann: Med. Klin., June, 1915, p. 687.

4. Brunig, F.: Deutsch. med. Wchnschr. **28**:322, 1912.

5. Aschoff, L.: Pathologische Anatomie, Ed. 3, **2**:793-795, 1913.

6. Moynihan, Berkeley: Essays on Surgical Subjects, Philadelphia, W. B. Saunders Company, 1921.

7. Sprengel: Deutsch. med. Wchnschr. **37**:2318, 1911.

even the appendix wall itself lacerated, the time elapsing between the receipt of the injury and the operation has permitted the rapidly advancing inflammatory process to obliterate all evidence of mechanical injury to the tissues.

Aschoff³ says:

Since the lymph follicles of the appendix push forward as far as the epithelium, it follows that, on the occasion of an injury, the epithelial covering is ruptured clear through the capsule of the node. And I have frequently, with sufficiently careful search, been able to demonstrate the very delicate fissures filled with fecal bacteria which have proceeded from the lumen into the substance of the lymph node.

Against this it has been urged that the same findings have been demonstrated in cases of appendicitis in which there was no history of trauma. The presence of these bacteria-filled fissures does not prove trauma, but does indicate very clearly an overdilatation of the appendical lumen to the point of actual rupture of its lining epithelium, and the admission of infectious organisms into the substance of the appendical wall. Muscular strain or the action of an aperient, as has already been indicated, would readily account for the presence of these fissures in cases not associated with a history of external violence. These factors invalidate the objection.

When it is considered that active lesion of the appendix wall can be demonstrated within one hour of the beginning of an infectious process, and that perforation may occur in six hours, it seems doubtful whether operative interference will ever be sufficiently prompt to provide the laboratory with material from these cases which will be of definite value in the study of the earlier histologic pictures following trauma. It would seem probable that these histologic pictures would be identical with those from cases not associated with trauma.

As no laboratory help has, in the past, been available to aid in the discrimination between traumatic and nontraumatic appendicitis, and as none seems likely to be forthcoming, the recognition of the traumatic case must, for the present at least, depend on accurate clinical observation. Four points are to be considered: (a) the anamnesis; (b) the circumstances of the immediately preceding trauma; (c) the time relationship between the trauma and the onset of symptoms, and (d) the pathologic conditions found at operation.

Unfortunately, there is little information of real value to be gleaned from the anamnesis. Inflammatory conditions may have existed in the appendix for years wholly without the knowledge of the patient; or a most circumstantial history may be woven about an appendix entirely free from disease. Again, there may have been an active appendicitis which has long since undergone complete resolution, leaving no trace behind.

A knowledge of the circumstances attending the immediately preceding trauma is of great value and should be carefully acquired in detail, not only as to the character and severity of the injury, but also as to whether it was a single impact or a series of impacts, as to whether general to the abdomen as a whole or local, as to the location of the impact on the abdominal wall, and, most particularly, as to its proximity to the cecum and the ascending colon. Falls on the abdomen, kicks, heavy blows and the striking of the right lower quadrant against the corner of a table or similar object are among the more usual causative injuries. Muscular strain usually occurs in lifting. Sir William Osler⁸

says, "Persons whose work necessitates the lifting of heavy weights seem more prone to the disease. Trauma plays a very definite rôle, and in a number of cases the symptoms have followed very closely a fall or a blow." This was written at a time when only the more acute forms of the disease as we recognize it today were denominated appendicitis.

While it is true that an attack is more likely to follow those injuries which fall on the region of the cecum or the ascending colon, it may follow a general diffuse abdominal trauma, as illustrated by Case 1:

CASE 1.—A girl, aged 10 years, fell from a swing a distance of about 2 feet and landed prone on level ground. Pain was immediate and severe, vomiting followed, and eighteen hours after the fall all the symptoms of peritonitis were obvious, and the operation, thirty hours after the fall, disclosed an appendix acutely angulated at its midpoint by a single firm adhesion. Immediately distal to the point of angulation, all of the coats of the appendicular wall were ruptured. An actively advancing peritonitis was present. There were no delimiting adhesions.

Case 2 is another example of appendicitis following general, and in this instance repeated, trauma to the abdomen as a whole.

CASE 2.—A boy, aged 9 years, was industriously enjoying the first sliding of the winter by "belly floppin'" on his sled. On account of abdominal pain, he abandoned his sport after about two hours' play. Vomiting followed, and seventy-two hours afterward a perforated gangrenous appendix containing a coprolith was removed from a well-walled-off abscess containing 4 ounces of the usual foul colon pus.

In those instances in which the trauma has been received immediately over the cecum or ascending colon, there are two factors of equal importance to be considered. One is the force of the blow, and the other is the directness with which that force is permitted to act on the cecal contents—its "access to the cecum," so to speak. This "access" is influenced very considerably by the muscular development of the individual, by the amount of adipose tissue in the abdominal wall, and by the preparedness of the muscles of the abdomen to receive the impact. It is obvious that in a thin walled abdomen with a minimum of adipose tissue and poorly developed musculature in a normal state of relaxation, a less force will be required to exert a given amount of effect on the underlying intestine than would be required to produce that same amount of effect in an abdomen with thick, powerful muscular walls, an abundance of overlying fat and the musculature held tense in anticipation of an impact.

CASE 3.—A schoolgirl, aged 19 years, feared that she was the victim of an appendical attack on account of some transient right lower abdominal pain, which recurred at intervals. She had previously experienced two brief attacks of appendicitis, with intervening intervals of two or three years. On the examining table she relaxed well, the abdominal wall was thin, and conscientious deep palpation of the right lower quadrant failed to elicit any evidence which would justify an opinion that the appendix was inflamed. Reassured that her fears were groundless, she went home and, as directed, took a saline aperient. As she was leaving the office she complained that the examination had "made it ache down there." The ache grew worse, vomiting ensued, and at 5 o'clock the following morning, sixteen hours after the "conscientious deep palpation," a sudden agonizing pain announced the perforation of the appendix, which, together with its contained coprolith, was removed two hours later.

COMMENT

When, as in this instance, an aperient has been administered, the responsibility for ensuing destructive dis-

8. Osler, William: Practice of Medicine, Ed. 3, 1899, p. 524.

case of the appendix must be divided between the trauma and the aperient. As to the trauma itself, it was mild in degree, but its "access" to the cecal contents was unimpeded by any of the previously mentioned factors.

It is not probable that a local injury to a portion of the abdominal wall remote from the cecum would give rise to an attack of appendicitis. Such an injury, if of sufficient severity to cause any material increase in the intracecal pressure, would most probably result in damage to the viscera lying immediately under the site of the injury. Blows on the back and flanks do not cause appendicitis, because of the large and powerful muscles which are interposed between the impact and the abdominal cavity. A considerable portion of any force applied in these regions is transmitted to and dispersed by the heavy bony structures to which these muscles are attached, while at the same time the thinner and more elastic portions of the abdominal wall are free to expand and dissipate the transmitted forces.

Bearing in mind that the initial pain in cases of traumatic appendicitis is due to the overdistention of the appendix and to its efforts to relieve itself of the burden by peristaltic action, it is readily appreciated that the onset of pain in the true traumatic case will be either immediate or occur within a very brief time after the injury. The appendical wall may have been so altered by preceding disease as to render an immediate peristaltic response to overdistention impossible. In this event, there will be a delay of a few hours in the onset of the pain, pending the accumulation of products of inflammation.

When the onset of the pain is immediate, it is usually of moderate severity, and it frequently diminishes or disappears entirely in a brief time. In a few hours it returns with renewed intensity, is usually accompanied by vomiting, and the classical clinical picture of peritonitis is rapidly completed. This pain-free interval is caused by the failure of active appendical peristalsis incident to the progressive destruction of the appendical wall and the anesthetizing effect of the accumulating edema on the terminal nerve filaments concerned in the neuromuscular reflex arc. This pain-free interval is invariably the preperforative stage of the true traumatic appendicitis, and the ideal time for effective operative intervention. Unfortunately, it is frequently looked on as an indication of improvement, and the opportunity to forestall the catastrophe of perforation is lost. If in a given case the circumstances are such as to justify the reasonable belief that damage has come to the appendix through trauma, this fact alone justifies immediate operative intervention. And this is particularly true in children.

The most important and reliable information bearing on the question of trauma as the causative factor of an appendicitis is obtained at operation. The question which the observer must consider has to do with the condition of the appendix at the moment the trauma was received. He must discriminate between the acute pathologic condition that has been added by the inflammatory reaction subsequent to the trauma, and the more ancient pathologic conditions which antedated the trauma. From the whole picture as presented at the operating table he must subtract the former and consider whether there remains a lesion sufficient to have materially impeded the emptying of the lumen of the appendix at the time of the injury. It is a question for nice judgment.

Clinical Notes, Suggestions, and New Instruments

OSTEOMYELITIS OF CREST OF RIGHT PUBIC BONE

A. BELCHAM KEYES, M.D., CHICAGO

The infrequency of pubic osteomyelitis, both as a spontaneous disease, and as secondary to the rare anterior pelvic (parametric) abscess that may later involve the bone, makes a report of this case of especial interest.

History.—Mrs. R. W., white, aged 24, with one boy, living and robust, aged 3, was brought to my office, April 7, 1920. With the exception of children's diseases she had always had good health. The heredity was good, and the patient stated that there had been no venereal disease, attempts to induce abortion, or pelvic treatment or examination of any kind.

In the autumn of 1918, she had influenza and pneumonia, being sick about four weeks, with very violent spells of coughing, occasionally lasting as long as fifteen minutes, and often accompanied by bleeding from the mouth and ears.

Some weeks after recovery, though still quite weak, she went to work in a stationery store. While working, she had to clean out big show cases, which required a crouching position and considerable stretching in order to reach the farthest parts. The patient also had to carry up heavy bottles of ink and other supplies from the basement of the store. These duties, in her still weak condition, were very exhausting, but she apparently always recuperated rapidly after a short rest.

Some evenings later, feeling stronger, she attended a basketball game. When the game was over and she was arising to go home, she was taken with a terrifically violent pain in the rectum, necessitating her sitting down in the snow to rest on the way home, only a few blocks away. It was near her menstrual period, and as she had had similar pains before (at such times), though never so severe, she thought no more of it.

However, the following morning she was so sick that the family doctor was called in and made a pelvic examination, causing her much additional pain. He reported finding nothing more than a displacement of the uterus. The pain was still so severe that she was forced to remain in bed, and at night on several occasions hypodermics had to be resorted to, in order to allow her to rest.

After fourteen weeks in bed she could sit up a little; so she, accompanied by her mother, was taken, in a wheel chair, by train to the Mayo Clinic. Here an examination was made, and she was told that she was suffering from a pelvic abscess, which was discharging into the vagina, and advised to return home and take hot douches of compound solution of cresol and hot sitz baths, and to report back to Rochester in three months.

By following out this treatment faithfully, she gained a little strength, and, with great effort, she was able to walk. Her husband having moved to Chicago, she did not report back to Rochester.

Examination.—When I first saw her, she was barely able to walk, and was much emaciated. She entered the Passavant Memorial Hospital, Chicago, April 8, for complete diagnosis and in order to be built up for possible operation. The physical examination showed some thickening and tenderness around the pubic bone on the right side. Other organs, supradiaphragmatic and infradiaphragmatic, were normal; the urine, vaginal smear, and Wassermann tests were all negative; the husband stated that she had not been exposed to venereal disease, either before or after marriage. A roentgen-ray examination by Dr. S. R. Hurlbut (Passavant Hospital) revealed inflammation and loss of substance of the crest of the right pubic bone.

Operation.—April 14, Dr. Keyes performed a laparotomy and sterilization by removal of both tubes and anterior fixation of the uterus. Intraperitoneally there was no inflammation. After the abdominal incision was closed, a lower

transverse incision was made over the cavum retzii, and the affected right pubic bone was curetted, and iodine and an iodoform gauze drain were inserted.

Course.—April 26, she left the hospital, still with a discharging sinus, and returned to the office every two or three days for dressing. Health, strength and the ability to walk returned gradually.

The patient was readmitted to the Passavant Hospital, October 4, and the soft parts were again opened widely and recuretted for removal of bone sequestrums. Iodine and a drain were reinserted. The patient was again discharged from the hospital, October 30. The sinus was still open, but strength and ability to walk now became markedly improved. The patient returned to the office, for a time, on every third day to have the wound dressed, during which time repeated roentgenograms were taken by Dr. Hollis E. Potter to note progress.

The healing having progressed considerably, the patient was allowed to go to Boise, Idaho, where she continued the dressings under my instructions. The last report from the patient, March 15, 1923, says, "Wound entirely healed for the past sixteen months. Am able to do all my own housework, dance, run and hike up the mountains, and do what any one else can do."

122 South Michigan Avenue.

TRAUMATIC PNEUMOTHORAX CAUSED BY TOY BALLOON

FRANK S. CHILD, JR., PH.M., M.D., PORT JEFFERSON, N. Y.

Edith D., aged 4 years, had been to the circus, Aug. 5, 1921. While returning home, she was running with a balloon stick in her mouth, and fell face downward. In falling, the stick was driven into the left side of her throat, piercing the thorax. The little girl picked herself up and pulled the broken stick from her mouth. She was immediately taken home. When I saw her one hour later, she was expectorating blood. Her mother stated there was considerable bleeding at first.

On examination, I noted that the left neck was very tender, the base of the tongue was lacerated, and there was a slight oozing of blood from the left side of the throat. The front of the neck was swollen, and the skin crackled when palpated, because of the emphysema. She was in moderate shock, with a respiration of 40 and a pulse of 150. Cold compresses were applied to the neck, and the patient was kept in bed.

The following day, August 6, amphoric breathing was noted over the entire left chest, and there was no respiratory movement on this side. The general condition of the little patient was good and continued to improve until August 13, eight days after the accident. Then she had a chill, followed by a fever of 104. By August 15, her condition had become so serious that I had her removed to the hospital. At this time she had a temperature of 105.4, pulse 170, respiration 54. I suspected pneumonia. Examination of the chest was very difficult because of the amphoric breathing, although bubbling râles could be heard. A roentgen-ray examination disclosed a collapsed lung on the left side, but no sign of fluid. A diagnosis of lobar pneumonia was made and the development of an abscess feared. The prognosis seemed poor.

At this time, August 17, Dr. Richard Derby of Oyster Bay was called in consultation. He advised a continuation of the expectant treatment. For five days the patient continued in an uncertain condition, her temperature remaining around 105. Then the fever began an irregular course, subsiding by lysis.

August 25, the roentgen-ray examination revealed a slight expansion of the lung, and on September 8, thirty-four days after the accident, another roentgen-ray examination showed a normal expansion of the lung. Amphoric breathing had disappeared, and only scattered crepitant râles remained.

The patient was discharged from the hospital, September 11, with a respiration of 34. Nov. 1, 1921, I examined her and found the lungs in normal condition, and although the little girl still showed effects of her illness, she was playing

about the house. April 1, 1923, I examined her again, and found her active and in excellent physical condition.

I am prompted to call attention to this case because of mention of similar accidents recently in *THE JOURNAL*.¹

209 East Broadway.

HEMANGIOMA OF THE SPINAL CORD

M. E. BLAHD, M.D., CLEVELAND

Associate Director of Surgery, Mount Sinai Hospital

Although I have nothing new to add to the subject of hemangioma of the spinal cord, the extreme rarity of the condition warrants the report of a case which came under my observation recently. Up to the year 1915, Cobb was able to compile seven cases from the literature, to which he added one of his own, making a total of eight. A careful search of the literature since 1915 has not revealed an additional instance; therefore, the case which I am now reporting is the ninth on record.²

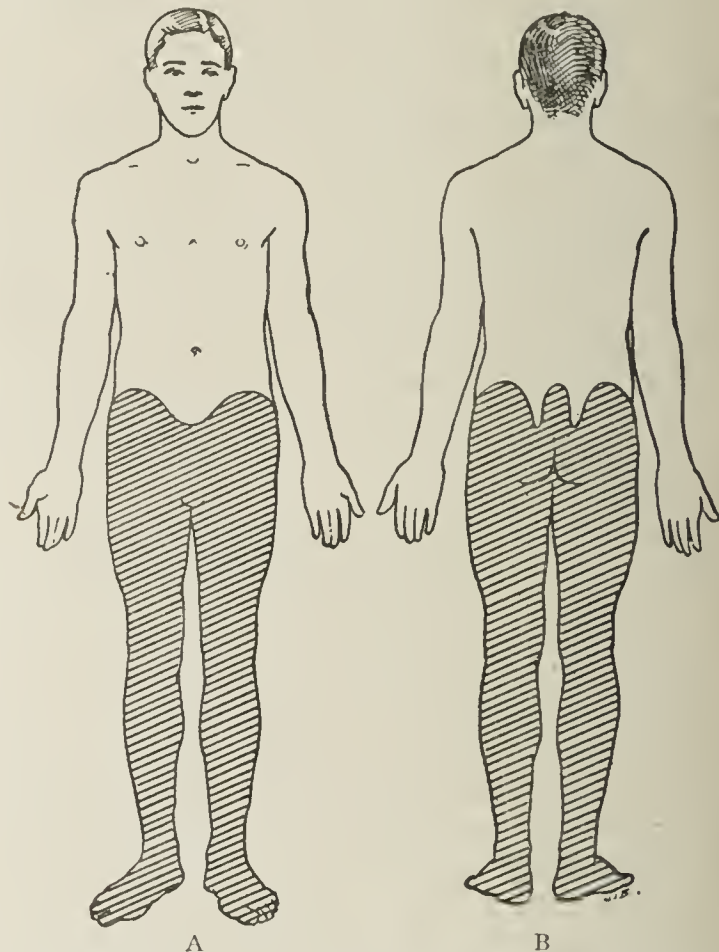


Fig. 1.—Distribution of sensory loss (shaded portion): A, ventral surface; B, dorsal surface.

REPORT OF CASE

History.—R. H., a youth aged 14 years, entered the Elyria Memorial Hospital, May 12, 1922, complaining of complete paralysis of both lower extremities and both sphincters. His family history contains nothing of importance. His personal history is negligible except for one fact. About eight months previous to his entry into the hospital, while walking through the woods, he was seized with a severe attack of pain in the right groin, which lasted about five minutes. After resting a short time, he was able to continue his walk and then return home, a distance of several miles. A few months later, he had a similar attack, which also lasted only a very short time and, as in his previous experience, complete cessation of the pain took place in five or ten minutes. During this entire time, he walked back and forth to school, a distance of 4 miles each way. Finally, in January, 1922, while sitting in a chair at his home, he was again taken with excruciating pain in the right groin. On this occasion, however, the pain was much more intense than in his previous attacks. Furthermore, instead of abating after a short period of time,

1. The Fatal Toy Balloon, London Letter, J. A. M. A. 80:1017 (April 7) 1923.

2. The Histories of the previously reported cases and a review of the entire subject are given by Cobb, Stanley: Ann. Surg. 62:641 (Dec.) 1915.

as had been its custom, it grew steadily in severity, and compelled him to take to his bed. The onset of the pain occurred at about 10 o'clock in the morning; by 7 that evening, he was completely paralyzed from the waistline down, including both sphincters.

The physical examination, with the exception of the neurologic findings, showed nothing of interest.

Neurologic Examination.

— This was performed by Dr. Stevens of Elyria, Ohio. The pupils were round and equal in size. They reacted promptly to light and in accommodation. There was no nystagmus. There was no diplopia. There was no impairment of the innervation of the facial muscles. There was no atrophy or paralysis of the upper extremities. The biceps, triceps and periosteal reflexes were normal on both sides. The umbilical reflex was present in the upper quadrants, but absent in the lower quadrants. The cremasteric reflex was absent. The Achilles tendon reflexes and plantar reflexes were absent. There was complete flaccid paralysis of the legs from the hips down. Sensory tests showed a complete loss of all sensations in the legs from a point about

3 cm. below the crest of the ilium. On the dorsal surface, the zone of anesthesia was slightly lower. The exact distribution of the sensory loss is shown in Figure 1. Coordination of the arms was good.

Laboratory Tests.—Lumbar puncture was performed, and 8 c.c. of clear spinal fluid under moderate pressure was withdrawn. The cell count was 11 per cubic millimeter. The Nonne test was positive. The colloidal gold test was: 1342000000. The Wassermann reaction on the spinal fluid and the blood was negative.

From a consideration of the paralyzed muscles, the zone of anesthesia and the reflexes, it appeared that the lesion implicated the spinal cord in the twelfth dorsal segment.

When I first saw the patient, July 1, 1922, he was very emaciated and had two large decubiti over the buttocks. The neurologic findings were the same as previously described.

The diagnosis was tumor of the spinal cord involving the twelfth dorsal segment.

Operation.—The lamina of the eighth, ninth, tenth and eleventh dorsal vertebrae were removed and the dura exposed. This membrane was very tense and presented a peculiar dark blue color. When the dura was opened, a mass of large distended veins, about 5 cm. in length and 2 cm. in width, immediately presented itself. These veins appeared to take origin in the pia. The underlying cord was markedly compressed in its anteroposterior diameter. No attempt to remove the tumor or ligate the vessels was made. The dura was not sutured, and the remainder of the wound was closed in the usual manner.

COMMENT

This case presented practically the same symptoms as the cases previously reported. The acute onset of the symptoms

and the paralysis were undoubtedly due to a hemorrhage into the cord which originated in the tumor.

Cobb pointed out that, in cases in which a sudden bilateral paralysis is antedated by one or more severe attacks of pain, with symptom-free intervals between the attacks, the presence of a hemangioma of the spinal cord must be considered.

When I last saw the patient, March 3, 1923, his general condition was greatly improved, but there was no improvement as far as the paralysis is concerned.

3912 Prospect Avenue.

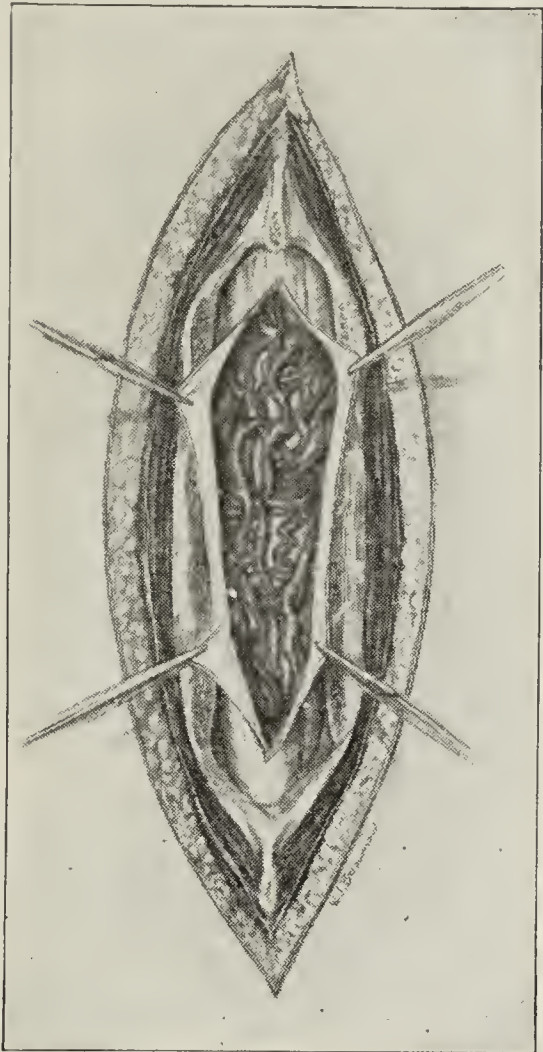


Fig. 2.—Hemangioma of the spinal cord. From original drawing made at time of operation, by Ruth Blanchard.

A MUSCLE INDICATOR FOR PLOTTING OUT THE FIELD OF DIPLOPIA AND VISUALIZING THE POSITION OF THE MUSCLE INVOLVED WITH FACE TURNING AND HEAD TILTING

EDWIN B. MILLER, M.D., PHILADELPHIA

In 1922, at the March meeting of the Ophthalmic Section of the College of Physicians, Philadelphia, I presented the original model of the muscle indicator. From the favorable comments made by the fellows at that time, I was encouraged to complete the apparatus.

It is not intended that this apparatus take the place of the study of the ocular muscles, but that it be used as a reference to help visualize conditions as they exist. It can be held in the hand in the presence of the patient, and will help to pick out quickly and accurately the muscle or muscles at fault.

The classification employed is that according to Duane. Both right and left turners are shown on the central part of arm A, the white line representing the true image and the red the false image. The right turners are the right external rectus and the left internal rectus. The left turners are the left external rectus and the right internal rectus. The elevators and depressors are shown on the squares at the ends of arm A, the white lines representing the true image and the red the false image. The right hand elevators are the right superior rectus and the left inferior oblique. The left hand elevators are the left superior rectus and the right inferior oblique. The right hand depressors are the right inferior rectus and the left superior oblique. The left hand depressors are the left inferior rectus and the right superior oblique.

The method of using the indicator, described on the back of the apparatus, is as follows:

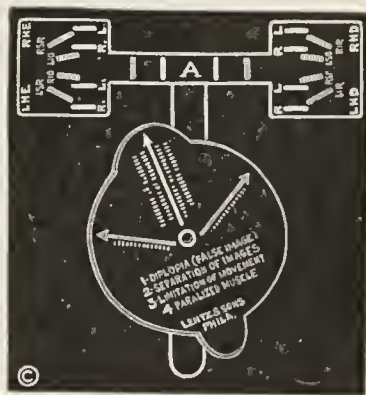
The patient is seated in a darkened room. A trial frame with a red glass is placed over one eye. The examiner stands about 10 feet in front of the patient with a lighted candle or small electric light. The field of diplopia is located.

In paralysis of the right turners the false image is in the right field, and in paralysis of the left turners the false image is in the left field. The maximum separation of the images is in the lateral direction.

In paralysis of the elevators the false image is in the upper field, and in paralysis of the depressors the false image is in the lower field. The maximum separation of the images is in the vertical direction.

If the straight muscles are involved, the vertical separation of the images is greatest when the eyes are turned toward the affected side. If the oblique muscles are involved, the vertical separation is greatest when the eyes are turned toward the sound side.

To identify the muscle involved when the false image is in the lateral field, the indicator is held before one to the right, if one is studying the right field, or to the left, if studying the left field, with arm A in a horizontal position. The red figures in the center of the horizontal arm represent the false image; the white ones the true image. The



Muscle indicator.

schematic eye is turned until the red arrow points toward the false image that is nearest on the indicator, which corresponds to the false image already located in the field of diplopia, and the findings on the chart are now read.

In locating an elevator or depressor, the indicator is held before one with arm A in a vertical position and to the right. The schematic eye is turned until the red arrow points toward the false image that is nearest on the indicator, which corresponds to the false image already located in the field of diplopia, and the findings on the chart are read off.

FACE TURNING

In paralysis of the turners, the face has a tendency to turn in the direction of the line of normal action of the paralyzed muscle; in paralysis of the right turners, the face is turned to the right; in paralysis of the left turners, the face is turned to the left.

In paralysis of the right hand elevators, the face is turned to the right in the direction of the maximum pull of the right superior rectus, which is exerted when the right eye is turned out 23 degrees, or of the left inferior oblique, which exerts its maximum pull when the left eye is turned in 39 degrees.

In paralysis of the left hand elevators, the face is turned to the left, in the direction of the maximum pull of the left superior rectus, which is exerted when the left eye is turned out 23 degrees, or the right inferior oblique, which exerts its maximum pull when the right eye is turned in 39 degrees. The same rule holds good for the right and left hand depressors.

HEAD TILTING

The normal physiologic pull of the superior recti, when the eyes are moved from the primary position (parallel, looking straight ahead) is up and the upper end of the vertical corneal meridian is rotated in toward the median line; therefore, the head is turned up and tilted in toward the sound side.

The normal physiologic pull of the superior oblique, when the eyes are in the primary position (parallel, looking straight ahead) is down, and the upper end of the vertical corneal meridian is rotated in toward the median line; therefore, the head is turned down and tilted in toward the sound side.

The normal physiologic pull of the inferior rectus, when the eyes are in the primary position (parallel, looking straight ahead) is down and the upper end of the vertical corneal meridian is rotated out; therefore, the head is turned down and tilted out or toward the affected side.

The normal physiologic pull of the inferior oblique, when the eyes are in the primary position (parallel, looking straight ahead) is up and the upper end of the vertical corneal meridian is rotated out; therefore, the head is turned up and tilted out or toward the affected side. These facts can be demonstrated by the indicator.

For example, in a case involving branches of the third nerve, causing paralysis of the right internal rectus and the right superior rectus, the face would have a tendency to turn toward the sound side in an effort to modify the diplopia caused by paralysis of the internal rectus, and up and out to modify the diplopia caused by paralysis of the right superior rectus, while the head would be tilted toward the median line; therefore, one would have a tendency to equalize the other. The external rectus would still be acting strongly and, with the two obliques, would be rotating the eye out, while the inferior rectus would be turning the eye down, overcoming the action cited above. Finally, the eye would be down and out and the face would be turned in, with tilting of the head up and in toward the sound side.

In every case the action of the antagonist as well as the synergist muscles must be grouped together and their action studied.

2008 Walnut Street.

Early Birds.—Traces of teeth are found in the embryos of some of the birds of today and are believed to be a heritage from early primitive reptile-like ancestors which had a full set of teeth.

A CASE OF CHRONIC APPENDICITIS SIMULATING¹ ANGINA PECTORIS

ANTHONY BASSLER, M.D., NEW YORK

Instances of chronic appendicitis being confused with disturbance in the gallbladder, gastroduodenal ulcer and various functional gastric disturbances are well known, operation usually disclosing the misdiagnosis, generally with benefit to the patient from the indicated surgery. There being no surgery or curative treatment for angina pectoris, this case is of interest:

A. M., a stock broker, aged 50, came under observation, Jan. 17, 1922. His father died of "heart disease," his mother of apoplexy. His past history was negative. He had been constipated most of his adult life, excepting on vacations, so he thought it was due to nervousness from active business strain. One night in early November, 1921, he suddenly awakened with an intense pain in the lower abdomen, followed by a temperature of 104, nausea and vomiting. The illness lasted four days, and was treated by rest in bed and colon irrigations, the latter being continued for two months. About a week after the onset of this illness he began to have a burning sensation in the chest. This was independent of meals or other noticeable cause, and gradually intensified and deepened into distinct pain. The attacks of burning and pain would come on suddenly, continue for varying lengths of time, and stop quickly. Various measures of treatment were employed without benefit. These attacks were always brought on by exertion, at first not so marked, but in a few weeks so severe that he was unable to walk from his home to his office, a distance of about 700 yards, without severe attacks.

He reported: "Yesterday morning I got up feeling fine. The pain came on, but it was not bad. I left my house for the office, and after walking about 200 feet, it became so terrific that I had to sit down in the street. I was gripped so tight that I could not breathe, and a passer-by told me afterward that I was white as a sheet, was doubled up with my knees on my chest, and was crying in agony. Within a few minutes I was all right again, and proceeded to walk to the office. After walking about 150 yards, it came again worse than before, because it lasted longer. A passer-by took me in his car to the office and, sitting on my desk chair, I worked hard all the day and felt fine. I have been to see three physicians who say I have angina pectoris. In the last three weeks, when the attack comes on, I have a marked pain down the left arm."

The patient was well nourished. His tongue was coated, and he had a marked gastric splash and moderate hemorrhoids. The urine contained an excess of indican and urochrome, a very occasional hyaline cast and a few pus cells. The gastric contents showed a slightly increased acidity, but otherwise were normal. The stool examination showed occult blood, excess mucus, and a high (90 per cent.) gram-negative count. The heart was of the dropped type, transverse measurement 11 cm. and oblique 13 cm., and was apparently normal. The vessels were normal. The systolic blood pressure was 145; diastolic, 93. Roentgen-ray examination of the abdomen displayed a moderate ptosis and an abnormal appendix, which was tender on pressure at the time the physical examination and three fluoroscopic examinations were made.

January 21, the appendix was removed by Dr. Charles Peck. The diagnosis was confirmed, and the patient made a smooth recovery. Microscopic examination showed the usual findings of a chronically diseased organ with subacute addition. After leaving the bed, some slight attacks of burning sensations and slight pain in the chest occurred on exertion, these lasting (gradually getting less) for about three months. A year has now transpired since the last of these, and the man has been uninterruptedly well. On many occasions he has tried by vigorous exercise (ice-skating, swimming, very long walks, laborious work on his farm) to test himself, and he has experienced no recurrence of the chest symptoms.

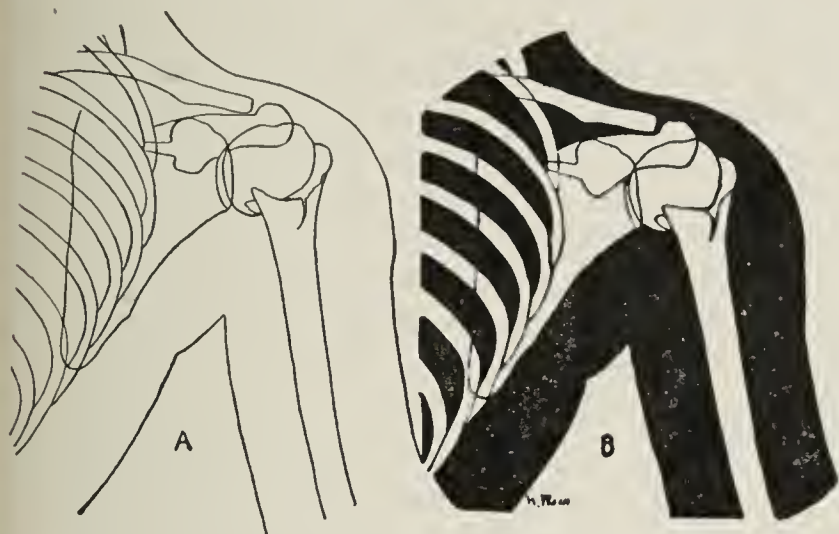
21 West Seventy-Fourth Street.

ROENTGEN-RAY SILHOUETTES: A METHOD OF CASE RECORDING *

JOHN J. MOORHEAD, M.D., NEW YORK

A number of methods have been designed for recording roentgen-ray findings, particularly in cases of fracture. These methods vary from a simple tracing to an elaborate colored photograph. During the war, the French had a very good idea in which colored chalk was used; but while this method is excellent and graphic, it requires considerable time and experience.

At the Post-Graduate and Beekman Street hospitals I have recently been using a modification of this French plan; our roentgen-ray records are now in black and white, and for want of a better name, I call them silhouettes.



Ordinary tracing (A), and finished silhouette (B).

An ordinary tracing is first made (A) on architect's tracing paper (sometimes called vellum), and then the interosseous and extra-osseous parts are painted solid black (B) with a small brush, a dull black paint, such as black japan, being used. The parchment-like tracing paper is quite absorptive, and the paint will not run. An ordinary 8 by 10 plate with the usual size image can be traced in about eight minutes, and shortly thereafter the paint will be dry enough to permit the silhouette to be handled. These tracings stand up with great detail when held up to the light, as in a viewing box or before the window, and they have the additional advantage of standing out prominently when used as illustrations in a magazine or a book.

For the final development of the method and for the detailed care with which it has been evolved, I am indebted to Mr. Harry Wein, roentgen-ray technician at the Beekman Street Hospital.

115 East Sixty-Fourth Street.

A CASE OF CAISSON DISEASE, OR DIVERS' PARALYSIS, TREATED WITH COMPRESSED AIR

W. H. PERRY, M.D., WASHINGTON, D. C.

Lieutenant, Medical Corps, United States Navy

On the afternoon of March 3, 1922, O. T., a deep sea diver employed by a wrecking company of New London, Conn., was stricken with complete loss of power of the lower extremities half an hour following an ascent from a dive in 95 feet of water. He had worked on the bottom for an hour and ten minutes, and was brought to the surface in less than four minutes. Symptoms appeared fifteen minutes after the removal of the diving dress. He first noticed incoordination in walking, and a feeling of weakness in both legs. Half an hour after the ascent he had completely lost control of the lower extremities. From his own statement, there were no areas of anesthesia. There was retention of urine. There was no headache, vomiting or dyspnea. So far as we were able to determine, the patient did not experience the cus-

tomary pains in the joints referred to as "bubbles" by deep sea divers.

The morning of the same day, this diver had made a dive at the same depth and remained on the bottom for an hour and four minutes. The accepted theory as to the cause of caisson disease is that bubbles of nitrogen are liberated in the various body tissues, including the blood, and, on a sudden decrease in pressure, emboli and infarcts are formed because of the slow absorption of nitrogen. It then seems reasonable to assume the tissues in the case of this diver were more or less saturated with nitrogen as a result of the first dive, and on the sudden decompression following the second dive his body was unable to take care of the excess nitrogen, and as a result an embolus was formed along the motor area.

In view of the fact that this diver had made a previous dive the same day at the same depth, at least fifty-two minutes should have elapsed from the time he left the bottom until he reached the surface. He was placed in the recompression tank of the U. S. S. *Falcon* at the New York Navy Yard twenty-three hours after the attack, and subjected to pressure according to tables prepared by G. R. W. French. Thirty minutes at 50 pounds served to give complete relief of all symptoms. The patient remained in the tank four hours.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

NEUTRAL ACRIFLAVINE.—*Acriflavina Neutra.*—The base, 3:6 diamino-10 methylchloracridine, $C_{14}H_{14}N_2Cl + H_2O$.

Actions, Uses and Dosage.—Neutral acriflavine has the actions and uses of acriflavine (See *Acriflavine and Proflavine*, New and Nonofficial Remedies, 1923, p. 23) but being neutral in reaction is claimed not to have the smarting and irritating effect of acriflavine solutions.

Neutral acriflavine is a brownish-red, odorless, granular powder. It is soluble in less than 2 parts of water, forming a brownish-red solution which fluoresces on dilution and which has a bitter taste; incompletely soluble in alcohol; nearly insoluble in ether, chloroform and the fixed volatile oils. An aqueous solution of neutral acriflavine (1:250) is neutral to congo paper (*distinction from acriflavine which has an acid reaction*).

Add a few drops of hydrochloric acid to an aqueous solution of neutral acriflavine which is sufficiently dilute to be fluorescent. The fluorescence disappears, but partially reappears on further dilution with water. Add 2 drops of sulphuric acid to about 1 Cc. of an aqueous solution of neutral acriflavine (1:250) and agitate the mixture. An orange-red precipitate is produced. An aqueous solution of neutral acriflavine (1:250), acidified with nitric acid, gives a precipitate with silver nitrate solution (*distinction from proflavine*). An aqueous solution of neutral acriflavine (1:250), acidified with hydrochloric acid, does not give a precipitate with barium chloride solution (*distinction from proflavine*). An aqueous solution of neutral acriflavine (1:250) does not give a precipitate with formaldehyde solution (*distinction from proflavine, which gives a brown precipitate*). Add 2 drops of diluted hydrochloric acid to 5 Cc. of an aqueous solution of neutral acriflavine (1:250) and immediately add 2 drops of sodium nitrite solution (1:10). A violet color is produced. By the further addition of an excess of sodium nitrite solution, a violet precipitate is formed, and, after a few minutes, the color of the solution becomes cherry-red. This may be best observed after filtration (*distinction from proflavine, the filtrate from which is colorless*). An aqueous solution of neutral acriflavine (1:250) gives an orange precipitate with sodium hydroxide test solution (*distinction from proflavine, which gives a yellow precipitate*).

Dry about 1 Gm. of neutral acriflavine, accurately weighed, to constant weight at 100 C. The substance loses not more than 10 per cent. of its weight. Dissolve about 1 Gm. of neutral acriflavine, accurately weighed, in 250 Cc. of warm water, collect the insoluble matter, if any, in a weighed Gooch crucible, wash the insoluble matter with hot water, dry and weigh the residue. The insoluble matter amounts to not more than 0.5 per cent. Heat with an excess of sulphuric acid at a low temperature about 1 Gm. of neutral acriflavine, accurately weighed. The "sulphated" ash amounts to not more than 4 per cent.

Neutral Acriflavine-Abbott.—A brand of neutral acriflavine—N. N. R.

Manufactured by The Abbott Laboratories, Chicago, under U. S. patent 1,005,176 (Oct. 10, 1911; expires 1928) by license of the Chemical Foundation, Inc. No U. S. trademark.

Tablets Neutral Acriflavine-Abbott, 0.03 Gm. (1/2 grain).

Enteric Coated Tablets Neutral Acriflavine-Abbott, 0.03 Gm. (1/2 grain).

* Read before the Section of Surgery, N. Y. Academy of Medicine, March 2, 1923.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - "Medic, Chicago" -

Subscription price - - - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, MAY 19, 1923

THE WASSERMANN TUBERCULOSIS REACTION

As has been widely reported,¹ Dr. August von Wassermann, originator of the well known test for syphilis, has succeeded in devising a serologic test for tuberculosis which, he claims, is more specific than other tests thus far devised. According to a recently issued statement, the formulation of this test was begun by the preparation of an antigen freed from the lipid substances of the bacilli by a prolonged extraction with tetralin. The latter substance is a naphthalene with four molecules of water of hydration, and has a neutral reaction. After the lipid substances are removed, the remainder acts as a strong tuberculin and is capable of producing complement fixation antibodies. It also gives a strong reaction with the serums of animals immunized with tubercle bacilli.

Wassermann² reports that he was at first disagreeably surprised when he found that the antigen did not react with the serums of men and animals suffering from tuberculosis, and addition of the extracted lipins did not improve the test. However, other authors, especially Bougouet and Negri, Much and Meier, who are quoted by Wassermann, found that lipoids play their part in the immunizing phenomena in tuberculosis. Moreover, Rabinowitsch-Kempner recently found that the serums of patients with tuberculosis give a certain reaction with the syphilitic reagent of Sachs-Georgi. These considerations led Wassermann to add lecithin to his antigen, for, he points out, the bacilli alone do not make the symptoms of the disease. The reaction of the tissues is equally involved. Therefore, it is necessary to add lecithin for the clinical test, whereas this addition is superfluous in immunized animals in which there are only bacilli and not affected tissues. Wassermann concludes that his test reveals the presence not only of tuberculosis but also of active tuberculosis, since it is the actual affection of the tissues that makes necessary the addition of lecithin and produces the response to the test. It is, of course,

possible, as Wassermann himself points out, that lecithin may act merely to make the reaction more easily apparent. However, the serum from the immunized animal reacted with the lecithinized antigen in greater dilutions than without lecithin. Wassermann found that cholesterol also increased the sensitiveness of the test, but that it led easily to non-specific reactions with syphilitic serums.

The new test was used on several hundred patients, and the results indicate that whereas the positive reaction proves the presence of active tuberculosis, a negative reaction does not seem to exclude it. Wassermann believes that the comparative usefulness of Besredka's and Negri's antigens is explained by the presence of lipoids, and that his antigen has the advantage of an exact proportion between the specific tuberculin antigen and the amount of lipoids, and that it thus avoids positive reactions with syphilitic serums. In outlining the test, Professor von Wassermann indicates the necessity for controls consisting of the extract, the serum, nontuberculous serum and the usual controls employed with the Wassermann test for syphilis. He considers it advisable to use a known syphilitic serum as one of the controls. The test is therefore dependent on the definitely lipophilic character of the serum of the tuberculous, and on the fact that such serum is differentiated from the serum of syphilitics in that it does not react with lipoids alone, other components being needed in the antigen. It also differentiates serum from patients actively tuberculous from the serum of patients having tubercle bacilli but not active lesions; the former require more lipid in the antigen in order to give a positive reaction than do the latter.

Whether or not the newly designed test will prove to be of the same value as the well known reaction for syphilis is, of course, dependent on extensive confirmation by other serologists. Its clinical and practical value will lie in the early detection of active processes of the disease with the hope of modifying the hygiene of the individual so as to permit cure of the disease while cure is possible. However, the lack of any efficient medicinal armamentarium against this disease as compared with syphilis would appear to lessen to some extent the practical importance of the work.

SUPPLY OF PHYSICIANS IN RURAL ENGLAND

The United States is not the only country in which a lack of physicians threatens in rural communities. England has a similar problem,¹ the reasons being quite parallel to those in this country. A generation or two ago, a capable physician could make a fair living in a country district, provide the essential comforts, and lay aside something for the future. At the present time, however, no matter how energetic or persevering the physician may be, country practice presents unusual

1. Berlin letter, J. A. M. A. 80: 1329 (May 5) 1923.

2. Von Wassermann, August: Ueber experimentelle Grundlagen für eine spezifische Serodiagnostik auf aktive Tuberculose, Deutsch. med. Wchnschr. 49: 303 (March 9) 1923.

1. Brit. M. J., Supp., April 21, 1923, pp. 117-119.

difficulties. Formerly, the country physician attended all classes of people in the community, the rich man and his family as well as his servants and dependents; at present, however, with the greatly improved means of transportation, the wealthy country people have fallen into the habit of going to cities for their various necessities, and in case of illness go to the city physician or are sent to the hospital in the city.

Formerly, the difficulties under which the physician practiced and the cost of living were less in the country than in the city. Now, the conditions have been reversed, and the country physician must pay for the taxes and up-keep of one or two automobiles, and expend a large amount of time in visiting his widely scattered patients, while the city physician is in easy walking distance, or has the use of the street-cars and can visit many patients where the country practitioner sees one. Schools in the country are usually of grammar school grade, and in order to give his children the benefits of better education, the physician must employ tutors or send his children to private schools, high schools and colleges in distant towns or cities. Opportunities for financial income from public sources, appointments, salaried positions, and similar emoluments are fewer or lacking in the country, as compared with cities. The country physician cannot establish regular hours, but must answer calls as they come, and must see at any time the patient who may have come many miles to see him. The very difficulties under which the country physician works, and the essential expenditure of a large proportion of time in caring for a few patients, also make it difficult for him to do the essential reading and keep up to date educationally and professionally. The very influences that are causing country physicians to lose patients are directly to the advantage of the city physician. However hard he may work, the country physician is held within rigid limitations. Some figures in the article quoted show that of ninety-four country physicians, the average number of patients cared for was 629, and the average income was about \$1,500; of 219 semiurban physicians, the average number of persons cared for was 1,263, and the average income about \$3,000, while it was stated that the average income of physicians in large towns was estimated at approximately \$4,500. The author states as an inevitable result that "the good men will not go into country practice."

The reasons for the scarcity of physicians in rural England, therefore, are identical with those in the United States, and the solution will largely need to be worked out in a similar manner. Physicians will not go to localities where they cannot make a fair livelihood without undue hardships. In this country the problem will be met by guaranties of income by citizens of the community or, as has just been provided by legislative enactment in New Hampshire, the taxing of citizens of any town to support a resident physician. In England, as shown by the author's suggestions, modifica-

tions of the national insurance acts may relieve the situation by making more generous financial provision in mileage and other allowances for the country practitioner.

FAMINE AND THE INCIDENCE OF COMMUNICABLE DISEASE

Famine, pestilence and war are three of the "Four Horsemen of the Apocalypse." With increasing malnutrition there is a greater incidence of morbidity and mortality. Severe as these sequels of national underfeeding have been, statistics from famine-swept Russia show that conditions have been underestimated, rather than overestimated. Cheinisse,¹ quoting the report of Tarassévitch² of Moscow to the Health Section of the League of Nations, states that from 1918 to 1921 there were, in Russia, from twenty-five to thirty million cases of exanthematous typhus—about one fifth of the total population—and that deaths from this cause were between two and one-half and three millions. Furthermore, Zlatogorov, Fedorov, Martzinovsky, Lubarsky and others note that famine adds grave trophic complications to the disease, among which are gangrene of the lower extremities and tendency to hemorrhage.

As testimony of the evil effect of malnutrition in regard to epidemic disease in Russia, Professor Otto³ of Germany presented this motion at the meeting of the Health Section of the League of Nations held at Warsaw, March 22, 1922:

The European Health Conference lays especial stress on the necessity for supporting health measures to be undertaken in Russia and the Ukraine by a campaign against famine, which is one of the chief causes of the epidemics, and invites all nations to take part in this campaign, without which efficient measures against the epidemics are impossible.

The resolution was adopted unanimously, showing that those who had studied conditions at first hand held no doubt as to the importance which normal nutrition plays in regard to the incidence of disease. The report continues:

Of all countries in eastern Europe, Russia has suffered most from epidemics during the last four years, during which time about seven million cases of typhus and relapsing fever were officially reported, without counting the figures for the Red army. The culminating point was reached in 1919 and 1920, when 4,917,000 cases of typhus and 1,259,500 of relapsing fever were officially recorded. The official figures, however, do not represent the total incidence, and must be multiplied by at least two and one-half in order to obtain an approximate picture of the situation. . . . Reported cases of typhus and relapsing fever were, for October, 1922, 14,578 and 29,258; for January, 1923, 87,742 and 89,535, respectively. . . . The cholera epidemic, which broke out in 1921, when 176,885 cases were officially reported, has proved the most deadly visitation for many years. In 1922, cholera reappeared in spite of the severity of the winter, in twenty-one different districts of the Ukraine and in Soviet Russia. . . . It is not usually realized that absolute famine, or conditions approaching famine are now (March 22, 1922) involving

1. Cheinisse, L.: La famine et les maladies infectieuses, Presse méd. 31: 681 (April 25) 1923.

2. Tarassévitch, L. A.: Report of European Health Conference, Geneva, April 3, 1922, p. 27.

3. Otto: Centralbl. f. Bakteriöl. I Ref. 74: 1, 1922.

8,000,000 of the inhabitants of southern Ukraine, and that there is, so far, no provision made to provide food from abroad, and that local resources are nearing an end.

It needs no further emphasis to indicate that disease in epidemic form makes grave inroads on underfed bodies: more grave than we have hitherto acknowledged. As to the course and symptomatology of recurrent fever, Cheinisse states that, in addition to the augmentation of the number of cases, the duration of the febrile period is longer (from six to ten days), and that the number of attacks has risen to from six to sixteen.

The only dissenting voice as to the view that famine predisposes to epidemic diseases is that of Sternberg,⁴ who holds that with the exception of dysentery and measles there has been no increase due to famine conditions. Sternberg, in addition to his general denial, particularizes as to tuberculosis, and as explanation for his assertion that this disease is also unaffected by famine, advances a theory based on endocrinology and having as its key the assumption that in conditions of malnutrition a state of hypothyroidism exists, and that this condition is less favorable for the development of the disease than that of hyperthyroidism, which is normally present in the young adults who are most susceptible to the disease.

Alone in his contention, he is vigorously attacked by Dr. V. M. Kogan, one of the editors of the Russian journal *Vratchebnoïé Délo*, and Dr. M. I. Lifchitz, professor of the medical faculty of Kharkov, who maintain not only that his theoretical reasoning is not well based, but also that the experience of all Russian physicians who have had personal contact with conditions proves him wrong. They both state that, under conditions of bad feeding, chronic tuberculosis, usually relatively benign, takes on an acute form with death in two or three months. They further state that there is much greater frequency in the occurrence of the acute miliary type and an increase in the rarer varieties, such as multiple localizations on the various serous surfaces, and granular phthisis with fatal issue prior to the miliary stage. They also note an increase in the frequency of intestinal tuberculosis and the involvement of the mesenteric glands and the peritoneum. Confirmation comes also from Bruns,⁵ who, in investigating the living conditions of the city of Trier, Germany, found that nutrition played a responsible part in the incidence of the disease.

Regardless of the academic conclusions of Sternberg, based on a perhaps ingenious, but doubtfully sustained hypothesis, the definite fact remains that those who are well nourished have a higher factor of safety as regards disease, epidemic or otherwise, than those who are at a low vital ebb. But we do not seem to have realized, thus far, that starvation can assume such

overwhelming proportions as a predisposing factor to epidemic disease as it has done, and is doing, in war-torn, famine-swept Russia.

Current Comment

THE PROGRESS OF RESEARCH

This week THE JOURNAL publishes the results of the clinical tests with ethylene made at the Presbyterian Hospital, Chicago, under the direction of Drs. Luckhardt and Carter.¹ The evidence seems to indicate that, properly administered, ethylene presents a real advance over other gaseous anesthetics. As the investigators point out, anesthesia has been induced with rapidity and ease, and many of the unpleasant symptoms and sequelae of other types of anesthesia have been absent. It is interesting, in view of these results, to reflect on a parallelism between the manner of development of this product and of insulin. In each instance previous workers had studied the problem, but in each instance also had stopped far short of the necessary experimentation to yield a practical result. It is apparent that Zuelzer, Steiner, and even Minkowski and Mering, as well as many others, might have continued their researches and eventually have reached the discovery achieved by Banting. As was noted in THE JOURNAL last week, Herrmann, Davy, Miller, Eulenberg and Lüssem had experimented with ethylene, but none of them had carried the work forward to the point at which its actual practical value was demonstrated. After all, this is what makes the romance of research. And it displays, too, the greatest attribute necessary for the successful research worker—the vision to see beyond the facts.

OAT-SEEDS AS A CAUSE OF FOREIGN-BODY TUBERCLES

Professor Marnoch of the University of Aberdeen performed an exploratory laparotomy for an acute attack of pain, preceded by discomfort in the upper part of the abdomen of several months' duration. He found an eruption of pink nodules on the visceral peritoneum, mostly over the pyloric end of the stomach. No acute inflammation was present, and the nodules were thought to be tuberculous. It was noted, however, that their distribution and consistency were unusual, and several were clipped off and sent to the pathologic department for investigation. The specimens, thus obtained, were prepared in the usual manner for study. Microscopic examination disclosed² that the nodules were made up of granulation tissue which was partly young, vascular, almost myxomatous connective tissue with occasional mononuclear and polymorphonuclear leukocytes, and partly more cellular areas enclosing fragments of some vegetable substance, the longest of which was 1 mm. in length. Giant cells, some with sixty nuclei, were closely applied to the fragments. Identification of this foreign material was

4. Sternberg, A.: *Deutsch. med. Wchnschr.* **48**: 581 (May 5) 1922.
5. Bruns, E. H.: Report on the Economic Conditions of the Poorer Population of the City of Trier as Determined by House to House Visits, *Mil. Surgeon* **46**: 418 (April) 1920.

1. Luckhardt, A. B., and Carter, J. B.: Ethylene as a Gas Anesthetic, *J. A. M. A.*, this issue, p. 1440.

2. Shennan, Theodore: Foreign-Body Tubercles on Serous Coat of Stomach, Caused by Escape of Particles of Oat-Seed, *J. Path. & Bacteriol.* **26**: 82 (Jan.) 1923.

difficult. It was found from collections in the botany department of the university that sections of grains of wheat and sections from the pathologic material were closely similar. All of the commoner cereals—wheat, oats, rye, barley, maize—were then prepared as the surgical specimen had been, cut in series and mounted. Thus, by comparison, it was demonstrated that the vegetable fragments from the abdominal tubercles had come from grains of oats. It could not be determined, however, when or how the oats had been transplanted from the mucous to the serous surface of the stomach. The assumption was that it had occurred through a small perforation which healed quickly and without much local reaction. The patient lived in northeastern Scotland, where oatmeal is a common food. Any foreign body embedded in the tissues stirs up the same response. The tuberculization of fragments of oats in the abdominal cavity, however, appears to be an extraordinary observation.

SPICES

Of all the flavors that tantalize the palate of man, none are so fragrant in their appeal to taste, to odor and to every sensation of pleasure as the spices, and it is not strange to read in a recent account of the growth and development of the spice trade that they were used by man in the earliest times. "When Alaric, the Goth," says LaWall,¹ "conquered Rome in 410 A. D., one of the ransoms asked by him was 3,000 pounds of pepper, then worth more than its weight in gold." In that period, caravan and ship carried ever as a part of their burden a certain quantity of "spices, gross spices or groceries, as well as minor spices." In fact, the first organization of dealers was known as "the fraternity of pepperers," and it was in the fourteenth century that the name was changed to "the Guild of Grocers," which depicted on its coat of arms six cloves. When Venice was at the peak of affluence, its trade in spices amounted to approximately ten million dollars annually. The name of Vasco da Gama has long been known as that of a famous sea-fighter, and it is interesting to know that one of his most important voyages was made to secure a cargo of pepper, cinnamon and ginger from India. When he returned from his voyage, which required almost two years to carry on, he was presented with remarkable emoluments for his courage, for he had paid to his supporters a sixty-fold profit. The war for supremacy between Venice and Portugal in this trade led da Gama to perform those cruelties in warfare which have made his name stand as the very symbol of terrific vengeance. In his consideration, Dr. LaWall traces the development of the trade in spices, how it passed from the Portuguese to the Dutch, and from the Dutch to the Germans and English and, in the latter part of the sixteenth century, how the famous freebooters Drake, Hawkins, Granville and Oxenham harassed the homeward bound spice ships of the king of Spain. The account is concluded with a list of the common spices now employed, more than thirty in number. A few

almost priceless spices which were the treasures of the middle ages have thus developed into an extensive list which are sold in pounds instead of ounces in groceries and markets, and which are the common household commodity. A mere list of their names provokes pleasant thoughts and fragrant memories—allspice and cinnamon, nutmeg and anise, coriander and marjoram, mace and dill, mustard and ginger, sage and thyme, savory and paradise.

WHAT MILWAUKEE—AND SOME OTHER PLACES—THINK OF ABRAMSISM

At a largely attended regular meeting of the Medical Society of Milwaukee County, held, May 10, Dr. G. E. Seaman offered the following motion:

"That the entire Abrams method is such a palpable fraud that this Society considers it beneath its dignity to appoint a Committee to investigate it, and that the pursuit of the Abrams method on the part of any member of this Society shall be considered inconsistent with membership in this Society."

The motion was carried without a dissenting vote. Two or three weeks ago, *THE JOURNAL* published a resolution printed in the *Bulletin* of the Los Angeles County Medical Association, in which that society went on record as declaring that the "Abrams method of diagnosis is a fraud" and that any physician who practiced the method was ineligible to membership in the association, and that any member of the association who practiced the method would have charges of unethical conduct preferred against him. As a result of this editorial note we have received a brief letter from Dr. W. B. Moore, the secretary of the Harrison County (Ky.) Medical Society, reading in part:

"I wish to state that the Harrison County Medical Society expelled two of its members March 5 for practicing this fraud. This is the first instance I have noticed of a doctor, being expelled from his society for such unethical conduct."

In this connection, it may be of interest to recall the fact that last January the Tulsa County (Okla.) Medical Society expelled two of its members who were local exponents of the Abrams methods. More than a year and a half ago the Massachusetts Medical Society called for the resignation of one of its members who was an Abramsite, and about a year ago the same individual had his license to practice medicine revoked by the Massachusetts Board of Registration in Medicine on the charge that he was guilty of deceit, malpractice and gross misconduct in the practice of his profession in that he had treated a young man by the so-called Abrams¹ method.

1. A reprint of the matter that has appeared in *THE JOURNAL* on the Abrams vagaries will be sent on receipt of four cents in stamps.

The Schick Test in Mexico and Uruguay.—In a group of 1,603 Mexicans of all ages up to 55 years, O. Rojas Avendaño secured positive results with the Schick test in 816, i. e., 50.9 per cent. There were 447 protein pseudoreactions. Among children 2 to 4 years old the proportion of positive tests was 69 per cent. M. Ponce de León used the test in 307 persons in Montevideo, with results very similar to those obtained by Park and Zingher in New York City. Up to the age of 15 years, there was an average of 77 per cent. negative tests. Only in people over 40 years was there found 100 per cent. negative tests.

1. LaWall, C. H.: *The Romance of Spices*, Am. J. Pharmacy, April, 1923.

Association News

THE SAN FRANCISCO SESSION

Fraternity Banquets

The Phi Rho Sigma Fraternity will have a banquet at the St. Francis Hotel at 6:30 p. m., Wednesday, June 27. The dinner will be over in time to allow Fellows to attend the President's reception later in the evening. Dr. Charles E. French, 749 Flood Building, San Francisco, is the chairman of the committee. Information about this banquet can be secured from him.

Nu Sigma Nu will have a forty-niners' banquet for local and visiting Fellows at the Bohemian Club on the evening of June 28. A special entertainment is being provided. Dr. H. D. Crall, 1242 A Second Avenue, San Francisco, is the chairman of the Nu Sigma Nu Committee.

Special Trains

Southern Medical Association Train: The Southern Medical Association will operate a train to San Francisco to be known as "Our President's Special." This train will start from St. Louis and will go by way of Kansas City, Colorado Springs and Salt Lake City, leaving St. Louis at 9 a. m. Tuesday, June 19. A part of Wednesday, June 20, and a part of Thursday, June 21, will be spent at Colorado Springs. Salt Lake City will be reached at 12:25 p. m., Friday, June 22, and departure for San Francisco will be at 11:40 a. m., Saturday, June 23. Information about this train can be secured by addressing the Southern Medical Association, Birmingham, Ala.

Special Train from Seattle: A special train will be operated over the Union Pacific for the accommodation of members and visitors to the meeting of the Pacific Northwest Medical Association to be held in Seattle, June 19-21. This train will leave Seattle at 9:30 a. m., June 22, Portland at 5:30 p. m., June 22, and is timed to arrive in San Francisco at 7 p. m., June 23. While in Portland, the party will be entertained by the Portland members of the Pacific Northwest Medical Association. Dr. F. R. Underwood of Seattle is the chairman of the transportation committee, and can be communicated with for information concerning this train.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

State Society Forwards Resolution.—At the annual session of the Alabama State Medical Association, April 17-20, a resolution was passed addressed to the director of the U. S. Veterans' Bureau, requesting that action be taken regarding the discontinuance of placing new trainees in chiropractic. A resolution was also passed commending the activities and policies of the U. S. Veterans' Bureau in general.

Colored Staff at Veterans' Bureau Hospital.—The entire staff of the U. S. Veterans' Bureau Hospital at Tuskegee will be composed of colored men and women. The U. S. Civil Service announces examinations for these positions. Applications should be addressed to the secretary, Fifth U. S. Civil Service District, Post Office, Atlanta, Ga. Fifteen general physicians, salaries up to \$3,250 a year, and eighteen specialists, particularly in neuropsychiatry and tuberculosis, salaries up to \$5,500 a year, will be appointed for service at the hospital, the capacity of which will be about 600 beds.

ARKANSAS

Physician Fined.—It is reported that Dr. J. Wesley Cunningham, Little Rock, was fined \$1,000 and sentenced to two years in the penitentiary, following conviction by a jury in

the federal court, April 25, for violation of the Harrison Narcotic Law.

State Medical Meeting.—At the forty-eighth annual convention of the Arkansas Medical Society, at Hot Springs, May 2-4, the following officers were elected for the ensuing year: president, Dr. William T. Wootton, Hot Springs; vice presidents, Dr. Jesse C. Graves, Lockesburg, and Dr. James O. Rush, Forrest City; secretary, Dr. William R. Bathurst, Little Rock, and treasurer, Dr. Robert L. Saxon, Little Rock. Fayetteville was unanimously selected for the 1924 convention.

CALIFORNIA

Governor Vetoes Bill Regulating Quack Advertising.—The bill making it unlawful for any person to use the words, letters or title of doctor, unless such letters or titles are accompanied by the degree on which his title is based, with the name of the school that conferred it, recently passed by the senate and assembly (THE JOURNAL, April 28, 1923, p. 1249), has been vetoed by Governor Richardson. The governor held, that, although the bill is designed to protect the public against fake advertising, its language is involved and ambiguous.

Hospital News.—The present Lodi Hospital, Lodi, will be torn down to make room for an office building. A new hospital will be erected at a cost of \$75,000.—A two-story addition will be erected by the Burbank Hospital in the near future with a fifty bed capacity.—Ground for the new San Antonio Community Hospital, to be erected at Upland, was broken, April 3. The hospital, which will cost approximately \$150,000, was made possible chiefly by the late Mrs. J. L. Paul, whose original donation of \$75,000 has been augmented by other gifts.

CONNECTICUT

Yale University School of Nursing.—Miss Annie W. Goodrich of Teachers College, Columbia University, New York, has been appointed dean of the new Yale University School of Nursing, New Haven (THE JOURNAL, April 28, p. 1249). Miss Goodrich was recently awarded the Distinguished Service Medal by the War Department.

Old Medical Societies Meet.—The one hundred and thirtieth annual meeting of the New Haven County Medical Society was held, April 26. President Charles H. Brown, Waterbury, spoke on cancer.—At the one hundred and thirty-first annual meeting of the Middlesex County Medical Association, at Middletown, April 12, Dr. F. T. Fitch was elected president, to succeed Dr. James H. Kingman.—The one hundred and thirtieth meeting of the Windham County Medical Society was held at Willimantic, April 19. Dr. Stanley H. Osborn, Hartford, spoke on "The Practicing Physician and Preventive Medicine."

ILLINOIS

Hospital News.—Work will soon be started on the new wing of St. Francis Hospital, Wilmette, which will have a capacity of 100 beds.—The board of managers of the Illinois State Baptists has voted to accept the offer to take over the Allen Sanatorium, Robinson, and make it a Baptist hospital. It will be known as the Allen Baptist Sanatorium.—The Methodists of the Rock River Conference will erect a 100-bed hospital, at a cost of \$300,000, in Morrison this summer. It will replace the Globe Hospital.

Personal.—Dr. John A. Lindquist has succeeded Dr. Jay T. Wood as city physician of Springfield. Dr. Wood resigned recently after eight years of service.—Dr. John W. H. Pollard was reappointed public health officer, and Dr. Earl L. Caddick was reappointed director of the public social hygiene clinic of Quincy, recently.—Dr. Amos A. Crooks, Peoria, has been appointed health superintendent of the district composed of Bureau, Stark, Tazewell and Mason counties.—Dr. John E. Lee has been reelected mayor of Venice.—Dr. George T. Palmer, president of the Illinois Tuberculosis Association, gave a public address on tuberculosis at Newton, April 24.—Drs. Andrew D. Miller, Sullivan, and Samuel L. Stevens, Dalton City, were elected president and secretary-treasurer, respectively, of the Moultrie County Medical Society, April 25.

Chicago

Hospital Assumes New Name.—The name of the Hahnemann Hospital of Chicago has been changed by the board of trustees to "The Chicago Memorial Hospital." The board states that the practice and work of the hospital now con-

forms in all respects to that of other approved hospitals of Chicago.

Epidemic of Measles.—The average number of cases of measles increased from thirty-three a day in January to 144 a day during the first ten days of May. The council finance committee, May 10, voted \$2,000 for extra quarantine officers to fight the epidemic. The city health commissioner stated that since January 1, 10,836 cases have been reported in Chicago.

Medical Women Incorporate.—The Chicago Council of Medical Women, organized for the purpose of collecting scientific data and promoting fellowship among women practitioners, was granted a charter of incorporation, May 8. Dr. Anna M. Blount, Oak Park, was elected first president of the council, which is limited to seventy-five members, and Dr. Lena K. Sadler, secretary.

Personal.—Dr. George W. Hoover, for the past nine years chief of the Chicago district of the U. S. Department of Agriculture, has been appointed chemist in charge of the drug control of the United States, it was announced, April 20.—Dr. Cassius C. Rogers discussed the treatment of cranial and intracranial lesions, before the Lee County Medical Society, April 10, at Dixon.—Dr. Dean D. Lewis addressed the Richmond Surgical Society at Richmond, Va., April 6, on "Some Problems in Peripheral Nerve Surgery."

IOWA

Training for General Practice.—A committee representing the state medical association and other organizations has been named to cooperate with the State University of Iowa College of Medicine, in connection with the new medical school, in planning courses to train physicians for general practice in rural sections of the state. Many rural sections, it is said, have been found to need physicians.

Iowa State Medical Society.—At the seventy-second annual convention of the society, at Ottumwa, May 9-11, Dr. Oliver J. Fay, Des Moines, was elected president for the year 1923-1924. Dr. Frank M. Fuller, Keokuk, was elected president-elect; Drs. Harvey B. Gratiot, Dubuque, and William E. Long, Mason City, vice presidents; Dr. Addison C. Page, Des Moines, treasurer, and Dr. Tom B. Throckmorton, secretary. The next meeting of the society will be held in Des Moines, May 7-9, 1924.

Summary of Recent Health Legislation.—The Iowa Tuberculosis Association and the state medical society prepared a summary of eighteen major and six minor health measures advocated by health workers, which passed the fortieth general assembly. Six proposals altering the present health laws of the state, in a manner deemed detrimental, were defeated or postponed. The physical education bill, which passed, provides that practical health instruction and training shall be given weekly in every school to all children of both sexes and that actual observance of the rules of health shall form part of the grades. A manual of methods will be furnished teachers by the superintendent of public instruction. This bill was supported by the American Legion, the state teachers' association, the state medical society, the state conference of social work, the physical education association and other organizations.

KANSAS

State Medical Meeting.—At the fifty-seventh annual convention of the Kansas Medical Society, at Kansas City, May 2-4, the following officers were elected for the ensuing year: president, Dr. Edwin D. Ebright, Wichita; vice president, Dr. Alfred O'Donnell, Ellsworth, Dr. Samuel J. Crumbine, Topeka, and Dr. Hugh Wilkinson, Kansas City; secretary, Dr. John F. Hassig, Kansas City, and treasurer, Dr. George M. Gray, Kansas City. Iola was selected for the next annual session.

Law Creating Commission for the Blind.—The Kansas State Legislature has passed a bill creating a commission for the blind. In addition to the usual responsibilities placed on such commission, the act provides:

"That it shall be the duty of the commission to cooperate with state and local boards and agencies, both public and private, in preventing the loss of sight, in alleviating the condition of . . . persons with failing sight. The commission shall cooperate with the state and local boards of health, the state and local boards of education, and such other state and local agencies as may be directly or indirectly concerned with the prevention of blindness and the conservation of vision and shall furthermore seek to disseminate information concerning the proper care of the eyes, such information to be prepared in cooperation with the departments which may be concerned."

KENTUCKY

Lexington Physicians Sentenced.—Drs. Elmer Northcutt and Wiley E. McWilliams, both of Lexington, were convicted and sentenced to three years each in the federal prison, Atlanta, Ga., May 12, according to reports. Dr. Northcutt was convicted on four and Dr. McWilliams on five counts for violation of the Harrison Narcotic Law.

MARYLAND

Eudowood Hospital to Expand.—Plans for a campaign to raise \$200,000 to increase the capacity of Eudowood Sanatorium, Towson, to be held during the week of May 21, have been formulated by the board of directors. The capacity of the hospital is to be doubled and a department for tuberculous children opened.

McCready Hospital Given to Crisfield.—A deed to the completed McCready Hospital at Crisfield was formally presented to the board of directors, May 6, by Mrs. Caroline Ritt McCready of Chicago. Dr. Thomas S. Cullen announced a gift also of two scholarships by Mrs. McCready; one for \$500 to be given to the physician who had done most for the community, the other for \$300 to the best nurse.

Personal.—Dr. George Walker, Baltimore, has been awarded the Distinguished Service Medal for services in preventing the spread of disease at the base ports in France during the World War.—Dr. Carl L. Alsberg, director of the Food Research Institute, Stanford University, San Francisco, delivered a lecture on "Economic Aspects of Our Food Supply" before the School of Hygiene and Public Health, Johns Hopkins University, April 16.—Dr. J. W. McCartney of the University of Edinburgh gave an address on "Primary Pneumococcal Peritonitis" before the medical societies of the Johns Hopkins Hospital, May 7.—In commemoration of his eightieth birthday, a dinner was given Dr. Henry M. Hurd, superintendent of the Johns Hopkins Hospital, Baltimore, May 3. Prominent medical men in Baltimore and several distinguished guests from out of town were in attendance.

MASSACHUSETTS

"Quacks" Arrested.—Fred LaPlante was re-arrested on his return from Deer Island, where he completed a fifteen months' sentence for larceny through the sale of quack medicine in Boston. A similar offense was committed in Saugus, according to recent reports.—Dr. Harmon P. McKnight, Somerville, claiming to be a "magnetic physician and osteopath" and a graduate of several medical schools, was arrested on a charge of practicing medicine without a license recently. It was reported that he has served in various penal institutions.

Boston Medical History Club.—At the annual meeting of the club, April 16, the following officers were elected for the ensuing year: president, Dr. John W. Farlow; vice president, Dr. Malcolm Storer, and secretary-treasurer, Dr. John W. Cummin. Dr. Timothy Leary read a paper on "Benjamin Church, Jr., First Surgeon-General of the American Army." Dr. Leary exhibited colonial documents in original and photostat reproduction, also Church's medical notebooks. After the meeting about 300 medical portraits, collected by the late Dr. Ernest B. Young, and recently presented to the library by his family, were displayed.

MICHIGAN

Memorial to Physician.—The new city hospital now under construction at Traverse City on the state hospital grounds will be named the James Decker Munson Hospital, as a memorial to Dr. J. D. Munson, who has been superintendent of the local institution since 1885.

MINNESOTA

Mayo Laboratory Burned.—The new animal experimental laboratory on the estate of Dr. Charles H. Mayo, Rochester, burned to the ground, May 7. The loss is estimated at \$150,000.

MISSISSIPPI

State Board Creates Oral Hygiene Division.—The state board of health has created a division of mouth hygiene under the bureau of child welfare. The Mississippi Dental Association has expressed in special resolutions a desire to cooperate in this work.

State Medical Meeting.—At the annual meeting of the Mississippi State Medical Association, at Vicksburg, May 8-9, the following officers were elected for the ensuing year: president, Dr. William A. Dearman, Long Beach; vice presidents, Drs. Lancelot L. Minor, Hollywood, James M. Guthrie, Meridian, and Alvan L. Chapman, Hermanville; secretary, Dr. Thomas M. Dye, Clarksdale, and treasurer, Dr. James M. Buchanan, Meridian.

MISSOURI

Committee for Mental Hygiene.—The psychiatric clinic, inaugurated about a year ago at St. Louis by the National Committee for Mental Hygiene, was formally taken over by director of public welfare, Nelson Cunliff, May 1, when it became a city institution. Dr. William L. Nelson has been appointed chief psychiatric clinic director.

National University Extension Association.—At the annual meeting of the association in St. Louis, which closed, April 21, the following officers were elected for the ensuing year: president, Prof. Richard R. Price, University of Minnesota, Minneapolis; vice president, Prof. Frederick W. Shipley, Washington University, St. Louis, and secretary-treasurer, Prof. James A. Moyer, Massachusetts department of education, division of university extension, Boston. Madison, Wis., was selected for the next annual meeting.

NEBRASKA

Hospital News.—The West Nebraska Methodist Hospital, Scottsbluff, which is under construction, will be ready for occupancy this fall. Its capacity will be 100 beds.—A clinic on "Asthma" was held at St. Clara's Hospital, Lincoln, under the auspices of the Logan County Medical Society, April 19. Drs. Burton D. Haseltine and Alvin W. LaForge, both of Chicago, addressed the meeting.

NEVADA

State Association News.—The next annual meeting of the Nevada State Medical Association will be held at Reno, September 28-30, or thereabouts, the secretary announces. Popular vote was taken as to whether it should be held in June or October. The *California State Journal of Medicine* is now the official journal of the Nevada State Medical Association following a vote at the recent Elko meeting. Subscriptions of \$2 for one year should be sent to Dr. W. E. Musgrave, 1016 Balboa Building, San Francisco.

Legislative News.—The public hospital bill has been signed by the governor. Under the new law 25 per cent. of the taxpayers in any county that wants a public hospital can present a petition to the commissioners, who will put the question on the ballot at the next general election. If the question carries, the commissioners will immediately proceed to provide the hospital. The nurses' registration bill also become a law. Graduate nurses and all other nurses that have had twenty-eight months' training in a Nevada hospital, under the direction of a physician licensed in that state, are entitled to register without examination, provided they do so by July 1.

NEW HAMPSHIRE

Orphan's Home Burned.—Two buildings of the New Hampshire Orphan's Home, Franklin, were destroyed by fire recently. The loss is estimated at \$60,000.

Appropriations for Physicians in Small Towns.—The New Hampshire legislature has recently passed a law which permits any town to raise money toward the support of a resident physician which, in the absence of such appropriation, could not obtain one. The act became effective, April 5.

NEW JERSEY

Personal.—Dr. Henry A. Cotton, medical director of the State Hospital for the Insane, Trenton, has accepted the invitation of the British Medico-Psychological Society to deliver an address in London before the annual convention in July.

Physician Arrested.—According to reports, the New Jersey State Board of Medical Examiners revoked the license to practice medicine of Dr. James F. Kerr, Newark, November, 1922, following his conviction on a charge of performing an abortion. Dr. Kerr, who was recently in jail, was held in \$3,000 bail, May 5, on a charge of performing an illegal operation, March 24.

NEW MEXICO

School for Health Officers.—The New Mexico State Bureau of Health proposes to conduct a four weeks' course of intensive instruction for health officers in order to qualify them for full-time county positions. The course will be given provided there are enough entrants to justify the time and expense. It is expected to follow the annual meeting of the state medical society, June 25.

NEW YORK

State Aids Veterans.—The New York State Senate passed the Kleinfeld bill, which provides \$1,000,000 for the relief of sick and disabled veterans of the World War. A similar \$1,000,000 fund under which veterans' aid has been given has just been exhausted.

Legislation.—It is reported that the chiropractic bill and the Lattin medical practice bill are "dead" for this session of the legislature. The Bloch narcotic bill has not been endorsed by the governor. There are indications that a new commission will be appointed to study the narcotic situation and to make recommendations to the next legislature.

"Bootleg Pharmacies" Hit.—The Twombey-Lattin bill to place the ownership of drug stores in New York state with licensed pharmacists was recently signed by Governor Smith. This bill, which received the approval of the Medical Society of the County of New York and of the state pharmaceutical association, restricts ownership of drug stores to licensed pharmacists only. It is hoped the measure will do away with so-called "bootleg pharmacies."

Glen Cove Must Pay Health Officer.—The Appellate Division has awarded a mandamus to Dr. Joseph B. Conolly, compelling the finance commissioner to pay him his salary as health officer of the City of Glen Cove, from which certain officials attempted to oust him in 1922. The Supreme Court had refused him a mandamus, but the Appellate Division reversed that decision, holding that Dr. Conolly took a competitive examination and is an employee under civil service rules and not a "public official."

Model Milk Ordinance.—The Albany Common Council held a public hearing on the question of the adoption of the model milk ordinance for cities as recommended by the state department of health, and the New York State Conference of Mayors, May 7. This model ordinance eliminates all Grade C milk and prohibits the sale of Grade B raw milk. It permits the sale of Grade B pasteurized milk, certified milk and Grade A raw and pasteurized milk. The ordinance also forbids the sale of dipped milk, requiring that all milk be sold in bottles, filled and capped at the place of production or at the collecting and distributing station. The Albany Medical Society passed a resolution that Albany be the first to adopt the model milk ordinance.

New York City

Chair of Nursing Endowed at Columbia.—Through the foundation of a chair of nursing by Mrs. Helen Hartley Jenkins of New York, Miss Adelaide Nutting has been made professor of nursing at Teachers College, Columbia University. This is reported to be the first endowment of its kind.

Cancer Institute for City's Poor.—The New York Cancer Institute will be established by the commissioner of public welfare, for the exclusive treatment of cancer among the city's poor. The hospital division of the institute will be located in a set of buildings of the City Hospital on Blackwell's Island, where accommodations will be available for 200 patients. The clinical division will be located on Fifty-Ninth Street temporarily, but within two months will be housed in a home of its own, it is stated. The cost of installing the roentgen-ray machines and radium emanation laboratories will be borne by several prominent citizens. Dr. Isaac Levin, clinical professor of cancer research at the New York University, has been appointed medical director of the cancer institute.

Annual Report of Committee.—According to the annual report of the public health committee of the New York Academy of Medicine, there is a shortage of hospital beds in New York for the treatment of neurologic and mental diseases, and the state hospitals are overcrowded to a degree that should not be tolerated. The report covers many subjects, among which are: the prophylactic value of pneumonia vaccines; spread of tuberculosis among families by domestics; disposal of city waste; automobile exhaust gas; anthrax; housing and transportation; prolonged neglect of proper sewage disposal; more sources for the city's water

supply; child health; measurement of growth of children; codification of child welfare laws; continued study of communicable diseases in hospitals; hospital information bureau; continuous collection of hospital statistics; relation of the community to hospitals; scrutiny of city's budget dealing with health and hospitals; supplying lists of expert examiners to civil service commissioner; rebates to physicians; legislation on health and medical education, and other subjects.

NORTH CAROLINA

"State Medicine" Defined.—At the annual meeting of the state medical society in Asheville, recently, the term "state medicine" was defined (when the report of the committee of public health administration was formally accepted) as any practice or policy provided for in the legislative acts of a state which has to do with the prevention or treatment of disease, and which may roughly include the following:

Legislation which determines who shall and who shall not be permitted to treat disease and which prescribes the conditions under which a person may practice medicine; which provides for the education of the general public in matters of personal and public hygiene; which provides public laboratories for assisting the profession in the diagnosis of specimens; which provides for the immunization by vaccines and serums of the general public against infectious diseases; which provides for the reporting of births, deaths and communicable diseases and prescribes measures for the restriction of the spread of contagion; which provides institutional treatment for the delinquent, the defective and the diseased; which provides for the physical examination of school-children, and which provides for health insurance and for panels of physicians who are paid out of the public funds at rates fixed by the state.

OHIO

Child Welfare Campaign.—A special "Save the Babies" child welfare campaign was held in Dayton, May 7-12, at which examination of babies under 2 years of age was held daily at the division of health. A health bulletin was issued giving information on prenatal and infant care, which will be mailed free each month on request.

Dr. Brock Wins Golf Tournament.—Dr. Lucian L. Brock, Washington, won the president's silver championship golf trophy at the Ohio Medical Golf Association Tournament at Dayton, during the annual meeting of the state medical association. A silver mounted cane was also awarded to Dr. Brock for being among the four players turning in the lowest scores for thirty-six holes from a field of 104 players.

Chiropractors Fined.—According to reports, C. E. Schillig, Willard, secretary of the state chiropractors, was fined \$100 and costs by Judge Lutts, at Norwalk, May 1, for practicing medicine without a license. Schillig refused to pay and was committed to jail.—Five Zanesville chiropractors, Marcus Hull, W. F. Stiers, L. O. West, J. T. Brooks and A. A. Crabbe, were fined \$50 and costs, each, April 30, for practicing medicine without a license. Three went to jail in preference to paying the fine.

Personal.—Dr. N. C. Yarian was recently elected president of the Cleveland Society of Industrial Physicians.—Dr. Frank E. Bunts, professor of surgery, Western Reserve Medical College, Cleveland, spoke on "A Consideration of Diseases of the Breast, Based on a Study of 1,250 Cases," before the Wayne County Medical Society, Detroit, May 7.—Dr. Edward W. Misamore has been appointed city health officer of Findlay.—Dr. William G. Rhoten, Hillsboro, for the last three years district health commissioner of Highland County, has assumed the same position in Hocking County and the city of Logan.—Dr. Albert D. DeHaven has been elected mayor of Xenia.—Albert P. Mathews, Ph.D., professor of biochemistry, University of Cincinnati College of Medicine, has been granted leave of absence to attend the Pasteur centenary in Paris and Strasbourg as a delegate from the university. Dr. Mathews has been appointed one of the twelve delegates from the United States to the International Union of Pure and Applied Chemistry to be held in Cambridge, England; he will also attend the International Congress of Physiology in Edinburgh in July.—Robert C. Walker has been appointed to the Seely Teaching Fellowship in Medicine at the University of Cincinnati College of Medicine, for the next school year.—Dr. David I. Wolfstein has resigned as professor of psychiatry, University of Cincinnati College of Medicine, because of ill health.

OKLAHOMA

Addition to Soldiers' Memorial Hospital.—Work will be started at once on the construction of the new personnel building for the Oklahoma Soldiers' Memorial Hospital, Muskogee.

PENNSYLVANIA

Course for Health Officers.—Col. P. M. Ashburn, commandant of the Army Medical School at Carlisle Barracks, will conduct a six weeks' course in sanitation, at the request of the state health commissioner, for health officers attached to the state department. This instruction is in line with the plan the health commissioner expects to follow in the larger counties of the state, where full-time district sanitary officers, properly trained in public health work, will be assigned.

Chiropractic Bills.—The Dunn bill, to regulate the practice of chiropractic and to provide for licensing by a board of examiners, failed in the house after nearly two hours' debate. The vote was 82 to 78.—Senator Joyce, Luzerne, has presented a bill to the state legislature to create a board of chiropractic examiners consisting of three members who would have power to issue and revoke chiropractors' licenses. The bill also provides that persons who have been practicing chiropractic for two or more years, would be licensed without taking a state examination on payment of a fee of \$20.

Hospital News.—Plans have been approved and bids requested for the Luzerne County Hospital, the estimated cost of which is \$1,000,000.—The Conemaugh Valley Memorial Hospital, Johnstown, in its recent campaign for \$500,000, realized \$500,460, in two weeks. Work for enlarging the hospital will be started at once. When completed the institution will accommodate more than 300 patients.—The House appropriations committee recently reported out 118 bills for hospitals and other institutions carrying a total of \$5,080,000, which sum is \$1,480,000 more than the maximum fixed by the governor in the budget.

Changes in County Hospital Law.—The governor has signed an amendment to the county hospital law, which gives counties the right of eminent domain in acquiring land for tuberculosis hospital purposes, and also gives the hospital board and the county controller joint supervision with the county commissioners in erecting such hospitals. As amended, Section 2 of the county hospital law now reads as follows:

If a majority of the voters on such question at such election shall be in favor of the establishment of the hospital, the county commissioners, county controller, where such office exists, and the board of trustees, hereafter provided for, shall have plans and specifications prepared and shall select and acquire a site for such hospital by purchase or condemnation with the same power and with the like procedure as land is now acquired under existing laws by school districts for school purposes, the county commissioners exercising the authority exercised by school directors for that purpose. On the approval by the commissioner of health of the plans and specifications and the location of such hospital the hospital shall be constructed and equipped under the direction and supervision of the board of trustees, the county commissioners, and the county controller, where such office exists, and in the same manner as other county buildings are constructed and equipped.

Philadelphia

Personal.—In honor of his recent election as provost of the University of Pennsylvania, the alumni of New York City selected Josiah H. Penniman, Ph.D., as their guest of honor at their thirty-fifth annual dinner at the Hotel Pennsylvania, New York, April 7.—Dr. Isaac M. Rubinow, New York, has been appointed executive director of the Jewish Welfare Society, Philadelphia.

Jefferson Alumni Day.—The annual dinner of the alumni association of the Jefferson Medical College will be held at the Bellevue-Stratford, May 31, preceding the ninety-eighth annual commencement, June 1. Dr. Ross V. Patterson, dean of the college, and president of the alumni association, will be toastmaster. The list of speakers include prominent graduates of Jefferson from various parts of the country.

Faculty of Woman's Medical College Reorganized.—Dr. Lida Steward Cogill was named, May 9, to succeed Dr. Alice Weld Tallant as head of the department of obstetrics at the Woman's Medical College of Pennsylvania, Philadelphia. The board of trustees accepted the resignations of the twenty-four professors who resigned as a protest in favor of Dr. Tallant and has made a complete reorganization of the teaching staff. Dr. Rudolph Max Goepppe was appointed to the chair of medicine, to succeed Dr. Arthur A. Stevens. Dr. Walter Estell Lee has been offered the chair of surgery formerly occupied by Dr. Harry C. Deaver.

TEXAS

Chiropractors Petition Governor.—A petition was presented to Governor Neff, April 27, by the president of the state chiropractors' association, requesting the governor to submit to the legislature the creation of a state board of chiropractic examiners. The petition was 3,928 feet long, and contained 67,520 names.

CANADA

Society News.—The next annual meeting of the Canadian Society of Anesthetists will be held in Montreal, June 12-14. —At the annual meeting of the Academy of Medicine, Toronto, the following officers were elected: president, Dr. John T. Fotheringham; vice president, Dr. John H. McConnell; secretary, Dr. Dennis Jordon, and treasurer, Dr. Harold M. Tovell.

The Cochrane Typhoid Epidemic.—The number of cases of typhoid in the Cochrane epidemic has reached about 820. The death rate has been about 7 per cent. New cases average now one a day, and the emergency hospital has reduced the number of beds by about 25 per cent. The Red Cross Society of Ontario voted \$25,000, and, it is reported, the Ontario Provincial Board of Health will increase its financial assistance beyond the \$25,000 already spent by the board.

University News.—At a recent meeting of the board of governors of the University of Toronto, Dr. Frederick G. Banting was officially appointed professor in medical research, and arrangements were made for distributing the balance of the money recently voted by the legislature of Ontario for the furtherance of research in the treatment of diabetes. —An insulin clinic will be established in the near future at the University of Alberta Hospital, Edmonton. Dr. J. B. Collip, codiscoverer of insulin and discoverer of glukokinin from vegetable sources, which also has a curative effect on diabetes, is to be the guest of honor at a banquet given by the citizens of Edmonton during "Insulin Week."

Personal.—Dr. Harry G. Grant, who has been conducting the tuberculosis clinic Health Center No. 1, Halifax, since November, 1920, has resigned to teach at Dalhousie University Faculty of Medicine. Dr. Saul H. Keshen has succeeded him. —Dr. Joseph W. Warren, radiologist at Calgary General Hospital, has been appointed radiologist at Jubilee Hospital, Victoria, B. C. —Dr. J. H. Elliott, Toronto, was recently elected vice president of the American Congress of Physicians at a meeting held in Philadelphia. Five other Toronto physicians were elected fellows of the American College of Physicians, as follows: Drs. J. T. Fotheringham, F. G. Banting, Henry C. Wales, George Porter, director of health, Toronto University, C. E. Cooper Cole. Dr. Neal of Peterboro, Ont., was also similarly honored. —Drs. John J. R. Macleod, professor of physiology, University of Toronto, and J. S. Plaskett, director of the Dominion Astrophysical Observatory, Victoria, B. C., were recently made Fellows of the Royal Society of London, England.

GENERAL

American Gastro-Enterological Association.—At the annual meeting of this association, in Atlantic City, N. J., April 30-May 1, the following officers were elected: president, Dr. R. Walter Mills, St. Louis; vice presidents, Drs. David Riesman, Philadelphia, and Arthur F. Chace, New York; secretary, Dr. John Bryant, Boston, and treasurer, Dr. Clement R. Jones, Pittsburgh.

Hospital Day.—The one hundred and third anniversary of the birth of Florence Nightingale was observed, May 12, by the nearly 7,000 hospitals of the United States and Canada, as National Hospital Day. Mr. E. S. Gilmore, of the Wesley Hospital, Chicago, president of the National Methodist Hospital Association, broadcasted a radio message on "The Value of the Hospital." This was the third national observance of Hospital Day.

Maternity Law Suit Opened.—Oral arguments were commenced, May 3, in the U. S. Supreme Court, Washington, D. C., in the case brought by the state of Massachusetts to test the constitutionality of the Sheppard-Towner Maternity Law. The right of the state of Massachusetts to question the validity of the law, in view of its failure to take advantage of the statute, was challenged by the federal government on the grounds of jurisdiction.

Amendment to Narcotic Act.—Amendment of the Jones-Miller Act regulating the importation and exportation of narcotic drugs was proposed by the American Drug Manufacturers' Association at its recent meeting in New York City. The association desires that the act be so amended as to permit the importation and storage of crude opium and of cocoa leaves, in excess of current needs, to provide against any possible emergency, and to permit the American exporter to export narcotics to countries which maintain systematic control of imports of such drugs, even though such countries may not have ratified the International Opium Convention of 1912.

International Society of the History of Medicine.—At a meeting of the permanent committee of the society at Antwerp, April 11, it was voted to hold the Fourth International Congress of the History of Medicine at Geneva, Switzerland, during the third week of July, 1925. The following officers were elected: president, Dr. Charles Greene Cumston, Geneva, formerly of Boston, and secretary general, Dr. A. de Peyer, rue General Dufour, 20, Geneva. Sir D'Arcy Power, London, England, was elected president of honor, and the following physicians, vice presidents of honor: Edward P. Krumbhaar, Philadelphia; J. G. de Lint, Gorinchem, Holland, Tricot Royer, Antwerp; Charles Singer, London.

Expenditures of Rockefeller Foundation.—In the recent report of the Rockefeller Foundation, issued ten years after its charter was granted, May 14, 1913, it is stated that the funds expended during the decade amounted to \$76,757,040. While the chartered purpose is stated as "the well-being of mankind throughout the world," the work of the foundation has become chiefly centered on public health and medical education. In carrying out its various activities the foundation has expended all of its income from year to year, and in addition \$17,500,000 of its general fund or principal. A further sum of \$15,500,000, payable in future years, has been pledged to various medical schools and public health projects. The expenditures are roughly divided as follows:

Medical education	\$24,716,859
War relief	22,298,541
Public health	18,188,838
Other philanthropic work.....	10,445,628
Administration	1,107,174
Total	\$76,757,040

American Child Health Association Awards Scholarships.—The association announces that \$10,000 has been set aside for twenty-five scholarships and fellowships to be offered to teachers, supervisors and educational executives who have done effective work in health education and who desire to improve their training, in universities, normal schools and colleges. The awards will include fifteen summer school scholarships and traveling expenses for tours of observation to health education demonstration centers. They will be available for the summer sessions in 1923 and for the school year, 1923-1924. Awards for summer schools will be made about June 15. Five \$1,000 scholarships and fellowships will be awarded to college graduates now in service as principals or elementary school supervisors; five \$500 scholarships, to normal school graduates or college graduates now engaged in classroom teaching, and fifteen \$200 scholarships to holders of teachers' certificates engaged in classroom teaching. These amounts are approximate, depending on circumstances. Further details will be furnished on request to the Committee on Teacher Scholarships and Fellowships of the American Child Health Association, 370 Seventh Avenue, New York.

Rockefeller Foundation Fellowships.—During 1922 a total of 226 fellowships were granted by the foundation and its various boards; of these, 79 were fellowships in public health administered by the International Health Board, 22 were under the division of medical education, 63 under the China Medical Board, and 62 were fellowships in physics, chemistry or medicine, supervised by a committee of the National Research Council. These fellowships represent the following countries: United States, 111; Brazil, 20; Czechoslovakia, 16; China, 14; Canada, 12; Poland, 10; Great Britain, 9; Philippine Islands, 4; Austria, Australia, Hungary, Nicaragua and Syria, each 3; Colombia, Japan, Yugoslavia and Siam, each 2; and Ceylon, Costa Rica, Mexico, Mauritius, Norway and Salvador, 1 each. The gift of the foundation for scholarships and fellowships in Germany is considered the most important constructive assistance given that country since the war. It is estimated that 100 fellowships are in active force and that 100 more will be granted during the course of the next six months. Dr. Alonzo E. Taylor of Stanford University School of Medicine, San Francisco, who recently returned from a survey of conditions in medical education in Europe, where he assisted Dr. Richard M. Pearce, Jr., states that supplies, such as animals, instruments, chemicals, and other facilities for medical research, are so difficult to get and so prohibitive in price in Germany that the number of students entering medical schools in that country has diminished to about one fourth the prewar number.

United States District Court Holds Limitations on Liquor Prescriptions Unconstitutional.—So much of the National Prohibition Act and of the act supplemental thereto as undertakes to limit the amount of spirituous and vinous liquor that may be prescribed by a physician for internal use by a single

patient has been declared unconstitutional by Judge John C. Knox of the U. S. District Court, New York City. The decision was rendered in a suit brought by Dr. Samuel W. Lambert to restrain the Commissioner of Internal Revenue, the Federal Prohibition Director for New York and New Jersey, and the U. S. District Attorney for the Southern District of New York from interfering, under color of the acts named, with the complainant's prescribing liquor for his patients in excess of the quantities specified in those acts. Dispatches from Washington, D. C., quote Prohibition Commissioner Haynes as saying that the decision, if upheld, would wreck law enforcement, not only with respect to liquor but also with respect to narcotic drugs, and bring into question the validity of all state laws limiting the right of physicians to prescribe intoxicating liquors in excess of a fixed amount. The government, which will take an appeal to the U. S. Supreme Court, expects that, pending a decision, a stay of execution will be granted. If a stay be granted, there will be no change in the regulations governing the prescribing of liquor by physicians until after the U. S. Supreme Court has rendered its decision which will scarcely be before the spring of 1924, unless in the meantime Congress enacts legislation to meet the situation. If a stay be not granted, special regulations may be put into effect within the jurisdiction of the court by which the recent decision was granted, in order to comply specifically with the decree of that court, and the regulations elsewhere throughout the United States be allowed to remain as they are, pending action by the Supreme Court.

Medical Fellowships of the National Research Council.—These fellowships are supported by joint contributions of the Rockefeller Foundation and the General Education Board and are administered by a special Medical Fellowship Board of the National Research Council (THE JOURNAL, Nov. 25, 1922, p. 1856). The fellowships are open to citizens of both sexes of the United States and Canada who possess an M.D. or a Ph.D. degree, or the equivalent of one of these degrees. They are intended for recent graduates and not for those already professionally established. The basic stipends awarded are \$1,800 for unmarried and \$2,300 for married fellows per annum. These stipends may be increased when there are other dependents or for other cogent reasons. Awards are made for one year, but fellowships may be renewed. Fellows are chosen at two semi-annual meetings of the Medical Fellowship Board in April and September and applications to receive consideration at these meetings must be filed on or before March 1 and August 1, respectively. Appointments may date from any period subsequent to the board meetings. The fellowships are designed to recruit men and women as medical teachers and investigators. Fellows may choose any branch of medicine or public health for their ultimate career, but at present those candidates, otherwise suitable, will be favored who plan to specialize in one of the preclinical sciences or to approach clinical medicine through temporary identification with one of the sciences. The fellowships are not granted to any institution or university, but the choice of place to work, either in this country or abroad, is left to the fellow, subject to the approval of the Fellowship Board. The appointments are for full-time and no other remunerative or routine work is permitted. The particular individual with whom a fellow wishes to work should, ordinarily, have agreed to accept him, prior to the consideration of his application by the board. Opportunities, but not obligations, for a certain amount of teaching must be available. It is further required that the Fellow be charged no fees or tuition by the institution where he chooses to work. Further particulars concerning these fellowships may be obtained by addressing the Chairman, Board of Medical Fellowships, National Research Council, 1701 Massachusetts Avenue, Washington, D. C.

LATIN AMERICA

Medical Congress in Venezuela.—The organizing committee has already issued the official program for the Fourth Venezuela Medical Congress, at Caracas, Dec. 1-8, 1924. The congress will be divided into three sections: medicine and surgery; pharmacology and natural history, and odontology. The officers of the organizing committee are: Drs. F. A. Rísquez, president; David Lobo, vice president, and L. Razetti, secretary.

Lepers Released in Venezuela.—Four lepers were recently discharged as cured from the Cabo Blanco Leper Colony. A library of over 1,000 volumes for the lepers was recently opened, the books being donated by public subscription. Two

schools for lepers are also about to be opened. Plans are now being studied for the construction of isolation and convalescent pavilions. Dr. A. Benchetrit is the new head of the leper colonies of Venezuela.

New Public Health Law in Costa Rica.—A law just enacted in Costa Rica centralizes all public health matters in a new department, to be designated the bureau of hygiene and public health. Public health clinics will be organized as soon as possible for the treatment of venereal and skin diseases. Five per cent. of the proceeds of the public lottery will be devoted to the antivenereal campaign. Custom duties are remitted on all antisypilitic remedies. The organization of local health departments is made compulsory. The public health bureau will also supervise the practice of medicine. Licenses to practice can be granted only by the medical school authorities. The joint practice of medicine and pharmacy by the same person is forbidden. The first undersecretary of public health is Dr. Solón Núñez.

FOREIGN

Medical Congresses at Strasbourg This Summer.—During the exposition to illustrate the advances in science due to Pasteur's discoveries, which will follow the unveiling of the Pasteur monument at Strasbourg, June 1, a number of medical and scientific congresses will be held: June 1, Hygiene and Bacteriology; June 2, Tuberculosis; June 11, Ophthalmology; July 23, Cancer; July 24, Dermatology and Syphilology, and July 26, Leprosy.

Congress of the International Surgical Association.—The sixth congress of the International Surgical Association will be held in London, Tuesday to Friday, July 17-20, 1923, under the chairmanship of Sir William Macewen. The provisional program follows: July 16, meeting of the International Committee, reception at the University of London; Tuesday, July 17, 11 a. m., opening meeting; 2 p. m., papers and discussions on surgery of the endocrine glands; 8 p. m., reception by the president of the association; Wednesday, July 18, 9:30 a. m., papers and discussions on arthroplasty; 2 p. m., operations in various hospitals; 5 p. m., demonstration of anatomic specimens by Prof. Sir Arthur Keith at the Hunterian Museum; 8 p. m., reception by the Lord Mayor; Thursday, July 19, 9:30 a. m., papers and discussions on the remote results of interventions for nerve traumatism; 11:30 a. m., general assembly; 2 p. m., operations in the hospitals; 4 p. m., reception by the College of Physicians; 8 p. m., reception by the College of Surgeons; Friday, July 20, 9:30 a. m., papers and discussions on serotherapy and shock; 2 p. m., operations in the hospitals; 2 p. m., demonstration of methods of vaccinotherapy by Prof. Sir Almroth Wright at St. Mary's Hospital; 8 p. m., banquet, reservations in advance. All meetings will be held at the headquarters of the Royal Society of Medicine, 1, Wimpole Street, W.1, where those attending the congress may have their mail sent, if desired. The papers to be read at the meeting are being printed and copies will soon be sent out. A committee of women has been appointed to accompany the wives of physicians in their tours about the city and vicinity. After the congress, two separate excursions into the provinces, occupying three days, July 21-23, are planned, one to Oxford-Leamington-Stratford-on-Avon-Warwick, the other to Bournemouth-Lulworth-Isle of Wight. Applications and requests for information should be addressed to Le Secrétaire-Général, Dr. L. Mayer, 72, rue de la Loi, Brussels.

Personal.—Czerny, who has been called the "ferment of pediatrics," recently reached his sixtieth birthday, which was celebrated by the pediatricians of Germany with a festival in the children's clinic at Berlin, of which he is director. A special volume of the *Monatsschrift für Kinderheilkunde* was presented as a *Festschrift*, and he was also presented with a portrait plaque and a fund to defray the expenses of works issued by the clinic. His pioneer work in infant feeding, in nutritional disturbances, in the exudative diathesis and in exact metabolic research in pediatrics is familiar to every physician. He has recently been impressing on pediatricians that their duty to children includes supervision of the training of the child.—Dr. Lozano, professor of surgical pathology at Zaragoza, recently delivered an interchange lecture at Paris, speaking on "Surgery of the Ileocecal Valve, Hydatid Cysts and Brachial Plexus."—Among the Italian professors who reach the age limit this year in their work in the medical faculties are Profs. E. Maragliano, Pio Foa, L. Bianchi and P. Albertoni, all of whom are senators; also Profs. F. Falchi of the eye clinic at Pavia, V. Grassi of the ear clinic at Pisa, and D. Majocchi of the dermatology clinic at

Bologna.—The Société médicale des hôpitaux de Paris recently elected, as corresponding members, Professors Ruitinga and Snapper of Amsterdam, and Gautier and Reh of Geneva.—A prize medal has been endowed in honor of Prof. Hans Horst Meyer of Vienna. It is to be awarded every five years for distinguished work in the domain of theoretical medicine. It was presented for the first time to Meyer himself on the occasion of his recent sixtieth birthday.—Prof. P. Michelet of Bordeaux has been awarded the triennial Pirondi prize offered by the Comité médical des Bouches-du-Rhône for his work on "General Pathology and Antisepsis."—Professor Poels recently resigned the charge of the state serum institution at Rotterdam; Dr. H. Klinkert was the spokesman at a meeting to extol his long services and present him with his portrait in oil.—Dr. J. S. Fraser, Edinburgh, recently arrived in this country to deliver lectures before the American Laryngological, Rhinological and Otological Society, and the American Otological Society, at Atlantic City. He also delivered an address before the otological section of the New York Academy of Medicine on "A Plea for an International Investigation into Otosclerosis and Allied Subjects," May 4.

Deaths in Other Countries

Dr. J. A. Valdés Anciano, professor of nervous and mental disease at the University of Havana, aged 56. He was a member of the leading neurologic societies in this country, France and Belgium, and had recently been elected corresponding member of the Paris Société médicale des hôpitaux.—Dr. Légenne of Cousolre, France, victim in an automobile accident.—Dr. C. Tamburini of Milan, aged 85. He was editor of the *Gazzetta degli ospedali* for many years.—Dr. Moritz Probst of Vienna, noted for his research on the anatomy and physiology of the brain, aged 56. Lewandowsky gave Probst's name to a commissure and a tract in the brain which the latter first described.—Dr. J. Turin of Vevey, who took the initiative in the introduction of adenoidectomy and roentgenoscopy into Switzerland, aged 70.—Dr. E. Menéndez Tejo of Besaya, Spain, an authority on balneotherapy.—Dr. Murga, a bacteriologist of Seville, who assisted Ferrán in the anticholera campaign in 1885.—Dr. V. Lafuerza, professor of anatomy and ophthalmology at the University of Zaragoza.—Dr. M. Bider of Basel, a leader in public health work, succumbed to a rapidly fatal epidemic encephalitis.—Dr. V. D. Madrazzo of Buenos Aires.—Dr. Valassopoulo, physician in charge of the Greek hospital at Alexandria, corresponding member of the Paris Société des hôpitaux.

CORRECTION

Cornerstone of Medical School Laid.—The *Cleveland News*, April 11, from which an item in THE JOURNAL, April 28, p. 1251, was taken, stated that Prof. William T. Corlett of London, England, gave an address at the laying of the cornerstone of the new Western Reserve University Medical School. Dr. Corlett writes that he is a resident of Cleveland.

Government Services

Veterans' Bureau Neuropsychiatric School Graduates

Graduating exercises of the U. S. Veterans' Bureau School of Neuropsychiatry were held at St. Elizabeth's Hospital, Washington, D. C., May 11. The class comprised forty-four physicians. This school was inaugurated by the Veterans' Bureau under the supervision of Dr. F. F. Hutchins to obtain sufficient competent neuropsychiatrists to care for ex-service men. The course of training opened January 15; the lectures, clinics and laboratory work occupied six hours a day; many of the instructors were eminent scientific men, selected with reference to subjects on which they were recognized as authorities. The graduates will be sent to hospitals throughout the country. Abstracts of the lectures given will be compiled into a volume which will be of great assistance to neuropsychiatric hospitals and clinics. There are 9,556 neuropsychiatric cases in Veterans' Bureau hospitals. It is estimated that eventually there will be from twelve to fifteen thousand such cases. In the successful completion of this school at St. Elizabeth's, those who closely followed this unprecedented project believe that something fundamental has been accomplished in psychiatry.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 23, 1923.

Prohibition

The view that prohibition is not acceptable to this country, expressed in a previous letter, is confirmed by the rejection by the House of Commons by an overwhelming majority, of a bill to enforce it. The bill was introduced by Mr. Scrymgeour, the solitary member of the house returned as a prohibitionist. In a speech tinged with religious fervor, he drew a lurid picture of the evils of drink, and twitted the house on its inconsistency in forbidding the saloon to those under 18, and treating it as "a paradise regained" for those above that age. Those engaged in the drink business paid the penalty: they died off more rapidly than those engaged in any other business. The motion in favor of the bill was seconded by Dr. Slater, a physician and member of the labor party. He pointed out that the house had taken strong action against dangerous drugs because they tended to antisocial actions. The position in regard to the drug alcohol was exactly the same. The first effect was to diminish the higher power of self-control. How many members of the house could say that they got a clean bill of ancestral mental health? He knew distinguished men in his own profession who showed all through their lives self-control, complete mental stability, but when they were 50 or 55 succumbed to the alcohol habit. Throughout the population there was a large number of persons as susceptible to alcohol as the majority of people were to morphin and cocain—they could not help becoming slaves to the drug once they started taking it. The members who opposed the bill argued that the English people had been getting more sober for many years. They were in favor of temperance, but it could be better promoted in other ways than by destroying the freedom of the individual. While the evils of drink were to be deplored, medical authorities showed that far more men died from overeating than from overdrinking. What was the good of bringing in prohibition with the example of America before them? Prohibition in that country had produced more corruption than any law introduced there. The way to promote temperance was to improve the saloons and make them open places, like the café system on the continent of Europe. Arrests for drunkenness in twenty-six American cities chosen at random had increased by 4,000 in 1922, as compared with 1918. The bill was rejected by 236 votes to 14. It is noteworthy that only a small number of the labor party, which counts well over 100 members in the house, voted for the bill.

Insulin

At last insulin is for sale. The Medical Research Council announces that insulin may be obtained from certain firms to whom provisional authority has been granted. These firms undertook the manufacture under agreement with the council, and have satisfied all the requirements and tests of the council for authenticity, standard, value, therapeutic efficiency and sterility. In addition, a supply is to be received from the American firm Eli Lilly & Co. The British firms have adopted a method of purification of the final product worked out by Dr. Dudley at the National Institute for Medical Research. By this method it is possible to get rid of more than 90 per cent. of the solid matter in the crude end-product of the original process, so that the active principle is obtained in the form of the hydrochlorid in a highly concentrated form freed from accidental irritants and other substances. Every batch put on sale will be biologically

tested under the supervision of the council. The present price of insulin is 60 cents for 10 units, which is the average dose. It is a watery solution issued in rubber-capped bottles. On the advice of a committee of eminent physicians appointed by the minister of health, manufacturers are directed during the present period of restricted production to supply insulin only to hospitals and registered physicians that have proper facilities at their command for making accurate blood sugar estimations. Each hospital and physician so supplied must undertake to observe these restrictions:

1. Careful correlation will be made of the diet, of the blood sugar changes, and of the insulin dosage in each case. For at least one group of cases it is known already that the insulin dosage can be reduced progressively with suitable adjustment of diet. This reduction allows economy of insulin, besides the advantage it may bring to the patient.

2. Insulin will not be given to those whose symptoms can be controlled by moderate restrictions of diet. There should be no luxury use of insulin till supplies are abundant.

3. It is understood, of course, that in emergency and apart from the careful correlation just mentioned, insulin will be given to those in diabetic coma or those nearly approaching it, and it may be given to those with diabetic symptoms needing special preparation for some surgical operation.

4. Care will be taken to avoid the danger of giving insulin in non-diabetic cases (e. g., to patients with renal glycosuria).

The Octocentenary of St. Bartholomew's Hospital

St. Bartholomew's Hospital, the oldest of the London hospitals, is making great preparations for the celebration, June 5 and the following days, of the eight-hundredth anniversary of its foundation. Like most of the old hospitals of Europe, it is of religious origin and was founded by the Norman monk Rahere in 1123. The celebration will begin by a service in the Priory Church of St. Bartholomew the Great, which still maintains a connection with the hospital. A most imposing pageant will be held in the hospital grounds. It will consist of five processions. The first will be formed by Augustinian canons chanting the ancient hymn used at the foundation of an Augustinian priory. The hospital was controlled by this religious order for the first four centuries of its existence. The second procession will illustrate the return of Rahere from his pilgrimage to Rome. The third procession will show King Henry VIII giving the charter for the refounding of the hospital to the lord mayor and citizens of London. Mr. Arthur Bouchier, the actor, will enact the part of the king. The fourth procession will show a detachment of the Royal Army Medical Corps with an ambulance such as was used in the war. The fifth procession will be formed by the Prince of Wales, accompanied by the officers and staff of the hospital. At the Guildhall the prince, as president of the hospital, will receive congratulatory addresses from delegates nominated by the English-speaking universities and colleges. In the great hall of the hospital, tableaux illustrating various events in the history of the hospital will be produced with appropriate music. The students of the hospital will reproduce the ancient institution of Bartholomew fair as it was in the time of Henry VIII. The old English sports of quarter-staff, wrestling, tumbling and acrobatic performances will be shown. The celebration will be concluded by a meeting of the Rahere lodge of Freemasons.

The Rockefeller Buildings at University College

May 31, the king will open the new Anatomy Institute of University College, London, which has been built by the munificence of the Rockefeller Foundation. The foundation has given \$6,000,000 to University College to form an ideal medical school equipped on the most modern lines. Of this, \$1,850,000 is for an institute of anatomy and for additions to the staff. The cost of the site, building, equipment and library of the institute is estimated at \$950,000, leaving a capital sum of \$900,000 to provide \$25,000 for additional staff in the anatomy department, \$12,500 in the physiology department and \$7,500 in other departments. The number of beds at the service of the clinical units recently established at

University College Hospital was considered too small, and proper provision was not made for obstetrics. It was therefore decided to build a new obstetric hospital. The Rockefeller Foundation has given \$2,000,000 for building operations, and \$2,175,000 for maintenance of the medical school. The income of this endowment is to be used for promoting education and research in the medical school, but a sum not exceeding \$80,000 a year is to be applied to the upkeep of 120 beds at the service of the medical and surgical units until such time as the money can otherwise be raised, when the income of the endowment will be restored to its original purpose of helping medical education and research.

PARIS

(From Our Regular Correspondent)

April 20, 1923.

University Group in Favor of the League of Nations

There has been founded at Paris a university group so called, in favor of the League of Nations, the purpose of which, as the title indicates, is to disseminate throughout France, and especially among young men with university training, a knowledge of the League of Nations and a love of peace. It is on the generation of young men who will direct the affairs of the France of tomorrow that the university group proposes to bring its influence to bear—by systematic propaganda; through the columns of the press, and by means of publications and also lectures, to be delivered at Paris and in the provinces by men who stand high in authority, and even within the walls of the colleges and universities.

The series of lectures has begun with that of Lord Robert Cecil, who was welcomed by Prof. Paul Appel, rector of the University of Paris. Intellectual cooperation, M. Appel stated, is one of the surest means of bringing about a rapprochement between nations. The rector ended his welcome with the words of Pasteur: "I believe absolutely that science and peace will triumph some day over ignorance and war."

In his address, Lord Robert Cecil emphasized particularly that fraternity or brotherhood is the principle on which is based the existence and the development of the League of Nations. How else can we interpret the aid given Austria in her distress; to Poland on the occasion of the epidemics that threatened it, and to Russia during its great famine?

Extension of Workmen's Compensation Law to Include Agricultural Laborers

A recent decision at law is to the effect that legislation concerning responsibility for industrial accidents is applicable to the workmen, employees and domestics engaged in agricultural pursuits of all kinds, including animal husbandry, training of animals, and all enterprises in which agricultural exploitation is the main object. But the law does not apply to those who ordinarily work alone, or are assisted only by certain near relatives and members of their immediate family, even though they may employ occasionally one or more salaried assistants.

Protection for the Results of Scientific Research

French law protects effectively the rights of authors of literary works, musical composers, painters and sculptors, but this is not true of scientists and inventors. The act of 1844, to be sure, provides for the granting of patents on inventions, but in reality only inventions strictly industrial in their nature come within the scope of this law. No pharmaceutical products or remedies of any kind may be patented. This state of affairs has recently given rise to sharp criticism. It has been emphasized that it is unjust that biologic discoveries and inventions which are of the greatest practical value in

agriculture, in veterinary science and in human medicine, and which occupy today such an important place in pure and applied science, should be deliberately excluded from the benefits of the law respecting letters patent and should become public property from the date of their origin. The question was made the subject of a long discussion at a meeting of the Confederation of Intellectual Workers, and the draft of a law providing for the protection of the rights of scientists has been prepared by a commission. According to this draft, the text of which has been submitted to the chamber of deputies and the League of Nations, the authors of scientific discoveries and inventions shall enjoy, for the duration of their life, the exclusive right of deriving a profit from their invention or discovery. Entitled to protection under this proposed law are: discoveries (that is, demonstrations of the existence of previously unknown principles, bodies, agents or properties of living beings or matter), inventions (that is, creations of the mind consisting of methods, apparatus, products, compositions of products as yet unknown), and, in a general way, all new applications of discoveries and inventions. To establish his right, the author of the discovery or invention must prove that his discovery or invention has been given sufficiently wide publicity. Publication in certain accepted periodicals will be regarded as sufficient publicity. Reproduction for commercial purposes of the name of the author of the published text or of the scientific communication and the bibliographic reference is prohibited, unless the written consent of the author is secured. The authors of inventions and discoveries may not oppose the industrial or commercial exploitation of new applications of their discoveries or inventions, but they will retain an author's rights in any exploitation in which applications of their initial inventions and discoveries have been made. The authors of discoveries or inventions in the domain of therapeutics will participate in the benefits of this law, it being understood that they cannot exploit of themselves their discoveries and inventions unless they hold the diploma of a pharmacist.

Typhoid in Paris

Whereas typhoid has considerably diminished in the large cities of the United States (THE JOURNAL, March 10, 1923, p. 691; March 17, p. 776), the municipal statistics of Paris record, at present, a slight recrudescence of this disease. The Assistance publique has recently published information on this point, from which it appears that the number of new cases rose, during the period from March 30 to April 9, from thirty-seven (the average figure) to sixty-nine. On the other hand, the hospitals of Paris have under treatment at present 148 typhoid patients as against seventy, the usual number. One point is very significant, and that is the sex incidence of the disease. Whereas, in 1913, 978 men and 823 women (a relation of seven men to six women) were affected with the disease, the proportion today is two men to six women. The explanation for this is that, since 1913, antityphoid vaccination has been compulsory in the army, and that almost the totality of the mobilized forces has been given such vaccination.

A New Review of Endocrinology

A new periodical, the *Revue française d'endocrinologie*, to be published under the direction of Professors Lucien and Parisot and Dr. Richard (Nancy), has been announced. This review will appear every two months. The first number will contain, among others, an article by Professor Gley on the history of endocrinology in France, an article by Prof. J. Sabrazès (Bordeaux) on senile dementia and lesions of the suprarenals, and a contribution by Dr. Mauclair on grafts of endocrine organs.

It is to be hoped that this publication will be able to make a judicious choice in the somewhat encumbered domain of

endocrinology. In this field, possibly more than anywhere else, really serious things should not be confused with trivial matters, but that is just what has happened to the *Vie médicale*, which names as the official organs of organotherapy *Endocrinology* and a certain pseudoscientific publication emanating from an American laboratory and sent out in profusion to the physicians on the continent. It is true that the director and proprietor of this laboratory was recently in Paris and was able to gather at a dinner several eminent members of the medical profession, who also took seriously what was not of any particular moment. A recent number of the *Gazette des hôpitaux* contains a letter from the United States, in which Dr. Faxton E. Gardner (New York) makes this statement: "There is a certain laboratory in the United States, which is flooding, copiously and frequently, the physicians of the continent with pseudoscientific propaganda in the interest of their numerous organic products with which all diseases may be treated and cured. It would almost seem as if the human organism were a mechanical device animated or propelled by a group of glands only one of which need be touched in order to unleash the desired effect. The physician, like the electrician standing near an electric display, needs only to push the proper button that is applicable in the particular case with which he is dealing. One may thus arrest a diarrhea, change a feeble-minded child into a wide-awake pupil, or give renewed youth to those who have become enfeebled with age."

The Centenary of the Election of Laënnec to the Academy of Medicine

At the last meeting of the Academy of Medicine, Professor Achard, the general secretary, called the attention of the academy to the fact that it was in 1823 (consequently, just 100 years ago) that this learned society admitted Laënnec to membership in the section of medicine. In reality, this anniversary should have been celebrated several months ago, for the election of Laënnec dates from Jan. 14, 1823. However, the illustrious inventor of auscultation did not take a very active part in the work of the academy.

The Fourth International Neurologic Conference

The fourth annual international neurologic conference will be held in Paris, June 8-9, 1923. The following question will be discussed: Compressions of the Medulla Oblongata. The essayists will be (1) from the standpoint of pathogenesis and pathologic anatomy, Drs. James Purves Stewart and George Riddoch (London), and (2) from the standpoint of pathologic physiology, and the clinical and therapeutic aspects, Dr. C. Foix (Paris).

BUDAPEST

(From Our Regular Correspondent)

April 7, 1923.

The Housing Problem

The problem of providing sanitary dwellings for the ever-increasing population of the city of Budapest has caused much anxiety to the authorities. Recently a series of regulations was drawn up by a committee of architects and physicians, and was presented for approval to the building committee of the city council. The principal points were: the fixed minimum to be 1,200 cubic feet of air space for each inhabitant; every inhabited room to have windows admitting direct light and air; the yard of a one-story house to be at least 10 by 6 yards in size; overcrowding (less than the air space minimum) to be prevented by special regulation of subletting; the width of future streets to be not less than 10 yards, or at least equal to the height of the houses; compulsory weekly cleansing of all toilets to be carried out by agents of the landlord, and kitchens to be separated from the

vicinity of the toilets. The proposal of the committee, however, is likely to be rejected by the majority of the city council on account of the exorbitant price of building, and building materials.

Malaria with One Single Symptom: Headache

Dr. Martonfy, who recently returned from imprisonment in Russia, reports a case of malaria without fever occurring during a Siberian winter. The patient was a physician named Lúmegi; the only symptom complained of was headache, which appeared each forenoon and lasted a few hours. The patient had had no previous malarial symptoms. Dr. Martonfy did not examine his friend's blood, nor did he suspect the presence of malaria. However, when returning through Moscow, Dr. Martonfy and his patient visited a hospital bacteriologist, who made an examination of the blood. No perfect organisms were found, but numerous malarial spores were present which appeared to be of tertian type; the organisms and the symptoms rapidly disappeared under quinin.

The Dangers of Some New Arsenic Preparations

Dr. Forbath read a communication in the medical union of a large provincial town, in which he brought forward a series of twelve cases of syphilis treated by "arsolnol" (an arylarsonate). The success secured induced him to continue its use and to recommend it until the middle of last year, when an untoward occurrence compelled him to abandon it and to regret that he had ever advocated it. A syphilitic patient was treated with phelarsonate (a preparation manufactured in Germany), and at the end of a course of ten injections given in the prescribed doses on alternate days, the patient complained of impaired vision, and was found to be suffering from incipient optic atrophy. This naturally caused him immediately to abandon the treatment. Dr. Forbath mentioned a similar case, which was reported in Germany, of a syphilitic patient who became blind after a course of about twenty-five injections of arsolnol. It is unnecessary to enter more fully into the history of these and other cases observed by different authors; Forbath would not have reported these cases, had not he recently received a pamphlet from the manufacturers of the preparations named. In this pamphlet, casual mention is made of the fact that signs of intolerance had been met after the use of arsolnol, such as "visual disturbances, nausea, vomiting, gastric pains, dermatitis, nervousness and insomnia," and that "the appearance of any of the foregoing symptoms should be a signal for withholding the drug." This is the only warning in the pamphlet, though the manufacturers had been informed of one case of total and irremediable blindness after the use of arsolnol, and knew that the physician had abandoned the use of the drug on that account. It is gratifying that the German supreme board of sanitation, having knowledge of a few such cases, took legal steps to prohibit the manufacture of arsolnol and phelarsonate.

Postgraduate Medical Courses in Hungary

On the initiative of the Hungarian minister for public instruction, postgraduate medical courses will again be established in Hungary. The movement has been set on foot by a resolution, passed by the International Committee of Post-Graduate Education, that mutual support be given by different countries (chiefly the new, so-called successor states) to postgraduate education. The minister expressed a preference for the German system, in which the function of the central institution is extended to the provinces. He has charged the dean of the medical faculty of Budapest University with the task of carrying the plan into execution. The dean has convoked the professional board of the university, and, in setting forth the scheme, said that in Hungary the

summer vacation courses were the only means for postgraduate medical instruction until 1910, when a regular postgraduate medical school was established and was continued until 1914. During the thirty years preceding the war, eighteen courses had been held, which had been attended by about 2,000 physicians. They had been given by some 300 lecturers, and the fees had served to cover expenses.

Inoculation Against Typhoid Fever

It has been ordered by the Hungarian command that, to encourage soldiers voluntarily to accept inoculation against typhoid, lectures on the advantages of this preventive measure will be given at stated intervals. The men should be advised to be inoculated as soon as they attain service age or become liable to service in Danube navigation, and it is suggested that quarterly inoculation of volunteers might take place in each garrison. If necessary, this could be done at monthly instead of quarterly intervals. The men should not be inoculated until they have completed the course for recruits and the training as soldiers should not be interfered with.

BERLIN

(From Our Regular Correspondent)

April 7, 1923.

Sexuality in Relation to Constitution

In the Hygienic Institute of the University of Berlin, the Aertzliche Gesellschaft für Sexualwissenschaft und Eugenetik held recently a special meeting in celebration of the tenth anniversary of its existence. The main topic discussed was, "Sexuality in Relation to Constitution." Many guests from different parts of Germany and from foreign countries were present. The president of the society, Dr. Max Hirsch, outlined in his opening address the position of sexual science as a branch of natural science and medicine. Sexual science has an historical and philosophical side, and has also a connection with the natural sciences and biology. But only since, in our era, the connection with the natural sciences and biology has been recognized and the scientific mode of inquiry has been introduced, has it been possible for medical thinkers and medical investigators to penetrate more deeply the domain of sexual phenomena. The lecturer pointed out that sexual science and the theory of constitution are based on the doctrine of internal secretion and the theory of heredity. The path leads from the observation of the cell to observations on cell systems—from researches on a single organ to researches on the whole organism. In other words, in place of observations on local organs must come researches on constitution.

Professor Kraus spoke on the subject, "History and Nature of the Problem of Constitution." He discussed the method of local diagnosis which still prevails, and the idea which is coming slowly to be realized that physicians must establish a personal relationship with their patients; that the whole organism is a clinical problem; that investigations on constitution must be regarded as the basis, but that researches on the individual must constitute the superstructure, for the reason that the activity of the patient's individual nature is of paramount importance in all medical treatment. The biologic aspects of constitution must be studied from the standpoint of the development of the species and the individual. Hereditary variation and modification must be sharply distinguished from the development of the individual due to the influences of environment. This double determination of man and the difficulty of recognizing or establishing hereditary influences often compel physicians to view all physical characteristics from the same point of view. Participation in certain sports may cause the same changes as are caused by organic disease. Certain diseases may have their origin in the brain as well

as in various glands. What we see is a form in which development has been completed, and therefore signifies much more than the mere notion of form. Therefore, we are not justified in making deductions with reference to individual character from mere external appearances—not even from observations on form. Professor Kraus discussed the conceptions of physical systems and the researches on the physiologic significance of form, and emphasized the extreme importance of the predisposition of the individual as it affects the mode of reaction to external stimuli. He warned, however, against the mistake of regarding the sexual sphere as the only psychologic source of exalted intoxication, since associative ideas may produce in us quite different types of exalted feeling. Medicine occupies a midway position between the natural sciences and the mental sciences, and must hearken to both.

Professor Hartmann of the Kaiser Wilhelm Institute in Dahlem, a suburb of Berlin, spoke on "The Biologic Basis of the Sexual Constitution." He gave a short survey of the mendelian theory of heredity, and showed how deeply sex distinctions affect all living nature. The determinants of heredity are inherent in the chromosomes of the cells, while each cell contains the determinative principles of both sexes. Only the presence (female) or absence (male) of the accessory chromosome constituting the sex differentiator is the determining factor of sex. The crossings of different breeds or strains, which possess these factors in different potency, produce, then, so-called intersexual organisms. Besides this hereditary intersexuality, there is also a hormonal intersexuality which is determined by the evolution of the secretions. A cell, however, may be masculine with reference to a second and feminine with respect to a third cell. The lecturer illustrated this thought by reference to examples of more primitive organisms, and called attention to the great difficulty of carrying out the needed experiments on complicated organisms. He stated that there was, however, no doubt that sexuality was a paramount factor in all cell life; that is, in all cellular systems.

Professor Kretschmer (Tübingen) outlined the basis for "The Psychology and Pathology of the Sexual Constitution." In connection with his classification of human beings as pycnic, asthenic, etc., he discussed the effects of constitutional tendencies as revealed in persons of note, pointing out parallels between psychic endowments and constitution in certain well known personages. He stressed also the possibility of the development of instinctive desires through the association of ideas, pointing out that in certain constitutions their repression was liable to lead to apparently unexplainable hysteria and neuroses. He interpreted the ideas and purposes of the ascetics as due to suppressed sadistic and masochistic tendencies, and showed that asceticism should no longer be regarded as conditioned by an absence of natural instincts, but rather as due to the satisfaction of strong instincts urging the infliction of self-torture. The "idealistic pathos" of the period of puberty, he explained, is due to psychic sexual representations that fall short of realization. He showed that the constitutional dynamics represented by the power of instincts affect to the uttermost all manifestations of the mind and determine its output.

Professor Hübner (Bonn) treated the relations between "Sexual Constitution and Jurisprudence," and showed how a knowledge and consideration of the sexual motives in all criminal cases open up an entirely different point of view in dealing with "amateurs," and allow one to judge their conduct much more justly. He discussed sexual suggestibility and various problems pertaining to the relations of the sexes, which must be better understood before we can establish a just system of criminal law and avoid treating disease as crime.

Great importance for the further development of sexual science attaches to the statements of Professor Matthes with reference to the establishment of types and the difficulties of the problem, owing to the fact that we must consider not only environmental influences but also the modifications in character, since the same individuals in the course of their life undergo most remarkable constitutional changes.

Professor Posner (Berlin) called attention to the progress in medicine that has resulted from the study of sexual science. Many diseases that formerly were treated with doubtful success as localized diseases can now be treated with much better understanding because the part played by constitutional factors has been recognized. For the determination of constitution, he advised starting with the aspects of individual conditions and testing them as to the type elements they contain.

Professor Mühsam expatiated on "The Effects of Sexual Constitution on the Psyche," showing to what extent the character of an individual depends on his sexual constitution and the changes in character brought about by influences affecting sexuality. He referred to Steinach's experiments on the organs of sex as still unexplained. The sexual constitution is influenced by various endosecretory processes.

Professor Peritz referred to the significance of the "reaction type" for the constitution. As the determinants of the constitution he designated the sexual factors in the cells, the hormones in the gonads and the endogenous "reaction types" in the nervous system. Changing the sexual factors does not lie within our power; the hormones are undergoing a constant change as time goes on, and they influence in turn the "reaction type." It is this reaction capacity that determines a child's character. In the period of puberty a complex of inhibitions begins to develop, and keeps pace with the maturing of the gonads. The final development depends then entirely on the relation that is established between these two complexes.

Sanitätsrat Magnus-Hirschfeld considered the stability of constitutional types, and explained, by means of numerous illustrations from the rich collection in the archives of the Institute for Sexual Research, the various human organisms that occupy an intermediate position sexually. He described in some detail their physiologic and psychologic peculiarities, and pointed out their necessity and difficulty of constantly repressing their natural sexual instincts. In closing, he expressed the hope that the better understanding of the theory of constitution and the doctrine of hormones might furnish an improved basis for an independent sexual science, the need of which was shown by the convening of this society, which he aided in founding.

Heredity and Education

At a recent meeting of the Deutsche Gesellschaft für Rassenhygiene (eugenics), the important problem "Heredity and Education" came up for discussion. According to Poll, the new professor in the field of hereditary transmission, the notion of heredity in modern biology has changed fundamentally. Hereditary transmission of a quality, character or function has been shown to be a rare and exceptional occurrence. An explanation of the fact that so much more frequently dissimilarities in form and performance are observed in ancestor and descendant awakens today a lively interest. The modern biologic theory of evolution, like the modern chemical theory of development, has come by means of exact experiments and observations to the conception that all living organisms have a definite constitution; that, just as chemical compounds are formed from atoms, biologic compounds, as represented by plants, animals and man, are formed from *Genen* or hereditary units. On the relationship of these hereditary units depend the form and behavior of all living

bodies. In the development of a living organism, external circumstances exert a modifying influence on the constitution of these hereditary units. The manner in which living organisms may be modified by external influences is determined by a hereditary capacity. Education signifies modification of a given constitution of man. The relationship of the hereditary units sets, therefore, insurmountable limitations on the capacity for modification under external influences; that is, on education. With the exception of twins, which have developed from two like germ cells, all human beings have a different hereditary constitution. It is, therefore, biologically illogical to endeavor to impose the same training and the same education on all human beings alike. Strictly speaking, since the hereditary constitution of every human being is different, every person should receive an education such as is best adapted to his (or her) peculiar nature. In closing, the speaker touched on the problem of improving mankind by education. In the light of the modern biologic theory of evolution this is a hopeless task, for there is no hereditary transmission of modifications. A progressive development of man can consequently not be brought about in this manner.

In his address which followed, Schlemmer, educational commissioner, expressed himself somewhat as follows: When an educator considers the conclusions reached by the science of heredity with respect to the hereditary transmission of modifications of character, his first impression is that, in the face of such facts, all efforts at education are entirely useless; and, indeed, the educator will do well to rid himself of the sovereign idea, which frequently takes possession of him, that he can accomplish with a pupil whatever he wishes; likewise, many of the time-honored methods of education, such as admonition, punishment and good example, will have to undergo considerable modification. However, from other points of view, the science of heredity introduces to us a wealth of important educational problems. To be sure, the inherited disposition of the child cannot be changed, but how the child's disposition develops depends to a large extent on the educational influences that are brought to bear on it—on environment, training, formal education, etc. It is also true that researches on heredity throw an entirely new light on many pedagogic problems; for example, welfare education, selection and separation from the multitude of the more gifted children, and a specially adapted training and education for girls. Pedagogy based on the highest ideals has much to learn from the teachings of heredity; nor are the findings of hereditary science out of harmony with the fundamental facts of religious experience.

A German Hygienic Expedition to Brazil

Prof. F. Munk (Berlin) accepted the invitation of Professor Chagas (Brazil) to undertake a hygienic expedition to Brazil, and has now published his report, from which the following statements are cited. Public health conditions in Brazil have improved greatly in recent years. After the bad conditions along the coast were abolished, the authorities began waging a successful fight against disease in the interior. A strange disease termed the "Chagas disease" has been encountered thus far only in Brazil, but it has a certain interest for us in Germany because there seem to be points of resemblance between the Chagas disease and a peculiar type of goiter that occurs here. The Chagas disease is common in a very dry plateau region, the population of which consists in large part of negroes and Indians of mixed blood. Chagas discovered trypanosomes in a bug by the bite of which the disease is transmitted to man. The symptoms consist of a goiter, cutaneous swellings, cardiac disturbances, etc. The whole course of the disease has not been cleared up, as yet.

Marriages

D. EMMETT WELSH to Mrs. Fannie M. Koon, both of Grand Rapids, Mich., at Los Angeles, April 2.

WILLIAM G. TELFAIR, Long Island City, N. Y., to Miss Adaline Bennett of Manchester, April 4.

WILLIAM T. JOHNSON, Eldorado, Ill., to Mrs. Katherine Patterson, of Norris City, April 29.

ROY EDMUND KRIGBAUM to Miss Lillian Agnes McGrath, both of Columbus, Ohio, May 5.

HELMUTH C. W. ERNST to Miss Gertrude Rose Bush, both of East Chicago, Ind., April 24.

RUSSELL M. FARNHAM to DR. HARRIET J. BOWER, both of Los Angeles, in April.

Deaths

Thomas Grant Allen, Chicago; Northwestern University Medical School, Chicago, 1898; member of the Chicago Pediatric Society and the Central States Pediatric Society; formerly professor of children's diseases at the Post-Graduate Medical School; served in the M. C., U. S. Army, during the World War; on the staff of U. S. Veterans' Hospital No. 30; aged 59; died, May 10, of pneumonia.

Louis Milton Coy ☉ San Bernardino, Calif.; College of Physicians and Surgeons, Los Angeles, 1915; past president of the San Bernardino County Medical Society; served in the M. C., U. S. Army, during the World War; formerly superintendent of the San Bernardino General Hospital, where he died, April 13, of Vincent's angina of the larynx, aged 33.

St. Clair Smith, New York; New York Homeopathic Medical College, New York, 1869; emeritus professor of theory and practice of medicine at his alma mater; formerly on the staffs of the Flower Hospital, New York, Morristown Memorial Hospital, Morristown, N. J., and St. Mary's Hospital, Passaic, N. J.; aged 77; died, May 1, in Pasadena, Calif.

William Dayton Shields ☉ Holdrege, Neb.; Medical College of Indiana, Indianapolis, 1886; member of the American Academy of Ophthalmology and Oto-Laryngology, the Omaha Ophthalmological Otological Society, and the Sioux Valley Eye and Ear Academy; aged 66; died, April 26.

Eliseo Font Y. Guillot, San Juan, P. R.; Universidad Santiago de Compostela, Spain, 1880; past president of the Medical Academy of Porto Rico, and at one time subcommissioner of health; on duty at the U. S. Public Health Service Relief Station; aged 67; died, March 27.

Earle Appleton Gayde, Taberg, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1898; formerly city medical inspector of Utica; at one time on the staff of the Utica Homeopathic Hospital; aged 54; died suddenly, April 17, of angina pectoris.

John Joseph Reid, New York; Medical Department of Columbia College, New York, 1869; member of the Medical Society of the State of New York, 1869; formerly on the staffs of the City and New York Foundling hospitals; aged 77; died, May 1, of myocarditis.

Edward Pinchon Bartlett, Springfield, Ill.; St. Louis Medical College, St. Louis, 1870; Bellevue Hospital Medical College, New York, 1875; state commander of the Grand Army of the Republic; aged 81; died, May 10, of cardiac asthma, at a local hospital.

Francis Marion Martin, Maryville, Mo.; Hahnemann Medical College and Hospital, Chicago, 1877; member of the Missouri State Medical Association; formerly county coroner; on the staff of St. Francis Hospital; aged 72; died, April 29, of pneumonia.

George E. Parsons ☉ Elk River, Minn.; University of Minnesota Medical School, Minneapolis, 1905; served as secretary of the Central Minnesota Medical Society for several years; aged 40; died, April 5, at the Abbott Hospital, Minneapolis.

Alexander Joseph Monge, Rochester, N. H.; Laval University Faculty of Medicine, Quebec, Que., Canada, 1897; member of the New Hampshire Medical Society; served in the

M. C., U. S. Army, during the World War, with the rank of captain; aged 56; died, April 21, of cerebral hemorrhage.

Gustav Hausser ☉ Cincinnati; Medical College of Ohio, Cincinnati, 1902; formerly instructor of dermatology at the Cincinnati Polyclinic and Post-Graduate School; aged 49; died, April 22, of pneumonia, at the Good Samaritan Hospital.

James Fey Cole, Oelwein, Iowa; State University of Iowa College of Medicine, Iowa City, 1887; served in the M. C., U. S. Army, during the World War, with the rank of captain; former mayor of Oelwein; aged 58; died, April 21.

Samuel Lanham Allen, Lancaster, S. C.; Medical College of the State of South Carolina, Charleston, 1912; member of the South Carolina Medical Association; aged 38; died, April 20, at the Spartanburg Hospital, Spartanburg.

Lewis Llewellyn Wickersham, Malden, Ill.; Rush Medical College, Chicago, 1882; also a druggist; aged 63; died, April 23, at the Perry Memorial Hospital, Princeton, of an overdose of veronal, presumably self-administered.

Morris Nathan Karash, New York; Columbia University College of Physicians and Surgeons, New York, 1896; member of the Medical Society of the State of New York; aged 61; died, April 28, of chronic myocarditis.

George Thomas Fuller, Jr., Tucson, Ariz.; Eclectic Medical College, Cincinnati, 1918; member of the Arizona Medical Association and the Kentucky State Medical Association; aged 31; died, April 20, of tuberculosis.

William Madison Dinsmore, Decatur, Ala.; Birmingham Medical College, Birmingham, 1909; member of the Medical Association of the State of Alabama; aged 43; died, April 18, of septicemia, at Nashville, Tenn.

George James Haslam ☉ Fremont, Neb.; M.R.C.S., England, 1880; Queens University, Ireland, 1880; served in the M. C., U. S. Army, during the World War; aged 64; died suddenly, April 24, of heart disease.

William Whitfield Stevens, Philadelphia; Ensworth Medical College, St. Joseph, Mo., 1892; member of the Medical Society of the State of Pennsylvania; aged 62; died suddenly, April 21, of heart disease.

Frederick Lee Morse ☉ Lake Odessa, Mich.; Saginaw Valley Medical College, Saginaw, 1898; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 47; died, April 30.

Thomas Jefferson Lyne, Stockport, Ohio; Dartmouth Medical School, Hanover, N. H., 1882; member of the Ohio State Medical Association; also a druggist; aged 63; died, April 21, of pneumonia.

Charles Wesley Blake, Jefferson, Iowa; State University of Iowa College of Medicine, Iowa City, 1898; member of the Iowa State Medical Society; aged 49; died, April 22, of cerebral hemorrhage.

Daniel Stanley Lyons, New York; Medical Department of Columbia College, New York, 1876; member of the Medical Society of the State of New York; aged 73; died, April 24, of heart disease.

Boulanger Gwaltney, Traskwood, Ark.; University of Arkansas Medical Department, Little Rock, 1913; served in the M. C., U. S. Army, during the World War; aged 35; died recently.

Archibald Bryant Taylor, Hanover, Ont., Canada; Trinity Medical College, Toronto, 1876; for nine years mayor of Hanover; aged 70; died, March 17, of heart disease and pneumonia.

Willis Mather Baker ☉ Warren, Pa.; University of Buffalo (N. Y.) Department of Medicine, 1878; past president of the Warren County Medical Society; aged 66; died, April 21, of pleurisy.

Life Harrison, Peoria, Ill.; Chicago College of Medicine and Surgery, Chicago, 1911; member of the Illinois State Medical Society; aged 57; died, May 6, in Delmar, Iowa.

Thomas P. McCluney, Lincoln, Calif.; St. Louis Medical College, St. Louis, 1860; Civil War veteran; formerly a practitioner in Missouri; aged 87; died recently, of senility.

Horace Hill Cowles, Lander, Pa.; Medical Department of the University of the City of New York, New York, 1877; aged 70; died, April 15, of influenza and pneumonia.

Frank P. Culverson, Greenfield, Iowa; College of Physicians and Surgeons, St. Joseph, Mo., 1880; also a druggist; aged 68; died, April 20, of cerebral hemorrhage.

Mercer R. Girvin, Mount Nebo, Pa.; College of Physicians and Surgeons, Baltimore, 1893; aged 54; died, April 25, at the Lancaster General Hospital, Lancaster.

Melville Hamilton Embree, Ottawa, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1904; aged 44; died, April 1, at Ste. Anne de Bellevue.

William Penick Milles, Halls, Tenn.; Memphis Hospital Medical College, Memphis, 1902; aged 47; died, April 26, of uremia, at a sanatorium in Memphis.

George William McNamara, Erie, Pa.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1879; aged 71; died recently, of senility.

W. H. McNorrill, Waynesboro, Ga.; University of Georgia Medical Department, Augusta, 1874; aged 69; died, March 16, of pneumonia, at Telfairville.

Charles Joseph Lopez, New Orleans; Medical Department University of Louisiana, New Orleans, 1873; aged 68; died, April 21, of diabetes mellitus.

Felix Spinzig, St. Louis; St. Louis Medical College, 1883; member of the Missouri State Medical Association; aged 65; died, March 1, of erysipelas.

Charles Frederick Haynes, Gorham, Me.; Bowdoin Medical School, Portland, 1862; Civil War veteran; aged 84; died, April 24, of senility.

Abram Baldwin Sturges, New Rochelle, N. Y.; Medical Department of the University of the City of New York, 1868; aged 76; died, April 28.

Sanford H. McCall, Santa Ana, Calif.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1900; aged 60; died, April 21, of paralysis.

Briton Havelock Richardson, Brooklyn; Long Island College Hospital, Brooklyn, 1893; aged 64; died, May 1, of cerebral hemorrhage.

Joseph Benjamin Robinson, Birmingham, Ala.; Vanderbilt University Medical Department, Nashville, Tenn., 1882; aged 74; died, April 13.

Nathaniel H. Manring, Elwood, Ind.; Indiana Medical College, Indianapolis, 1876; aged 77; died, April 19, of cerebral hemorrhage.

George Washington Hart ☉ Hartwell, Ark.; University of Arkansas Medical Department, Little Rock, 1920; aged 34; died, April 13.

Franklin Pierce Bivins, Shelbyville, Ill.; Miami Medical College, Cincinnati, 1881; aged 69; died, April 22, following a long illness.

George William Nash, Hurley, N. Y.; Medical School of Harvard University, Boston, 1884; aged 66; died, April 13, of carcinoma.

Charles A. Canfield ☉ Preston, Idaho; Homeopathic Medical College of Missouri, St. Louis, 1890; died, April 21, of heart disease.

Mark Spicker, Chicago; Medical Department of the University of the City of New York, 1872; aged 72; died, May 10, of uremia.

William Richardson, Carson City, Mich.; University of Michigan Medical School, Ann Arbor, 1871; aged 78; died, March 18.

William Robert MacKenzie ☉ Chester, Ill.; University of Michigan Medical School, Ann Arbor, 1870; aged 79; died, April 24.

James Franklin Barker ☉ Albany, N. Y.; Albany Medical College, 1877; aged 71; died, March 18, following a long illness.

John George A. Stahl, Chicago; Rush Medical College, Chicago, 1895; aged 59; died, May 10, of cerebral hemorrhage.

Peter Macdonald, London, Ont., Canada; Trinity Medical College, Toronto, 1872; aged 86; died, March 24, of senility.

Thomas Bernard Morrissey, Los Angeles; Rush Medical College, Chicago, 1899; aged 56; died, April 23, of pneumonia.

William Ellwood Lewis, Bothell, Wash.; Jefferson Medical College of Philadelphia, 1878; aged 72; died, April 21.

Otto Morton Roberts, Winkelman, Ariz.; Miami Medical College, Cincinnati, 1887; aged 60; died, April 28.

Barnett Linton Embry, Villa Rica, Ga.; Atlanta Medical College, Atlanta, 1878; aged 70; died, April 21.

Robert Lucy, Guelph, Ont., Canada; Trinity Medical College, Toronto, 1885; aged 61; died, April 3.

Henry Buschmann, Cincinnati; Medical College of Ohio, Cincinnati, 1897; aged 72; died, April 23.

W. B. Yoe, Cambridge, Ohio (licensed, years of practice); aged 81; died, April 23, of senility.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THE STANDARDIZATION OF PITUITARY EXTRACT

Pituitary extract—a solution containing the water soluble principle or principles from the fresh posterior lobe of the pituitary body of cattle—is official in the United States Pharmacopeia as Solution of Hypophysis (*Liquor Hypophysis*). It is required to be standardized so that 1 c.c. diluted 20,000 times has the same activity on the isolated uterus of the virgin guinea-pig as a one-to-twenty-million solution of beta-aminazoly-ethylamine (histamine) hydrochloride.

In practice the pharmacopeial standard has been found unreliable and manufacturers have adopted various modifications of the method in an attempt to overcome the objections to this assay method. Further, the pharmacopeial solution has been found too weak and a number of manufacturers have marketed nonpharmacopeial solutions which are considerably stronger. New and Nonofficial Remedies lists products some of which (intended for obstetrical use) are approximately two and one half or three times and others (intended for surgical use) five or six times the strength of the official preparation.

The wide variation in the strength of commercial pituitary extracts and the unsatisfactory character of the pharmacopeial assay method is shown in a study carried out at the Pharmacology Laboratory of the University of Michigan Medical School by Erwin E. Nelson (*J. Lab. and Clin. Med.* 8:318 (Feb.) 1923). An examination of ten specimens showed that preparations claimed to be of pharmacopeial strength differed widely, some being but one fifth the strength of others. Nelson believes that this variation may be due largely to the undependability of the assay method—that is, that the method gives different results in the hands of different operators.

As a result of his work, Nelson favors the adoption of a method of standardization in which the commercial extracts are standardized against a preparation of pituitary gland.

The unreliability of the present market supply of pituitary extract and the need for a better method of assay is further emphasized through a study carried out by Maurice I. Smith and William B. McClosky (*Public Health Rep.* 38:493 [March 16] 1923). They made an assay, by the isolated uterus method of nine commercial pituitary extracts against preparations of their own make from desiccated and defatted postpituitary lobes. There was a wide variation in the activity of the commercial extracts, ranging approximately from that of 9 mg. of fresh postpituitary substance to each cubic centimeter to nearly 70 mg. It also appears that several of the extracts assayed at from 2 to 3 per cent. of fresh substance, two at about 1 per cent. two at 4 per cent. and one at nearly 7 per cent., respectively.

A MEANINGLESS STANDARDIZATION

The authors report that all the commercial extracts bore the inscription "physiologically standardized"; that each manufacturer is using his own standard of strength; and that the standards of the different manufacturers have no relation to each other. Some of the preparations had the statement that the extract represented 20 and even 30 per cent. of fresh posterior lobe material. From these experiments it appears that the strongest preparation represents only 7 per cent. of fresh postpituitary gland, while most of the others are considerably below 5 per cent. Obviously, the manufacturers either succeeded in getting out only part of the activity of the gland, lost much of it during process of manufacture, or the extracts suffered deterioration during the time intervening between the time of their manufacture and the time of this examination. Two extracts that, according to the manufacturers' statement, were supposed to repre-

sent 20 per cent. of fresh gland material, were found to assay only a little over 3 and 4 per cent., respectively. One extract said to represent the activity of 30 gm. of fresh infundibular substance to each hundred cubic centimeters of solvent, assayed at less than 1 per cent. It did not appear to the examiners that the time element, within reasonable limits, would be a factor in the deterioration of extracts. The 5 per cent. fresh gland extract which they themselves made gave no evidence of deterioration after a period of six months.

Smith and McClosky describe a method for the preparation of an infundibular powder of uniform potency, representing the whole oxytocic and pressor activity of the infundibular lobe of the pituitary gland. The powder has not shown any deterioration after nearly eight months. The active principle (or principles) is readily extracted quantitatively from the powder by simple manipulation. It is proposed that an infundibular powder such as is described be used as a standard for the assay of commercial extracts by the isolated uterus method, and the recommendation is made that manufacturers be required to make and standardize their extracts to represent the activity of 4 mg. of the standard powder, or its approximate equal of fresh gland substance (which is 30 mg.) per cubic centimeter of extract.

THE NEED OF CONTROL

It is to be hoped that the next pharmacopeia (which is now in process of preparation) will provide a pituitary solution of satisfactory strength and that an assay method will be adopted which will ensure a satisfactory control of this important medicament. The strength of this preparation should be such as to make the marketing of two strengths unnecessary. Thus, for instance, instead of administering 0.5 to 1 c.c. of an "obstetric" and the same amount of a "surgical" solution which is twice as strong, the dose might be from 0.5 to 1 c.c. when used in obstetrical work and 1 to 2 c.c. when used for surgical cases. In this connection it may be suggested that the pharmacopeia committee consider the replacement of the unpopular term "solution of hypophysis" by one which physicians will find more familiar, such as solution of pituitary.

The investigation of Nelson and of Smith and McClosky would have been of greater value to physicians had the names of the preparations and of their manufacturers been disclosed. Until such time as the Pharmacopeial Revision Committee adopts a method of bio-assay of pituitary extract which will insure a product of uniform activity the physician will do well to use one of the pituitary preparations accepted for New and Nonofficial Remedies, which he has found to be satisfactory in his experience.

Correspondence

EPIDEMIC ENCEPHALITIS

To the Editor:—In a recent leading article in THE JOURNAL, reference is made to some views that I am supposed to hold, and which, it is said, are no longer seriously considered. I am sure you will allow me space to say that the belief that poliomyelitis and encephalitis lethargica have the same virus, or that the virus of encephalitis lethargica is the same, or a variation of that of poliomyelitis, does not quite accurately represent my position.

So far as I can see, there has not yet been put forward any single clinical, epidemiologic or pathologic criterion that clearly separates the vast mass of these nervous cases into two groups: that enables us to say definitely, in respect of all cases, which should be put on the left and which on the right. So long as this is so, it seems to me wise to use one common name, and to speak of cases of epidemic encephalomyelitis, or the like. But, if a clear division can be made, then we may use two separate names, and proceed to discuss

and investigate the difference or community in respect of virus in the two groups. It by no means follows that differences in respect of virus should follow the same line of separation as clinical, or even pathologic differences. For the moment, in asking whether poliomyelitis and encephalitis lethargica have "the same virus," it seems to me that we are begging an important question: namely, whether the setting up of these two rather undefined concepts as those of two separate diseases is justified except as a temporary expedient.

Put in another way, we are begging an important question if we ask a pathologist to determine the virus in a case of "encephalitis lethargica" on one day, and in a case of "poliomyelitis" the next.

Such a pathologist might well reply: "I have read what Netter has said on this question: are you sure that your case of 'encephalitis lethargica' is not one of 'poliomyelitis of the cerebral type,' and your case of 'poliomyelitis,' one of 'encephalitis of the spinal type'?"

Our conception of poliomyelitis has gradually widened, during my lifetime, from one of an acute motor palsy of children depending on a lesion of an anterior horn, to the much broader notion put forward in the books of Dr. Draper and Dr. Ruhräh.

It seems to me that only a little extension is now required to bring the cases called "encephalitis lethargica" under the Heine-Medin, or "epidemic encephalomyelitis" umbrella; and so far no one has shown definite causes to keep them out from that friendly shade. Even the results of the bacteriologists and immunologists cancel each other out, and fail to give the "clear cut" some hoped for.

P. G. CROOKSHANK, M.D., F.R.C.P., London.

"MERCURIALS IN EXPERIMENTAL SYPHILIS"

To the Editor:—Supplementary to our article in THE JOURNAL, May 12, page 1365, two of the node transfers from rabbits treated with red mercuric iodid have become positive, making the treatment with this drug subcurative in at least three of the four cases.

JUSTINA H. HILL, M.S., and H. H. YOUNG, M.D., Baltimore.

PROPER COURSE FOR PROPONENTS OF NEW METHODS IN TREATING SYPHILIS

To the Editor:—I have read with interest the recent reports of the Council on Pharmacy and Chemistry of the American Medical Association dealing with various preparations for the treatment of syphilis. I think the Council is to be congratulated on its effort to protect the field of syphilotherapeutics from objectionable types of propaganda.

The problem of what is and what is not effective treatment for syphilis may, of course, be a matter for wide difference of opinion. The questions involved are undoubtedly of great complexity. There is certainly no excuse for a hide-bound traditional outlook that would restrict the treatment of the disease absolutely to the orthodox arsphenamins and mercury and iodid by the older methods of administration. On the other hand, treatment for syphilis is peculiarly a field susceptible of irrational and unprincipled exploitation. The mechanism of action of the drugs even now employed, while fairly understood by a few, is not sufficiently familiar to most practicing physicians to enable them to judge for themselves the worth of claims made by drug manufacturers for this or that innovation. The proponent of a new or modified form of treatment for syphilis, it seems to me, before he even considers placing his preparation in the hands of the medical

profession at large for every-day use, should seek definite knowledge and authoritative corroboration of his findings on certain points, as follows:

1. He should know the composition of the medicament in question, and be prepared to state it publicly.

2. Its toxicity for animals and by inference for man should have been definitely appraised.

3. The reactions which the drug may produce in animals, and the means of preventing them, should have had careful study.

4. The trypanocidal index of the preparation should have been correctly measured, and the ultimate as well as the immediate trypanocidal effect in animals definitely worked out.

5. After the study of trypanocidal effects should come the study of the effect of the drug on *Spirochaeta pallida* in the rabbit. The uncertainties of this phase of the investigation must be borne in mind, and the experiments not accepted as a final measure of value. Lymph-node inoculations are a necessary part of this work.

6. In preparations which are not expected to exhibit a direct destructive effect on *Spirochaeta pallida*, evidence should be available to show that the preparation under examination has a definite and definable effect on the resistance mechanism in syphilis which results in therapeutic responses in animals not dependent on direct spirocheticidal action.

7. Definite information should next be obtained as to the stability or instability of the preparation under marketing conditions, so that the physician who may later employ it may know whether he is dealing with a product of constant or variable effectiveness. If variations or deteriorations can be detected chemically or biologically, they must be planned for in advance of any clinical trial.

8. Not until these requirements are satisfied should a new preparation for the treatment of syphilis receive a clinical test on man. Such a clinical test should not be conducted under the auspices of isolated and partially equipped physicians, but should be carried out in properly equipped hospitals and clinics under expert direction. Systematic study of the viability and rate of destruction of *Spirochaeta pallida* in active early lesions must be carried out, and the effect on serologic and clinical manifestations of the diseases observed. The keeping of adequate records should be regarded as an essential qualification in all clinics asked to undertake this work. Mere number of patients or treatment, without proper follow-up and observation, does not provide final evidence for the clinical evaluation of drugs to be used in the treatment of syphilis.

9. The action of the new drug or combination should be studied in comparison with that of known effective anti-syphilitic drugs of all types.

10. The reports of clinical results obtained with a new preparation should be given the widest possible publicity through the medium of medical journals of high standing before the preparation is made generally available.

11. The cooperation of the Hygienic Laboratory of the United States Public Health Service and the Council on Pharmacy and Chemistry of the American Medical Association should in this country be sought before and not after advertising and sales campaigns are considered or formulated.

Such a series of labors preparatory to a pharmaceutical debut in the syphilologic field may seem Herculean to the average drug manufacturer, eager to capture a lucrative and uncritical clientele. Yet it embodies no more than the past decade has taught us in regard to the chemotherapy of syphilis. How many of these requirements have the manufacturers of the Herradora specialties or other recent prep-

arations with a more pretentious front attempted to meet before circularizing the medical profession at large?

I think it is Professor Dewey who has said, in effect, that one of the chief functions of education in this day of cheap printing and tainted news should be to assist mankind in distinguishing sound values in experience from the bunk and hokum that flows in on us from every side. If this is indeed the purpose of education, the service of the Council on Pharmacy and Chemistry conforms in the best sense to educational ideals. Its aid in preventing the exploitation of a large group of unfortunates will be appreciated by syphilologists.

JOHN H. STOKES, M.D., Rochester, Minn.

"THE INSIDE STORY OF DOPE"

To the Editor:—In a recent article on "The Inside Story of Dope in This Country" (*Hearst's International*, May, 1923), Sidney Howard makes a vicious indictment against the medical profession. This arraignment is admittedly premeditated, for in paragraph 3, page 17, he says, "Over half of our addicted population owes its plight to the circumstance or ignorance of medical treatment. This is the real and appalling importance of the dope problem."

In paragraph 4, on the same page, this erudite gentleman gives "figures from the records of the Charles B. Towns Hospital" which he claims to have obtained from Dr. Alexander Lambert. "Here are eleven hundred and some addicted male patients who received treatment in the course of a year. Of that number exactly ninety-six are listed as members of the Underworld while four hundred are doctors." Then, through a process of careful analysis, he shows "this group of ninety-six criminal types against better than a thousand respectable unfortunates most of whom have become addicted through unskilled or unavoidable medical treatment." This able statistician with astute mixture of mental gymnastics and legerdemain produces an additional "eight hundred thousand odd noncriminal addicts as proof positive of the futility of criminal prosecution as a single weapon against dope."

This Moses, who has taken his allotted time in getting out of the wilderness, asserts that "the existence of the pedler is no more than an automatic economic response to a great market from which the legitimate supply has been cut off by law. The authorities in charge of enforcing antinarcotic legislation denied the doctors the right to prescribe narcotics to narcotic addicts except in treatment of incurable diseases or for the aged and infirm. Unquestionably the blatant misdemeanors of many doctors justified this regulation."

The camel's load was apparently too heavy, for the sentence following the foregoing reads, "None the less, it is very certain that addiction grows and spreads more rapidly with drugs in the hands of the greedy pedler than ever it did in the days of promiscuous doctor's prescriptions." Then, in his incoherent rambling, he continues: "I am not interested in any solution which is no better than the lesser of two evils. The thing, so viewed, is simply a vicious circle from pedlers to doctors and back to pedlers again."

After this producer of human interest documents has submerged the doctors into the seven circles of Hades, white-washed the Underworld, and made "nice, clean, hundred per cent." Americans out of dope pedlers, he eructates the following pronunciamento: "As for the doctors, they are either cowards of necessity or opportunists by profession. They know nothing. They have done nothing. They will dare nothing. Except the few whose consciences are not above paying the income tax on quackery."

He raves on: "As long as the average general practitioner of medicine remains of the opinion that his job is no more than the gentle art of killing pain, we can expect a con-

siderable overuse of morphin and a resulting population of innocent addicts."

"Again and again I ask opiate users what the sensations are. Their answers run so consistently that I can typify them."

How really wonderful! They are human and speak for themselves: "I smoked opium for a while. I had fine dreams of castles in Spain and perfectly equipped harems and anything I happened to want I couldn't get. Then I stopped dreaming but I couldn't stop smoking. It made me sick when I tried. . . . After I laid off the pipe I had no more use for it. I was in for morphin and in for it right. It fooled me at first. I thought I had something good. At first it made everything seem so easy. That didn't last two weeks. I tried heroin. I use fifty grains a day now." Mighty "consistent" is this writer, who has the doctors running opium joints on Mott Street!

The writer develops suddenly into a "full fledged" doctor. He describes the etiology, pathology, symptoms, complications and prognosis of opiumism. He has arrived at the point where he prescribes for the patient dying from morphin poisoning. Then he proceeds with the treatment. The language of the author of "dope" is more convincing: "As I have seen it happen over and over. There was a witness in the district attorney's office in New York. I mentioned him once before in these articles. I shall never forget the blue look of him lying on the floor, the deathly sickness, the pulse that, as I took it, was surely near to death itself. When we administered the shot which would enable him to continue his testimony, the effect was magical. In two minutes he was talking again, as vigorously as any one of us." How marvelous! Perhaps if the writer had used epinephrin, the result would have been instantaneous. And so continues the bunk in these articles.

In behalf of a profession that has suffered much for humanity and a constructive civilization and gained little in wordly goods, I ask, Why should the medical profession be subject to such humiliating unjustifiable criticism?

W. F. DUTTON, M.D., Philadelphia.

AID FOR RUSSIAN PHYSICIANS

To the Editor:—As public health adviser to the Russian Commission of the National Information Bureau, I have had the opportunity of making a survey of health conditions in the larger cities, in normal country districts, and in the famine districts of Russia. Our observations agree with the reports of the League of Nations Health Section as to typhus, recurrent fever, cholera, dysentery and smallpox. Great effort is being made to control epidemic diseases, but they are still to be found in all parts of the country to an extent that would tax the health resources of any country. Accurate medical statistics are not available, but the fact that in the last five years, according to the most moderate estimates of epidemiologists, there have been 25,000,000 cases of typhus alone, gives some idea of the extent of the problem. Malaria is widespread, especially among the peasant population, and is still on the increase. In December the commissariat of health reported 8,000,000 cases registered. No statistician dares even estimate the inroads of tuberculosis on an exhausted population in a chronic state of undernutrition.

One of the most serious problems that confronts the medical profession is the care of millions of children whose health has been damaged by adverse social and economic conditions. Studies made among 25,000 school children in Kiev and 22,000 in Kharkov, both in the famine region, show 75 and 82 per cent. classified as tuberculous on the basis of Pirquet tests plus positive clinical findings in each case. A

school dispensary in Petrograd reports that if marked anemia and malnutrition are included, 100 per cent. of the 27,000 children examined in 1922 presented symptoms requiring treatment.

Hospitals, which have been taxed to the utmost to meet the epidemic situation, are now running with greatly reduced efficiency, owing to lack of necessary equipment and supplies. Surgical instruments are worn beyond the possibility of repair. The American Relief Administration and other foreign relief organizations have sent great quantities of medical supplies, but Russia is so large and so impoverished after the many years of isolation and disease that we found medicines only in small quantities or entirely lacking in all the districts we visited in Russia. In many of the so-called normal areas, which have never been touched by foreign relief, the lack of essential supplies is even more acute than in the famine area. Dispensaries, while still running, are hampered by the lack of even the simplest drugs. For example, one district in the Samara government reporting 4,500 cases of malaria, had not one grain of quinin.

Russian physicians and nurses, as a result of their self-sacrificing efforts to maintain a high standard of medical work, have reached the point of exhaustion. It is certain that at least 75 per cent. of these men and women are existing on incomes inadequate for even the bare necessities of food and clothing. Great numbers of physicians and nurses have died in fighting epidemics; others have contracted tuberculosis; and those who remain are so weakened by years of privation and overwork that they have slight resistance to disease. All achievement is being paid for in terms of undermined health and death among the medical personnel, but Russian physicians everywhere, while admitting their desperate economic condition, made only one appeal for themselves—medical literature from the outside world.

In my opinion, the point of attack in the present health situation of Russia is to preserve the medical personnel and to supply their essential professional needs. There is great need for food and clothing to protect the health of the individual physician and nurse; for instruments, drugs, medical supplies and literature to make their work effective. I trust that the national campaign of physicians and surgeons in behalf of medical aid for Russia will bring this situation so forcibly to the attention of the American public that immediate and generous aid will be given.

H. O. EVERSOLE, New York,
Commission on Russian Relief.

To the Editor:—An earnest effort is being made by the American Medical Aid for Russia, the Medical Division of the American Friends Service Committee (Quakers), to collect money, clothing, instruments, books and journals for our medical colleagues in Russia.

The condition of these men is deplorable. Removed happily by the nature of their profession from the political disturbance, they have suffered doubly from the troubles of the last six years in that, while the demands for their assistance have multiplied immensely, they have been almost deprived of medical supplies: indeed, even of the necessities of life. They not only lack the barest necessities of food and clothing, but are terribly in need of drugs, medical and surgical instruments, and of books and journals.

The Quakers are in a position to assure American physicians who are willing to assist their Russian colleagues that distributions will be promptly and efficiently made in Russia. Literature will be distributed in cooperation with the Russian Health Department through notices printed in the official bulletin, to the effect that medical literature in English is available and can be had on request. The Quaker relief workers will directly supervise the distribution of this

material to Russian hospitals, medical schools and individual physicians.

If every one of us would make his personal effort to help to send such money and clothes as he can, and to send files of journals which he himself does not use, as well as such medical books and instruments as he can spare, it would be an immense help.

It's not a charity; it's a duty.

W. S. THAYER, M.D., Baltimore.

[NOTE.—The American Friends Service Committee has two warehouses: 108 Dobbin Street, Brooklyn, and 1521 Cherry Street, Philadelphia. Physicians can send to either of these at their own convenience. It is requested that those who do not care to assume the expense of forwarding books and instruments will communicate with the American Medical Aid for Russia, 103 Park Avenue, New York, estimating the bulk and probable cost of shipment of the proposed donation.—ED.]

"THE INTRACARDIAC INJECTION OF EPINEPHRIN"

To the Editor:—The editorial on "The Intracardiac Injection of Epinephrin" (THE JOURNAL, May 5) is very timely and of considerable interest.

April 4, 1923, I was called to see a woman living 7 miles in the country. About the time I got in the house she died from an attack of angina pectoris; at least, the heart had stopped, and she gasped for the last time. The daughter was notifying the relatives over the telephone that the mother had just died, but in the meantime I gave her an injection of epinephrin, 1 c.c., as described in the editorial, and in a few minutes she rallied and is alive and well today.

I had a patient die just the other day in the hospital in just the same way, while the nurse was trying to reach me over the telephone; so it seems to me that it should be a part of the nurse's training to give these injections when the physician cannot be reached, before that "intangible thing known as the spirit has passed away."

J. R. BRIDGES, M.D., Kahoka, Mo.

"NEW ANESTHETICS: ETHYLENE AND ACETYLENE"

To the Editor:—Your editorial (May 12, 1923, p. 1383) called our attention to some early work on ethylene. Twice in the progress of our own work (spring, 1918, and summer, 1922) we made, as we thought, a thorough search of the literature for possible references to ethylene, assisted the last time by an expert medical librarian. Unfortunately we failed to find this bibliography. We cannot understand why these early results which, according to the editorial statements, seemed so promising, failed to stimulate the original authors or the later pharmacologists and anesthetists to extend the work during the intervening thirty-eight years as we have done; perhaps their interest was in an investigation of the probable toxic and not the anesthetic properties of ethylene.

A. B. LUCKHARDT, M.D.,
J. B. CARTER, M.S.,
Chicago.

Increase of Typhoid Fever in Manila.—Typhoid fever, says Dr. Proceso Gabriel (*Rev. de Med. y Farm.*, January, 1923) has shown a steady increase in Manila during the last few years. From an average death rate of 20.73 per hundred thousand in 1911-1913, mortality increased to 50.94 in 1914, 83.91 in 1918 and 102.60 in 1920. In 1921 and 1922, the increase persisted. Artesian wells, flies, stables, unsanitary restaurants, together with the practice of filling hollows with refuse, are said to be the cause.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"DIAGNOSIS OF RABIES"

To the Editor:—I have been much interested in reading the query on the diagnosis of rabies (THE JOURNAL, May 5, p. 1333).

A boy, aged 10, who had been in good health, was brought to me for advice, May 4. On the preceding day, while on his way to school, he was bitten in two places, on the back and on the palm of the right hand. Although there was some laceration in both wounds, neither of them showed penetration, and the wounds were not opposite. The boy went to a neighbor's, who washed his hand; and, having dried it, applied tincture of iodine freely and put on a roller bandage. When I saw the patient next day, about twenty-four hours after the injury, there was a slight swelling, barely perceptible, and the boy said he felt well, except that he had vomited that morning before breakfast, which was unusual. There was no fever. As I am under the impression, having read it in an excellent work, that it requires six hours for infection to break down the wall of lymphatic resistance (if there is infection), and feeling the futility of opening up the wounds and cauterizing with fuming nitric acid, I again painted the healing wounds with compound tincture of iodine and gave instructions that they be painted with iodine twice a day for a week, and the outcome reported. The dog had had a reputation for being vicious for a long time, and I advised that the animal be kept under observation, but not confined. I did this because one of the neighbors, a single man, told me that he intended to have the animal killed at once, before the dog could do any more damage. I advised him not to kill the dog until the danger period was past, but I advised him that if the dog was killed, to decapitate it, pack the head in ice, and have it sent to a first class laboratory for diagnosis. 1. Did I omit any therapeutic agent that may be of benefit to this patient? 2. Is there an antitoxin or any other agent that I might use now that could be of benefit to this patient?

M.D., Minnesota.

ANSWER.—It is not apparent that anything of benefit to the patient has been omitted in this case except, of course, the use of antirabic vaccine. In a case of this kind, in which there is doubt whether the dog in question is rabid, it is always difficult to decide whether to submit the bitten person to a course of antirabic vaccinations or not. It would seem best in all cases in which there is a possibility that the dog may be mad to follow the rule of "safety first," and that means the injection of antirabic vaccine. There is no other treatment of any kind, antitoxic or otherwise, that is known to have any influence on the development of rabies from the bite of infected animals.

THE RECORDING OF VISION

To the Editor:—In the medical certificate of the U. S. Civil Service Commission's application blank there appear these directions in testing for vision: Question 3:

"Vision: Test both eyes, near and distant, using, if possible, Snellen's types.

O. D.—Near —; distant —, O. S. near —; distant —."

20 20 20 20

Not being familiar with this method of recording the near vision or of using the figure 20 as the denominator in recording the distant vision, I will thank you for this information.

C. A. KISSINGER, M.D., Melrose, Wis.

ANSWER.—This is either a printer's error or else a statement by a layman, ophthalmologically speaking. Near vision is invariably recorded in terms of Snellen or Jaeger type (Sn 1, 2, 3, etc., or Jg 1, 2, 3, etc.). More recently, the Committee on Compensation for Eye Injuries of the Section on Ophthalmology of the American Medical Association has introduced a method of recording near vision, based on the ability to perceive characters at 14 inches, the normal being one that subtends an angle of 5 minutes on the retina. This method uses the ratio of 14/14, 14/28, 14/35, etc.

When Snellen introduced the present method of recording distant vision, he did not intend that the ratio expressed by 20/20 should be considered as a fraction. The first number (so-called numerator) indicates the distance in feet at which the test is being made. The second number (so-called denominator) indicates the smallest character that can be perceived at that distance, the normal being a character that subtends a 5 minute angle on the retina and whose component parts subtend a 1 minute angle. Thus, if 20/40 indicates the normal, 20/40 would indicate that the subject could perceive at 20 feet a character that a normal vision could discern at 40 feet.

By an inversion of the process, the second number (so-called denominator) may be made the constant. The normal character, indicating vision of 20/20, is used and the distance between the person under examination and the test

letter is varied. Thus, 10/20 would indicate that the subject could see only at 10 feet distance a character that the normal person should be able to perceive at 20 feet. This method of testing is rather uncertain, and has fallen into disuse.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.
FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.
IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
LOUISIANA: New Orleans, June 7-9. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.
MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.
MISSISSIPPI: Jackson, June 13-14. Sec., Dr. W. S. Leathers, University.
NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.
OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.
SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg.
VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.
WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.
WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

THE EDUCATION OF THE PARTIALLY TRAINED SANITARIAN NOW EMPLOYED

FREDERICK W. SEARS, M.D.

Associate Professor of Hygiene and Preventive Medicine, Syracuse University College of Medicine

SYRACUSE, N. Y.

The education of the partially trained sanitarians now employed should be considered from its practical rather than from its theoretical side. It is quite impossible to make any radical change without first securing favorable public sentiment. Home rule is a firmly established principle in rural communities and must be kept in mind in bringing about these changes. We should not make a course of instruction so comprehensive as to be prohibitive or unattractive to the local health officer, as we must rely largely on his efforts to bring about the desired change in public sentiment.

PRESENT STATUS

One of the greatest obstacles to progress in public health work in rural communities is the conception by the public of what the duties of the health officer are. Some boards of health regard the health officer as a medical policeman who should function only during an epidemic, his compensation being in accordance with his activities during such time. It has been only within a comparatively few years that this attitude has been to any extent changed. Securing adequately paid, well-trained health officers under such conditions is practically impossible. The great majority of health officers are practicing physicians whose salaries as health officers are a small fraction of their incomes. Many of them have accepted the office from a sense of duty to their community, some of them with the feeling that the duties of

the office will be so slight as not to interfere materially with their practice. I have found the majority of them eager to improve their knowledge in public health matters.

The conditions under which most health officers have been expected to produce results have been most discouraging. They are underpaid and are given no financial resources for health activities; they are appreciated by the community and their board of health for what they do not do rather than for efficient service; they are isolated from those of similar interests, with little or no opportunity given them to keep in touch with the newer methods and facilities of preventive medicine. Insufficient knowledge of laboratory methods has given rise to misunderstandings and doubts as to the value of the laboratory. Efficient service can come only from self-confidence inspired by a knowledge of one's subject. It is only by efficiency that we can gain the confidence of the public and the respect of the physicians for our official positions. No matter how conscientious a public health worker may be, his enthusiasm soon wanes if he is conscious that his work is not appreciated.

In the recent past the majority of health officers have been selected for their political activities rather than for their fitness for the position, and the office is still regarded by some local boards as a political plum which should be passed around. The greatest factor in bringing about a complete change in sentiment is the personality of the health officer. If he can be brought to realize the great significance of preventive medicine and can bring it to the attention of his community by showing practical results, he will be able not only to secure more adequate compensation and funds for his work, but also to place his tenure of office beyond the dickerings of politicians.

THE IDEAL HEALTH OFFICER

The health officer should be regarded by his community as a specialist in public health and hygiene. In order to meet the dignity of his position, his knowledge of public health subjects should be broad and comprehensive. His selection to office should be made solely in regard to his fitness. His duties should not be the perfunctory ones of a sanitary policeman, who is often regarded by the public as a worse menace than the disease which he quarantines. He should be entrusted with the giving of instructions as to the methods to be adopted in preventing the spread of disease—a function which the family physician too frequently assumes. Misunderstandings frequently arise from such an assumption. The attending physician should seek the health officer's advice in matters pertaining to health regulations in the same spirit in which he would seek the advice of the consulting surgeon or internist.

Through a better knowledge of public health, the work of the health officer should impress itself on the municipality in a manner sufficient to command cooperation and assistance from all civic societies and organizations. His visits to the afflicted home should be looked on as that of a wise counselor and friend, and not as that of a heartless official to be dreaded. This will secure more prompt reporting of disease by the family. To secure such recognition he must possess certain qualifications of character and education which will command the respect of the entire community.

The health officer should be prepared to answer promptly and intelligently all questions relating to the fundamental principles underlying public health work, when such advice is asked by the local physicians. His knowledge of epidemiology should be sufficient to enable him to meet effectually all outbreaks of disease and, so far as possible, to trace them to their source.

The question naturally arises, "How can the health officer secure such qualifications without too great a sacrifice of

time and money?" When we consider the meagerness of his salary in proportion to his income from private practice, we are but little surprised at the query so commonly expressed, "How can I afford to do it?"

TRAINING THE HEALTH OFFICER

We must furnish the health officer with a course which will afford him these opportunities with the least possible loss of time from his regular practice. It must be of such a character that its teachings will be of the highest value to him as a practitioner in medical lines which are closely allied to public health work. Our aim should be to open up to him the broader fields which he can cultivate by future reading. It would require years of training to qualify a physician as a specialist in bacteriology, but he can acquire in a comparatively short time the fundamental principles of laboratory work and laboratory methods which will enable him to appreciate their limitations and the wonderful assistance to be obtained from them when they are properly understood.

The health officer should, in a general way, know the principles which govern the growth and propagation of bacteria, something of their morphology, selective staining, and the difficulties encountered by the bacteriologist when specimens are improperly collected, tabulated and dispatched to his laboratory. He should have some knowledge of the methods used in isolating pure cultures and for what purposes they are isolated. He should know what is meant by "dark field illumination" in the diagnosis of certain diseases; the principles underlying agglutination tests and complement fixation; and the methods of ascertaining the various types of pneumonia for the purpose of serum treatment. He should understand some of the underlying principles of immunity, both active and passive, and the great value of immune serums when administered properly. He should understand in a general way the phenomenon of anaphylaxis and the dangers of administering large amounts of foreign proteins without suitable precautions, and the effects of horse serum products on asthmatic patients.

He should have some knowledge of vaccine therapy and its precautions. He should understand the difference between vaccines and immune serums. He should have a general knowledge of the production of diphtheria antitoxin, its standardization, dosage and administration under varying conditions; how Vincent's angina can be distinguished from diphtheria; what we mean by the Schick test and its application; what the toxin-antitoxin method of immunization against diphtheria is; how to secure blood for the Wassermann test and other similar reactions; what spinal puncture is and its importance as a diagnostic and therapeutic measure in certain meningeal affections. To my mind, the knowledge of these various phenomena cannot be obtained without practical demonstrations and conferences with competent teachers; reading alone is totally inadequate.

If this work is to be taught effectually, the class must be limited in numbers, and we must have only teachers who are practical and who have the enthusiasm and personality which will bring out the difficult points through personal questioning, explanations and painstaking demonstrations. The same methods should be used in demonstrating other phases of the work. Practical demonstrations should be given in the early diagnosis of tuberculosis by the best specialists obtainable in this line of work. The class should be shown that sanatorium control of this disease should be both educational and for the arrest of the progress of the disease.

The student should be familiar with the treatment of venereal diseases, and have practical demonstrations in the administration of their remedies and, so far as possible, be

taught the technic of intravenous therapy by actual demonstration. The same practical methods should be used in demonstrating school examinations, school inspections and the problems underlying its various branches. He should be shown open-air schools in operation. He should be taught the value of substituting industrial teaching for the atypical and backward pupils. He should be taught industrial hygiene, and personal hygiene in the handling of foods. He should visit certified dairies, milk pasteurization plants and ice cream factories, and should be shown the methods used in scoring dairies by men of experience.

He should visit hospitals for communicable diseases and observe these diseases in their various manifestations throughout their course. He should be taught the rôle of the disease carrier in the spread of disease, and how best to protect the public from them with the least amount of hardship to the afflicted family. He should be taught the various methods for the purification of water for municipal purposes, including chlorination and mechanical and slow sand filtration. He should visit sewage disposal plants in operation and the various other municipal health activities. He should be given practical demonstrations in prenatal care and infant welfare work. He should be taught the value of vital statistics and the general laws governing their activities, and he should be well drilled in the requirements of the sanitary code.

The question naturally arises in one's mind, "Is all this possible in so short a course?" Without enthusiasm, cooperation and a determination to succeed, it would be impossible. If a corps of instructors can be secured who will work with little or no remuneration, who have enthusiasm for the work and who can inspire their men with the highest ideals, it is possible.

A SHORT-TERM COURSE

In January, 1916, I submitted to the New York State Public Health Council a plan for a short-term course to meet the conditions outlined above. The plan which was approved by the council consists of combining reading and residence work extending over a period of twelve weeks, two days of each successive week being spent in class work in Syracuse; four or five hours each day being employed in lectures, practical demonstrations and conferences, the spare time of the remainder of the week to be devoted to selective reading, the program being so arranged as to link together correlated subjects. Sufficient opportunity is given the men for conferences among themselves for the purpose of checking up and fixing the subject-matter in their mind. The latter, I believe, is a most essential feature of the course. Only men of broad, practical experience and enthusiasm should be selected as teachers, the selection being made from the university, the municipality and the state health department. A tentative program covering the entire course is issued to the members of the class several weeks before the course begins, and a corrected weekly program a few days in advance. This enables the men to familiarize themselves with the work in hand. The classes are conducted at a season of the year most convenient for the men, and arrangement is made for telephone calls to be received from their homes.

The first course started March 24, 1916, with a class numbering twenty-seven. I have now conducted fourteen classes since that time—twelve in Syracuse in connection with Syracuse University, and two in Ithaca in connection with Cornell University. About 220 health officers from a radius of 80 miles have taken these courses, an average of about fifteen to the class. Four classes on a similar plan have also been conducted in connection with Albany Medical College—two in New York, and two in Buffalo, during the last

four years. We are now planning to have a similar course in Rochester the coming spring.

In order to keep up the interest and supplement the activities of those who have taken the course, about four years ago the Central New York Public Health Association was formed, the membership being limited to the graduates and faculty. This association meets annually in Syracuse for a two-day session, and splendid programs have been carried out.

RESULTS

The sacrifice of time in the weekly attendance has, of course, been great, but none have complained. The effect on the morale and efficiency of the health officers can hardly be overestimated. Higher spirit of cooperation was manifested; keener interest and enthusiasm in the development of new activities in their municipalities has been very evident; greater confidence in their own ability to meet their health problems has been shown, also a higher appreciation of the efforts of the state health department in the control of disease. Boards of health have shown greater confidence in the health officers who have taken the courses, as has been manifested by increased remuneration and better cooperation in a large percentage of the municipalities. Many of the local boards have borne the expenses of the course; several of them have increased their per capita compensation; and, in one instance, the salary of the health officer was increased from \$150 to \$500 per annum.

As a result of the requirements of the New York State Public Health Council, that health officers should have certain qualifications before appointment, there has been less tendency to change the tenure of office of the qualified man. We fully realize that the ideal for which we are working can be accomplished only by the securing of well-paid, full-time county health officers, but until we can create public sentiment and an appreciation by physicians of the great importance of preventive medicine, we must use the material at hand, not only to meet our present health situation, but in order to stimulate the public to a better appreciation of public health work.

Pennsylvania January and February Examination

Mr. C. D. Koch, preliminary examiner, Pennsylvania Bureau of Medical Education and Licensure, reports the written and practical examination held at Philadelphia, Jan. 30-Feb. 3, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 43 candidates examined, 39 passed and 4 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Howard University.....	(1920), (1921)		2
University of Louisville.....	(1911)		1
Johns Hopkins University.....	(1920)		1
Boston University	(1921)		1
Harvard University	(1922)		1
Tufts College Medical School.....	(1907)		1
Detroit College of Medicine and Surgery.....	(1921)		1
University of Michigan Homeopathic Medical School.....	(1921)		1
University of Michigan Medical School.....	(1900), (1921)		2
Cornell University	(1920)		1
New York Homeo. Med. College and Flower Hospital..	(1910)		1
University and Bellevue Hospital Medical College....	(1921)		1
Hahnemann Med. Coll and Hospital of Philadelphia...	(1921)		5
Jefferson Medical College of Philadelphia.....	(1921)		4
Temple University	(1921)		3
University of Pennsylvania.....	(1920, 3), (1921, 4)		7
Woman's Medical College of Pennsylvania.....	(1921)		1
Laval University, Faculty of Medicine.....	(1903)		1
University of Manitoba.....	(1919)		1
Imperial University, St. Petersburg, Russia.....	(1911)*		1
University of Berne, Switzerland.....	(1919)*		1
University of Geneva, Switzerland.....	(1907)		1

College	FAILED	Year Grad.	Number Licensed
Howard University	(1920)		1
University of Louisville.....	(1910)		1
Baltimore Medical College.....	(1897)		1
Ohio Medical University.....	(1898)		1

* Graduation cannot be verified.

Book Notices

AN INDEX OF PROGNOSIS AND END-RESULTS OF TREATMENT. By Various Writers. Edited by A. Rendle Short, M.D., B.S., F.R.C.S., Lecturer in Physiology at the University of Bristol. Third edition. Cloth. Price, \$12 net. Pp. 594. New York: William Wood & Co., 1922.

The last previous edition of this book appeared in 1915. It contains in alphabetical order discussions of the prognosis for life and for health in various diseases. It represents a compilation of a large amount of material by men especially competent to judge the value of the statistics and literature considered. Practically all of the well known English clinicians have cooperated in the preparation of this book. Of particular interest are the sections on anesthesia and appendicitis. The authors adopt the point of view that the appendicitis operation is far less serious than any possible delay. It is interesting to note that the English experience agrees with that of the United States in regard to epidemic encephalitis, namely, that in the majority of cases there is left behind some persistent sign of nuclear disease. A long section on the mental diseases has been thoroughly worked out by the late T. S. Clouston. In the discussion of congenital pyloric stenosis, the author has neglected to include the most important American operative figures, namely, those of Downes and Strauss, which show a far smaller mortality than the 25 to 50 per cent. mortality which apparently exists in England.

SELECTED PAPERS AND ADDRESSES. By William Williams Keen, M.D., LL.D., Emeritus Professor of Surgery, Jefferson Medical College of Philadelphia. Cloth. Pp. 340. Philadelphia: George W. Jacobs & Co., 1923.

Over a period of many years Dr. W. W. Keen has served the profession and the public, interpreting the science of medicine to the public, and helping the medical profession to take account of itself. It was a happy idea for him to gather in one volume some of his most significant addresses. Practically all of the papers appearing in this book have been previously published in periodicals. It is unnecessary to state that the literary style of Dr. Keen is simple, direct and easily followed. Certain of the incidents recounted could have been told only by Dr. Keen, since in some instances he was the only American or the only physician present. Some of the addresses carry us back to the medicine of the prescientific era; thus, the sketch "Before and After Lister." Such essays as the "Graduation Ceremony" and the "Early Years of Brown University" have a wide general educational appeal. The book is printed in large type on good paper, and is a worthy addition to any medical library that is not confined exclusively to technical publications.

DIE SYPHILIS DES ZENTRALNERVENSYSTEMS, IHRE URSACHEN UND BEHANDLUNG. Von Professor Dr. Wilhelm Gennerich. Second edition. Paper. Price, \$1.80. Pp. 295. Berlin: Julius Springer, 1922.

The first edition of this important monograph appeared in 1921, and was reviewed in these columns. While Nonne's still larger monograph deals chiefly with pathology and symptomatology, Gennerich's work is centered on the treatment. He is a strong advocate of the intraspinal method. The new edition contains some additions, especially regarding the technic of intraspinal injections, and a brief discussion of the treatment of paresis and tabes by inoculation of malaria or relapsing fever.

CONTRIBUTION À L'ÉTUDE DES MANIFESTATIONS TARDIVES DE L'ENCEPHALITE ÉPIDÉMIQUE. (Formes prolongées et reprises tardives). Syndrome Excito Moteur — Syndrome Parkinsonien Forme Respiratoire — Forme Insomnique et Hypomaniaque de l'Enfant. Par le Docteur Gabrielle Lévy. Paper. Pp. 312, with 53 illustrations. Paris: Vigot Frères, 1922.

This is a Paris thesis by a pupil of Pierre Marie, and it is based on 129 cases observed in his service in the Salpêtrière. This master clinician has published comparatively little on encephalitis under his own name, and for that reason this thesis, of which Marie is "president," assumes great importance as it no doubt expresses his views and records observations controlled by him. It will be recalled that Marie in

similar manner allowed his pupils to publish the details of his epoch-making work on acromegaly and aphasia. Seventy cases presented the parkinsonian syndrome, and forty-three various excitomotor syndromes, such as choreic and myoclonic. Sixty-eight cases are given in detail. Four of the late cases were also studied histologically. Altogether, this thesis is a gold mine of information on this timely subject.

EUGENICS, GENETICS AND THE FAMILY. Volume I, Scientific Papers of the Second International Congress of Eugenics. Committee on Publication: Charles B. Davenport, Chairman, Henry Fairfield Osborn, Ex Officio, Clark Wissler, and H. H. Laughlin, Secretary. Cloth. \$6. Pp. 439, with 24 illustrations. Baltimore: Williams & Wilkins Company, 1923.

EUGENICS IN RACE AND STATE. Volume II, Scientific Papers of the Second International Congress of Eugenics. Committee on Publication: Charles B. Davenport, Chairman, Henry Fairfield Osborn, Ex Officio, Clark Wissler, and H. H. Laughlin, Secretary. Cloth. Price, \$6. Pp. 472, with 20 illustrations. Baltimore: Williams & Wilkins Company, 1923.

The essays in these two volumes comprise the scientific papers delivered at the second international congress of eugenics, held in New York City in 1921. Three addresses, by Osborn, Darwin and Davenport, are written particularly for the public. The scientific papers are technical in character, and cover the entire field of heredity and family studies. These papers indicate that the scientific study of inheritance has traveled a long road during the last twenty years. Such questions as the genesis of twins, disturbances in development produced by radium, inheritance of cancer, eye defects and mental disorders, the effects of inbreeding, race mixture, religious intermarriage, eugenic reform and similar problems have an interest that is not the problem of any one field of science but the equal problem of every branch of biology. In the two volumes are included 108 papers of an authoritative and serious character. For those wishing the last word on the problems discussed, no better source can be recommended.

OXIDATIONS AND REDUCTIONS IN THE ANIMAL BODY. By H. D. Dakin, D.Sc., F.I.C., F.R.S. Second edition. Boards. Price, \$2 net. Pp. 176. New York: Longmans Green & Co., 1922.

Ten years have passed since Dakin's first publication of this book, during which time we have learned much more about oxidation, despite the fact that most of the fundamental problems remain unanswered. There is some consolation in this statement in the preface: "Perhaps when it is recalled that the pure chemist is still debating as to what really happens when carbon monoxide burns in oxygen, the biochemist may not feel so dissatisfied with the modest progress that has been made in elucidating biochemical oxidations." The scope of the book remains unchanged. It differs from the first edition entirely in the addition of newer materials, which have increased the volume nearly one third. The chief advances have been made in the study of carbohydrate oxidations, this chapter having been rewritten. It is to be expected that the present activities stimulated by the discovery of insulin will add much more to this subject in a short time. There is an extensive bibliography, and the monograph is of inestimable value as an accurate critical summary of our present knowledge concerning biochemical oxidations, which are, of course, the fundamental source of all manifestations of living energy. The only adverse criticism that can be made is that typographic errors are more numerous than one is accustomed to note in works of this class.

A MANUAL OF DISEASES OF THE NOSE AND THROAT. By Cornelius G. Coakley, A.M., M.D., F.A.C.S., Professor of Laryngology and Otology in the College of Physicians and Surgeons, Columbia University. Sixth edition. Cloth. Price, \$4.25. Pp. 664, with 152 illustrations. Philadelphia: Lea & Febiger, 1922.

As the name implies, this book briefly and compactly covers the practical features of examination, diagnosis and treatment of nose and throat diseases, and is designed primarily for students and practitioners. The present edition has been augmented by articles on sinusitis in children, Vincent's angina, parapharyngeal abscess, and direct laryngoscopy and esophagoscopy. The author has made every effort to bring the text up to date and, in view of the size of the book, has achieved considerable success. The volume is attractively illustrated, and is very readable in its limited scope.

Medicolegal

Insufficient Evidence that Accident Caused Cancer

(*Green et al. v. Locomotive Engineers' Mut. Life & Accident Ins. Ass'n* (Iowa), 190 N. W. R. 934)

The Supreme Court of Iowa, in reversing a judgment that was rendered in favor of the beneficiaries of a policy of accident insurance, says that the insured was a locomotive engineer. August 1, while he was attempting to pass from the deck of an engine to his seat in the cab, his foot slipped and he struck his side against the seat. The only trip that he made after that was on August 3. Some time early in that month he consulted a physician, who testified that he found no external evidence of injury, although he said that the insured had told him that he had had an accident. Not very long afterward, the ailment was diagnosed as cancer of the kidney. The patient died, December 1, and a necropsy revealed the cancer which, it was conceded, was the cause of death. The plaintiffs contended that the accident caused the cancer. The medical experts expressed the opinion, in answer to a hypothetical question, and also gave it as their judgment, that a cancer might be produced by a blow or injury, but they were about equally emphatic in their statements that it might result from the position assumed by a locomotive engineer while sitting on the seat in the cab. No expert testimony was offered by the defendant. It seems to the court that the evidence offered by the plaintiffs was so indefinite, uncertain and speculative in its character that the court could not say that it preponderated in favor of the plaintiffs' theory. The probabilities in favor of the plaintiffs did not outweigh the opposite probabilities, and the testimony was not at all convincing.

Construction of Law as to Privileged Communications

(*Myers v. State* (Ind.), 137 N. E. R. 547)

The Supreme Court of Indiana, in reversing a judgment of conviction of manslaughter in this case, in which a wife was charged with killing her husband, says that by the statute of that state "physicians, as to matters communicated to them, as such, by patients, in the course of their professional business, or advice given in such cases," are privileged, except by consent of the patient. This statute, being in derogation of the common law, under all rules of statutory construction should not be enlarged by intendment to include as privileged information entirely aside from that necessary to communicate to enable the physician or surgeon to act or prescribe. However, contrary to the strict rules for construing statutes, the one in question has been somewhat broadened to include, as privileged, not only communications by the patient to his physician, but any other information the physician may obtain from a physical examination of the patient, or by observation while in the discharge of his professional duty, or knowledge gained through the intervention of a third party, with a view to intelligent treatment. And, according to the decisions of some courts, the words "matters communicated," as used in the statute to cover privileged information, may be defined as information obtained in the sickroom, heard or observed by the physician, or of which he is otherwise informed, pertaining to the patient, and on which he is persuaded to do some act or give some direction or advice in the discharge of his professional obligation.

In this case a physician whom the defendant called as a witness was asked what, on a certain occasion when he was leaving a room of the dwelling occupied by the defendant's husband, he heard the husband say. The offer to prove was, "I will get her yet." The objection was interposed that "anything he learned there was on account of his confidential relation," and the evidence was excluded on the ground that the witness was there in the capacity of a physician, and that "what transpired there was all in the scope of his professional employment." It appeared that, after examining and treating the man, the physician departed from the sickroom, but while he was in the hall or a room adjoining the sickroom, he heard the patient use the language excluded by the trial

court. Under this state of the evidence it could not reasonably be maintained that the statements proposed by the witness tended to reveal that which should be kept inviolate, nor were they such as would enable him to give advice, treat or prescribe for the patient, nor could it be said that they were intended for him. The question of privilege, under this showing, did not depend on inferences to be drawn from testimony. It was not, therefore, a question of fact, but one of law. Competence to testify and competence of evidence are questions for the court, with the recurring thought that incompetence is the exception. With these general principles in mind, the supreme court is clearly of the opinion that the statute should not be extended to cover as privileged the excluded testimony, although there are expressions in the books seemingly broadening the literal meaning of the words thus employed.

The general rule governing privileged communications between attorney and client is applicable to physician and patient; and with respect to this rule this court has said that "to come under the protection of the rule, in question, the communications claimed to be privileged must be addressed to an attorney in his professional character of a legal adviser, with a view to legal advice which as an attorney it was his duty to give." The offered evidence should have been admitted.

Right of Injured Employee to Choose Own Physician

(*Lading v. City of Duluth* (Minn.), 190 N. W. R. 981)

The Supreme Court of Minnesota says that the plaintiff, while in the performance of his duties as a policeman in the service of the defendant city, was shot in the arm. He called a physician of his own selection to treat him, and afterward sought to recover in this proceeding under the workmen's compensation act the reasonable value of the services of the physician. The city resisted on the ground that, since the regular city physician was subject to the call of the plaintiff, to his knowledge, he, having elected to secure the services of another, was not entitled to reimbursement. The statute referred to, which controlled the issues, provides that the employer shall furnish the injured employee such medical, surgical and hospital treatment as may be reasonably required at the time of the injury, and during the disability thus created, not exceeding ninety days or \$100 in value; "and in case of his inability or refusal seasonably to do so, the employer shall be liable for the reasonable expense incurred by or on behalf of the employee in providing the same."

The statute is clear and unambiguous, and imposes on the employer the obligation to furnish medical aid to an injured employee to the extent therein stated; and, if he is unable or refuses to do so, imposes liability for the reasonable value of the services rendered by a physician employed by or on behalf of the injured employee. To justify a recovery of the reasonable value of the services of a physician called by the employee, it must appear either that the employer was unable to furnish one, or that he refused to do so. Of this the statute leaves no doubt. But the requirements of the statute were not met by the plaintiff. There could be no claim that the city was unable to furnish the needed medical attention. A physician was in its employ for the purpose of responding to cases of the kind, and his services were available to the plaintiff. Nor was there any showing of a request by the plaintiff for his services, and no occasion was presented for volunteer action on his part. There was therefore no refusal by the city to furnish the necessary medical attention. The plaintiff voluntarily chose his own physician, on the apparent theory that he had the right to do so at the expense of the city. He proceeded advisedly in the matter, for his injury was not of a character to render him mentally incompetent.

It followed, then, that the plaintiff was not entitled to recover the reasonable value of the services of the physician so called. But the court is of the opinion that the statute should not be construed to impose on the employee the unqualified obligation to accept the physician selected by the employer, or forfeit the right of reimbursement there given. It often happens—a situation perhaps more or less general—that the employee has a family physician to whom he prefers

to turn in case of injury or sickness, rather than to accept the services of another with whom he has no acquaintance, or in whom, perchance, he has no confidence. In that situation he should have the option or unquestioned right to choose his medical attendant or accept the one tendered him by the employer, but within the limits of liability on the part of the employer imposed by the statute. The statute contains no language unconditionally requiring the employee to accept unconditionally the physician tendered him, or relinquish the right of reimbursement altogether; and this court construes it to give him an option, and, when exercised in good faith, to entitle him to reimbursement to the extent provided by the statute.

The fact that the employer in this case was a municipal corporation and employed a physician for all such cases, paying him a fixed salary, could not alter the construction given the statute; nor could that be made to apply to different employers in a different degree of liability. It is susceptible of one construction, applicable alike to all employers, municipal corporation or individual. It followed that the plaintiff was entitled to reimbursement for the services of the physician called by him to the extent of \$100, and no more.

The court applies the doctrine of this case to the case of *Bookman v. Lyle Culvert & Road Equipment Company*, 190 N. W. 984, holding that under a prior statute, which contained a provision similar to this one, an employee engaging her own physician could recover the reasonable expense incurred to the amount of \$100.

Obligation to Pay Physician's Bill Implied

(*Stoudemire v. Davis (Ala.)*, 94 So. R. 498)

The Supreme Court of Alabama, in affirming a judgment in favor of plaintiff Davis for damages for personal injuries inflicted by the defendant's automobile, says that exception was taken to an instruction to the jury with regard to the plaintiff's right to recover the amount of medical expense resulting from his injury. But there was at least an implied obligation on his part, he being then an adult, to pay the physician's bill, shown to be reasonable for the service rendered him; hence such liability therefor by the plaintiff as to justify the recovery of the amount if, of course, the plaintiff was otherwise found entitled to judgment for the injury suffered. The fact that his father sent for the physician did not conclude against the plaintiff's implied liability to pay for these professional services to him.

Total Disability from Fracture—Injury to Old Man

(*Clark v. Clearfield Opera House Company et al. (Pa.)*, 119 Atl. R. 136)

The Supreme Court of Pennsylvania, in affirming on order making an award for total disability under the workmen's compensation act, says that the claimant, who was 79 years of age, was suffering from an ununited fracture of the neck of the left femur, in that part of the bone that formed the hip joint, known as an intracapsular fracture. The employer and insurance carrier contended that this was a permanent injury, causing the loss of the use of a leg. It was a permanent injury, but it covered a wider area and extended beyond the leg proper. The injury affected the physical structure of the body in a manner that does not normally follow accidents of this character, when the bones unite. It involved the leg and the hip joint, and was attended with unusual pain and suffering in the region of and above the hip joint when the claimant sat down, lay down, or changed position. He was not able to dress or bathe himself, get into bed, or attend to his bodily requirements without assistance. This was a direct result of the permanent injury, with a direct relation to it and a causal connection beyond any disability, disadvantage or suffering that would ordinarily come from the loss of a leg. The physical structure of the body (the hip joint and parts above) was affected through the nerves, tissue, blood supply, muscles, bony tissue and other parts that make up the hip joint, not a part of the leg from the joint to the foot. These conditions were not the normal result of the loss of a leg, and when such conditions exist, most unusual in their nature, followed by a disability,

they cannot be solely attributed to the permanent or actual loss of the member. If the claimant could undergo an operation, it would be one involving not only the leg but the hip joint as well, incidentally removing one sixth of the body. What further effect it might otherwise have, destroying or injuring the structure, the court does not know; the existing situation showed that a large part of the body was practically useless.

The claimant was found to be totally disabled. This court's conclusion is not influenced because of his age, though humane principles should guide the court in the interpretation of this law. If necessary to sustain the award because the claimant was an old man, predisposed to such accidents, this court would not hesitate to do so, as both employer and insurer must have known that such accidents, with like results, may happen to old men. This court stands, however, on the causal connection between the injured part and the other affected parts of the body as a direct result of the injury.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.
- American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
- American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
- American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
- American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
- American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
- American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
- American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
- American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
- American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
- American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.
- American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
- American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
- Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
- Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
- California Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
- Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
- Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
- Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
- Montana Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
- National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.
- New Hampshire Medical Society, Concord, May 22-23. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- New Jersey Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
- New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
- North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
- Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.
- Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Eppen, 422 Paulsen Building, Spokane, Secretary.
- Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
- Rhode Island Medical Society, Providence, June 7. Dr. I. W. Lecch, 369 Broad Street, Providence, Secretary.
- Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
- West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
- Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.
- Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

31: 339-438 (March) 1923

- Independence of Mitochondria and Bacillus Radicicola in Root Nodules. E. V. Cowdry, New York.—p. 339.
Pubic Symphysis of Guinea-Pig in Relation to Pregnancy and Parturition. T. W. Todd, Cleveland.—p. 345.
Two European Types. R. B. Bean, Charlottesville, Va.—p. 359.
Development of Primitive Reptilian Vertebral Column, as Shown by Study of Alligator Mississippiensis. G. M. Higgins, Galesburg, Ill.—p. 373.
Development of Metanephric Anlage of Chick in Allantoic Grafts. R. R. Atterbury, New York.—p. 409.

American Journal of Hygiene, Baltimore

3: 99-180 (March) 1923

- *Pathologic Anatomy of Ophthalmia Produced by Diets Containing Fat Soluble A Vitamin, but Unfavorable Contents of Certain Inorganic Elements. S. Mori, Dairen, Manchuria.—p. 99.
*Whole Culture Method of Testing Virulence of Diphtheria Bacilli. C. G. Bull, and C. M. McKee, Baltimore.—p. 103.
*Biologic Study of Diphtheria Bacillus. H. M. Powell, Baltimore.—p. 109.
*Anopheline Mosquitoes of Siam. M. E. Barnes, Bangkok, Siam.—p. 121.
Control of Hookworm Disease. XVI. Variation in Length of Life of Hookworm Larvae from Stools of Different Individuals. D. L. Augustinc, Baltimore.—p. 127.
*Control of Hookworm Disease. XVII. A Quantitative Study Defining Point of Breakdown of Hookworm Eggs Cultured in Feces, and Its Association with Intense Acidity. N. R. Stoll, Baltimore.—p. 137.
*Control of Hookworm Disease. XVIII. Relation Between Number of Eggs Found in Human Feces and Number of Hookworms in Host. N. R. Stoll, Baltimore.—p. 156.
Effects of Changes in Diet on Incidence, Distribution and Numbers of Certain Intestinal Protozoa of Rats. R. W. Hegner, Baltimore.—p. 180.

Ophthalmia of Dietetic Origin.—Xerophthalmia and keratomalacia were produced by Mori in rats by feeding them diets deficient in fat soluble A vitamin. The same changes may also result from the consumption of diets which have an abundant supply of fat soluble A vitamin, but which contain certain unfavorable salt mixtures. The two conditions are clinically and pathologically identical and are identical with human xerophthalmia and keratomalacia. It would seem from this experiment that in cases of xerophthalmia in human beings other factors than fat soluble A vitamin may have to be considered in regard to the etiology and treatment of the condition.

Testing Virulence of Diphtheria Bacilli.—Havens, Powell, Force and Beattie recently described the whole culture virulence test for diphtheria bacilli. The chief value of the method lies in the fact that virulence tests can be made with the original diagnostic culture, eliminating the necessity of isolating pure cultures, and this is representative of the whole culture instead of one or two colonies selected at random from plates made from the diagnostic culture. It also makes it possible to make virulence tests on cultures from which it is not possible to isolate pure strains. The observations made by Bull and McKee are based on 3,995 combined nose and throat cultures made from children. One hundred and ninety-eight of the cultures were tested for the presence of virulent diphtheria organisms by the whole culture method. On the basis of morphology, eighty-two of these cultures were diagnosed as unqualifiedly positive, thirty-seven were questionably positive and seventy-nine were questionably negative. These observations complement those of Havens and Powell.

Biologic Study of Diphtheria Bacillus.—During two years' time, covering about fifty generations, no detectable change in the property of virulence occurred among more than 300 strains of *Bacillus diphtheriae* which were propagated by Powell on Loeffler's serum medium.

Anopheline Mosquitoes of Siam.—No previously undescribed species of anopheline mosquitoes have been found by Barnes in Siam. Of the 3,901 anopheline mosquitoes collected in his house, 1,954 were females and 1,947 were males.

The great majority of these mosquitoes were *Anopheles rossii*. It would appear that the males follow the females in their flight instead of remaining near the breeding pools to which the females will return and from which newly matured females are emerging. Another observation is the efficiency of small webless spiders as destroyers of anopheline mosquitoes. Barnes observed also the capture of a mosquito by a dragon fly.

Analyzing Hookworm Culture Conditions.—Experimentation detailed by Stoll demonstrates a method of analyzing hookworm culture conditions by combining the use of an egg count method before (and during) the culturing and the larval isolation procedure afterward. Two experiments are described in detail in which very acid feces were cultured for hookworm larvae under a variety of conditions. The unmodified feces produced few or no larvae. This was accompanied by an intense acidity at all stages of the experiment, as measured in terms of either the hydrogen ion concentration or the titration values. In general the pH reading was from 4.8 to 5.0, the feces titrating more than 1 c.c. of decinormal sodium hydroxid solution per gram. Charcoal and soil cultures from the same stirred stools reared up to 69 per cent. of larvae.

Relation Between Number of Eggs Found in Human Feces and Number of Hookworms in Host.—An intensive study of ten hookworm cases in Utuado, P. R., is reported on by Stoll in which the total number of hookworm eggs in the feces has been computed for from one to five days and compared to worm counts made after treatment. The consistency of the data presented is such as to recommend the use of a dilution egg counting method to determine intensity of infections of patients with hookworms.

American Review of Tuberculosis, Baltimore

7: 1-62 (March) 1923

- *Biochemistry and Chemotherapy of Tuberculosis. XXIV. Alimentary Absorption of Calcium and Its Deposition in Tissues in Experimental Tuberculosis. M. E. Maver and H. G. Wells, Chicago.—p. 1.
*Nutrition in Experimental Tuberculosis. I. Effect of Fat Soluble A Vitamin on Tuberculosis of Guinea-Pig; Value of Cod Liver Oil in Experimental Tuberculosis. M. I. Smith, Washington, D. C.—p. 33.
*Experimental Tuberculosis in Rats on Varied Diets. Protein and Salt Factors. L. B. Lange and N. Simmonds, Baltimore.—p. 49.
*Case of Primary Lower Lobe Tuberculosis Manifested Immediately After Prophylactic Typhoid Inoculation. I. S. Kahn, San Antonio, Texas.—p. 60.
Case of Closed Tuberculous Pyopneumothorax Treated by Formaldehyde-Glycerin Injections with Recovery. I. S. Kahn, San Antonio, Texas.—p. 62.

Alimentary Absorption of Calcium.—A review of the literature on the therapeutic use of calcium in tuberculosis, and especially the experimental evidence on this subject, reveals the presence of a considerable body of clinical observation indicating a favorable effect of calcium therapy on the tuberculosis itself as well as on certain of its complications, a certain amount of evidence that such favorable results are not obtainable, and a complete lack of convincing experimental evidence in support of calcium therapy. The hypothesis of a decalcification or demineralization in tuberculosis, according to Maver and Wells, does not receive support from the most carefully conducted investigations. Also, the best chemical evidence is that there is no demonstrable deficiency of calcium in the blood or tissues in tuberculosis, and that feeding of calcium salts does not appreciably increase the amount of calcium in the blood when this is already normal. The authors' experiments have shown that guinea-pigs on an ordinary laboratory diet exhibit some variations in the calcium content of the same tissue in different animals, and of different tissues in the same animals, yet, averaged together in a series of animals, the results are not far from identical, being generally lowest in the liver and highest in the lymph nodes; but not far from the same content as the blood, that is, from 10 to 13 mg. of calcium for each 100 gm. moist weight. These studies have failed to produce experimental evidence to support the empirical clinical evidence that calcium administration has a favorable influence on the course of tuberculous infection. They do support the evidence of chemical studies that administration of calcium salts by mouth does not appreciably increase the amount of calcium in the blood and tissues, for this is nor-

mally maintained at a level not far below the saturation point of the body fluids.

Effect of Fat Soluble A Vitamin on Experimental Tuberculosis.—The results of Smith's experiments are negative in so far as concerns the action of cod liver oil on tuberculosis of the guinea-pig. This substance has not shown itself definitely beneficial, either as regards weight curve, length of life or extent of the disease process, in experimentally infected guinea-pigs kept on a normal or a deficient diet. There has been no evidence of deposition of calcium in tubercle of the guinea-pig when this element was administered with the cod liver oil. Cod liver oil appears to have, however, a definite, though slight, effect on the nutrition of the nontuberculous guinea-pig, especially when the latter is maintained on a diet deficient in the fat soluble A factor.

Experimental Tuberculosis in Rats on Varied Diets.—Four series of rats were infected by Lange and Simmonds with bovine tubercle bacilli by subcutaneous inoculation into the groin and the progress of the infection was studied at intervals of from one week to five months. Three series were on diets of varying protein content, adequate, high and low. No significant difference was noted in the reaction to infection in the three groups, either in the general condition and weight curves or in the necropsy findings. The fourth series was on a diet deficient in salts but otherwise adequate. These animals showed a more diffuse and extensive local reaction at the site of inoculation, a slower dissemination and a slower elimination of the lesions. In all four series there was a high resistance to tuberculous infection. As far as it went, the reaction was similar in character and progress to that found in less resistant animals, but the process never advanced in any of the sixty-six infected animals to extensive necrosis. Instead, the invading bacilli appear to be overcome directly rather than to be merely walled off. No instance of connective tissue encapsulation was observed. Instead, there was slow shrinkage and absorption of the tuberculous tissue accompanied by disappearance of the tubercle bacilli.

Case of Primary Lower Lobe Tuberculosis.—Immediately after a prophylactic typhoid inoculation, Kahn's patient developed fever and cough. Examination a week later showed moderate tuberculous infiltration extending from hilum to periphery of the lower lobe of the right lung, with one small old cavity in the upper portion of infiltration. The upper lobes were clear. The sputum was scanty and mucoid, but contained tubercle bacilli.

Annals of Surgery, Philadelphia

77: 257-364 (March) 1923

- General Plastic Surgery. J. S. Davis, Baltimore.—p. 257.
Treatment of Anthrax Infections. A. McGlannan, Baltimore.—p. 263.
Treatment of Diverticulum of the Esophagus. C. H. Mayo, Rochester, Minn.—p. 267.
*Metastasizing Tendency of Esophagus Carcinoma. G. F. Helsley, Fresno, Calif.—p. 272.
*Papilloma and Adenoma of Gallbladder. I. Abell, Louisville.—p. 276.
*White Bile in Common Duct. E. S. Judd and J. H. Lyons, Rochester, Minn.—p. 281.
*Surgical Treatment of Chronic Ulcerative Colitis. H. B. Stone, Baltimore.—p. 293.
Mesenteric Thrombosis. Report of Case. J. F. Mitchell, Washington, D. C.—p. 299.
*Sarcoma or Embryoma of Kidney in Infants. C. R. Robins, Richmond, Va.—p. 306.
*Spontaneous Hematoma in Sarcoma of Kidney. F. K. Boland, Atlanta, Ga.—p. 311.
Ureteral Injuries During Pelvic Operations. J. M. Maury, Memphis.—p. 314.
*Typhoidal Osteomyelitis. N. Winslow, Baltimore.—p. 319.
Radical Operation for Chronic Empyema. C. Eggers, New York.—p. 327.
Case of Teratoid Mixed Tumor of Breast. M. A. McIver, Boston.—p. 354.
*Rupture of Long Head of Biceps Flexor Cubiti Muscle. N. A. Ludington, New Haven, Conn.—p. 358.
Value and Limitations of Blood Transfusion. E. W. Peterson, New York.—p. 364.

Metastases of Esophagus Carcinoma.—In seventy fatal cases of carcinoma of the esophagus analyzed by Helsley, metastases were present in 36 per cent. In 6 per cent. the secondary growths were limited to the regional lymph nodes. This indicates a limited tendency to metastasize. The average duration of symptoms, 4.8 months, in the patients who

died without metastases indicates that in the majority of cases ample time is given for diagnosis and treatment before metastasis occurs. However, the striking change for the worse in the pathologic picture during the average of sixty-nine days by which the patients that survived gastrectomy outlived the patients that succumbed thereto, gives warning of the speed with which metastases develop in a somewhat advanced stage of the disease. Irrespective of the duration of the disease, the possibility of metastasis formation, without definite evidence of same, should not be considered as a contraindication to radical operation.

Papilloma and Adenoma of Gallbladder.—Benign tumors of the gallbladder, notably papilloma and adenoma, Abell says, are not so rare as formerly thought, occurring in the Mayo series once in every twenty-three cases of cholecystectomy and once in every thirty-six cases of the series reported on by Abell. The invariable presence of chronic inflammatory changes in gallbladders containing such tumors would argue the importance of chronic irritation as an etiologic factor in their development. The overshadowing clinical picture is that of cholecystitis, there being no correlation of symptoms with the presence of such tumors. The fact that such tumors occur in the course of chronic cholecystitis, in Abell's opinion, is an additional argument in favor of cholecystectomy.

White Bile in Common Duct.—Cases in which there is white or colorless fluid in the common duct, Judd and Lyons assert, represent a very serious surgical type. They are not, however, necessarily fatal as the finding of this fluid in the duct does not mean that the liver is interfered with more than in any deeply jaundiced patient. The colorless fluid, or so-called white bile, is a product of the glands of the duct wall. It is secreted under sufficient pressure to continue to form, regardless of the secretion of bile from the liver, and it collects in the ducts only when the activities of the gallbladder are destroyed. Nineteen cases are reported.

Surgical Treatment of Chronic Ulcerative Colitis.—When chronic ulcerative colitis resists medical treatment or becomes severe, Stone asserts that operative intervention is indicated, and ileostomy and separate appendicostomy for colon irrigations, with exclusion of the colon from function, offers best results.

Sarcoma or Embryoma of Kidney in Infants.—The case reported by Robins is of interest because the specimen is a very typical example of this type of tumor and because the patient is still alive and in robust health two years after the operation. He is now 3 years old.

Spontaneous Hematoma in Sarcoma of Kidney.—Boland's patient, a female, aged 51, was seized with a sudden violent pain in the left loin, accompanied by extreme weakness, faintness and nausea. Within two hours she was in a state of collapse, with a very weak pulse, a distended abdomen, and an easily discernible mass in the left loin, the size of one's head and extended toward the pelvis. It was tender, hard and immovable. Gentle inflation of the descending colon with air showed that the mass was retroperitoneal. No roentgen-ray equipment was available, and the weakness of the patient and difficulty of moving her seemed to contraindicate the use of the cystoscope. An exploratory operation was performed. The mass proved to be the kidney, its lower pole enveloped by an hematoma 22 cm. in diameter, apparently held within the perirenal fat. A new growth, 7 cm. in diameter, probably malignant, occupied the lower third of the organ. A nephrectomy was done. Examination of the excised organ showed that it had "blown out" at its lower pole through the new growth, producing hemorrhage and the enormous hematoma. What excited the rupture at this particular time could not be determined. The pathologic diagnosis was spindle cell sarcoma. Boland failed to find a similar case on record.

Typhoidal Osteomyelitis.—Winslow calls attention to osteomyelitis as a relic of typhoid fever; tabulates the cases in which *B. typhosus* has been found and records two additional cases.

Rupture of Long Head of Biceps Flexor Cubiti Muscle.—A new diagnostic test is described by Ludington. The patient

is directed to rest his folded hands, palms down, on the top of his head and allow the interlocked fingers to support the weight of the arms. In this position there is maximum relaxation of the long head of the biceps. The examiner then places two fingers on the tendon of the long head of the biceps in each arm, and directs the patient to contract and relax his biceps muscles simultaneously. The contraction of the long head tendon on the sound side is plainly felt while it is absent on the affected side if the tendon is ruptured.

Archives of Dermatology and Syphilology, Chicago

7: 429-572 (April) 1923

- *Study of Erosive and Gangrenous Balanitis. Special Reference to Role of Fusiform Bacilli and Spirochetes. J. Brams and I. Pilot, Chicago.—p. 429.
- Herpes Zoster Generalisatus. Report of Case. Review of Literature. M. B. Parounagian and H. Goodman, New York.—p. 439.
- Lichen Nitidus. Report of Two Cases. W. B. Trimble and E. R. Maloney, New York.—p. 452.
- Acute Papular and Desquamative Exanthem in an Orang-Utan. H. Fox and F. D. Weidman, Philadelphia.—p. 462.
- *Syphilitic Macular Atrophy. V. Pardo-Castello, Havana, Cuha.—p. 465.
- Epithelioma of Auricle. D. W. Montgomery and G. D. Culver, San Francisco.—p. 472.
- Nevus Pilaris with Hyperplasia of Nonstriated Muscle. J. H. Stokes, Rochester, Minn.—p. 479.
- *Inability of Serum with High Cholesterol Content to Increase Strength of Wassermann Reaction. W. Thalheimer and B. Hogan, Milwaukee.—p. 482.
- Jaundice in Syphilitic Persons Receiving Arsenical Medication. Its Early Detection and Possible Prevention. L. Chargin and S. Z. Orgel, New York.—p. 495.
- Common Errors in Dermatologic Terminology. II. Fox, New York.—p. 499.
- *Treatment of Pruritus Ani with Bacterial Injections. F. C. Knowles and E. F. Corson, Philadelphia.—p. 505.
- *Geranium Dermatitis. Report of Case. J. W. Anderson, Norfolk, Va.—p. 510.

Erosive and Gangrenous Balanitis.—Four cases of gangrenous and erosive balanitis are reported by Brams and Pilot because the comparative bacteriologic study of the secretions in these diseases and the normal preputial secretion suggested the etiology of the infection. The cases did not present a history of any unnatural sexual acts or saliva contact of any kind. Bacteriologic study showed that normal preputial secretions often harbor fusiform bacilli, spirochetes and pyogens. Under suitable conditions, often associated with diminished lowered general resistance, balanitis may result from the organisms normally present as saprophytes. To prevent balanitis, proper hygiene of the sac should be carried out, particularly in patients with a long foreskin. Early recognition and proper treatment of the disease is imperative, as the process spreads with great rapidity.

Syphilitic Macular Atrophy.—A case of cutaneous macular atrophy of syphilitic origin in a colored man, 29 years of age, is reported by Castello. No other signs of syphilis could be found. The Wassermann reaction was strongly positive. Pathologically, there was degeneration and atrophy of the elastic tissue, hyperplasia of the connective tissue, arteritis, moderate perivascular infiltration and atrophy of the epidermis. This case resembles closely the condition described by Schweninger and Buzzi under the name of multiple benign tumor-like new growths. The condition first reported by these authors seems to be a form of macular atrophy of the skin due to different etiologic causes, one of which might be syphilis. The diagnosis of syphilis in this case is based on the history of the patient, the pathologic findings, the strongly positive Wassermann test, and on the fact that after four months of intensive specific treatment no new lesions have appeared.

Inability of High Cholesterol Serum to Increase Strength of Wassermann Reaction.—The investigation made by Thalheimer and Hogan is said to have demonstrated that when relatively large amounts of a high cholesterol serum are added to the Kolmer quantitative test, no increase in the strength of the reaction occurs. The authors believe that this indicates that hypercholesterolemia does not increase the strength of the Wassermann reaction whether plain or cholesterolized antigens are used. The experiments also demonstrate that hypercholesterolemia does not cause a falsely positive (nonspecific) Wassermann reaction.

Bacterial Injections in Treatment of Pruritus Ani.—Knowles and Corson report having obtained good results in cases of pruritus ani from the injection of killed *Streptococcus fecalis*. The doses used were large, running from 175,000,000 to 1,000,000,000 killed organisms. Adherence to small doses (less than 100,000,000) seemed to produce little effect. Those benefited only improved when the number of bacteria was increased to several hundred millions. Injections were given at weekly intervals. The length of time the condition had existed varied from four months to ten years.

Vesicular Geranium Dermatitis.—A case of vesicular dermatitis cause by contact with the leaves of a geranium is reported by Anderson. It is said to be the first case of the kind on record. This condition was proved by a cutaneous test, arsenic and other parasitocides having been eliminated.

Boston Medical and Surgical Journal

188: 523-566 (April 12) 1923

- Smallpox and Vaccination. B. White, Boston.—p. 523.
- Granuloma Inguinale in Boston. G. C. Shattuck, Boston.—p. 530.
- Fish-Egg Mucocoele of Appendix; Cystic Type of Chronic Catarrhal Appendicitis. Report of Case. W. R. Morrison, Boston.—p. 532.
- Excising the Appendix Vermiformis. W. Van Hook, Chicago.—p. 537.
- Full-Time School Physician. H. G. Rowell, New Bedford, Mass.—p. 540.
- Are Amputation Stumps Receiving Adequate After-Care? C. Barse, Boston.—p. 542.
- High and Low Enemata. A Mistaken Conception. S. W. Ellsworth and F. E. Wheatley, Boston.—p. 545.

Canadian Medical Association Journal, Montreal

13: 152-189 (March) 1923

- Recent Cancer Therapy. F. C. Wood, New York.—p. 152.
- Control of Cancer. A. Primrose, Toronto.—p. 160.
- Clinical Diagnosis of Smallpox and Chickenpox. H. W. Hill, Ontario.—p. 162.
- Scoliosis or Lateral Curvature of Spine. A. M. Forbes, Montreal.—p. 168.
- *Congenital Syphilis. E. A. Morgan, Toronto.—p. 171.
- Management of Discharging Ears in Children. E. Boyd, Toronto.—p. 175.
- Phosphate Content of Serum of Cases of Bone Tuberculosis Treated by Heliotherapy. F. T. Tisdall and R. I. Harris, Toronto.—p. 177.
- Supplemental Feeding in Gastro-Intestinal Disturbances of Breast Fed Infant. R. R. MacGregor, Kingston.—p. 179.
- Testing of Clinical Thermometers. W. C. Way, Ottawa.—p. 180.
- Limp of Childhood. J. A. Nutter, Montreal.—p. 182.
- Four Cases of Bronchoscopy (Including Two of Lung Abscess). R. H. Craig, Montreal.—p. 185.
- Hypertonic Solutions. W. Bourne, Montreal.—p. 188.
- Epilepsy. A. G. Morphy, Montreal.—p. 189.

Treatment of Congenital Syphilis.—The routine treatment adopted by Morgan in 186 cases was as follows: One of the arsenical compounds is injected intravenously once a week for six weeks, followed by a course of mercury for six weeks. Blood for a Wassermann test is then taken and if still positive the courses are again repeated. This routine is continued until a negative test is obtained or the hope of securing a negative test is regarded as small. The veins used for injection are those of the scalp, of the antecubital space, or the external jugular. The longitudinal sinus is never used since it is believed that such a procedure is not unattended with danger. Mercury is given by inunction to the infants, and by inunction and by mouth to the older children. Intramuscular injections are employed in those cases in which there is a well founded suspicion that the home treatment by inunction is being neglected by the parents. In a few instances arsenic and mercury have been administered at the same time. Cases of neurosyphilis were treated in the manner suggested by Swift and Ellis. Of 100 patients, three died, and only 21 per cent. failed to improve.

Colorado Medicine, Denver

20: 61-86 (March) 1923

- Hypertrophic Stenosis of Pylorus. Report of Twenty-Four Cases. J. W. Ames, Denver.—p. 68.
- Surgical Treatment of Congenital Hypertrophic Pyloric Stenosis. G. B. Packard, Jr., Denver.—p. 73.

Georgia Medical Association Journal, Atlanta

12: 89-132 (March) 1923

- Percussion of Healthy Chest. B. C. Teasley, Hartwell, Ga.—p. 89.
- Treatment of Ruptured Appendix. E. H. Greene, Atlanta.—p. 92.
- Pemphigus Conjunctivae; Report of Case. C. Stockard, Atlanta.—p. 95.

- Interesting Experiences in Cataract Extraction Among Confederate Veterans. M. Eguen, Atlanta.—p. 97.
 Vernal Conjunctivitis. (Spring Catarrh. Conjunctivitis Aestivalis). New Observations on Treatment. A. G. Fort, Atlanta.—p. 101.
 Syphilis Among Insane. G. L. Echols, Milledgeville, Ga.—p. 103.
 Accidental Hemorrhage. Report of Five Cases. A. C. Wade, Augusta, Ga.—p. 105.
 Case of Sudden Death in Labor Due to Intracranial Hemorrhage. R. A. Bartholomew, Atlanta.—p. 109.
 Rational Surgery in Gallbladder Disease. L. W. Grove, Atlanta.—p. 111.

Journal of Immunology, Baltimore

8: 75-151 (March) 1923

- *Physiologic Adaptations of Fixed Tissues in Anaphylaxis and Immunity. I. Reactions of Isolated Rabbit Heart to Cobra Venom. W. H. Manwaring and T. B. Williams, San Francisco.—p. 75.
 Study of Microbic Tissue Affinity by Perfusion Methods. W. H. Manwaring and W. Fritschen, San Francisco.—p. 83.
 Prophylactic Action of Atropin Sulphate on Anaphylactic and Allergic Reactions of Excised Uterus of Virgin Guinea-Pigs. O. O. Stoland and N. P. Sherwood, Rosedale, Kan.—p. 91.
 *Complement Fixation Test in Chronic Gonorrhea in Women. M. A. Wilson, M. V. Forbes and F. Schwartz, New York.—p. 105.
 Hepatic Reactions in Anaphylaxis. II. Hepatic Mechanical Factor in Peptone Shock. W. H. Manwaring, S. Brill and W. H. Boyd, San Francisco.—p. 121.
 Hepatic Reactions in Anaphylaxis. III. Extrahepatic Mechanical Reactions in Peptone Shock. W. H. Manwaring and W. H. Boyd, San Francisco.—p. 131.
 Bacterial Anaphylaxis. N. P. Sherwood and O. O. Stoland, Lawrence, Kan.—p. 141.
 Substance in Immune Horse Serum Which Interferes with Alexin Fixation. H. Zinsser and J. T. Parker, New York.—p. 151.

Physiologic Adaptations of Fixed Tissues in Anaphylaxis.—The observations made by Manwaring and Williams are to the effect that the cardiac tissues apparently play a purely passive rôle in immunologic adaptation to cobra venom.

Complement Fixation Test in Chronic Gonorrhea in Women.—Investigation made by Wilson, Forbes and Schwartz of various culture mediums for the preparation of gonococcus antigen showed that any of the starch-free and hemoglobin-free mediums that would give a profuse growth of the gonococcus within forty-eight hours at 37 C., would give antigens of equal value. Recently isolated gonococci were of lower antigenicity than the Torrey strains isolated many years ago.

Journal of Nervous and Mental Diseases, New York

57: 329-364 (April) 1923

- The Mneme, the Engram and the Unconscious. Richard Semon. His Life and Work. S. E. Jelliffe, New York.—p. 329.
 Tumors of the Upper Cervical Cord. Report of Cases. I. Abrahamson and M. Grossman, New York.—p. 342.
 *Lumbosacral Pain and Sacralization of the Fifth Lumbar Vertebra, Complicated by Involvement of the Spinal Cord. A. Gordon, Philadelphia.—p. 364.

Lumbosacral Pain and Sacralization.—Gordon reports a case in which the symptoms pointed to a compression of the roots and nerves passing through the intervertebral foramina, which by reason of the excessive enlargement of the transverse process of the fifth lumbar vertebra became narrowed. There was also the involvement of certain tracts within the spinal cord evidently secondary in its development. The case is an example of sacralization of the transverse process of the vertebra and more on one side than on the other. The pain appeared when the patient was 26, demonstrating a late ossification of complementary points in the transverse process of the vertebrae.

Journal of Radiology, Omaha

4: 75-104 (March) 1923

- Progression of Chest and Determination of Normal. W. W. Wasson, Denver.—p. 75.
 Surgical Diathermy in Relation to Radiotherapy. G. Kolischer and H. Katz, Chicago.—p. 76.
 Physical Principles of Alpha Ray Therapy. V. F. Hess, New York.—p. 78.
 Ultraviolet Radiation. A. J. Pacini, Chicago.—p. 80.
 Roentgenologic Aspects of Visceral Crises. A. W. Crane, Kalamazoo, Mich.—p. 85.

Journal of Urology, Baltimore

March, 1923, 9, No. 3

- *Diathermy in Treatment of Tumors of Lower Urinary Tract. C. Corbus, Chicago.—p. 203.
 *Treatment of Cancer of Bladder by Radium Implantation. G. G. Smith, Boston.—p. 217.

- *New Method of Applying Radium Through the Cystoscope. L. Buerger, New York.—p. 227.
 Electrotherapeutics in Prostatic Conditions. V. C. Pedersen, New York.—p. 249.
 Case of Stone in Bladder Which Formed Around Suture of Pagenstecher Linen. H. L. Kretschmer, Chicago.—p. 281.
 Partial Spontaneous Inversion of Diverticulum of Bladder with Dumb-Bell Stone. C. R. B. Crompton, Rochester, Minn.—p. 283.

Diathermy in Treatment of Tumors of Lower Urinary Tract.—Corbus asserts that diathermy can be used to destroy cancer in areas that are totally inaccessible by any other procedure. In order to accomplish successfully the destruction of malignant tumors with thermic electrocoagulation, however, a current must be used that is low in voltage and high in amperes, only enough voltage being used to drive the current through the tissues. This, of course, varies in different parts of the body. In coagulating tumors of the bladder by the low infusion of heat 1,500 milliamperes are, as a rule, sufficient.

Radium Therapy for Cancer of Bladder.—Smith's experience has been that the implantation in bladder cancer of bare tubes of radium emanation of low potency, or of radium bearing needles of 5 mg. each, will cause complete necrosis of the tumor, provided the radium carriers are inserted 1 cm. apart and are so placed that the entire periphery of the growth is brought within reach of rays of lethal power. Two classes of cases are said to be suitable for this treatment: (1) small, single papillary carcinomata, into the base of which bare emanation tubes may be deposited by intravesical methods; (2) sessile carcinomata, or the bases of large fungating growths after destruction of the tumor by cautery, into which radium may be implanted through a suprapubic cystotomy. It is inadvisable to bring about the necrosis of a tumor more than 3 or 4 cm. in diameter, as the absorption of toxins from the infected slough is likely to prove fatal. The problem in treating cancer of the bladder by this method is to use enough radium to destroy the cancer, but not enough to destroy the patient. In a number of cases of cancer of the bladder in which the growth could not have been excised successfully, there has been complete disappearance of the growth, clinically, following the implantation of radium.

New Method of Applying Radium in Bladder Cancer.—Buerger has perfected a method of applying radium in bladder cancer that will eliminate the necessity of leaving the cystoscope in the bladder, and thus permit the prolongation of radium contact over a period of many hours without excessive discomfort to the patient. The armamentarium which has been successfully employed includes: special radium needles; special applicators for the insertion of the needles into the growth and either the author's operating cystoscope, a direct or oblique vision cystoscope, or the author's oblique vision radium cystoscope.

Kentucky Medical Journal, Bowling Green

21: 113-170 (March) 1923

- Preventive Medicine and General Practitioner. J. M. Dodson, Chicago.—p. 115.
 Abscess of Lung Occurring After Tonsillectomy. J. R. Peabody, Louisville.—p. 121.
 Hill Billy Abdominal Surgery. J. G. Carpenter, Stanford.—p. 128.
 Pyonephrosis with Multiple Calculi in Child of Twelve Years. G. P. Grigsby, Louisville.—p. 139.
 Therapeutic Problems of Acute Middle Ear Infection. M. F. McCarthy, Cincinnati.—p. 140.
 Cooperative Full Time County Health Department. P. W. Covington, Louisville.—p. 144.
 Infection and Inflammation of Investing Tissues of Teeth and Their Relation to Maxillary Sinus. G. B. Brown, Lexington.—p. 149.
 What the Family Physician Should Know About Syphilis. C. J. Broeman, Cincinnati.—p. 152.
 Summer Diarrhea. J. W. Bruce, Louisville.—p. 158.
 Brain Tumor. Case Report. L. W. Frank, Louisville.—p. 160.

New Orleans Medical and Surgical Journal

75: 483-531 (March) 1923

- Sketch of Life of Pasteur. O. L. Pothier, New Orleans.—p. 483.
 Influence of Pasteur on Surgery. H. B. Gessner, New Orleans.—p. 494.
 Influence of Pasteur on Bacteriology and Pathology. J. A. Lanford, New Orleans.—p. 499.
 Pasteur—His Work and What It Has Done for Medicine. J. D. Weis, New Orleans.—p. 505.
 Pasteur's Influence on Hygiene. W. H. Seeman, New Orleans.—p. 515.
 Pasteur's Contributions to Chemistry. H. W. Mosely, New Orleans.—p. 519.

- Influence of Pasteur on Obstetrics and Gynecology. E. L. King, New Orleans.—p. 527.
Safe and Practical Method of Administering Scopolamin-Morphin Anesthesia in Obstetrics. B. Van Hoosen, Chicago.—p. 531.

75: 585-694 (April) 1923

- Nervous System in Syphilis. C. Pierson, Alexandria, La., and E. M. Levy, Jackson, La.—p. 585.
*Diarrhea and Disturbances of Digestive Functions. D. N. Silverman, New Orleans.—p. 592.
*Lethargic Encephalitis (Epidemic). Report of Four Cases with Residual Symptoms. W. S. Kerlin, Shreveport, La.—p. 600.
*Correlation of Blood, Spinal Fluid and Clinical Findings in Unselected Cases Presenting Probable Syphilitic Condition. F. M. Johns, New Orleans.—p. 606.
Treatment of Tetanus by Serum. D. W. Kelly, Winnfield, La.—p. 615.
Blood Pressure. H. G. Richie, New Orleans.—p. 618.
Treatment of Typhoid Fever. G. S. Bel, New Orleans.—p. 629.
The Unusual Child. W. J. Otis, New Orleans.—p. 641.
Leukocytic Count and Its Relationship to Various Diseases. W. H. Harris, New Orleans.—p. 649.
Puzzling Case of Fever (Yellow Fever?). A. E. Fossier, New Orleans.—p. 658.

Diarrhea and Disturbances of Digestive Functions.—Silverman relates a case of chronic diarrhea following a cholecystectomy in which microscopic studies of the duodenal contents showed thousands of vegetative *Giardia* present. The administration of five doses of silver arsphenamin intraduodenally, aggregating a dosage of 7 dg. in four weeks, caused the disappearance of the *Giardia* in both the duodenal contents and stools. But, the diarrhea persisted. The giving of pancreatin resulted in two stools daily and the disappearance of undigested food from the feces.

Residual Symptoms in Lethargic Encephalitis.—Four cases of lethargic encephalitis are reported by Kerlin which presented late manifestations and recrudescence of symptoms. In one case the patient complained of inability to control her movements, restlessness and jerking of hands. Another suffered from constant yawning and drowsiness; a third exhibited nervousness and a tremor involving principally the muscles of the right leg. The fourth patient also complained of nervousness as well as weakness of the back muscles.

Correlation of Blood Spinal Fluid and Clinical Findings in Syphilis.—Of 100 cases analyzed by Johns in which syphilis was possibly present, forty-two were diagnosed as such. In 85 per cent. of the positive diagnoses, confirmatory laboratory findings were present in the blood or spinal fluid. In forty cases there was clinical evidence of organic central nervous system involvement, with thirty-nine showing clinical evidence of meningeal involvement and thirty-four of these gave evidence of organic degenerative changes in the spinal fluid. All of the cases in this limited series that presented either an increased globulin content, + colloidal gold reaction or increased cell count presented some degree of symptoms referable to a meningeal involvement. Two cases of tertiary syphilis with no evidence of central nervous involvement gave neither increase in the globulins and cells nor reaction with colloidal gold.

New York Medical Journal and Medical Record

March 21, 1923, 117, No. 6

- Vitamin C as Vegetable and Animal Tyrosin and Tyrosinase, Jointly the Homologues of Epinephrin Tests and Food Values. C. E. de M. Sajous, Philadelphia.—p. 325.
Diagnostic Criterion and Serum Therapy in Lethargic Encephalitis. M. Neustaedter, New York.—p. 333.
Educational Methods of Various Schools of Medicine and Treatment of Disease. J. M. Anders, Philadelphia.—p. 335.
*Medical School Curriculum Leading to Rational Therapy Recommended by American Therapeutic Society. O. T. Osborne, New Haven, Conn.—p. 340.
Social Service Ward for Women and Children. Solution of Family Problems of Venereal Disease. V. C. Pedersen, New York.—p. 345.
Synergistic Analgesia in Rectal Operations. J. F. Saphir, New York.—p. 351.
Advances in Roentgen-Ray Therapy with Special Reference to High Voltage Homogeneous Rays. W. H. Dieffenbach, New York.—p. 354.
*Case of Cyst of Epiglottis Presenting Some Unusual Features. H. M. Taylor, Jacksonville, Fla.—p. 357.
Clinical Manifestations of Anaphylactic Reaction. J. F. Anderson, New Brunswick, N. J.—p. 358.
Dawn of Surgery: Its Armamentarium. J. Wright, Pleasantville, N. Y.—p. 361.
Health Conditions in New York City Prisons. J. A. Hamilton, Albany, N. Y.—p. 364.

Medical School Curriculum Recommended by American Therapeutic Society.—The plan outlined by Osborne is as

follows: Biochemistry and physiology should be taught principally in the first year, but the chemistry of the tissues and secretions, and nutritional and metabolic processes should be presented repeatedly to the medical student throughout his course in pharmacology and therapeutics, so that he will constantly bear in mind the functions and the chemical reactions of the diseased parts he is called on to treat. Pharmacology should be taught principally in the second year by assigned lessons in a textbook and by personal participation, under supervision of the instructor, in the demonstration of the action of therapeutically useful drugs. The close relationship between physiology and pharmacology should constantly be impressed on the student. Didactic instruction should be given and, when possible, quizzes based on textbook lessons should be held on all useful drugs the action of which cannot be demonstrated pharmacologically, such as quinin, mercury, iodids, iron, and others. Also, such instruction should be given concerning the value of drugs used externally, as antiseptics, germicides, and those used as stimulants or sedatives to the skin and mucous membranes. The principles of therapeutics should be taught in the first half of the third year, and must be preceded by the study of the pathology of disease, as unless the physiology and pathology of a part, or a diseased condition, are understood, a rational application of therapeutic measures cannot be made. Applied therapeutics should be preceded by instruction in physical diagnosis, clinical laboratory instruction, and didactic and textbook instruction of internal medicine. Clinical instruction in therapy, that is, applied therapeutics, should be begun at the bedside, in the latter half of the third year and should continue throughout the fourth year. Didactic instruction in applied therapeutics should, during the third year, supplement the bedside instruction. The part that foods play in diseases of metabolism and the proper diet for each individual patient should be presented to the student so that he will recognize the importance of dietotherapy. Preferably hospital therapeutic instruction should precede dispensary therapeutic instruction, as more scientific diagnoses can be made and the results of treatment can be watched in the former cases. Throughout the whole course of the student's hospital and dispensary clinical instruction, the effect, success or failure of any drug or physical treatment given should be brought emphatically to his attention.

Cyst of Epiglottis Presenting Unusual Features.—In Taylor's case, the forty-third on record, a cystadenoma of the epiglottis was removed. There followed an entropion of the epiglottis which gave rise to the same symptoms as did the tumor. Seven weeks after the removal of the cyst, during which time the patient was having nocturnal attacks of choking, that portion of the epiglottis showing a definite entropion was removed by the use of the alligator punch forceps. The result was relief from all distressing symptoms.

Northwest Medicine, Seattle

22: 77-114 (March) 1923

- Treatment of Carcinoma of Uterus. Special Reference to Surgery, Roentgen Rays and Radium. H. Schmitz, Chicago.—p. 77.
Deep Roentgen Ray Therapy. C. B. Ward, Spokane, Wash.—p. 81.
High Voltage Roentgen Ray Therapy in Treatment of Carcinoma of Breast. J. Aspray, Spokane, Wash.—p. 85.
Method of Intensive, Systematic and Prolonged Treatment of Syphilis and Importance of Its Application in Primary and Early Secondary Stages. H. M. Greene, Portland, Ore.—p. 87.
Pulmonary Sequelae of Oral and Nasal Operations. C. C. Browning, Los Angeles.—p. 92.
Pyelitis. Some Clinical Relationships. E. W. Janes, Tacoma, Wash.—p. 96.
Eugenics and Heredity. J. W. Snoke, Tacoma, Wash.—p. 100.

Oklahoma State Medical Association Journal, Muskogee

16: 53-84 (March) 1923

- Cholecystitis. O. W. Rice, Alderson, Okla.—p. 53.
Pernicious Anemia. H. T. Ballantine, Muskogee.—p. 57.
Treatment of Eye Injuries. Use of Conjunctival Flap in Perforations. O. I. Green, Bartlesville, Okla.—p. 61.
Congenital Anophthalmos. Report of Case. U. C. Boon, Chickasha.—p. 63.
Urethritis. J. H. Hays, Enid, Okla.—p. 64.

Southwestern Medicine, Phoenix, Ariz.

V: 65-89 (March) 1923

- Diagnosis and Treatment (Heliotherapy) of Intestinal Tuberculosis. R. O. Brown, Santa Fe, N. M.—p. 65.
 Hysterectomy for Pernicious Vomiting in Pregnancy with Fibroid. J. R. Gilbert, Alamogordo, N. M.—p. 71.
 Intensive Treatment of Early Syphilis. W. G. Schultz, Tucson, Ariz.—p. 73.
 Over Three Years' Surgical Work at Clifton (Arizona) Hospital without Surgical Mortality. T. B. Smith, Morenci, Ariz.—p. 77.
 Cerebrospinal Fluid. C. Jay, Morenci, Ariz.—p. 81.
 Appendicitis. H. A. Phillips, Fort Bliss, Tex.—p. 86.
 Disorders of Locomotion and Their Significance. C. L. Lowman, Los Angeles, Calif.—p. 89.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

7: 161-204 (April) 1923

- So-Called Glass Workers' Cataract Occurring in Other Occupations. Report of Two Cases. A. W. Sichel.—p. 161.
 Macular Perception in Advanced Cataract. G. Young.—p. 167.
 Monocular Optic Neuritis. L. Buchanan.—p. 170.
 Siderosis. J. L. Gibson.—p. 174.
 Ophthalmomyiasis. A. Ticho.—p. 177.

British Medical Journal, London

1: 579-616 (April 7) 1923

- *Congenital Hypertrophy of Pylorus. G. F. Still.—p. 579.
 *Ten Cases of Ovariectomy in Women Over 70 Years of Age. H. R. Spencer.—p. 582.
 Man's Posture: Its Evolution and Disorders. A. Keith.—p. 587.
 *Nature of Sugar in Blood. J. A. Hewitt.—p. 590.
 *Septicemic Infection Following Operations for Appendicitis. A Prophylactic Serum. H. H. Brown.—p. 591.

Congenital Hypertrophy of Pylorus.—Of 225 cases observed by Still, 156 children recovered and 69 died. So far from operation being essential in all cases, Still says, there are some cases in which without special treatment of any kind, beyond painstaking and efficient regulation of the feeding, generally in the direction of reducing the food to small quantities at short intervals, the tumor and peristalsis have gradually disappeared, and after many weeks or months of hovering on the verge of collapse the infant has completely recovered. Among the 156 recoveries, six infants were treated this way, and one infant, after lavage had been perseveringly tried without success, eventually recovered with prolonged care in feeding. Of seventy-eight babies treated only by lavage, forty-three recovered and thirty-five died. With all its drawbacks, however, lavage has had sufficient successes, in Still's experience, to justify its retention as a method of treatment which may be the best one to adopt in particular cases. When the mother is breast-feeding her infant, Still believes it is usually the wisest course to proceed at once to operation, so that only with an interruption of forty-eight hours, to allow for recovery from the immediate disturbance of operation, the infant may continue the breastmilk. Forcible dilation was done in 108 cases, with good results in eighty-six. Death occurred in twenty-two cases. The Rammstedt operation was successful in eighteen out of twenty-nine cases. Still favors dilation.

Ovariectomy in Women Over Seventy.—The ten cases reported on by Spencer occurred among 625 cases of ovarian tumor, the frequency being 1.6 per cent. Operation was done in each case, and all of the patients recovered.

Nature of Sugar in Blood.—Until evidence is brought that gamma glucose does exist as the sugar of blood and does not exist in diabetic blood, Hewitt says, no theory of diabetes can be formulated as to the relation of these sugars to this pathologic condition. Formation of gamma glucose in carbohydrate metabolism may take place as and when required, and the active modification may possibly have no more than a transitory existence.

Prophylactic Serum in Certain Cases of Appendicitis.—It occurred to Brown that it might be possible, by injecting a prophylactic serum before and at the time of operation and shortly afterward, to produce an immunity for the time which would prevent or largely minimize the danger of blood infection at the operation, if performed during the dangerous period of an abscessed appendix. It was decided to prepare

such a serum by immunizing horses with cultures of *Streptococcus faecalis* and *Bacillus coli* provided from cases. Brown has not had an opportunity to test the value of this serum. He asks others to help him.

Indian Medical Gazette, Calcutta

58: 97-144 (March) 1923

- Bacteriologic Notes on Epidemic of Seven-Day Fever. C. J. Stocker.—p. 97.
 Field for Research in Indian Indigenous Drugs. R. N. Chopra and B. N. Ghosh.—p. 99.
 Further Practical Experience with Aldehyde Test. L. E. Napier.—p. 104.
 Berger's Stereoscopic Lenses for Ophthalmic Practice. E. A. R. Newman.—p. 108.
 Surgical Treatment of Chronic Dyspepsia. E. W. C. Bradfield.—p. 109.
 New Method of Treatment for Inoperable Cancer (Auto-Inoculation). S. Mallannah.—p. 113.
 Case of Quintuplets. R. E. Vecrana.—p. 115.
 Case of Lethargic Encephalitis with Parkinsonian Syndrome. J. C. De.—p. 117.
 Edema of Leg Following Plague. G. S. Chawla.—p. 120.
 Aseptic Thermometer Case. Lachmandas.—p. 120.

Lancet, London

1: 681-730 (April 7) 1923

- *Diagnosis of Ulcers of Stomach and Duodenum. Value of Gastro-jejunoscopy in Their Treatment. A. Young.—p. 681.
 After Effects of War Nephritis.—G. L. Thornton.—p. 690.
 *Reflex Dulness in Old Chest Wounds. A. Neville.—p. 693.
 *Intravenous Injection of Serum. P. Iversen.—p. 694.
 Toxemic Aspect of Ocular Disease. P. Dunn.—p. 696.
 *Treatment of Gluteal Aneurysm. A. W. Adams.—p. 697.
 Research in Calcutta School of Tropical Medicine. R. Knowles.—p. 728.

Diagnosis of Ulcers of Stomach and Duodenum.—Of the 110 cases analyzed by Young, only sixteen were not diagnosed correctly and the error was not uniformly serious or material. Of nine cases diagnosed as simple gastric ulcer, only one case was wrongly diagnosed, and even that one was recognized as duodenal (after perforation), prior to operation. Of thirty-eight cases diagnosed as pyloroduodenal ulceration, only two were proved erroneously diagnosed, one being a case of general visceroptosis, including gastropoptosis, the other being a case of cholecystitis and chronic appendicitis. Of twenty-one cases diagnosed as duodenal ulcer, four proved to be of another nature, but the error here could not be said to be of a serious order, the condition in all four cases being merely more extensive in location, and involving the pyloric region as well as the beginning of the duodenum, i. e., a case of pyloroduodenal ulceration, instead of purely duodenal. Of twenty-six cases diagnosed as certainly or probably cancer of the stomach, in only five did the diagnosis prove to be unjustified. In four of these five cases operation disclosed pyloroduodenal ulceration (in one case complicated by other lesions); in the remaining case (no operation performed), the aftercourse suggested that it was of the same order as the others. One case of supposed congenital stenosis of the pylorus was found to be of a simple spasmodic nature. In one case of cholecystitis, with gallstones, in which duodenal ulceration was also suspected, there was no direct evidence of the latter at operation, though some adhesions were found between duodenum and gallbladder; while in another case of the same nature pyloroduodenal ulceration was found where it had not been previously expected.

Significance of Band Dulness in Chest Wounds.—In non-tuberculous cases, Cox says, the presence or absence of the band dulness sign is closely related to the presence or absence of a retained foreign body in the chest. In wound cases, therefore, this sign cannot be taken as being diagnostic of active tubercle. Accepting Riviere's view that the sign indicates an irritation or inflammation of the lung parenchyma, it appears that a bullet or shell fragment is not always retained by the lung with such complete indifference as has been thought. It appears also, since band dulness was found in some instances so long as seven years after the wound was sustained, that the symptoms due to a retained foreign body may last a long time, and are by no means entirely subjective. In two cases there was clear evidence that the foreign body was changing its position in the lung. One of these patients had severe hemoptyses about the times of shift in position. Apparently, wounds of the lung are only rarely followed by tuberculosis; two instances out of sixty-

five cases were found in this series. The physical sign of "reflex hand dullness" is frequently found in old lung wound cases, when there is a retained foreign body. Both this sign and the symptoms experienced by these patients suggest that a piece of metal retained in the lung keeps up a certain amount of chronic irritation.

Intravenous Injection of Diphtheria Antitoxin.—Iversen asserts that the intravenous injection of diphtheria antitoxin is not a dangerous method. It should be the method of choice, even in patients who have previously received serum. It is only necessary to give the injection slowly, and temporarily or definitely discontinue it on the appearance of any reaction by the patient. The most unfavorable attacks after reinjection occur at the time when the serum rash appears.

Treatment of Gluteal Aneurysm.—Aneurysm of the gluteal artery, Adam says, should be treated by (1) preliminary ligation of the internal iliac. This is in itself harmless and will control hemorrhage from the sac; (2) the aneurysmal sac is dealt with locally according to the condition found in the buttock: (a) if the wall of the sac is ill defined, as in this case of ruptured aneurysm, intrasaccular ligation is best; (b) if a well formed sac is present, then obliterative endo-aneurysmorrhaphy is the ideal method.

Practitioner, London

February, 1923, **110**, No. 2

- Recent Work on Diseases of Heart. C. W. Chapman.—p. 137.
Essential Enuresis. K. M. Walker.—p. 145.
Sigmoidoscope and Its Uses. L. E. C. Norbury.—p. 156.
Diagnostic Significance of Uterine Hemorrhage. M. Donaldson.—p. 168.
Cancer of Breast: Its Treatment by Roentgen Rays and Electricity. F. Hernaman-Johnson.—p. 177.
Influence of Abdominal and Thoracic Lesions on Respiratory System. D. J. Harries.—p. 188.
Zinc Ions in Psoas Abscess. M. Wardle.—p. 195.
Case of Tetanus. J. O'Neill.—p. 196.

March, 1923, **110**, No. 3

- *Therapeutic Value of Vomiting in Intestinal Obstruction and Acute Appendicitis. C. Symonds.—p. 205.
Dupuytren's Contraction of Palmar Fascia and Some Other Deformities. A. H. Tubby.—p. 214.
*Venous Thrombosis During Attack of Acute Rheumatism in Child. F. J. Poynton.—p. 221.
Surgical Aspect of Gastric Ulcer. W. H. C. Romanis.—p. 224.
Interrelation of Certain General Conditions with Gastro-Intestinal Disorders. T. I. Bennett.—p. 242.
Some Problems of Prostatectomy. C. Morson.—p. 253.
Early Diagnosis and Treatment of Disseminated Sclerosis. E. W. Scripture.—p. 259.
Cerebral Hemorrhage. J. Burgess.—p. 261.
Thickening of Skin, or Cornification, as Signs of Abscess Formation in Palm and Sole. F. D. Bana.—p. 263.

Value of Vomiting in Intestinal Obstruction and Appendicitis.—Cases are reported by Symonds to illustrate the value of vomiting as a life saving symptom in these cases. He insists that the free administration of fluids, principally water, in suspected intestinal obstruction or acute appendicitis is sound practice. After operation vomiting should be encouraged, especially in advanced cases, until the rejected material is free from bile. When hiccup is present and vomiting does not follow the free exhibition of fluids, the stomach should be washed out, in severe cases every four hours, in others, two or three times a day. The injured bowel will maintain obstruction for from two to four days, and during this period the best treatment is to encourage vomiting. To permit the reflexes to come into operation as soon as possible (a) the preoperative dose of morphin should be omitted; (b) the operation should be as brief as possible, and the minimum amount of anesthetic employed, and (c) morphin should be withheld until the rejected material is free from bile. When free vomiting has occurred, the symptoms of toxemia are absent, and, therefore, the prospects of recovery after operation are immensely increased. The cases also show that movement does no harm; in fact, Symonds says it is beneficial, for if vomiting results the danger is removed.

Venous Thrombosis During Attack of Acute Rheumatism in a Child.—Poynton relates the case of a boy, aged 13, who after a chill from swimming, developed articular rheumatism. The arthritis subsided in a week, to be followed by the sudden development of chorea, and later by renewed arthritis, arditis and pleurisy. The type of chorea was essentially

paralytic, with profound mental disturbance and great general weakness. After a few days in the hospital the chorea was found to be increasing in intensity. There were also present complete incontinence and dumbness. Then the right elbow became acutely painful, the temperature never reached the normal line, and the heart beat more rapidly and was more dilated. A small patch of pleurisy was detected over the right lung anteriorly. On the thirteenth day all the superficial abdominal veins below the umbilicus on both sides were distended and formed a tracery over the hypogastrium. The blood flow downward was impeded, and there seemed no escape from the diagnosis of a venous thrombosis at the lower end of the inferior vena cava or the upper end of both common iliac veins. Next, the ankle joints swelled and became very painful; the heart had a cantering rhythm; the circumference at a selected level on the right thigh was 5 inches greater than on the left. The left thigh began to swell, but the right limb was diminishing in size. Improvement was rapid and steady, with the exception of a transient arthritis of the left elbow joint.

Sei-I-Kwai Medical Journal, Tokyo

42: 1-28 (Feb.) 1923

- *Deafness Through Mumps. M. Kurosu.—p. 1.
Urease. T. Yokota.—p. 24.
Comparative Study of Power of Intestinal Antiseptics Observed from Amount of Urine Indican. H. Nagaoka.—p. 26.
Studies of Staircase Phenomenon. Part I. Literal Consideration. S. Uramoto.—p. 28.

Deafness Through Mumps.—Eleven cases of deafness complicating mumps are reported by Kurosu. The principal cause seems to be neuritis, which arises through a toxin produced by the exciting agent of parotitis. The seat of the affection is usually said to be retrolabyrinthine, as the affections of the vestibularis appeared in all these cases except one, in which the blindness developed exceptionally slowly. Meningitis, too, may be the cause of mumps-deafness, but seems to be responsible for it only very rarely. There may, however, be cases, in which it is clinically impossible to decide if meningitis or neuritis is the real cause. The primary seat of the injury to the acoustic nerve has not been determined.

Tubercle, London

February, 1923, **4**, No. 5

- Gas Embolism and Other Accidents of Chest Puncture. C. Lillingston.—p. 193.
Treatment of Pulmonary Hemorrhages by Artificial Pneumothorax. M. J. Fine.—p. 200.
Thermolite Lamp; Results at a Tuberculosis Institute. F. Clifford.—p. 204.

4: 241-268 (March) 1923

- Influence of Industrialism on Age Incidence of Phthisis. E. L. Collis.—p. 241.
Experiences of Refractory Industries (Silicosis) Scheme, 1919. C. L. Sutherland and W. C. Rivers.—p. 255.

Annales de l'Institut Pasteur, Paris

37: 1-106 (Jan.) 1923

- *Neurotropic Ectodermoses. C. Levaditi and S. Nicolau.—p. 1.

Research on Vaccinia: Neurotropic Ectodermoses.—Levaditi and Nicolau have succeeded in cultivating vaccine virus serially in rabbits' brains, like rabies virus. With this neuro-vaccine, as they call it, they have apparently demonstrated that only the tissues derived from the ectoderm are susceptible to infection from the filtrable, invisible viruses. Bacteria, spirilla, fungi and protozoa induce infection only in the tissues derived from the mesoderm. Each of these two groups of infectious agents is thus restricted in its action to one of the embryonal layers. The agents of the mesodermoses induce immunity by means of phagocytosis and a bactericidal and antitoxic action. The agents of the ectodermoses induce immunity by producing a local refractory condition. Probably the two embryonal layers have a different physicochemical composition; very few micro-organisms seem to have an affinity for both. The spirochete of syphilis is one of the few exceptions. The very existence of vertebrates depends on the fact that the pathogenic micro-organisms which swarm on the skin, intestines and nasopharynx are virulent only for the mesoderm and not for the ectoderm. Among the ectodermoses, they call attention to the neurotropic subgroup comprising vaccinia, herpes, encephalitis,

rabies and poliomyelitis. The invisible viruses of this subgroup have many characteristics in common, especially the intense affinity for the central nervous system and a less pronounced affinity for the external segment of the ectoderm, the skin, cornea and nasopharyngeal mucosa. The virus does not attack any cells unless they are of the ectoderm (or endoderm) and in a condition of regenerative proliferation or karyokinetic rejuvenation from some irritation. The research reported sustains the assumption that the virus of vaccinia, herpes and encephalitis spreads rapidly by the blood or peripheral nerves to all the tissues for which it has an affinity. After recovery each receptive tissue is left refractory to further infection of the same kind. General immunity is thus an accumulation of as many partial immunities as there were susceptible tissues to begin with. The refractory state gradually wears off. This occurs the more rapidly, the more rapid the regeneration of the tissue involved. The article is profusely illustrated.

37: 107-227 (Feb.) 1923

*New Principles of Therapeutic Inoculation. Sir Almroth E. Wright, L. Colebrook and J. Storer.—p. 107.

*Plurality of Syphilis Viruses. Fournier and Schwartz.—p. 183.
Anthrax Pustule Necrotic from the Start. Morel.—p. 225.

Test for Power of Immunizing Response to Therapeutic Inoculation: Vaccine Response Test.—One of the new principles involved in therapeutic vaccination, which have been discovered by Wright and his co-workers, is that antibacterial substances come—not from the tissues—but from the leukocytes. The leukocytes spontaneously set free bactericidal and opsonic substances when vaccines in appropriate concentration come into operation on the leukocytes in the blood, both in the living body and in the test tube. "A test tube vaccine response test is thus possible by introducing graduate quanta of vaccine into a series of volumes of the patient's blood and seeing whether there is any improvement in the phagocytic power of the vaccinated bloods or in the opsonic power of the serums. Investigations of the bactericidal power can also be carried out when there is no emergency. We can thus ascertain readily whether a patient is or is not capable of an immunizing response. Where he is competent to make such response, we can further ascertain to what dose of vaccine, intravenously inoculated, he will be able to make the optimum response." In the alternative of his not being able to make immunizing response, we can evoke the immunizing response in the healthy blood of another subject, and inject the latter's blood—an immunotransfusion, as Wright calls it. [Practically this same article appeared in the *Lancet* of Feb. 24, March 3 and 10, 1923, and the general conclusions were summarized in these columns April 28, p. 1273.]

Plurality of Spirochetes of Syphilis.—Fournier and Schwartz relate that syphilitic chancres which developed in rabbits after inoculation with material from different patients showed such differences in character and course that the spirochetes inducing them apparently belonged to different species. They describe experiments which confirm the difference between the dermatropic and the neurotropic strains, and present arguments to show that the latter alone is responsible for general paralysis and tabes.

Bulletin de l'Académie de Médecine, Paris

89: 223-237 (Feb. 13) 1923

*Hygienic Reforms Among Mohammedans in Tunis. Dinguizli.—p. 233.

Hygienic Reforms Among Mohammedans in Tunis.—Dinguizli shows that it would be comparatively easy to introduce hygienic measures among the Mohammedan population, because their ritual contains similar requirements. Two of his quotations from Mohammed are interesting: "The study of the science of the human body shall be given the preference over the study of the religious sciences." . . . "If it were not for that fine dust which we see floating in the sunbeam, and if it were not for the danger from stagnating waters, Adam's son would live ten centuries." The use of alcohol, hashish and opium is widespread among the natives. Being a native himself, Dinguizli asks for prohibition of manufacture and importation, and especially for laws against the sale of all intoxicant drugs to natives.

Bulletins de la Société Médicale des Hôpitaux, Paris

47: 59-100 (Jan. 19) 1923

*Dissociated Icterus. E. Chabrol and H. Bénard.—p. 60.

Purulent Thyroiditis from Paratyphoid Bacilli. Carnot and Blamoutier.—p. 66.

*Neurectomy in Angina Pectoris. Daniélopou and Hristide.—p. 69.

*Deforming Arthritis and Syphilis. Haguénau and Bernard.—p. 73.

*Anaphylactic Enterocolitis and Dyspepsia. Le Noir et al.—p. 77.

*Anaphylactic Chronic Colitis. Richet, Jr., and de Fossey.—p. 81.

*Treatment by Proteins and Specific Serum in Meningococcemia. L. Blum.—p. 83.

Splenomegaly: Type Gaucher. Harvier and Lebée.—p. 87.

Dissociated Icterus.—Chabrol and Bénard prefer stalagmometry to Hay's test with sulphur flowers for determination of bile salts in urine. They emphasize the possibility of error. The bile salts circulate normally from the liver through the bile to the intestines and back to the liver. If this circle is interrupted by occlusion of the choledochus, there is very little excretion of bile salts. Therefore practically every mechanical icterus is a dissociated icterus (main excretion of pigments) and all other conclusions are erroneous.

Resection of Spinal Nerves in Angina Pectoris.—Daniélopou and Hristide anesthetized the second and third left spinal nerves in a case of angina pectoris in which the pains corresponded to the area of these nerves. While otherwise the slightest effort caused attacks, none occurred, in spite of the dyspnea, during the anesthesia. They propose therefore the resection of the roots of the nerves corresponding to the pains in this condition (from the eighth cervical to the fourth dorsal).

Deforming Arthritis and Syphilis.—Haguénau and Bernard find no reasons for assuming a syphilitic etiology in chronic arthritis deformans.

Anaphylactic Enterocolitis and Dyspepsia.—Noir, Richet and Barreau publish a case of diarrhea due to raw meat. The skin reaction to it was negative, but was immediately followed by a drop in the number of white corpuscles. Another case of dyspepsia probably due to green peas could be controlled for some time by peptone.

Anaphylactic Chronic Colitis.—Richet and Fossey report a case of intolerance for meat and fish. Ingestion of 0.5 gm. of peptone one hour before the meal was followed with recovery in a short time.

Treatment by Proteins and Specific Serum in Meningococcemia.—Blum observed a very good effect of protein treatment in one case of meningococcemia, but none in another case. This was probably due to a meningeal localization in the second case, which requires specific treatment.

47: 101-142 (Jan. 26) 1923

Deforming Arthritis. Milian.—p. 102.

Meningococcemia Cyanosis and Purpura. Clerc et al.—p. 102.

*Essential Incontinence of Urine. Delbet and Léri.—p. 105.

Agglutination of Meningococci. Dopter et al.—p. 106.

Ulcerous Pulmonary Tuberculosis in Paratyphoid. Eschbach and Laprade.—p. 112.

*Foreign Body Simulating Chronic Bronchitis. Halphen.—p. 114.

Serotherapy in Gonococcus Arthritis. Merklen and Minvielle.—p. 116.

Idem. Clerc and Perrochaud.—p. 118.

Complications of Gonorrhea. Stérian.—p. 121.

*Menacing Pneumothorax. Emile-Weil and Isch-Wall.—p. 127.

Herpes Zoster and General Vesicular Eruption. Jeanselme and M. Bloch.—p. 131.

Pocket Apparatus for Percussion and Auscultation. Chiray.—p. 134.

*Two Atypical Cases of H. Roger's Disease. Variot and Cailliau.—p. 135.

Surgical Cure of "Essential" Urinary Incontinence Due to Occult Spina Bifida.—Delbet and Léri report that after failure of roentgen treatment they operated, removing a pad of fibrocartilaginous tissue which had been compressing the dura and the cauda equina. The enuresis was cured at once and permanently.

Unsuspected Foreign Body in Bronchus Simulating Chronic Bronchitis.—Halphen extracted a foreign body which had induced localized bronchitis. The cause was not suspected until a roentgenogram was taken. The mucopurulent secretion was a guide in the bronchoscopy, leading to a bronchus of the second degree. Recovery was complete.

Treatment of Suffocating Pneumothorax.—Emile-Weil and Isch-Wall report a case of pneumothorax with increased

pressure. The suffocative attacks ceased after repeated intrapleural injections of medicated olive oil. The oil reached at last the height of the third rib. They intend to perform an artificial pneumothorax later. In the discussion that followed, F. Ramond proposed to use pure olive oil without any addition, since the action seems to be due simply to the viscosity of the oil.

Two Atypical Cases of Roger's Disease.—Variot and Cailiau present the organs of two cases of opening in the interventricular septum. Both patients had a loud and long systolic murmur over the whole pericardiac region, without cyanosis (Roger's disease), yet radiography showed a greater enlargement of the ventricle than one finds usually. The first case had a stenosis of the pulmonary valve while the other was typical. The hypertrophy of the left ventricle in this case may be due to nephritis.

Presse Médicale, Paris

31: 109-120 (Feb. 3) 1923

Treatment of Aneurysms. R. Matas (New Orleans).—p. 109.

*Anaphylactic Conjunctivitis. H. Lagrange.—p. 112.

Infundibulo-Pituitary Syndromes in Epidemic Encephalitis. J. Mouzon.—p. 113.

Anaphylactic Conjunctivitis.—Lagrange reports a case of conjunctivitis in a diabetic, subject to attacks of urticaria. Manipulation of wood was the cause, and an application of oak bark provoked a marked hemoclastic crisis:

31: 193-238 (Feb. 28-March 10) 1923

*Radium Treatment of Cancer of Esophagus. J. Guisez.—p. 193.

*Rupture of Intercostal Artery. J. Henrichsen.—p. 195.

Remarks on Vitiligo. K. Lindberg.—p. 196.

*Hepatitis and Cholecystitis of Intestinal Origin. Brulé and Garban.—p. 205.

*Masked Hypertension in Surgical Cases. Jeanneney and Tauzin.—p. 207.

The Vitamins in Decoctions of Cereals. M. Springer.—p. 208.

Present Status of Research on Pressure in the Capillaries. M. Weiss.—p. 211.

*Pathogenesis of Hemorrhagic Pancreatitis. Brocq and Binet.—p. 219.

*Influenza and Epidemic Encephalitis. Volpino and Racchiusa.—p. 222.

Nutrition in the Obese. M. Labbé.—p. 227.

*Localized Ossifying Myositis. Chaton and Caillods.—p. 228.

*Hepatitis: Chronic Functional Disease of the Liver. R. Glénard.—p. 230.

Present Status of Symptomatic Treatment of Dysmenorrhea. Cheinisse.—p. 232.

Radium Treatment of Cancer of the Esophagus.—Guisez has applied the radium rays in 180 cases of cancer of the esophagus since 1909. During the first few years the benefit was only palliative, but during the last three years a number of apparent cures have been realized, as the technic has improved. In all the cases treated during the last six months not a trace of the cancer can be seen and all difficulty in swallowing has disappeared. The applications ranged from twelve to twenty-four hours, to a total of sixty to seventy hours of exposure. The endoscopic pictures of a number of cases are reproduced.

Rupture of Intercostal Artery.—The hemothorax after fracture of a rib was successfully treated by resection of the rib.

Liver and Gallbladder Disease of Intestinal Origin.—Brulé and Garban examine the urine for urobilin and bile salts as a routine practice, and they have been amazed at the prompt reflection in the functioning of the biliary apparatus of even slight intestinal derangement, an exceptionally hearty meal, or period of constipation. They assert that the diagnosis of gallstone disease will be made less frequently when liver and gallbladder disease of intestinal origin is better known. Calomel and saline purgatives, given to act on the biliary apparatus, may injure an already damaged bowel. Both intestines and biliary apparatus may improve under treatment with inert powders, oily or mucilaginous laxatives, digestive ferments or lactic acid ferments. They have had occasion to treat patients who had had their appendix or gallbladder removed on a mistaken diagnostic basis, and the intestine and liver had continued to suffer as before.

Masked Arterial Hypertension.—Jeanneney and Tauzin refer to cases in which the high blood pressure is temporarily masked by some intercurrent factor causing hypotension.

Pathogenesis of Hemorrhagic Pancreatitis.—Brocq and Binet were able to induce hemorrhagic pancreatitis with fat

necrosis in dogs in the absence of any infectious process. It is the result of autodigestion of the pancreas, but this requires the activation of the pancreatic ferments by some extraneous substance, such as bile or intestinal juice, finding its way into the pancreas. This is liable to occur with duodenal stasis from spasm, overfilling of the digestive tract, or other cause. An operation on the pancreas relieves the immediate danger but a second operation may be necessary to remove the cause. The pylorus, the duodenum and the duodenojejunal angle should all be examined to discover the mechanical cause inducing the reflux of bile or intestinal juice into the pancreas.

Influenza and Epidemic Encephalitis.—Volpino and Racchiusa report that rabbits inoculated with virus from human influenza sputum developed a fatal disease closely resembling epidemic encephalitis in man. No bacteria were found in the rabbits, but the brain cells showed peculiar inclusions which resembled Negri bodies in rabies. Other findings suggested those of human epidemic encephalitis.

Focus of Myositis with Necrobiosis.—Chaton and Caillods found the bones in the leg normal in a man, aged 65, who presented a large encapsulated tumor in the leg containing numerous spicules of bone. The roentgenograms are reproduced and the lesion defined as an ossifying inflammatory process in the muscle tissue, showing pronounced necrosis. The characteristic roentgenograms excluded the first presumptive diagnosis of sarcoma, and a complete cure followed evacuation of the products of necrobiosis of the degenerated muscle.

Hepatitis.—Glénard includes in this term the diseases of nutrition, gastro-intestinal dyspepsia and neuropathies, as well as the pathology of the liver itself. He defines the various pathologic syndromes resulting from disturbances in any one of the twelve known functions of the liver.

Schweizerische medizinische Wochenschrift, Basel

53: 105-132 (Feb. 1) 1923

*Radium Treatment of Uterine Cancer. O. Beuttner.—p. 105.

*Multiple Sclerosis and Its Etiology. E. Long.—p. 109.

*Serodiagnosis of Tuberculosis. N. Takenomata.—p. 112.

The Result of Radium Treatment of Carcinoma of the Uterine Cervix.—Beuttner, on the basis of sixty-three cases observed during the last eight years, believes that the result of radium treatment depends less on the microscopic form of the carcinoma or the number of applied milli-curie-hours than on the age and general condition of the patient. The older patients give the best results. The prognosis of carcinoma in comparatively young women has improved through radium treatment. Radio-active bodies are also given intravenously, based on Kotzareff's experiments on fixation of the emanation in embryonic and malignant cells. The experiences related have demonstrated that even if it still is an open question as to whether operable carcinomas should be removed by the knife or by radium or roentgen rays, irradiation has given better results in inoperable cases than the old palliative methods.

Multiple Sclerosis and Its Etiology.—Long, basing his statement on statistics, says that only 20 or 25 per cent. of the cases diagnosed as multiple sclerosis are of the classic form, with all the symptoms described by Vulpian and Chareot. The recent experiments caused a change in the conception of the etiology of this disease: Inoculations of the cerebrospinal fluid of multiple sclerosis patients and the nerve substance seemed to prove that there is a specific virus which produces the disease. The hope awakened by arsphenamin must be abandoned.

Serodiagnosis in Tuberculosis.—Takenomata, experimenting with serum from forty-five tuberculous and suspect patients and forty-eight controls, has shown the complement-fixation reaction to be of positive assistance in diagnosis. In tuberculosis of the lungs, tuberculous pleuritis, and also in other tuberculous affections, the complement-fixation reaction is, as a rule, positive though in the early stages the reaction may be uncertain. The Besredka antigen (made from tubercle bacilli, cultivated in egg-bouillon, and killed by heating) has proved itself efficient, but the bacillary emul-

sion of human types produced by Takenomata served the purpose at least equally well. Tuberculin is not so efficient as antigen.

Policlinico, Rome

30: 57-112 (Feb. 15) 1923. Surgical Section

- *Malarial Splenomegaly and Its Complications. O. Cignozzi.—p. 57.
- Traumatic Dislocation of the Testis. M. Margottini.—p. 68.
- Subphrenic Abscesses. G. Pisano.—p. 74.
- *Trauma in Origin of Tumors. G. Pistocchi.—p. 83. Cont'd.
- Two Cases of Cystic Pneumatosis. L. Torraca.—p. 112.

Malarial Splenomegaly.—Cignozzi denounces attempts to remove a normally located spleen, no matter how much it is enlarged. Medical measures alone are all that is needed. But in case of rupture or displacement of the spleen, or sup-puration in or near it, an operation is necessary. He gives details of seventeen cases in this latter group and the ultimate outcome after splenectomy in fifteen. The blood-producing organs gradually assume the tasks of the spleen, so that the blood returns to normal after five or six months. Malaria may recur after splenectomy, and three of Cignozzi's cases seem to suggest that the resisting power to septic affections is reduced by splenectomy. One woman, for instance, developed fatal puerperal fever seven years after the spleen had been removed. A conservative operation on the spleen exposes to recurrence of the malaria; it is better to remove the entire organ with its lurking parasites.

Cancer and Trauma.—Pistocchi reports a case of primary lymphosarcoma of the stomach found at necropsy five months after severe contusion of the epigastrium. The pain had been intense at the time and persisted continuously afterward, suggesting at first fracture of ribs. The pain finally localized in the stomach. It was not aggravated by food. The exacerbations resembled colic and tabetic crises. He is inclined to accept a direct connection with the trauma in this case.

Semana Médica, Buenos Aires

1: 185-228 (Feb. 1) 1923

- *Intracranial Hypertension in Children. A. Segers.—p. 185.
- Intracutaneous Tuberculin Reaction in Parturients and the New-Born. M. L. Pérez.—p. 188.
- Vaccine Therapy in Acute Urethritis. E. Castaño.—p. 197.
- Tuberculosis in the Army. J. A. López.—p. 204.
- *Suggestion in Crime. J. C. Belbey.—p. 210.
- Case of Eunuchoidism. C. L. Echevarne.—p. 219.
- Findings a Year After Total Colectomy. P. Barbieri.—p. 223.
- Anaphylaxis to Antialpha Vaccine. J. Ferrán.—p. 224.

Intracranial Hypertension in Children.—Segers declares that physicians wait too long before diagnosing intracranial hypertension, allowing the causal lesions to become irreparable. He cites a number of instructive cases, and warns that examination of the fundus of the eye should never be neglected or postponed when a child presents headache, vomiting and persistent constipation without well defined cause. The neurologist locates the lesion and the frequent success with surgery in such cases justifies prompt intervention. Syphilis has been found a factor in not more than 1 per cent. of the total cases of brain tumors in children, and specific treatment is futile in these cases, although the focal changes at the first doses of mercury often seem to confirm the diagnosis. In one girl, aged 10, the operation completely and permanently cured the left hydrocephalus. The symptoms had been noted fifteen months before, and the girl had been blind for a month. She is now healthy but blind. Another child presented symptoms of a tumor in the cerebellum. Under mercurial treatment, stomatitis and ulcerating sore throat developed, and the child soon died. Necropsy disclosed a single tuberculoma which could easily have been shelled out.

Suggestion in Crime.—This is a medical study of famous examples in literature, from Don Quixote and Othello to Vargas Vila and D'Annunzio's recent novels.

Deutsche medizinische Wochenschrift, Berlin

49: 105-136 (Jan. 26) 1923

- *Kidney Function Tests. Schlayer.—p. 105.
- Etiology of Tumors. E. Schwarz.—p. 108.
- "Predisposition to Tumors." W. Roux.—p. 110.
- *Assimilation in Avitaminosis and Hunger. J. A. Collazo.—p. 110.
- *Peripancreatic Fat Necrosis Due to Gallstone. Schottmüller.—p. 112.
- *Rheumatic Purpura. E. Rautenberg.—p. 112.
- *Anesthesia and Tuberculin Reaction. H. Biberstein.—p. 113.

- *Tuberculosis and Pregnancy. Winter and Oppermann.—p. 115. Conc'n.
- *Early Diagnosis of Pregnancy. L. Lewin.—p. 117.
- Obesity in Emphysematous Habitus. J. Deupmann.—p. 118.
- Objections to Mixed Arsphenamin and Mercury Treatment. H. Nover.—p. 119.
- Diverticula of Esophagus. H. Krekel.—p. 119.
- Action of Blood Transfusions. Opitz.—p. 120.
- Filaments and Rods in Blood. H. Zeller.—p. 120.
- Mole in Twin Pregnancy with One Normal Ovum. Günther.—p. 121.
- Relative Aspermia without Urogenital Disease. Huhner.—p. 121.
- Portable Examining Table. Freistadt.—p. 121.
- For and Against Compulsory Vaccination. Liebermann.—p. 122.
- *Smallpox in Switzerland. Sobernheim.—p. 122. Conc'n p. 155.

Kidney Function Tests.—Schlayer recommends the use of several tests. The dilution and concentration tests are good in every form. The "tissue factor" does not interfere with the use of the tests, if the results are considered critically. Determining the elimination of added urea or salt is not a reliable test. Even a very sick kidney may eliminate quantitatively.

Assimilation in Avitaminosis and Hunger.—Collazo finds that the animal loses its vitamins if it is on a diet without vitamins, but keeps them during starvation. This accounts for the fact that starving dogs increase at first in weight if they get food without vitamins. Organs from starving animals act like food containing vitamins, while organs from dogs which were on a diet without vitamins have no action. Hunger acts in a certain sense as prophylaxis against loss of vitamins.

Peripancreatic Fat Necrosis Due to Gallstone.—Schottmüller publishes a case of fat necrosis around the pancreas in a woman with an incarcerated gallstone in the duodenal papilla.

Rheumatic Purpura.—Rautenberg had striking results with intraspinal injections of 4 c.c. of a 0.5 per cent. solution of novocain in normal saline. The red spots in his cases were not real hemorrhage, and disappeared very quickly.

Anesthesia and Tuberculin Reaction.—Biberstein did not find inhibition of the tuberculin test by previous local anesthesia.

Tuberculosis and Pregnancy.—Winter and Oppermann consider artificial abortion and eventual sterilization as a safe means to protect tuberculous women from the dangers of pregnancy.

Early Diagnosis of Pregnancy.—Lewin examined 100 women for glycosuria after injection of 2 mg. phlorizin; 8 per cent. of the 50 controls were positive. Most of the pregnant women in the earliest stages were also positive.

Smallpox Epidemic in Switzerland.—Sobernheim shows by statistics the causal relation between the "conscientious objectors" and the cases of smallpox in Switzerland.

Klinische Wochenschrift, Berlin

2: 237-284 (Feb. 5) 1923

- Extrapyramidal Motor System. Lewy.—p. 237. Conc'n.
- Diseases of Bones and Growth. F. J. Lang.—p. 240.
- *Dosage of Roentgen and Radium Rays. E. Opitz.—p. 243.
- *Determination of Hypoxemia. F. Kauders and O. Porges.—p. 247.
- *Dyspepsia of Infants. A. Adam.—p. 248.
- *Postural Treatment of Bronchial Disease. Schaefer.—p. 252.
- Dorsal Subluxation of Metacarpus of Thumb. Sonntag.—p. 253.
- *Treatment of Hypertrophy of Prostate by Vasectomy. Landau.—p. 255.
- *Spontaneous Appearance of Spirochetes Resembling Pallida in a Non-syphilitic Rabbit. F. Neumann.—p. 256.
- Diagnosis of Normal and Extrauterine Pregnancy and Ovarian Hematomas. M. Samuel.—p. 257.
- *Quantitative Test for Bilirubin. Adler and Meyer.—p. 258.
- History of Neosilverarsphenamin. A. Binz.—p. 259.
- Iso-Electric Point of Mammalian Corpuscles. Straub and Meier.—p. 260.
- Significance of Potassium Ions for Muscle Tonus. Neuschlosz.—p. 260.
- *Guanidin Poisoning. L. Nelken.—p. 261.
- Speed of Sedimentation of Erythrocytes in Hemoclastic Crisis. E. Wiechmann and E. von Schröder.—p. 261.
- Osteomyelitis of Pubis Simulating Tuberculous Fistula of Anus in a Child. H. Plaut.—p. 262.
- Surgical Treatment of Pylorospasm in Infants. Heile.—p. 262.
- *Pulmonary Tuberculosis in School Children. Poelchau.—p. 265.
- Chemistry of Proteins and Biology. H. Handovsky.—p. 267.

Dosage of Roentgen and Radium Rays.—Opitz finds that there is no dose which will annihilate the carcinoma in every case. He is strictly opposed to Seitz and Wintz' "carcinoma dose" and still more to their "sarcoma dose." The general

action of the rays on the whole body is an important factor, which may be beneficial or injurious, according to the dose.

Determination of Hypoxemia.—Instead of using arterial blood and gas analysis, Kauders and Porges take a drop of blood from the ear in a capillary tube and compare its color with the blood of a healthy subject, to estimate the carbon dioxide content.

Dyspepsia of Infants.—Adam points out that the strains of colon bacilli found in dyspeptic infants have a stronger fermentative and a weaker putrefactive action than normal strains. The foods which produce or increase dyspepsia (peptone, sugars, fatty acids and alkaline soaps of the feces) increase the growth of these strains. Food which is indicated in this condition (amino-acids, casein, calcium) inhibits the growth of these bacilli.

Postural Treatment of Bronchial Disease.—Schaefer tried Quincke's method on eleven patients suffering mostly from bronchiectasia. The patient remains, after the usual expectation in the morning, for two hours in a horizontal position and, when accustomed to it, the foot end of the bed is raised for about 30 cm. The method is excellent only in localized disease of the lower lobes.

Treatment of Hypertrophy of Prostate by Vasectomy.—Landau reports 26 cases of hypertrophy of the prostate, in which radical operation was contraindicated because of the general condition of the patients. He resected both vasa deferentia and had 10 failures and 16 very good results. He attributes the subjective and objective improvement in most of the cases to the relief from the prostatic trouble and not to a rejuvenation in the sense of Steinach.

Spontaneous Appearance of Spirochetes Resembling Pallida in a Nonsyphilitic Rabbit.—Neumann found spirochetes resembling the pallida in an isolated rabbit which he scarified near the vulva. He doubts the absolute diagnostic value even of typical spirochetes found in man.

Quantitative Estimate of Bilirubin in Urine.—Adler and Meyer recommend Grimbert's test: Add 0.25 gm. barium chlorid to 5 c.c. of urine and centrifugate. Extract the sediment with alcohol, containing 4 per cent. of hydrochloric acid, by stirring and keeping a few minutes in water at 70 or 80 C. The green color is specific, and may be used for quantitative estimation.

Influence of Guanidin Poisoning on Calcium and Phosphates of the Blood.—Nelken found in rabbits and cats poisoned with guanidin an increase in the calcium and phosphates of the blood.

Pulmonary Tuberculosis in Schoolchildren in Berlin Suburb in 1921.—Poelchau found in 1921 a slight increase in tuberculosis in boys in Charlottenburg over the figures of 1912. The girls have the same rate as in 1912.

Medizinische Klinik, Berlin

19: 133-162 (Feb. 4) 1923

- Constitutional and Familial Hyperglobulia. H. Curschmann.—p. 133.
Metabolism in Dermatology. E. Pulay.—p. 135. Cont'n.
*Treatment of Hemoptysis. H. Horalek.—p. 138.
*Gymnastic Exercises for Infants. E. Czapski.—p. 140.
Treatment of Essential Enuresis. F. Fischer.—p. 142.
Premature Senility of Face. Landsberger.—p. 143.
*Colibacteriophages. O. Bail.—p. 144.
Estimation of Onset of Disability. Wulsten.—p. 146. Cont'n.
Hypnotics. C. Bachem.—p. 147. Cont'd.
Diseases of Bladder. E. Portner.—p. 149.
Recent Literature on Ophthalmology. Adam.—p. 150.
Recent Literature on Menstruation. W. Liepmann.—p. 151.

Treatment of Hemoptysis.—Horalek recalls the temporary ligation of the extremities, which was recommended by Hippocrates. Its action consists in the increase in coagulability of the blood. Another similar remedy is the intravenous injection of 5 c.c. of a 10 per cent. solution of sodium chlorid with 0.2 gm. of calcium chlorid and addition of a little of a digitalis preparation, as recommended by Windrath. Digitalis helps in cases when the weak heart causes passive congestion in the lungs.

Gymnastic Exercises for Infants.—Czapski recommends gymnastics for infants after the sixth month, if they are too fat or weak. Beginning rachitis was well influenced.

Colon Bacilli Bacteriophagy.—Bail uses the specificity of resistance against bacteriophages as a means to differentiate bacteriophage strains. He found, however, one exception in a strain that formed much mucus. This strain was generally resistant. The cause of this behavior was that the mucus acted as a protecting colloid against all bacteriophages, in the same way as gelatin. Its action was in proportion to the concentration, and the strain lost its resistance with the loss of formation of mucus. The specific resistance is inherited. Another interesting fact was that a strain which became resistant against one bacteriophage, lost its former resistance against others. If it was cultivated with these, it became again resistant to them, but was dissolved by the first bacteriophage. This experiment was repeated several times.

Münchener medizinische Wochenschrift, Munich

70: 137-166 (Feb. 2) 1923

- *Birth Injuries and Their Consequences. H. Siegmund.—p. 137.
*Influence of Musical Rhythm on Motor Sequelae. E. Meyer.—p. 139.
*Therapeutic Effect of Inflammation on Sepsis. F. Rolly.—p. 139.
*Untoward Effects of Bismuth Treatment. Görl and Voigt.—p. 143.
*Tissue Cultivation in Study of Typhus. Krontowski and Hach.—p. 144.
*Syphilis Acquired in Aspiring from New-Born Infant. Sigwart.—p. 146.
Intravenous Injections of Morphin by Addict. Gruber.—p. 147.
*Anopheles and Malaria in Baden. F. Eckstein.—p. 147.
Cephalad Displacement of Transverse Colon by Trauma. Hofmann.—p. 149.
Apparatus for Graduated Vacuum Suction. Herz and Stern.—p. 149.
Blister Fluid in Prophylactic Serotherapy. Thomas and Arnold.—p. 150.
Improved Technic for Turbidity Test. E. Meinicke.—p. 150.
Migraine in Children. F. Hamburger.—p. 150.
*Treatment of Women with Myoma. M. Nassauer.—p. 152.

Birth Injuries to the Brain and Their Consequences.—Siegmund maintains that it is the vascular system which is most directly affected by birth trauma. Mechanical injuries to the small vessels cause disturbance in the circulation, stasis, diapedesis of erythrocytes and, as a result, impairment of the nourishment of adjacent tissues. The resulting degeneration may lead to complete necrosis. Such softening processes stand in close relation with the development of cysts, porencephaly, sclerosis, microgyria, etc. Small foci of cicatricial softening are often found in infants, especially in the premature, within the first six months. Because of the active metabolism in children, even slight disturbances may exert a great influence on the formation of the central nervous system, more particularly of the medulla. Subdural hemorrhage may entail external hydrocephalus while intracerebral hemorrhage may lead to internal hydrocephalus. The fatty degenerative process of neuroglia, known as encephalodystrophy of the new-born is, in the majority of cases, due to birth trauma. Siegmund asserts that any one who has had occasion to examine postmortem a large number of recently born infants cannot fail to be impressed by the intense hyperemia not only of the skin but of the cerebral meninges and the brain tissue. He is convinced that many deaths during delivery are the consequences of minute hemorrhages and diapedesis occurring from birth trauma.

Therapeutic Influence of Musical Rhythm on the Parkinsonian Motor Sequelae of Epidemic Encephalitis.—Meyer, basing his opinion on four cases, believes that motor disturbances of this nature can be benefited by cultivating a sense of rhythm in the patients through music. One of the patients, showing the purely lethargic form of epidemic encephalitis, who spent his days in complete inactivity, as if shackled, but without other sure symptoms of the parkinsonian syndrome, roused himself toward evening and danced to mandolin music. Another, with pronounced parkinsonian symptoms, was tested with marches, played on a mouth organ, to which he walked faster and with better carriage than otherwise, and also used his arms better. He had been a soldier only for six months and had never been specially interested in music. The other two patients responded similarly to musical rhythm. Hauptmann and Steiner, who lately have made similar experiments, believe that encephalitic motor disturbances are not only amenable to influences from without but also from within the patient, and suggest that the awakening of sex feelings may be of therapeutic value.

The Therapeutic Effect on Sepsis of Local Inflammation and Abscess Formation.—Rolly reports that in a case of severe puerperal sepsis, by mistake, twenty-four subcutaneous (instead of intravenous) injections of a silver salt had been made in the lower extremities. Inflammation and abscesses developed around the needle holes. The recovery of this apparently moribund patient led him to repeat the experiment in another case of the same nature. Pure cultures of ordinary streptococci were found in the blood and pus of the abscesses. The streptococci disappeared from the blood in seventeen days, and the patient recovered. Later he inoculated mice to induce pneumococcus bacteremia and found that these animals survived longer when inflammation and abscesses could be produced by subcutaneous injection of a silver salt or turpentine. The general reaction to the local inflammatory process may be beneficial or the reverse. Hence he advises a fixation abscess only as a last resort.

Untoward Effects of Bismuth Treatment for Syphilis.—Görl and Voigt caution against the use of bismuth when there is disease of internal organs, especially of the heart. Their experience has shown that even a dose of 0.4 gr. is liable to induce menacing weakness and irregular heart action.

Cultivation of Tissues in Study of Typhus.—Krontowski and Hach have long been experimenting on the behavior of typhus virus in tissue scraps and in explantation. They used the leukocytes of typhus patients, scraps of skin from the petechiae, the brain tissue, or the spleen or brain tissue of guinea-pigs with experimental typhus. Among the points learned in experiments on 205 guinea-pigs is that the virus in spleen tissue kept at body temperature under aseptic conditions loses its potency so rapidly that after the second day typhus fails to develop after inoculation with it. But cultivation of typhus spleen tissue by the explantation technic for three or five days, allowed the persistence of virulence, and guinea-pigs inoculated with the cultures all developed typical typhus. Hence the cultivated tissue evidently contained the virus. The explantation technic opens a new field for research on the experimental biology and morphology of typhus virus.

The Tracheal Catheter in Transmission of Syphilis from the New-Born.—The maternity nurse developed a primary syphilitic lesion in the tonsil after aspirating the mucus and fluid from the throat of a new-born infant. Sigwart says that he has been able to find in the literature only one analogous case (Wigglesworth, 1884) with the tracheal catheter.

Mosquitoes and Malaria in Baden.—Eckstein emphasizes the fact that the habits of the anopheles and especially their fondness for warmth determine whether they attack domestic animals or man. He ascribes the prevalence of malaria in Baden during the last century in large part to the fact that the barns were so cold that in severe weather the cow and horse were taken into the house. Nowadays, the barns are built to keep out the cold, and they are often warmer than the house. The thermophile *Anopheles maculipennis* in particular is numerous in the barns and not in the houses. Eckstein has also noted a difference in the regions where the cattle are kept in the pasture; the mosquitoes stay with the cattle. When the cattle are driven to the pastures in the morning and return to the barns at night, the mosquitoes stay in the barns, and at twilight sally forth hungry. The barns with numerous swallows were found comparatively free from mosquitoes.

Treatment of Women with Myoma.—Nassauer insists that we must not speak of "treating the disease" but of treating the patient. Any disorder in the heart action without manifest cause should suggest possible myoma. If there is much bleeding with a myoma, he advocates vaginal irrigations with water as hot as the patient can bear with her finger, using 2 or 3 liters, the woman reclining. He discusses the pros and cons of curettement, and advises informing the women that the effect of curettement seldom lasts for more than a few months. The circulation in a myomatous uterus is certainly far from normal, and thrombosis and embolism have been observed after curettement. Operative measures may

become necessary if the tendency to hemorrhages cannot be arrested or the myoma presses on adjacent organs, and radiation proves ineffectual or is not available. Only a laparotomy should be considered, and the specialists should then decide whether a subserous myoma should be shelled out, leaving the rest of the uterus intact for future pregnancies, or whether the entire uterus should be removed or the vaginal portion retained. Malignant degeneration of a myoma is by no means rare. For this reason, also, women with myomas should be kept under permanent surveillance. In conclusion he emphasizes the beneficial influence of the family physician's advice in dyspareunia, and other sources of worry.

Wiener Archiv für innere Medizin, Vienna

5: 283-604 (Jan. 30) 1923

- The Cheynes-Stokes' Syndrome. S. Wassermann.—p. 283.
- *Chemistry of Spinal Fluid. Depisch and M. Richter-Quittner.—p. 321.
- *Akropachy. Schirmer.—p. 345.
- *Indicanemia in Insufficiency of Kidneys. G. Baar.—p. 353.
- Leukemia and Leukocytosis. G. Holler and H. Haumeder.—p. 357.
- *Percussion of Hilum. O. Haus.—p. 373.
- *Carbon Dioxid and Gastric Secretion. Kauders and Porges.—p. 379.
- *Blackwater Fever. Barrenscheen and Glaessner.—p. 409.
- *Action of Drugs on Blood Sugar. Grossmann and Sandor.—p. 419.
- *Pituitary Extract Diuresis in Nephritis. O. Klein.—p. 429.
- *Pulsatory Motions of Diaphragm. Hitzberger.—p. 451.
- *Dilatation of Heart. E. Weiser.—p. 473.
- Anatomic Basis of Flint's Murmur. H. Elias.—p. 497.
- *Carbon Dioxid and Blood Chlorids. Essen et al.—p. 499.
- *Treatment of Anemia with Colloidal Metals. B. Aschner.—p. 523.
- *Pharmacology of Vegetative Nervous System. R. Hoffmann.—p. 543.
- Diastolic Blood Pressure. S. Peller.—p. 553.
- Heart After Muscular Exertion. E. Kauf.—p. 567.
- *Diabetic Edema. W. Falta.—p. 581.
- *Action of Fats on Gastric Secretion of Acid. P. Frank.—p. 591.

Chemistry of Human Cerebrospinal Fluid.—Depisch and Richter-Quittner examined 167 normal and pathologic cerebrospinal fluids. The depression of the freezing point was always greater than that of the serum. Chlorids are almost always higher than in the serum and sometimes far higher. They believe that this is to compensate for lack of colloids. The sugar and total calcium concentration is always lower. The amount of calcium ions was constant, if calcium was present at all. In some of the fluids, calcium was not present, and these patients complained of headaches, as well as those who had an abnormally high calcium concentration.

Akropachia: Pseudohypertrophic Pulmonary Osteoarthropathy.—Schirmer describes and gives microscopic pictures of a case of infantilism, lymphogranulomatosis and purulent bronchitis with typical clubbed fingers. They contained a tissue which resembled an embryonic mucoid tissue.

Indicanemia in Insufficiency of Kidneys.—Baar recommends examination of the blood for indican as an early and reliable sign of insufficiency of the kidneys.

Percussion of Hilum.—Haus confirms Felsenreich's findings of parasternal fields of dullness adjacent to the central dullness in patients with enlarged lymphatic glands at the hilum.

Relation of Carbon Dioxid Tension of Alveolar Air to Secretion of Stomach.—Kauders and Porges found after meals an increase in the carbon dioxid tension of the alveolar air only in persons whose gastric juice contained hydrochloric acid. Since the tension did not change in patients with carcinoma of the stomach, they conclude that the acidity in carcinoma is primary, and not due to a neutralization of the secreted acid. The low alveolar tension of patients suffering from malignant tumors seems to be due to the cachexia.

Blackwater Fever.—Barrenscheen and Glaessner believe that the difference between an attack of malaria and of blackwater fever is only quantitative. The resistance of erythrocytes during the attacks of malaria is always lowered. If the washed corpuscles of a person with malaria are treated with the serum of another suffering from blackwater fever, the osmotic resistance of the corpuscles is lowered. The serum has no action on normal corpuscles.

Action of Drugs on Blood Sugar.—Grossmann and Sandor found that atropin lowers the blood sugar level in some instances (sometimes in diabetes) for about a day. They made also tests with epinephrin and pilocarpin.

Pituitary Extract Diuresis in Nephritis.—Klein found four different types of diuresis following injections of pituitary extracts. The action is protracted and less marked in nephritis, but shows differences especially between edematous patients and others without tendency to edema.

Pulsatory Motions of Diaphragm.—Hitzenger studied roentgenologically the pulsatory movements of the diaphragm. In healthy persons and in cardiac troubles without tricuspid insufficiency or auricular fibrillation, there is in the right half a presystolic movement upward and quicker systolic movement downward. In tricuspid insufficiency (positive venous pulsation of liver) the systolic movement is upward. Pleuropericardial adhesions in the right angle between liver and heart cause a quick systolic movement upward.

Dilatation of Heart.—Weiser finds that small hearts with thin walls and lack of tendency to hypertrophy do not get dilated. Since dilating is a compensatory mechanism, such patients die very quickly if the heart becomes insufficient. The big strong hypertrophic hearts can be repeatedly dilated without having ever caused a deficiency of circulation.

Relation of Carbon Dioxid Tension of Alveolar Air to the Blood Chlorids.—Essen, Kauders and Porges found an intimate relation between the chlorids of the serum and the carbon dioxid tension of the alveolar air. An increase in the serum chlorids is followed by a decrease of the carbon dioxid tension, which is an indicator of the carbonates of the serum. Prolonged ingestion of chlorids or carbonates causes the expected change in the alveolar air. With emphysema, there is high carbon dioxid tension and low chlorids. Nephritics with hyperchloremia have a low carbon dioxid tension. In edemas of other than cardiorenal origin, these relations were not always present.

Treatment of Anemias with Colloidal Metals.—Aschner had no therapeutic results with intravenous injections of a colloidal preparation of iron in nine different cases of anemia. The iron content of the preparation is too low to stimulate erythropoiesis or to block the reticulo-endothelial system. It is besides questionable whether even a real blocking would inhibit a pathologically increased hemolysis.

Pharmacology of the Vegetative Nervous System.—Hoffmann injected pilocarpin and epinephrin in different combinations. He found that the effect depends chiefly on the state of the autonomic nervous system produced by the drug used first. The glycosuric action of epinephrin was enhanced by the subsequent injection of pilocarpin, but inhibited, if pilocarpin was injected first.

Diabetic Edema.—Falta reports a case of diabetes with formation of edema during a diet containing sodium bicarbonate, but free from chlorids. Potassium bicarbonate caused loss of edemas. The urine during the diuretic period contained very little chlorids, and the edema itself had only 0.151 per cent. of chlorin. The depression of the freezing point was normal and caused probably by the bicarbonates. Acidosis cannot be the main cause of diabetic edema, since it is present even in patients who have lost their acidosis.

Action of Fats on Gastric Secretion of Acid.—Frank found that fat taken before a meal lowers the acidity of the gastric juice. If taken during the meal, it does not change it, or increases it if the fat is decomposed.

Wiener klinische Wochenschrift, Vienna

36: 81-100 (Feb. 1) 1923

Structure and Function of Kidneys. E. Schwarz.—p. 81. Conc'n p. 101.
Identity of Virus of Herpes and Encephalitis. Schnabel.—p. 84.
Action of Gelatin on Bacteriophages. O. Nakamura.—p. 86.
Heart Disease and Trauma. J. Reder.—p. 87.
Treatment of Dysentery with Sodium Sulphate. T. Hausmann.—p. 89.
Medicolegal Aspects of Cremation. A. Haberda.—p. 89.

Action of Gelatin on Bacteriophages.—Nakamura confirms the inhibitory action of gelatin on bacteriophages, which, however, does not destroy them. He found that sugar has a similar, though smaller influence. Other colloids (gums) had a very strong inhibitory action.

Treatment of Dysentery with Sodium Sulphate.—Hausmann believes that nobody would die from dysentery if large amounts of sodium sulphate (15-20 gm. of the dry salt) were

given in time. Sodium sulphate reduces the tendency to spasm of the intestine, and is therefore preferable to magnesium sulphate.

Casopis lekaruv ceskych, Prague

62: 109-136 (Feb. 3) 1923

*Preservation of Milk by Hydrogen Peroxid. G. Kabrhel.—p. 109.
*Immunity in Experimental Anthrax. J. Lukes.—p. 116.
*Refractometry of Serum. J. Becka.—p. 120.
*Pathogenesis of Meningitis. R. Pollak.—p. 122.

Preservation of Milk by Hydrogen Peroxid.—Kabrhel advises against legal sanction of the use of a proprietary preparation containing sodium perborate for preservation of milk. The oxidizing and reducing power of the liberated oxygen may hurt the vitamin content, and the alkali may camouflage the acid fermentation of the impure milk, which would otherwise lead to coagulation, a natural warning sign against the use of it.

Immunity in Anthrax of Guinea-Pigs and Rabbits.—Lukes found the same severity of infection by anthrax bacilli when he inoculated a rabbit intravenously with precautions to avoid infection of subcutaneous tissue, or without these precautions. He attributes this result to the great virulence of the strain he used. Intracutaneous and percutaneous inoculation of guinea-pigs and rabbits with Pasteur's anthrax vaccine caused the death of some of the animals, and did not protect sufficiently those that survived.

Refractometry of Serum.—Becka found that diluting serum with normal saline causes changes in refraction, which do not correspond with the theoretical values. These differences are maximal in a certain degree of dilution. If the serum is mixed slowly with the salt solution, the refraction is less than if mixed quickly. The refraction of the diluted serum diminishes usually after a few (eighteen) hours.

Pathogenesis of Meningitis.—Pollak finds that bacteriologic examination of persons who have been in contact with cerebrospinal meningitis has not much value. A strict isolation is not necessary.

Tohoku Journal of Experimental Medicine, Sendai

3: 305-657 (Dec. 30) 1922. English and German Edition

*Anticoagulants and the Oxygen Capacity of Blood. M. Yamakita.—p. 305.
*Lipoidemia and Xanthoma. S. Yamakawa and M. Kashiwabara.—p. 317.
Changes of Agglutination of Bacilli of Mice Typhoid. T. Konno and K. Sakai.—p. 333.
Relations Between Agglutination and Group Agglutination. Sakai.—p. 341.
*Hyperchloremia in Asphyxia. K. Yamakami.—p. 352.
Induced Hyperglycemia and Glycosuria in Cats. S. Morita.—p. 363.
*Research on Gaseous Metabolism and Blood Flow in Brain. M. Yamakita.—pp. 414-566.
Internal Secretion and Gaseous Exchange of Blood. Yamakita.—p. 567.
*Oxygen Administration in Anoxemia. M. Yamakita and T. Kato.—p. 608.
*Alcohol Precipitate of Serum as Antigen. Ryo Tsukasaki.—p. 653.

Anticoagulants and the Oxygen Capacity of Blood.—Yamakita found that large amounts of potassium oxalate and sodium citrate inhibit the complete laking of blood, and cause by it lower values of the oxygen capacity.

Lipoidema and Xanthoma.—Yamakawa and Kashiwabara describe a patient suffering from multiple xanthomas. His serum contained about three times the usual amount of cholesterol and neutral fat and a little more than the normal amount of phosphatids. The tumors contained much cholesterol and its esters, and only traces of phosphatids. They believe that xanthomas should be classed rather among the disturbances of metabolism than among tumors.

Hyperchloremia in Asphyxia.—Yamakami found an increase in the blood chlorids (frequently over 10 per cent. of the original value) and a small decrease in the chlorids of muscles in suffocated animals. The probable explanation lies in an irritation of the center.

Gaseous Metabolism and Blood Flow in Brain Under Narcosis and Hypnotics.—Yamakita describes the method and results of his studies on rabbits. In ether narcosis the cerebral blood flow and oxygen consumption increase in the stage of excitation, decrease (oxygen over 50 per cent.) during the narcosis and increase after it. Chloroform decreases

the oxygen consumption in spite of the frequently augmented blood flow. Yet in the reparatory stage the blood flow decreases. Magnesium decreases the oxygen consumption strongly. Injection of calcium stops this narcosis but the gaseous exchange remains low. Chloral hydrate diminishes the oxygen consumption, but does not diminish the blood flow. The changes of cerebral activity, blood flow and oxygen consumption under the influence of narcotics and hypnotics are not always parallel. These experiments brought no evidence for a causal relation between the oxygen consumption and narcosis. Injection of strychnin, caffeine and cocaine increased very strongly the blood flow and especially the oxygen consumption. Antipyrin acted in a similar way. Cold and hot applications on the head increased, usually, the oxygen consumption of the brain. The blood flow was often diminished by cold, while hot applications on the head always increased the blood flow. The rate of the blood flow influences the oxygen consumption of the brain more under normal conditions, than during activity of the brain. The average amount of oxygen used per minute per gram of brain of rabbits is 0.0944 c.c. which is more than in other organs. The average difference between the oxygen content of the arterial and venous blood of the rabbit brain was 6.92 c.c. per hundred c.c. of blood in 185 animals.

Anoxemia and Effect of Oxygen Administration.—Yamakita and Kato found in ten normal adults and several patients with normal heart and lungs, the "oxygen unsaturation" of the blood between 0.85 and 1.85 c.c. per hundred c.c. of blood. The unsaturation was more marked in some cases of pulmonary tuberculosis, pleurisy and especially in seropneumothorax, but not in chronic bilateral processes. Oxygen inhalation diminished the unsaturation in these cases as well as in healthy persons. Nine cases of heart disease had a distinctly higher unsaturation. Oxygen inhalation relieved the condition only in cases, which were not decompensated. Experiments on animals gave similar results and demonstrated the inefficacy of oxygen inhalation in different poisonings, and the favorable action in anoxic states with an intact ventilating surface of the lungs. This effect is only temporary. Ten to thirty seconds after withdrawal of oxygen, the unsaturation rose to the previous level.

Alcohol Precipitate of Serum as Antigen.—Tsukasaki was able to immunize animals with an emulsion of the dried precipitate of serum. The powder preserves its antigenic property for a long time.

Finska Läkaresällskapet's Handlingar, Helsingfors

65: 1-149 (Jan.) 1923

The Pasteur Centennial. R. Tigerstedt.—p. 1.

*Polyarthrititis and Heart Disease. R. Ehrström and J. Wahlberg.—p. 15.

*Rheumatic Endocarditis. A. Krogius.—p. 28.

Familial Aplasia of the Iris. J. G. Lindberg.—p. 38.

Pylorospasm in Infants. B. Sourander.—p. 48.

Attenuated Criminal Responsibility. E. Ehrnrooth.—p. 54.

*Neuroses Following Epidemic Encephalitis. J. Hagelstam.—p. 69.

Balantidium Colitis. M. Savolin.—p. 92.

Polyarthrititis and Heart Disease.—The 1,072 cases of heart disease at the Helsingfors medical clinic from 1842 to 1921 have been investigated as to the connection with acute polyarticular rheumatism. Treatment with the salicylates did not begin until 1876, but the proportion of cases with heart complications was not reduced by it. The average has increased from 2 to nearly 4 per cent. since then. The unmistakable influence of the salicylates on the joint process may be merely a chemical sensitizing of the joint itself, without any action on the causal virus. The symptomatic action of the salicylates may be compared to that of iodid and mercury in syphilis. Further analogy with syphilis is seen in Holst's and Poulsson's recent assertions that polyarticular rheumatism is not an acute but a chronic disease: The virus persists after the acute phase has subsided, just as in syphilis, and it may overwhelm the organism anew in a recurrent attack of the febrile rheumatism. In the intervals, the virus acts on the heart and nervous system, or the virus may attack the heart first, and a chronic valvular defect develop before the case is explained by symptoms from the joints. The heart disease and the chorea from the virus attacking

the nervous system usually develop without fever and are not influenced by salicylate treatment, and are not even warded off by it. Ehrström and Wahlberg regard the heart involvement as the main feature of the disease; the joint processes are merely episodes in its course. And we are powerless in respect to the main feature of the disease, the carditis.

Is Endocarditis a Complication or the Primary Localization of Febrile Rheumatism?—Krogius presents arguments to prove that the virus locates first in the heart valves, and that minute emboli from this source are swept to the joints and elsewhere from time to time. This explains the course, the tendency to recurrence of the polyarticular phase, and the chorea phase when the virus attacks the nervous system. He believes that more careful investigation in typical polyarticular rheumatism would reveal the primary heart lesion in these cases, both during life and at necropsy. It is possible, he adds, that gonorrheal arthritis may be secondary to a similar endocarditis of gonococcus origin. He has no direct proof to offer, and anticipates vigorous protests from the internists, but reiterates that the pathogenesis of acute polyarticular rheumatism needs revision.

Postencephalitic Neuroses.—Hagelstam describes four cases of neuroses in which the differential diagnosis was difficult. They were the only cases of the kind observed in ninety cases of epidemic encephalitis in 1920 and 1921. The ages in the neurosis cases ranged from 10 to 53; all were in males. Hysteria had been assumed at first. The psychogenic character of many of the symptoms, their periodic recurrence and the benefit from psychotherapy are main features of the cases. Hagelstam calls attention further to the presence of certain symptoms which we know from other forms of encephalitis. This suggests the necessity for seeking an organic basis in all cases of neuroses.

Ugeskrift for Læger, Copenhagen

85: 105-120 (Feb. 15) 1923

*Obesity. E. E. Faber.—p. 105.

*Apparatus for Demonstrating Mechanics of Throat. W. Talvi.—p. 109.

*Diagnosis of Cancer in Colon. T. E. Hess Thaysen.—p. 110.

Experiences with Toxin-Antitoxin. C. C. C. Vogel.—p. 111.

Obesity of Endogenous and Exogenous Origin.—Faber explains how the physiologic balance requires that the calory content of the food must equal the basal metabolism plus the work of digestion, plus the amount of energy used up in muscular work. He expresses this in the equation $C = B + D + M$. War experiences and research since have confirmed the view that the intake of calories is often above the physiologic requirement, and the superfluous calories throw an extra task on the organs which regulate oxidation and radiation of heat. If they are unequal to this task, the superfluous nourishment is deposited as fat. The metabolic anomaly in this endogenous obesity may not affect the basal metabolism, but thyroid treatment may stimulate the organs involved and lead to the throwing off of the fat deposits. Another point he emphasizes is that the organs involved (endocrine glands) may become exhausted from their extra work, so that even when the intake of calories is reduced very low they still are unable to cope with them. Obesity is rare in the young because their endocrine glands are so active that they can handle an excess of work. In exophthalmic goiter, the abnormally active thyroid diverts the energy to tremor and sweating, rather than to accumulation of fat. The tendency to accumulation of fat increases as the endocrine system grows less active with advancing years. This is especially manifest in women at the menopause although the basal metabolism is normal. He remarks in conclusion that even the most pronounced cases of *endogen adipositas* may show no benefit from thyroid or other treatment until the intake of food is materially reduced. This confirms the almost invariable blending of the endogenous and exogenous types.

To Demonstrate Movements in Larynx and Pharynx.—Talvi's illustration shows the apparatus he has devised for amphitheater teaching.

Diagnosis of Cancer in the Colon.—Thaysen asserts that a contrast meal is of no use for the diagnosis of a stricture in the colon. Only a contrast enema is instructive.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 21

CHICAGO, ILLINOIS

MAY 26, 1923

THE THERAPEUTIC USE OF TRYP- ARSAMID IN NEUROSYPHILIS*

W. F. LORENZ, M.D.; A. S. LOEVENHART, M.D.;
W. J. BLECKWENN, M.D., AND
F. J. HODGES, M.D.
MADISON, WIS.

In the latter part of 1919, we entered on a study of the treatment of syphilis of the central nervous system with a view to the development and use of new drugs. At the suggestion of Dr. Wade H. Brown, we began our study with tryparsamid, the sodium salt of *N*-Phenyl-glycineamid-*p*-arsonic acid, $C_6H_4(NHCH_2CONH_2) \cdot (AsO \cdot OH \cdot ONa)$, which was first made by Jacobs and Heidelberger¹ in 1915. The biologic action of this substance has been studied experimentally by Brown and Pearce² in normal animals and in animals infected with trypanosomes and with the spirochetes of relapsing fever and of syphilis. Tryparsamid had also been used in a comparatively small group of patients for the treatment of syphilis other than that of the central nervous system, first by Louise Pearce and later by Keidel and Moore; and at the time our investigation began, it was about to be tested by Dr. Pearce in the treatment of human trypanosomiasis.³

From the work which had been done, it was known that single doses of the drug as large as 5 gm. could be administered with safety except for the occasional occurrence of transient symptoms of amblyopia. It had also been found that old or indolent lesions of syphilis disappeared promptly under treatment with tryparsamid, that patients showed a marked improvement in physical condition, and that a positive blood Wassermann reaction could be reduced to negative. Early, primary and secondary lesions, on the other hand, responded less favorably, so that the employment of the drug in this class of patients was discontinued.⁴

The introduction of tryparsamid into the therapy of syphilis was not based primarily on its spirocheticidal action, which was comparatively feeble, but on certain unusual features of toxicologic and therapeutic action observed in experimental animals, such as the promptness of recovery from toxic injury, tolerance to repeated doses, a marked tonic effect, and the ability

of the drug to induce resolution and healing of syphilitic lesions, even in the presence of actively motile spirochetes, but without increasing the liability to the occurrence of a generalized disease.

There were additional facts to recommend the use of this drug in the treatment of syphilis of the central nervous system. From the results obtained by the administration of toxic doses of tryparsamid to laboratory animals, there was abundant evidence to show that the drug possessed an affinity for the tissues of the central nervous system, and it appeared that, with proper regulation of dosage, the difficulties of penetration hitherto experienced with arsenicals and other drugs might be overcome and that the affinity of the drug for these tissues might be utilized for therapeutic purposes. This had been accomplished in rabbits with trypanosomiasis, in which there is a distribution of organisms and of lesions in the central nervous system comparable to those of cerebral syphilis in man.

Statistics show that approximately 5 per cent. of persons with syphilis later develop paresis. It is now well known that from 30 to 40 per cent. of all syphilitic patients show positive spinal fluid findings at some time in the course of the disease; yet, from clinical experience, we know that the incidence of paresis is far below 40 per cent. Therefore, many of these cases must be arrested at some time in the course of the disease and paresis spontaneously prevented. In such instances, it seems permissible to hypothecate a defensive mechanism of some kind which protects nervous tissues, a reaction which either makes the cell more resistant or the toxins less destructive: in either event, a protective agency that is endogenous. Such speculation allows for the conception of remedies that might not be directly inimical to the infecting organism, but act as stimulants to such a natural defensive mechanism.

Moore⁵ has recently pointed out that the relative infrequency of clinical neurosyphilis in women, as compared with men, may be due to the incidence of pregnancy. It has long been known that pregnancy modifies the reaction to syphilitic infection. It may be that physiologic processes incident to pregnancy tend to prevent the disease.

Dunlap⁶ states that the treatment of general paresis may not be absolutely hopeless; that some of the spirochetes at least are probably accessible, and that we may need a modified therapeutic agent different from that which succeeds with the ordinary syphilitic strains.

The tryparsamid used in our work has been furnished us by the Rockefeller Institute; and Drs. Brown

* Tryparsamid is described under New and Nonofficial Remedies in this issue. The substance is not yet offered for sale.

* The expenses of this research were partly defrayed by grants from the U. S. Interdepartmental Social Hygiene Board. The authors have had the valuable assistance in this research of Drs. M. F. Kasak, R. L. Kenney and A. K. Viner.

1. Jacobs, W. A., and Heidelberger, M.: *J. Am. Chem. Soc.* **41**: 1581, 1917; *J. Exper. Med.* **30**: 411 (Nov.) 1919.

2. Brown, W. H., and Pearce, Louise: *J. Exper. Med.* **30**: 417, 437, 455, 483 (Nov.) 1919; **33**: 193, 1921.

3. Pearce, Louise: *J. Exper. Med.* (supplement) **34**: 1 (Dec.) 1921.

4. Personal communication to the authors.

5. Moore, J. E.: Studies in Asymptomatic Neurosyphilis: Apparent Influence of Pregnancy on Incidence of Neurosyphilis in Women, *Arch. Int. Med.* **30**: 548 (Nov.) 1922.

6. Dunlap, C. B.: Spirochetes in General Paralysis, *Arch. Neurol. & Psychiat.* **8**: 589 (Dec.) 1922.

and Pearce have placed at our disposal all of their experience with the compound.

The drug is a white, crystalline solid, extremely soluble in water. It is odorless and tasteless and possesses practically no local irritating action. On intravenous injection of a 50 per cent. solution in the anesthetized animal, no observable changes are noted in the blood pressure or respiration, and the drug is remarkably inert as to immediate effects.

We have confirmed many of the laboratory findings of Brown and Pearce and have studied the rate of excretion of tryparsamid in man and animals. We have made a study of the effect of tryparsamid on the retina in animals and have studied the clinical use of the drug in neurosyphilis and other forms of late syphilis, but the present report deals in the main with cases in which there was involvement of the central nervous system. The laboratory findings and the details of the clinical work will be published elsewhere, and we desire to present herewith merely a statement of the therapeutic results which we have thus far obtained with the drug.

TYPE OF CASES

A list of the type of cases treated is shown in Tables 1 and 2. Table 1 shows patients committed as insane, and Table 2 shows the noncommitted ambulatory patients. Most of our patients were insane and the cases were diagnosed by us as paresis. In view of the rather generally held conception of paresis, especially from the standpoint of the futility of treatment, it seems desirable for us briefly to define this disease. It is our clinical experience, largely borne out by histologic studies, that the demarcation between meningovascular syphilis and paresis is not very clear. Excepting the extremes of these conditions, the transitional point, or mean, is a matter of opinion. We, therefore, have fixed a syndrome which we regard as paresis, preferring to discard entirely this term because its original use was determined in a great measure by a psychotic manifestation. In our work we include under paresis any case of syphilis of the central nervous system that has a certain physical symptom-complex and which is associated with definite mental symptoms of sufficient severity to warrant the conclusion that a psychosis exists. This psychosis may be varied in its symptoms; most common is a general dilapidation shown by a lessened interest and capability, with a proneness to confusion and faulty memory for recent events, associated with an emotional instability bordering on a childlike happiness or simplicity. These placid mental states are frequently interrupted by sharp periods of excitement. In some cases a manic-like picture is seen, but most common and characteristic is a feeling of happiness or well-being. This may be actually expressed or evidenced by conduct and may be inferred from the topic of conversation selected by the patient or his general manner of speech. The carelessness and indifference of the patient relative to his immediate circumstances and the future are also characteristic mental symptoms of paresis. The classical picture of megalomania or delusions of great wealth, great physical strength or great attainment are relatively uncommon today. This is probably due to our recognizing paresis without these expansive ideas that were essential for the picture as recognized years ago. To sum up, in the mental symptoms associated with the physical signs of tremors, disturbed deep reflexes, pupillary anomalies, speech

defects, etc., that complete the picture of paresis, most stress would be laid on definite changes in character or personality; mental or intellectual indolence; mild or marked euphoria; memory disturbances; confusion; excitement; delusions; hallucinations, etc. In addition to this syndrome, a completely positive serology in both blood and spinal fluid in an untreated case adds the other elements essential for our diagnosis of paresis.

Next in order to the long-standing institutional cases we have included in our series twelve fairly early paretics—patients that were committed because of some serious conduct disorder, regarded and easily recognized as insane by laymen. These cases differed from the first mentioned in that the history of mental disorder rarely extended further back than six months previous to admission. This group comprised, largely, younger adults, and were mostly ex-service men. Their psychotic manifestations were usually quite acute, and in some instances presented a picture of manic excitement. The physical signs, especially tremors and loss of weight, were pronounced. Hyperreflexia was also especially marked. Some of these were cases that in the old days were referred to as fulminating paresis because of great excitement, rapid loss of weight, and death from exhaustion in a matter of one or two months after admission of the patient to a hospital. Quite frequently these cases are mistaken for manic excitement. In this group the pupillary anomalies were but slightly in evidence. In some cases the changes approached the Argyll Robertson type, but rarely was this sign bilaterally present. Usually one found a relative slowness and limited excursion in response to light as compared to the response in accommodation, a condition which might be termed Argyll Robertson-like. In some cases, no pupillary anomalies were found, although most cases manifested some changes, such as irregularity in outline or an inequality or loss of sympathetic dilatation. Tremors were very constant and especially noticeable about the lips and tongue. These were usually made more evident by emotional upset or excitement. Speech incoordination was also very frequent, and, again, intensified by strain and effort at conversation. Among these cases were some that might be regarded as classical from the standpoint of expansiveness. Most of the patients bordered on a euphoric condition. A few were inclined to be depressed or emotionally unstable. In every case the physical and mental symptoms, together with completely positive serologic findings, gave sufficient evidence clearly to warrant the diagnosis of paresis as seen at any hospital for the insane.

It has been a common experience since serologic methods have been widely used to find patients giving all the laboratory findings of paresis without any suggestion of mental disturbances. For such cases we have reserved the term of asymptomatic paresis. Of these, we had fourteen that were entirely free from mental symptoms. Usually these patients sought a physician or a hospital because of a "nervous breakdown." Most of them, knowing of their syphilitic infection, had a well-defined fear that it was active. Among these were also patients that had been treated extensively but were serologically positive when referred to us. In these cases, the physical findings were relatively few or poorly defined. Those usually found were quite active deep reflexes and slight tremors. Headaches and fatigability are frequently early complaints in the history. The general complaints are

of such a character that these cases might easily be passed by with the diagnosis of neurasthenia or psychoneurosis. In such cases, the diagnosis is definite only when the serologic findings are completely positive.

We had in our series five cases of frank tabes dorsalis and five cases of taboparesis.

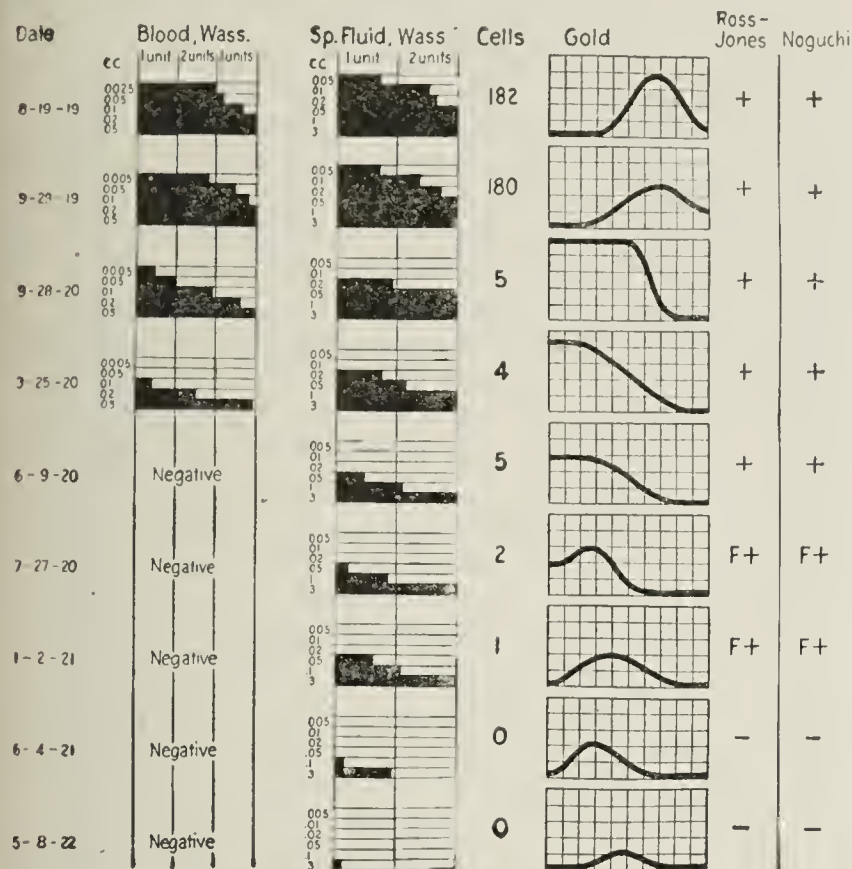


Chart 1.—Observations in a case of manic excitement, later diagnosed general paralysis, committed to the State Hospital for the Insane. Over a period of two years, the patient was given three courses of tryparsamid and five of mercuric salicylate. After nine months of hospitalization, the patient was discharged, as the case was clinically arrested, and has continued to earn a comfortable living, without return of symptoms. The serologic findings, as seen in the last puncture, were completely negative. At the beginning of treatment the patient weighed 142 pounds (64 kg.), and at the end, 176 pounds (78 kg.). In this chart and the accompanying charts, black indicates the degree of Wassermann positivity. The length of the black lines shows the number of units absorbed. All Wassermann tests were made with varying amounts of serum or of cerebrospinal fluid, as indicated. Plus signs mean a positive globulin test. F+ indicates a faintly positive reaction; —, a negative globulin test. Numerals in the "Cell" column indicate the number of lymphocytes per cubic millimeter.

We designate another group, under the general heading of syphilis of the central nervous system, as meningovascular syphilis. In this group we include all the cases that are generally referred to as cerebrospinal syphilis. In these the clinical syndrome is headache, ocular palsies, ptosis, dizziness, epileptiform seizures, transient or permanent cerebral focalization, such as spastic paraplegia of the upper or lower extremities, unilateral deafness, paralysis, and atrophy of the tongue with speech disturbances and impairment of deglutition. Insomnia, irritability, loss of ambition and an inability to concentrate are also quite common with a cerebrospinal fluid in which the serologic findings are quite different from those so commonly seen in paresis. In this group the cell count may be normal or greatly above that encountered in paresis. The Wassermann reaction of the spinal fluid is rarely positive in 0.1 c.c., usually requiring from 0.5 to 1 c.c. for a positive result. The colloidal gold test is also fairly characteristic in showing a maximum response in the fourth, fifth and sixth tubes. Of the meningovascular type, we had ten patients.

In addition, we had in our series nine cases that we have designated as late syphilis without central nervous system involvement. These comprise systemic syphilis, general in its character, such as congenital syphilis,

cardiovascular syphilis, tertiary skin lesions and gummas. Included herewith were four cases of generalized syphilis in which there had been severe reactions to neo-arsphenamin; one an almost fatal case of dermatitis exfoliativa; another one of severe jaundice.

METHODS

The work began with a study of the action of tryparsamid in late paresis. It was obvious that we could not expect any great clinical improvement in the late cases. In these, the full measure of brain damage in the form of extensive parenchymatous degeneration had been done. Therefore, it was clear that our sole criteria of improvement would be the laboratory findings, which, for this reason, assumed great importance. In the earlier cases, therapeutic efficiency was estimated from the definite demonstrable clinical improvement and the serologic changes. There was first obtained the constant or basal serologic level by a series of examinations of both the blood and the spinal fluid before treatment started. Most of our patients had received treatment at some time prior to our efforts, but in no case had any antisyphilitic treatment been given for six months previous to our initial examinations.

The blood Wassermann test is performed in a special way. We use a serial dilution of blood serum from 2.5 to 50 per cent. Of each dilution, 0.1 c.c. is used in the test. In addition to these varying amounts of serum, we use separately in each test with each dilution one and two units of complement. Preferring unheated serum, we therefore first measure the amount of native complement present in each dilution, and furthermore we measure any anticomplementary reaction that may be present in each of the various dilutions of serum used. The total set-up for one test of a serum comprises twenty test tubes. The final result gives us the minimum amount of serum that will fix both one, two or more units of available complement.

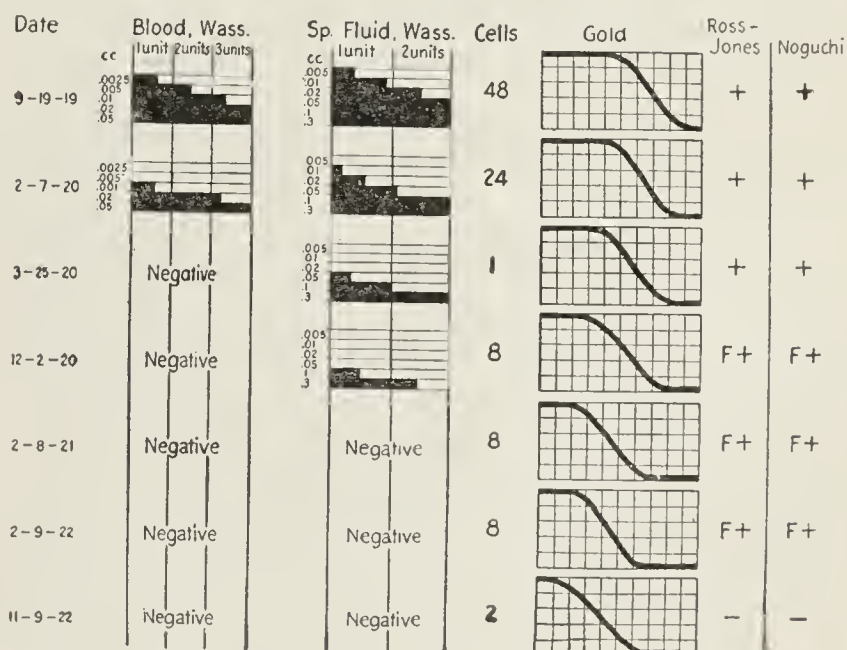


Chart 2.—Observations in a case of late general paralysis committed to the State Hospital for the Insane. Treatment was begun in February, 1920. Only two courses of the drug were given; no treatment was given subsequent to December, 1920. The patient has returned to normal activity and has continued to earn a livelihood without recurrence of the clinical symptoms. The last puncture shows negativity of blood and spinal fluid, cells and globulin, but a persistence of the colloidal gold curve. At the beginning of treatment the patient weighed 165 pounds (75 kg.), and at the end 178 pounds (80 kg.).

In other words, we are able to measure the amount of complement deviated or fixed and the least amount of serum required to fix such measured amount of complement. The other components of the Wassermann

test, as made by us, are acetone insoluble, alcoholic ethereal extract of heart muscle as antigen; freshly obtained sheep cells in 1 per cent. suspension, and anti-sheep hemolysin produced in rabbits. On the day of the test, units are established by careful titration in which the time element employed in the final test is followed. The antigen used must conform to certain fixed requirements. It must not be anticomplementary or hemolytic in 0.5 c.c. of a 20 per cent. emulsion. Its fixing property is such that 0.1 c.c. of a 2.5 per cent. emulsion completely fixes two units of complement in the presence of a 0.03 c.c. pooled positive serum. The dose used in the test is 0.1 c.c. of a 10 per cent. emulsion, or approximately ten units. Incubation at 39° C. is used throughout.

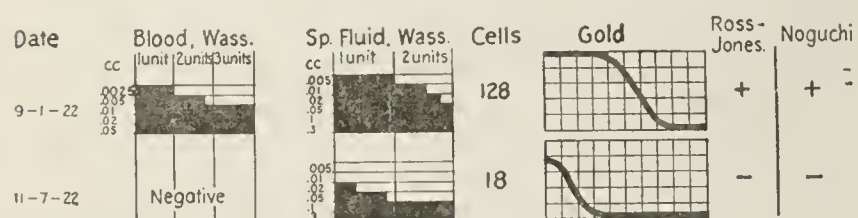


Chart 3.—Observations in a case of asymptomatic paresis in a woman, aged 24, who received one course of eight doses of tryparsamid, 3 gm., and eight doses of mercuric salicylate. The second lumbar puncture was made two weeks subsequent to the last treatment. At the beginning of treatment the patient weighed 128 pounds (57 kg.), and at the end, 133 pounds (60 kg.).

Our spinal fluid examinations consist of a Wassermann titration similar to that already described for blood serum. In addition, a cell count is made on the freshly drawn fluid, and a globulin estimation is made, the Noguchi butyric acid test and the contact test of Ross-Jones being employed. The colloidal gold test is done in accordance with the generally accepted method; that is, serial dilutions of spinal fluid, beginning with a 1:10, then 1:20, 1:40, 1:80, etc., in all, ten tubes being used. To each of such dilutions there is added 5 c.c. of the colloidal gold solution, and the results are read after twenty-four hours.

After a series of examinations for a period of from one to several weeks, our patients were placed on tryparsamid, and later tryparsamid and mercuric salicylate. During the period of treatment, blood specimens were taken every week and lumbar punctures were made usually at intervals of six weeks. After drug administration and during the period of rest, further examinations of a similar character were made.

Before and during treatment, very complete clinical observations were made, including careful physical and mental examination, blood counts, body weight, etc.

We found intelligence tests (Terman's) to be useful in gaging mental improvement. The test level may not necessarily be fixed by intellectual ability as such, but probably is determined also by such factors as interest on the part of the patient, cooperation, emotional states, and such other mental phenomena as contribute to the final intellectual effort of the patient. In employing such tests it is imperative to adhere to a fixed technic and method, or else the results cannot be compared. Renal functional tests were made in order to exclude kidney injury. During the course of treatment and subsequently, many similar detailed clinical and serologic examinations were made. As a consequence we were able to estimate with fair accuracy the changes that occurred.

At the outset we used tryparsamid without any other antisiphilitic medication. We gave the drug in doses of 5 gm. at intervals of one week over a period of

from five to six weeks. The patients were then given no further treatment. It was evident from our initial trial that tryparsamid alone has very marked beneficial effects, both on the clinical and on the serologic pictures. After several months under the same clinical observation, it was found that the serologic improvement was not stable. Regression approaching the original findings developed, although clinically the improvement which had occurred seemed stationary. Fearing a clinical relapse, we decided to use mercury in addition to tryparsamid. We then found that the additional use of mercury during the time of tryparsamid treatment resulted in more permanent improvement of the serologic findings as well as apparently more rapid clinical improvement.

When tryparsamid was used in 5 gram doses at weekly intervals, we found that after four or five such administrations, approximately 40 per cent. of our patients complained of dimness of vision. This condition was transient in all except two cases, and disappeared as soon as the drug was stopped. In the two cases in which the condition was persistent, the patients were far advanced paretics who had had abnormal eyegrounds before treatment. In view of this experience, we adopted the rule, which we recommend for general application, that every case to be treated with tryparsamid be subjected to careful ophthalmoscopic examination, and that in any case showing retinal changes the drug be used with great caution. Except for the appearance of amblyopia, 5 gram doses were very well tolerated by all. We have given a patient weighing 90 kg. as much as 8 gm. of tryparsamid at one injection without any untoward manifestations. In view of the eye symptoms developing with 5 gram dosage, we began with much smaller doses and gradually increased. By this method, we found that a dose of 3 gm. of tryparsamid, given weekly, yields the therapeutic effect of the drug, and during the period of more than one year we have at

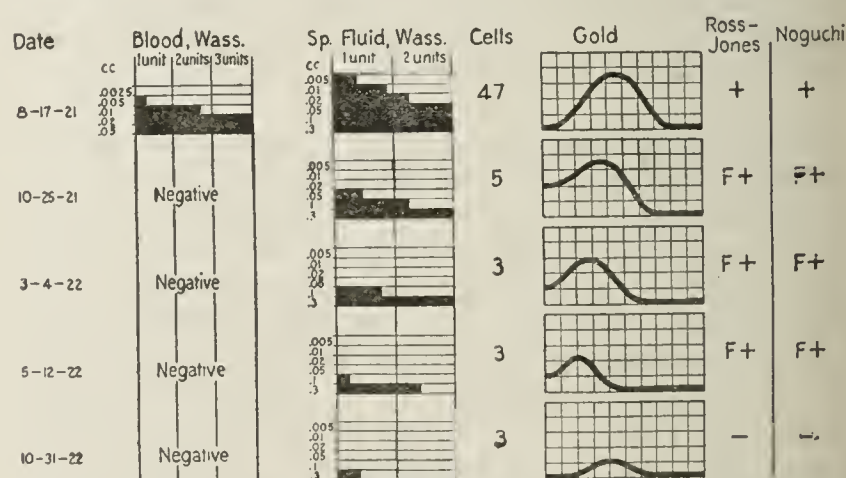


Chart 4.—Observations in a case of meningovascular syphilis in which four courses of tryparsamid and mercury were given, each course consisting of eight doses, with rest periods of six weeks. The last lumbar puncture was made one month subsequent to the final treatment. At the beginning of treatment the patient weighed 148 pounds (67 kg.), and at the end, 178 pounds (80 kg.).

no time observed any retinal disturbances or any other untoward manifestations.

Our practice during the last year has been to dissolve 3 gm. of tryparsamid in 10 c.c. of sterile freshly distilled water, and to inject the total amount intravenously. This solution is given at intervals of one week and for a period of eight weeks. At the same time, mercuric salicylate is administered intramuscularly in 1 grain doses. The mercury is given three days before the tryparsamid and a total of nine such injections

alternated with the eight injections of tryparsamid comprises a course. It has then been our practice to give the patient a rest period of from five to eight weeks, when a second similar course is repeated. After this second course and a period of rest, if there is continued evidence of activity, or the case is still serologically positive, a third course is given.

RESULTS

With few exceptions, all of our patients have remained under our clinical observation and a large

months to one year. Such a definite and decided change in the course of paresis is, in our experience, extremely rare among untreated cases.

Of the total of fifty-four cases of paresis studied, twenty-eight patients have been discharged from the hospitals and are holding positions and earning a livelihood for themselves and their families for periods ranging from six months to two years.

It should be noted that tryparsamid has a definite effect on nutrition. The majority of our patients have made a decided gain in weight, and their general state

TABLE 1.—Summary of Results in Patients Committed as Insane

Classification	Clinically			Blood Wassermann Reaction			Spinal Fluid				
	Arrested and Working	Improved	Unimproved	Became Negative	Mildly Positive	Unchanged	Wassermann	Cell	Globulin	Colloidal Gold	
Paresis, late..... (42 cases)	21	4	17	80%	17%	3%	30% 54% 16%	50% 50% —	34% 52% 14%	12% 48% 40%	Negative Reduced Unchanged
Paresis, early..... (12 cases)	7	5	—	84%	16%	—	40% 52% 8%	72% 28% —	56% 44% —	24% 68% 8%	Negative Reduced Unchanged
Taboparesis..... (2 cases)	1	1	—	100%	—	—	50% 50%	100% —	50% 50%	50% 50%	Negative Reduced Unchanged
Tabes..... (1 case)	1	—	—	100%	—	—	100% —	100% —	100% —	100% —	Negative Reduced Unchanged
Meningovascular syphilis..... (2 cases)	2	—	—	100%	—	—	50% 50%	100% —	50% 50%	50% 50%	Negative Reduced Unchanged
Generalized syphilis..... (2 cases)	2	—	—	100%	—	—	—	—	—	—	Unchanged
(Both patients suffering from acute alcoholic psychosis.)											

number have had a complete serologic examination made recently.

Of the forty-two far advanced parietic patients treated, twenty-one have been discharged from the hospitals and are working. In the twelve earlier cases and relatively acute, extremely agitated type of parietic, our results have been most pronounced. Seven patients have fully recovered their normal mentality and have been discharged and are earning their livelihood. The remaining five patients are mentally in condition to earn their livings; but, on account of serologic findings they have not been discharged.

of health has markedly improved. This phase of the action of the drug cannot be overlooked, especially in patients in a poor state of nutrition. These patients on the average show a gain of weight of about 20 pounds (9 kg.).

Of the ten cases of meningovascular syphilis treated, the blood Wassermann reaction became negative in eight and was mildly positive in two. The spinal fluid serologic findings became negative in four of the cases, improved in five, and was unchanged in one case.

The effect of treatment from the clinical and serologic standpoints is summarized in the accompanying

TABLE 2.—Summary of Results in Noncommitted Ambulatory Cases

Classification	Clinically			Blood Wassermann Reaction			Spinal Fluid				
	Arrested	Improved	Unimproved	Became Negative	Mildly Positive	Unchanged	Wassermann	Cell	Globulin	Colloidal Gold	
Paresis, asymptomatic..... (14 cases)	13	1	—	84%	16%	—	42% 51% 7%	77% 23% —	56% 44% —	28% 72% —	Negative Reduced Unchanged
Taboparesis..... (3 cases)	3	—	—	67%	33%	—	33% 67% —	67% 33% —	33% 67% —	— 67% 33%	Negative Reduced Unchanged
Tabes..... (4 cases)	3	1	—	100%	—	—	25% 75% —	75% 25% —	25% 75% —	— 100% —	Negative Reduced Unchanged
Meningovascular syphilis..... (8 cases)	7	1	—	75%	25%	—	37% 50% 13%	50% 50% —	50% 50% —	37% 50% 13%	Negative Reduced Unchanged
Generalized syphilis (7 cases).. (7 cases)	7	—	—	42%	29%	29%	—	—	—	—	Unchanged

This brings up for consideration a so-called characteristic of paresis which is so frequently offered as an explanation for response to any form of treatment; that is, the so-called "remission." Our experience with paresis in all its stages has been large and spread over a considerable number of years. We cannot, in the light of this experience, subscribe to the oft-repeated statements of the frequency of remissions in paresis; that is, if one is to regard as a remission the complete disappearance of all mental symptoms and a return to fairly normal mental activity over a period of six

tables. We present four charts to illustrate in detail the effect of treatment on the serologic findings. We found that tryparsamid alone altered the blood Wassermann reaction in more than 80 per cent. of the cases treated. Some cases became absolutely negative, as previously stated. However, when mercury was used, together with tryparsamid, the blood Wassermann reaction was more promptly altered. In nearly every case so treated there was a demonstrable change in the direction of negativity. Some cases were never made completely negative.

The spinal fluid Wassermann reaction was favorably altered in seventy-eight cases. In thirty-two cases the spinal fluid became completely negative—that is, complete hemolysis with 0.5 c.c. of fluid and one unit of available complement. In fifty-four cases the lymphocyte count was reduced to normal range. Forty cases showed negative globulin tests after treatment. The colloidal gold test was favorably affected in sixty-eight cases. The changes in this reaction followed the order frequently observed when syphilis of the central nervous system is effectively treated. The initial paretic curves would change and become more of the meningovascular type. Eventually this response would be changed, and in eighteen cases the reaction became negative. Of the total number of cases treated in which there were completely positive serologic findings in the spinal fluid, eighteen became negative in all phases of spinal fluid serology.

From our present experience we recommend this method of treatment in properly selected cases: The tryparsamid should be used in doses of 3 gm., dissolved in sterile freshly distilled water, sufficient to make approximately a 30 per cent. solution; that is 3 gm. dissolved in 10 c.c. of water. This solution is given intravenously at intervals of one week and for a period of eight weeks. At the same time, mercuric salicylate should be administered intramuscularly in 1 grain doses. The mercury should be given three days before the tryparsamid, and a total of nine such injections with eight of the tryparsamid should comprise a course. After such a course has been given, we believe that a rest period of from five to eight weeks is good practice, when a second course similar to the first is repeated. After the second course and after a period of rest, if there is still evidence of clinical activity or the case is still serologically positive, a third course should be given.

We have had four patients on weekly injections of 3 gm. of this drug over a period of six months without a rest period, during which time careful kidney function tests were made, and at no time was there any evidence of renal derangement.

From our present experience we recommend the use of tryparsamid and mercury in cases of neurosyphilis and believe that this combination is more effective in paresis than any other measures now in use. The beneficial effects are especially striking in early paresis. We also recommend that this drug combination can be used advantageously with patients that cannot take the other arsenicals used in the treatment of syphilis. This combination is also recommended for trial in cases that are Wassermann fast. Owing to the absence of any untoward reactions and the conviction that this method of treatment is less drastic than arsphenamin and neo-arsphenamin, we recommend its use in cases of late syphilis in patients past middle age. Generally, this type of case must be more gently handled than younger patients, and we believe that this combination can be advantageously used for patients that might be very seriously damaged by arsphenamin.

Finally, we recommend the use of these drugs in cases exhibiting a poor state of nutrition, as tryparsamid has a definitely favorable effect on the nutrition.

In the use of tryparsamid it is imperative that a very complete physical examination be made, especially of the eyegrounds. Furthermore, that any case under treatment should be watched carefully for retinal changes and the patient so questioned as to bring out any disturbance in vision. It is, of course, important

not to suggest symptoms to the patient; but if there is any evidence of a visual disturbance, the drug should be immediately withheld.

SUMMARY

Tryparsamid and mercuric salicylate, given according to the method herein described, is especially effective in early paresis and other forms of neurosyphilis. In our experience, it is more effective than any other form of treatment used.

We also recommend its trial in cases that are "Wassermann fast" and in syphilitic patients showing a poor state of nutrition and those beyond middle age.

Tryparsamid, when employed in dosage of 3 gm., produces no local or general symptoms, either immediate or late, and can be used to advantage in cases in which the patient cannot tolerate other arsenicals.

Clinical and serologic improvement in early and violent cases of paresis is extremely striking. The recovery or improvement is not absolutely stable; but the use of mercuric salicylate with the tryparsamid tends to stabilize the improvement. Some of the cases, after a period of two years, again show serologic activity, although clinical improvement has continued without change. The attitude of the patient toward this entire method of treatment is such that continued treatment and repeated courses are taken without complaint, and, indeed, with cooperation.

Finally, we desire to emphasize the fact that tryparsamid possesses the potentiality of injuring the optic tract and should not be used in cases showing degenerative changes in the retina.

THE PRECIPITIN TEST IN THE DIAGNOSIS OF SYPHILIS *

V. H. MOON, M.Sc., M.D.

INDIANAPOLIS

Meinicke,¹ in 1917, and Sachs and Georgi,² in 1918, reported the practical application of the precipitin test to the diagnosis of syphilis. They claimed that the results were as accurate as those obtained by a carefully performed Wassermann test, and further that frequently the blood from a known syphilitic which gave a negative Wassermann reaction would give a positive precipitin reaction. Within the four years following this announcement, these results were confirmed by many reports both here and in Europe.

The technic as followed by Sachs and Georgi is much simpler than that of the Wassermann test, since the precipitin test requires only patient's serum, antigen and salt solution. The disadvantage of the Sachs-Georgi technic is that it requires two incubation periods of about twenty hours each during which bacterial growth may take place, producing a cloudiness resembling that observed in a positive precipitin test.

Recently, Kahn³ has offered improvements to the technic obviating those objections and at the same time rendering the test more simple. The antigens used by Kahn are carefully prepared extracts of dried heart muscle, and are similar, except in the percentage of

* From the Department of Pathology, Indiana University School of Medicine.

1. Meinicke, E.: *Berl. klin. Wchnschr.* 54: 613, 1917.

2. Sachs, H., and Georgi, W.: *Med. Klin.* 14: 805, 1918.

3. Kahn, R. L.: Simple Quantitative Precipitin Reaction for Syphilis, *Arch. Dermat. & Syph.* 5: 570 (May) 1922; 5: 734 (June) 1922; 6: 332 (Sept.) 1922.

cholesterin used, to the antigens which Kolmer⁴ recommends in his proposed standard Wassermann technic. In addition to a variation in the antigen, Kahn's method applies the principle that undiluted serum, when mixed with antigen, gives a more prompt and definite precipitin reaction than when the serum is diluted. The technic consists in measuring 0.3 c.c. of inactivated serum into each of three tubes. Into two of these is measured 0.08 c.c., respectively, of each antigen properly diluted. To the third tube is added a like quantity of salt solution as a control. The tubes are vigorously shaken and a preliminary reading is made within a few minutes. The tubes are then incubated for three hours at 37.5 C. before the final readings are made. Strongly positive reactions show a heavy flocculent precipitate, while the weaker reactions show a fine turbidity of minute white particles, either suspended in the serum or settled to the bottom of the tube. Negative serums remain clear, as do the controls.

Since Kahn's announcement, several reports have appeared detailing the results of other workers.⁵ All of these tend to the same conclusions: that the precipitin test parallels very closely the results of the Wassermann test, and that occasionally it appears more delicate than that test. Frequently, the serums of known syphilitics, particularly in cases of long standing, that are negative by Wassermann test give a positive precipitin reaction.

Herrold⁶ has proposed a modification of Kahn's technic that makes use of the fact, previously noted by Hektoen and others, that in precipitin tests most precise and definite results are obtained if the antigen is not mixed with the serum but is superimposed upon it in a definite layer. When this is done, a positive result is shown by a distinct circle or ring of fine white precipitate at the plane of contact of the two fluids. This ring appears promptly, and if not present after one hour at room temperature, it will not appear later.

Herrold's series of 244 cases, tested in parallel both with Kahn's method and with the Wassermann test, showed absolute agreement in 95.5 per cent. of cases. Serums which gave doubtful results by the Wassermann or by the Kahn test gave definitely positive or negative reactions by the ring test. His technic has the advantages of extreme simplicity, a short period of incubation and sharp definite result. When the same antigen is employed, there is no apparent reason for variation in results between the two methods of performing the precipitin test. The apparent advantages led me to begin the series of parallel tests which are the basis of the present report.

A short trial showed that the results of the precipitin test by the ring method paralleled very closely those of the Wassermann test. The series had not progressed far until it was seen that a greater number of positive results was obtained by the ring method than by the Wassermann test. Frequently, such cases were found to be treated cases of syphilis of many years' duration. Presently, it was noted that lipemic serums having a distinct whitish turbidity would give a positive ring test regardless of the presence or absence of syphilis. This

occurred so regularly that we were able to predict that serums having this appearance would, when tested, give a positive ring. The ring in such cases would often be thicker and have a fuzzy surface distinct from the sharp line seen in typical positive tests; but in many instances it was impossible to recognize these false positive reactions by any characteristics. It was at first thought that the false results were due to some quality peculiar to the particular antigen being used. Other antigens were prepared and tested, but the same results followed with each of six different preparations of antigens. When this observation had been confirmed, lipemic serums were thereafter excluded from the tests. However, a number of such cases had been recorded as positive before these observations had been made.

The precipitin test by the ring method was tried on 528 serums, using antigens prepared as directed by Kahn. The Wassermann test on the same serums was performed according to the standard technic proposed by Kolmer,⁴ using two antigens, and with incubation at icebox temperature. The results of the ring tests are shown in Table 1. There was absolute agreement in 91.5 per cent. of cases; relative agreement in 2.9, and disagreement in 5.5.

RESULTS OF WASSERMANN TEST IN FOUR CASE GROUPS

An attempt was made to study those cases in which the tests showed disagreement of results. Unfortunately, clinical data with definite reference to syphilis

TABLE 1.—Results of Wassermann and Ring Tests

Ring Reactions	Wassermann Reactions			
	Positive +++++	Positive +++ or ++	Doubtful +, ± or Anti-complementary	Negative
Negative.....	2	3	3	346
Positive.....	131	5	1	25
Doubtful.....	1	1	2	8

were not obtainable in every case. In those cases coming from the Robert W. Long Hospital or from the City Dispensary, there was no difficulty in securing accurate data. In cases sent in from other sources, often no data were available, or the clinical features were summed up in such statements as "acne," "no history of syphilis" and "arteriosclerosis." The results of such study of cases as was possible are presented in groups according to the results of the Wassermann test.

GROUP 1.—*Wassermann reaction strongly positive* (four plus). Two cases in this group gave a negative ring reaction. In one, there was a history of two miscarriages, but no other evidence of syphilis. In the other, no clinical data were obtainable. In the 131 cases in which the results coincide, each test may be regarded as corroborative of the other. In the one case in this group with a doubtful ring and a positive Wassermann reaction, there was definite history and clinical evidence of syphilis. I do not feel that a negative or a doubtful precipitin reaction should detract from the import of a strongly positive Wassermann reaction.

GROUP 2.—*Wassermann reaction moderately positive* (three plus or two plus). Three cases in this group gave negative ring reactions. In one, there was paralysis of the external rectus muscle of the eye, with blurring of the optic disk and dizziness, but no other clinical evidence of syphilis, which was probably pres-

4. Kolmer, J. A.: Studies in the Standardization of the Wassermann Reaction: New Complement-Fixation Test for Syphilis Based upon Results of Studies in Standardization of Technic, *Am. J. Syph.* **6**: 82 (Jan.) 1922.

5. Ide, Sohei, and Smith, G. J.: Comparative Study of Kahn and Wassermann Reactions, *Arch. Dermat. & Syph.* **6**: 770 (Dec.) 1922. Keim, H. L., and Wile, N. J.: Kahn Precipitation Test in Diagnosis of Syphilis, *J. A. M. A.* **79**: 870 (Sept. 9) 1922. Young, C. C.: Public Health Value of Kahn Test for Syphilis, *J. A. M. A.* **79**: 1674 (Nov. 11) 1922. Moody, W. B.: The Precipitin Reaction for Syphilis, *J. A. M. A.* **80**: 383 (Feb. 10) 1923.

6. Herrold, R. D.: Ring or Contact Precipitation Test for Syphilis, *J. A. M. A.* **79**: 957 (Sept. 16) 1922.

ent. In a second case there was paralysis of the external oblique muscle. The patient had had cerebral hemorrhages, and there was a definite history of syphilitic infection thirty years previously. Clinically, an old latent syphilis was diagnosed. Blood from this case was retested three weeks later; the Wassermann reaction proving negative, the ring reaction positive. In the third case, no history was obtainable.

In the five cases in this group having a positive ring reaction, the laboratory evidence is strongly indicative of syphilis. In each case in which data were obtainable, there was clear clinical evidence of syphilis.

TABLE 2.—Results of Parallel Tests

Number of Cases	Wassermann Test	Herrold Test	Kahn Test
55.....	—	—	—
21.....	+	+	+
5.....	—	+	+
1.....	+	—	—
2.....	+	+	—
2.....	—	+	—
14*.....	—	+	—

* In these cases, lipemic serum (serum having a whitish or opalescent turbidity) was employed.

The one case having a two plus Wassermann and a doubtful ring reaction was clinically cerebrospinal syphilis. In the entire group having a two plus or a three plus Wassermann reaction, no case was found in which syphilis could be excluded. Here, as in Group 1, a positive precipitin reaction is corroborative, but a negative or doubtful reaction should not be regarded as evidence against syphilis.

GROUP 3.—*Wassermann reaction doubtful* (plus, plus-minus or anticomplementary). Only one case was found having a doubtful Wassermann and a positive ring reaction. This case had a definite history and clinical evidence of syphilis.

In those cases having a doubtful Wassermann and a negative ring reaction, the laboratory evidence is against syphilis, and in none of these cases have I found clinical evidence of syphilis.

In the small group of cases in which both the Wassermann and the ring reactions were doubtful, the laboratory evidence must be regarded as nil.

GROUP 4.—*Wassermann reaction negative*. In 346 such cases, the ring test gave corroborative results. The twenty-five cases with negative Wassermann and positive ring reaction are of particular interest. In six of these, I was unable to secure any clinical information. In eight cases, the clinical evidence was meager, consisting of these statements: 1. There was acute gonococcal infection. 2. Arteriosclerotic gangrene followed trauma. 3. There was pelvic inflammatory disease, but no history of syphilis. 4. No syphilitic lesion was present, and the history was negative. 5. Osteomyelitis was present. 6. Lung abscesses followed aspiration of a tooth. 7. Frontal headaches, choroiditis and frequent urination were complained of. 8. There had been mechanical crushing of the hand; there was no history of syphilis.

These eight cases occurred in the early part of the series, and a few of them were noted to have the lipemic type of serum which I later found to give false positive reactions. Since the clinical data were so incomplete, it is impossible to say whether any one of these cases should be regarded as a false positive; but it would not be fair to assume that all of the fourteen patients in whom no evidence of syphilis was found were syphilitic. It is more probable that in many of them

there were false positive reactions, as will be discussed in a later paragraph.

In each one of the remaining eleven cases in this group having positive ring reactions, there was definite clinical evidence and a history of syphilis, and most of them were old treated cases. From this it appears, as has been observed by others, that many old cases of syphilis that gave a negative Wassermann reaction will give a positive precipitin reaction.

None of the eight cases having a negative Wassermann and a doubtful ring reaction were shown to be syphilitic.

TESTS IN ONE HUNDRED ADDITIONAL CASES

It was found that the precipitin test performed by Kahn's method did not give false positives with lipemic serums as did the ring method of Herrold. This was demonstrated by performing the three tests in 100 additional cases. The results are shown in Table 2.

Special attention is called to the group of fourteen lipemic or turbid serums on which both the Wassermann and the precipitin reactions by Kahn's method were negative, but which gave a distinct contact ring by Herrold's method. The same preparation of antigen, appropriately diluted as directed by the authors, was used in each method. Inspection of the table will show that the ring precipitin test gives, as claimed by Herrold, a higher number of positives than Kahn's method, but the disadvantage of false positives in turbid serums makes it unreliable.

The five cases with negative Wassermann and positive precipitin reactions by both methods are of particular interest. Two of these had definite clinical evidence and a history of syphilis. In one case, no history was obtainable. In the two remaining cases, a careful history and searching clinical scrutiny revealed no reason for even a suspicion of syphilis. The same was true of one of the two cases in which the ring test was positive and both the Wassermann and the Kahn test were negative.

RESULTS OF VARYING THE ANTIGEN

It should be borne in mind that the antigen here used was made strictly in accordance with Kahn's directions and contained 0.4 per cent. cholesterol. Sad

TABLE 3.—Results of Tests with Two Antigens

Number of Cases	Wassermann Test	Precipitin Test 0.4% Cholesterol	Precipitin Test 0.2% Cholesterol
63.....	—	—	—
23.....	+	+	+
6.....	—	+	+
3.....	+	—	—
5.....	—	+	—

experience with the Wassermann test taught serologists that an antigen containing 0.4 per cent. cholesterol is unreliable for routine use because of the frequency of false positive reactions. There are many reasons for believing that the same biochemical mechanism is the basis for both the complement fixation and the precipitin reaction in syphilis. If this is true, it is probable that an antigen containing 0.4 per cent. cholesterol may give false positives with the precipitin test as well as with the Wassermann test. Table 3 presents the results in 100 cases tested with two antigens prepared from the same alcoholic extract of beef heart muscle, one having 0.4 per cent. and the other 0.2 per cent. cholesterol.

Particular attention is directed to the group of five cases in which the Wassermann test and the precipitin test with 0.2 per cent. cholesterin were negative, but in which the precipitin test with 0.4 per cent. cholesterin was positive. Three of these were strongly positive, and two gave a weak reaction which might be designated as + or ++. There were no points in the histories or in the clinical aspects of any of these five cases which would support a suspicion of syphilis. Unless we assume, in spite of the evidence to the contrary, that each case was syphilitic, we are forced to conclude that the precipitin test may give false positive reactions if performed with an antigen containing as much cholesterin as Kahn has recommended.

VARIATION OF OTHER FACTORS

Variations in other factors were found to affect the reliability of the results. Kahn recommended dilution of the antigen with salt solution 1:12 for use. The antigen thus prepared should be markedly opalescent but should not be turbid or form even a light sediment on standing. In other words, the optimum condition of the diluted antigen is a suspensoid of colloidal particles having a certain size. If the particles are larger, the suspensoid becomes turbid and may form a sediment after standing. Such an antigen dilution may cause spontaneous precipitation when mixed with serums from nonsyphilitic cases. If the particles are smaller, the opalescence of the suspensoid becomes less marked. Such a dilution of antigen is less easily precipitated and hence less sensitive to the effect of serum from a syphilitic patient. Now the size of the particles in the suspensoid is easily influenced by even so minor a factor as the speed with which the antigen and salt solution are mixed. Nor is temperature a negligible factor. If the salt solution has a temperature of 10 C., it will produce a more turbid suspensoid than salt solution of higher temperatures, as 20 or 30 C.

A factor with which Kahn did not deal in his announcements is the concentration of the salt solution used in diluting the antigen. He stated that it was the physiologic concentration of 0.85 per cent. Such a concentration has given, in our hands, a suspensoid of far too great turbidity. This turbidity became less as salt solution of lower concentration was used. The same antigen diluted with 0.3 or 0.4 per cent. salt usually gave the desired degree of opalescence. But another batch of antigen, prepared from heart muscle by exactly the same method, under as nearly identical physical conditions as was possible and containing the same proportion of cholesterin, required 0.6 per cent. salt solution to produce a similar degree of opalescence. From which it is apparent that: 1. We have as yet no determined criterion as to the preparation of antigen which will have a proper degree of sensitivity and yet will be known to give no false positives. 2. Two antigens prepared by identical procedure may vary widely in their colloidal equilibrium. 3. At present, the only standard by which to determine the suitability of an antigen dilution is the opalescence of the suspensoid, judged optically. This admits a large personal factor, allowing considerable variations in the suspensoids prepared on different days by the same worker.

The higher sensitivity of the precipitin test as compared with the Wassermann, and the relative simplicity of its technic, make it worth the labor necessary to eliminate the foregoing objections. This could probably be accomplished with a small fraction of the experimentation which brought the Wassermann test to its present status.

CONCLUSIONS

The precipitin test performed by the ring method described by Herrold gives confusing results on turbid or lipemic serums.

Antigen containing 0.4 per cent. cholesterin occasionally gives a positive precipitin reaction with serums from nonsyphilitic patients.

The precipitin test under proper conditions is more sensitive than the Wassermann test, in that the serums from known syphilitics which give a negative Wassermann reaction will often give positive precipitin reaction.

Careful work must yet be done to determine the optimum conditions of performance to obtain a maximum sensitivity with no false positives.

So many variable factors enter into the manipulation of the antigen that, in order to secure reliable results, the test must be performed by serologists of experience. It is not a simple test to be used by physicians in practice or by unskilled laboratory workers.

THE BLOOD WITH DEEP ROENTGEN-RAY THERAPY

HYDROGEN-ION CONCENTRATION, ALKALI RESERVE,
SUGAR, AND NONPROTEIN NITROGEN *

EDWIN F. HIRSCH, M.D.

AND

A. J. PETERSEN, M.D.

CHICAGO

The almost universal use of roentgen-ray therapy has prompted numerous chemical examinations of the blood with the purpose of demonstrating any regular changes induced by such treatment and especially with the hope of establishing some variation that might serve to explain the roentgen-ray sickness so frequently observed in patients following treatment. Hall and Whipple¹ have reviewed the various theories advanced to explain this roentgen-ray illness, but few of them have a substantial scientific basis and some are quite hypothetical. Lange² suggests that roentgen-ray sickness results from an acidosis caused by cellular degeneration or from increased catabolic cellular activity. The work of Denis, Aldrich and Martin³ supports this idea, for they observed an acidosis in rabbits, when some portion of the intestinal canal is included within the irradiated area. Golden,⁴ from observations on patients treated and on dogs exposed experimentally to roentgen rays, finds no diminution of the alkali reserve, and believes accordingly that the constitutional reaction is not associated with an acidosis. Hussey⁵ observed an increased alkali reserve and alkalinity of the blood in rabbits twenty-four hours after roentgen-ray treatment, a condition designated by him as a state of uncompensated alkali excess.

As regards variations in the nitrogen constituents of the body, Hall and Whipple¹ find the total nonprotein nitrogen and the urea nitrogen in the blood of dogs

* From the Pathological Laboratory of St. Luke's Hospital.

* Aided by a fund given by Mr. Albert B. Kuppenheimer.

1. Hall, C. C., and Whipple, G. H.: Roentgen-Ray Intoxication, *Am. J. M. Sc.* **157**: 453 (April) 1919.

2. Lange, S.: Roentgenotherapy, *Am. J. Roentgenol.* **3**: 356 (July) 1916.

3. Denis, W.; Aldrich, M., and Martin, C. L.: *Am. J. M. Sc.* **160**: 555 (Oct.) 1920.

4. Golden, R.: Alkali Reserve in "Roentgen-Ray Sickness," *Arch. Int. Med.* **30**: 629 (Nov.) 1922.

5. Hussey, R. G.: Influence of X-Rays on Properties of Blood, *J. Gen. Physiol.* **4**: 511 (May) 1922.

exposed to roentgen rays usually increased much above normal shortly before death, and the elimination of the urine nitrogen increased on the day following treatment and remaining high until death. They observed focal necrosis in the lining of the small bowel, and suggest that this may cause the general intoxication with its vomiting and diarrhea. Later studies by Whipple and his associates ⁶ confirm these observations. Nürnbergger ⁷ observed an increase of the sugar in the blood of patients with roentgen-ray treatment, sufficient to be termed a roentgen-ray hyperglycemia. The maximum concentration was reached

dioxid combining power of the blood plasma according to Van Slyke,⁹ and the hydrogen-ion concentration of the whole defibrinated blood by the gas chain method. Blood was taken from the arm vein before treatment, one to two hours after treatment, and again after about twenty-four hours. The blood samples were drawn into 20 to 25 c.c. defibrinating tubes containing glass beads in such a way that all of the air was displaced and in the closed tubes the blood was defibrinated by shaking. The hydrogen-ion determinations were made in a McClendon electrode vessel, the transfer of blood into the vessel being completed without exposure to air.

Results of Observations

	pH	Carbon Dioxid	Urea Nitrogen	Total Nonprotein Nitrogen	Uric Acid	Creatinin	Sugar, per Cent.	Comment
Before.....	7.41	68.58	14.48	31.08	3.87	0.084	Carcinoma of breast; not sick; sodium bicarbonate by mouth
*After (2 hours).....	7.30	72.25	13.20	29.98	3.32	....	0.083
After (24 hours).....	7.46	.....	13.90	29.47	3.74	....	0.081
Before.....	7.50	64.14	9.99	41.81	2.12	0.179	Carcinoma of cecum; nauseated by treatment; sodium bicarbonate by mouth
*After (2 hours).....	7.34	63.81	10.04	45.73	7.72	....	0.097
After (24 hours).....	7.43	62.75	12.61	52.13	3.75	....	0.162
*After (2 hours).....	7.25	62.62	9.20	41.44	4.94	0.072	Carcinoma of cecum; nauseated by treatment; sodium bicarbonate by mouth
Before.....	7.40	43.35	14.75	30.01	4.00	....	0.094
*After (24 hours).....	....	67.02	15.75	31.07	4.12	....	0.091
Before.....	7.44	58.63	10.55	27.84	3.10	1.45	0.185	Abdominal carcinoma: orange juice and sodium bicarbonate by mouth; patient markedly nauseated toward end of the course of treatment
*After (2 hours).....	7.36	56.43	9.85	27.75	2.39	1.41	0.138	
After (24 hours).....	7.50	58.83	9.15	27.24	2.40	1.49	0.176	
*After (1½ hours).....	7.38	58.05	10.09	26.91	2.47	1.49	0.086	
After (24 hours).....	7.37	56.72	13.40	25.68	2.58	1.44	0.155	
*After (2½ hours).....	7.22	50.19	12.24	27.81	2.50	1.47	0.087	
After (24 hours).....	....	53.75	10.79	25.44	2.45	1.43	0.140
*After (1½ hours).....	7.20	54.15	8.64	26.67	2.37	1.43	0.080	
After (24 hours).....	7.39	57.24	7.70	25.62	2.42	1.43	0.127	
Before.....	7.33	50.30	15.83	38.22	7.95	1.44	0.068	Sarcoma of thigh; no appreciable distress with treatment
*After (2 hours).....	7.15	54.01	14.38	37.46	6.99	1.42	0.110	
After (24 hours).....	7.50	50.70	14.83	34.56	9.90	1.43	0.092	
*After (2 hours).....	7.47	54.40	14.48	34.98	9.02	1.42	0.099	
After (24 hours).....	7.50	53.71	12.61	32.25	8.05	1.50	0.098	
*After (¾ hour).....	7.36	50.77	11.91	30.15	8.15	1.50	0.091	Carcinoma of uterus: sodium chloride solution and orange juice by mouth; nausea and vomiting
After (24 hours).....	7.40	51.93	12.28	28.78	6.74	1.31	0.080	
Before.....	....	40.87	60.52	101.04	15.06	3.36	0.131
*After (2 hours).....	7.42	34.47	57.91	101.68	14.16	3.36	0.146	
After (24 hours).....	7.40	33.28	57.44	89.12	15.10	3.32	0.088	
*After (2 hours).....	7.33	37.48	54.64	88.92	12.41	3.35	0.111	Abdominal carcinoma: nausea
After (24 hours).....	7.38	37.59	59.96	118.03	14.97	3.37	0.122	
*After (2 hours).....	7.21	33.15	58.84	106.32	15.08	3.30	0.167	
48 Hour Interval								
Before.....	7.44	38.64	65.15	99.24	14.49	3.27	0.142	
*After (2 hours).....	7.35	38.50	66.27	99.63	13.47	3.19	0.095	Abdominal carcinoma: nausea
After (24 hours).....	7.51	38.04	67.95	101.00	16.57	3.35	0.144	
*After (2 hours).....	7.28	38.51	59.54	96.12	15.45	3.21	0.088	
Before.....	7.60	52.98	11.72	42.70	4.70	1.25	0.108	
*After (2 hours).....	7.55	51.45	11.58	42.52	4.58	1.27	0.107	
After (24 hours).....	7.62	55.44	9.01	36.14	4.65	1.34	0.141	Control; no malignant growth; roentgen ray over chest; slight nausea
*After (24 hours).....	7.44	52.45	14.06	39.78	10.40	1.34	0.143	
*After (1¼ hours).....	7.35	50.47	21.30	39.48	10.50	1.30	0.121	
After (24 hours).....	7.54	59.93	14.85	33.15	7.45	1.36	0.133	
No roentgen ray.....	7.48	52.45	.....	.....	.....	.....	.....
After (2 hours).....	7.47	50.72	Control; no roentgen-ray treatment; bled from arm vein only
After (24 hours).....	7.44	52.31	.....	.....	.....	.....	.....

* indicates roentgen-ray treatment.

usually on the first and second days of the treatment. According to his literature quotations, there has been observed an increased urinary elimination of uric acid, purin bases and phosphoric acid, findings that agree with Whipple's observations.

Variations in the amounts of the nonprotein nitrogen constituents and other substances of the blood may occur with roentgen-ray treatment, and in the hope of demonstrating changes which, in turn, may have some significance in explaining the roentgen-ray sickness, a chemical study of the blood was made on certain patients coming to this hospital and treated in the routine way with high voltage roentgen rays. The urea nitrogen, the total nonprotein nitrogen, the uric acid, the creatinin and the sugar of the blood were determined according to Folin and Wu;⁸ the carbon

The results from eight of the fourteen patients studied are contained in the accompanying table, the results of the others agreeing in all essentials.

COMMENT

These examinations demonstrate no striking or consistent alteration in the urea nitrogen, the total nonprotein nitrogen, the uric acid, the creatinin or the sugar concentration in the blood of patients treated with roentgen rays. There is, however, a disturbance of the acid-base equilibrium, manifested immediately after treatment by an increase of the hydrogen-ion concentration and sometimes by a slight lowering of the alkali reserve. In the blood, after twenty-four hours, these relationships are reversed, and there is a diminished hydrogen-ion concentration and an increased alkali reserve. The latter observation agrees with the results obtained by Hussey in rabbits, and

6. Whipple, G. H., and Warren, S. L.: J. Exper. Med. **35**: 187, 203, 213 (Feb.) 1922.
7. Nürnbergger: Strahlentherapie **12**: 732, 1921.
8. Folin, O., and Wu, H.: J. Biol. Chem. **38**: 81 (May) 1919; **41**: 367 (March) 1920.

9. Van Slyke, D. D.: Studies of Acidosis, J. Biol. Chem. **30**: 289 (June) 1917.

the mechanism concerned is probably like that in other physiologic reactions in which the acid-base equilibrium of the body is disturbed,¹⁰ and a transient acidosis is followed by an overcompensating alkali response (alkalosis). It may be that this disturbance of the acid-base equilibrium, or perhaps some as yet unknown factors associated with it, is responsible for the sickness following roentgen-ray treatment.

THE TREATMENT OF TYPE I PNEUMOCOCCUS LOBAR PNEUMONIA WITH SPECIFIC SERUM*

EDWIN A. LOCKE, M.D.

BOSTON

It is now nearly ten years since Cole and his associates at the Hospital of the Rockefeller Institute for Medical Research began the use of specific antipneumococcus serum in the treatment of lobar pneumonia due to the Type I organism. In spite of the brilliant results from time to time reported from the Rockefeller Hospital, this method of treatment has not met with special favor. Indeed, during the last few years, there has developed a somewhat widespread and growing skepticism regarding the value of antipneumococcus serum in the treatment of lobar pneumonia due to this organism. Many physicians are inclined to class this method of treatment with the numerous vaunted remedies for pneumonia which have proved of little or no value, and in which medical literature abounds.

The principal reasons why the Type I serum has not come into more general use are evident. The first and most important obstacle to its use is the great difficulty in getting an early bacteriologic diagnosis. Frequently, no sputum for typing is obtainable until some days after the onset of the disease, and then only too often at least twenty-four hours elapses before the laboratory furnishes its report. This means that the serum treatment, if given at all, is begun late in the course of the disease, when it is generally agreed that it exerts but slight curative power. The technical difficulties to the proper administration of such a powerful serum are such as to discourage its general use outside hospital practice. In many instances, it would appear that the serum has been given in too small doses or at too long intervals to be effective. Finally, a most important obstacle to its further use is the fact that other observers have not been able to duplicate the strikingly low mortality figures obtained at the Rockefeller Hospital.

There is now a considerable accumulation of available reports on the use of this serum. My object in this communication is to make a critical examination of recorded results, together with observations not previously published, in the hope that it may be possible to estimate more accurately the clinical value of this form of treatment.

EFFICIENCY OF A SERUM

It may be well to define by what criterion the efficiency of a specific serum in such a disease as pneumonia is to be judged. I need not particularly stress the importance of the subtle dangers in deductions from casual observations in this disease. In its symptoma-

tology and course, it shows an "unrivalled variability." Its limited but variable duration, its peculiar tendency to almost miraculous change in the clinical picture, which often occurs with crisis, the fact that not infrequently there is sudden recovery in seemingly hopeless cases, all indicate the difficulties of an accurate clinical judgment of therapeutic results. Under such circumstances, the most rigid criteria are necessary.

The elaborate scientific studies made by many eminent workers during the last thirty years have provided an unusually sound experimental basis for the use of antipneumococcus serum of the type and in the manner now under discussion. The proof of the possibility of producing an active or passive immunity against Type I pneumonia in certain animals, or even of curing the pneumonia in infected animals by the intravenous injection of homologous serum, does not establish its value in man. Nor do these results of animal experimentation warrant the acceptance of conclusions from clinical tests that are not based on the most exact clinical observations. To be fully trustworthy, it is absolutely essential that therapeutic results, whether the agent employed is a drug or an immune serum, should be checked by a control series.

The clinical test of the efficiency of specific immunotherapy in pneumonia must consist in (1) the accurate observations regarding the course of the disease following serum, and (2) a statistical study of the final case fatality rate. Under the former, the chief considerations are the study of the effects of the serum on (1) the toxemia; (2) the pulse and temperature curves; (3) the duration of the disease; (4) the extension of the disease after serum; (5) the bacteremia; (6) the rate of resolution, and (7) the development of complications.

The figures with regard to the case fatality rate are of value only when taken into consideration with (1) the dose of serum and the frequency of its administration; (2) the time of administration, i. e., the day of the disease; (3) the patient's age, and (4) the general estimate of the type of patient treated.

RESULTS OF TREATMENT

My own experience with the treatment of Type I pneumonia with homologous immune serum is confined to a relatively small series of 145 cases in the special pneumonia service at the Boston City Hospital. The cases have been arbitrarily divided into groups A and B. Group A comprises seventy-five cases studied during the years 1919 and 1920. These were without controls. Group B includes seventy cases treated and controlled by a parallel series of seventy-one untreated cases during the years 1921 and 1922. On the whole, these cases were perhaps a very severe test of the effectiveness of the serum, since in a general municipal hospital the type of case is probably a less favorable one than would be encountered elsewhere.

In Group A, the average total amount of serum given to those who recovered was 182 c.c., and in the case of those who died, 266 c.c. Somewhat larger amounts were given to the patients in Group B; i. e., in the case of the living, 374 c.c., and in the fatal cases, 342 c.c. Fourteen of the patients in group B who died received 600 c.c. or more. It would appear from these averages that even greater amounts were employed than in the treatment of the series at the Rockefeller Hospital.

Blood cultures were made as a routine and positive results were obtained as follows: Group A, thirteen

10. Hirsch, E. F.: *J. Infect. Dis.* 28:275 (March) 1921.

* Read before the New York Academy of Medicine, Feb. 20, 1923.

cases, or 17.3 per cent.; Group B, thirty-one cases, or 44.3 per cent.; Group B (controls), sixteen cases, or 22.5 per cent. Unfortunately, cultures were not taken regularly following the serum, making it impossible to form any judgment of the effects of the serum on the bacteremia when present.

In general, we have not observed the striking effects on the patients' general condition following serum which have been described by Cole and a few other authors. A small percentage of the cases seemed definitely less toxic. In a few instances, the improvement in the patient's condition has been so striking as to seem convincing that the results were directly due to the intravenous injections. For example, in Group B, only six cases showed strongly suggestive evidence of a specific action of the serum. In eight others, the general estimate of the results was entered in the records as "suggestive," or "improvement probably due to serum." The remaining fifty-six gave no indications of benefit to be attributed to the serum. Constant observation of the simultaneous control group frequently showed similar sudden changes and ones quite as striking, which, had they occurred in the treated individuals, would certainly have been attributed to the specific therapy. The constant demonstration of the fallibility of judgment by the observation of the treated and untreated patients side by side has made us feel less confidence in the general impression of the effects than in the final statistical study of the duration course, complications and mortality.

A study of the average duration in the 145 treated and the seventy-one untreated controls, i. e., the duration from the onset of the disease to the discharge from the hospital, apparently shows no advantage for the serum cases (Table 1).

Such differences as are shown in this table are so slight as to be regarded as probably without significance. Similar figures for the duration, as measured by the time from onset to a normal temperature, are likewise without any essential difference.

In order to compare directly the course of the temperature and pulse in the two series of Group B, two

and pulse are distinctly lower. The duration, however, is the same. The few patients, then, who received serum as early as the fourth day, on the average had a slightly lower temperature and pulse than did the untreated patients who entered the hospital on the corresponding day of the disease. A fourth chart, comprising only those patients receiving serum on the fifth day, indicates no advantage for either group.

The serum cases show a slight advantage over the controls in regard to the number of lobes involved. Only a single lobe was involved in 69 per cent. of the former and 62 per cent. of the latter. In no patient who recovered has extension of the pneumonia been

TABLE 2.—Complications, Groups A and B

Complications	Group A: Treated, 75 Cases		Group B			
			Treated, 70 Cases		Untreated, 71 Cases	
	Living	Dead	Living	Dead	Living	Dead
Total number of cases.....	13	4	16	7	12	7
Empyema.....	9	1	6	1	4	1
Septicemia.....	..	..	..	4	..	6
Endocarditis.....	..	..	1	..	..	1
Pericarditis.....	1	1	2	..	1	..
Pleurisy with effusion.....	1	2	2	1	3	..
Meningitis.....	..	..	..	1	..	..
Phlebitis and thrombosis.....	1	..	2	..	1	..
Focal infections.....	1	..	3	1	1	..
Otitis media.....	..	..	2	..	1	..
Nephritis.....	..	..	2	..	..	1
Embolism.....	..	..	..	1	..	..

noted after the administration of serum. This fact lends weight to the impression formed that in a few cases the serum has seemed to stay the progression of the disease.

It has not been noted that resolution in the serum-treated patients was more rapid than in those who did not receive serum. Although the exact character of the process of resolution is unknown, there seems sufficient evidence to warrant the statement that it is entirely "independent of the immunity reaction." In other words, however favorable the reaction to serum may be, there is no reason to anticipate any direct influence on the rate of resolution.

Tabulation of the number and type of the principal complications in the two groups indicates no very manifest differences, though in the seventy treated cases of Group B there appear a slightly greater number of complications than in the seventy-one untreated (Table 2). Furthermore, the percentage of incidence of empyema in the 145 serum cases is 10 per cent., while in the controls it is slightly under 6 per cent. The greater frequency of complications, and especially empyema, in Group B, as compared with the controls of Group B, is too small to warrant any definite deductions. It is interesting, however, as being in accord with the observations of Cole, that, in the case of the serum-treated pneumonia patients, focal infections are somewhat more common, and that infection in passively immunized animals is also apt to be focal. The question of whether complications are more common after serum can be answered only by the observation of a much larger series of cases.

An exact general estimate of the significance of these general observations on the course of the disease under serum treatment is extremely difficult. When all the evidence is weighed, we do not feel convinced that in our two groups any very decided advantage has resulted from its use.

TABLE 1.—Average Number of Days from Onset of Disease to Discharge

	Treated Cases				Control Cases, Group B	
	Group A		Group B		Living	Dead
	Living	Dead	Living	Dead		
Whole group.....	29.2	12.7	33.0	10.8	27.9	10.8
Group without complications...	26.5	10.3	25.3	10.8	22.1	14.0
Group with complications.....	41.4	18.2	48.7	11.1	44.8	9.2

composite curves have been made from the temperature and pulse records throughout the course of the pyrexia. These curves in the case of both the temperature and the pulse are almost identical. The conclusion seems fair that, on the whole, so far as the temperature and pulse are concerned, no benefit can be granted the cases treated by serum. This accords with the impression gained by following the individual charts from day to day. When similar composite curves are made for all patients first receiving serum on the third and fourth days of their disease and compared with the control cases entering the hospital on the corresponding day, then the treated cases appear to show a decided advantage over the untreated, since the curves of temperature

The final and most important test of the value of serum therapy in the case of any infectious disease, such as pneumonia, is to be found in the figures of mortality. There is always the danger of drawing "positive and sweeping" conclusions from too small a series of observations. Particularly in pneumonia, among the infectious diseases, the series on which mortality figures are based should be large, and should preferably comprise the experience of a considerable number of competent observers. It is of the utmost importance, furthermore, that the series of treated cases should be checked by a similar and simultaneous control series. The comparison of the case fatality rate obtained through specific serum with the assumed general mortality rate in untreated cases is, at best, haphazard. The general case fatality rate in Type I pneumonia is extremely variable, as shown by the numerous reports already published, and can be accurately determined only by the accumulation of a very large number of cases. The general estimate so often made that the mortality rate in Type I pneumonia in hospitals is approximately 30 per cent. seems to me grossly inaccurate. At the Boston City Hospital, the

were under 15 years and all recovered. With the single exception of one child of 6, all of the cases in Group B were adults. The average age in the seventy treated cases in Group B was 35.2 years, and in the seventy-one control cases, 34.1 years.

Table 3 shows the mortality in the 145 cases treated at the Boston City Hospital, with reference to the day

TABLE 4.—Mortality Rate, Groups A and B, with Reference to the Stage of the Disease When Serum Was Given

	Number of Cases	Number of Deaths	Mortality, per Cent.
145 Serum Treated Cases:			
Serum given within first 3 days.....	12	0	0.0
Serum given within first 4 days.....	38	7	18.4
Serum given within first 5 days.....	68	8	11.8
Serum given within first 6 days.....	89	10	11.2
Serum given after 6 days.....	56	15	26.8
71 Untreated Cases (Controls):			
Admitted within first 3 days.....	13	4	30.8
Admitted within first 4 days.....	32	4	12.5
Admitted within first 5 days.....	46	4	8.7
Admitted within first 6 days.....	58	7	12.1
Admitted after 6 days.....	13	5	38.5

of the disease on which treatment was begun. As will be noted, no deaths occurred among the twelve cases treated on the second and third days of the disease. The sharp rise in the case fatality rate to 26.9 in the cases beginning serum on the fourth day, and the sudden drop to 3.3 per cent. in the fifth day cases is difficult to explain. It seems probable that these wide differences would not be shown in a larger series of cases. If the serum played any part in the recovery in these groups, then it appears that the effectiveness of the serum therapy bears a direct and important relationship to the stage of the disease when given; i. e., it is most effective when administered early. This is one of the positive conclusions drawn by Cole and his co-workers from their study of the treated cases at the Rockefeller Hospital. More recently, Cecil and Blake³ reached similar conclusions from their experience in the treatment of experimental pneumococcus Type I pneumonia in monkeys treated with Type I antipneumococcus serum.

Table 4 seems to give a better general idea of the possible relation between the mortality and the period

TABLE 5.—Case Fatality Rate—One Hundred and Forty-Five Treated; Seventy-One Control Cases

	Number of Cases	Number of Deaths	Mortality, per Cent.
Group A.....	75	13	17.3
Group B.....	70	12	17.1
Totals.....	145	25	17.2
Controls, Group B.....	71	12	16.9

of the disease when serum was used. The most noteworthy features are the absence of any deaths among the twelve treated within the first three days, the high mortality percentage in those beginning treatment on the fourth day, and the contrast between the 11.2 per cent. mortality for those treated within the first six days and 26.8 per cent. for those treated after six days. It has been suggested that the day of entrance to the hospital may be the factor concerned, and not the early administration of serum. The evidence, however, from the control group, so far as it is of any value in so

TABLE 3.—Mortality with Reference to Day of Disease When Treatment Began

Day	Group A		Group B		Totals		
	Total Cases	No. Deaths	Total Cases	No. Deaths	Total Cases	No. Deaths	Per- centage
Second.....	1	..	..	..	1	..	0.0
Third.....	7	..	4	..	11	..	0.0
Fourth.....	13	2	13	5	26	7	26.9
Fifth.....	13	1	17	..	30	1	3.3
Sixth.....	9	2	12	..	21	2	9.5
Seventh.....	13	2	10	3	23	5	21.7
Eighth.....	8	3	7	1	15	4	26.7
Ninth.....	4	1	4	1	8	2	25.0
Tenth or more.....	4	2	2	2	6	4	66.7
Unknown.....	3	..	1	..	4	..	0.0
Total.....	75	13	70	12	145	25	

mortality in the 364 cases of Type I pneumonia was 18.1 per cent. Deducting the sixty-three cases occurring in children under 15 years, the figure is raised to 19.6 per cent. Cecil and Larsen,¹ working at Bellevue Hospital, in 162 cases of Type I pneumonia, used as a part of the control series for their work with reference to the therapeutic value of pneumococcus antibody solution, found a mortality rate of 22.2 per cent. The general mortality rate for Type I pneumonia is, I believe, not far from 20 per cent.

A factor of no small importance as influencing the mortality is the age of the patients treated. The mortality in children under 15 years is very low when compared with adults. In our series of sixty-three Type I pneumonias in children of this age, only seven, or 11.1 per cent., died. Only eight, or 6.2 per cent., of a total of 129 cases of pneumococcus pneumonia in children of all ages died, as contrasted with 27.3 per cent., in the case of the 772 adults. Shattuck and Lawrence² calculated, from the study of 2,882 cases of lobar pneumonia treated at the Massachusetts General Hospital from 1889 to 1917, an increase in the mortality rate of, roughly, 10 per cent. for each decade after the age of 20. In Group A, six of the patients

1. Cecil, R. L., and Larsen, N. P.: Clinical and Bacteriologic Study of One Thousand Cases of Lobar Pneumonia, J. A. M. A. 79: 343 (July 29) 1922.
2. Shattuck, F. C., and Lawrence, C. H.: Boston M. & S. J. 178: 245 (Feb. 21) 1918.

3. Cecil, R. L., and Blake, F. G.: J. Exper. Med. 32: 1 (July) 1920.

small a number of cases, is against this view. It may be noted that in four of the thirteen cases, or 30.8 per cent., in the untreated group entering the hospital within the first three days of the disease, the patient died. It is interesting that in this control series a similar contrast in mortality rate is shown between those entering on or before the sixth day and those admitted after the sixth day. Until a much greater number of cases are available, one is not warranted in attempting any

TABLE 6.—Mortality Rate with Reference to the Stage of the Disease When Serum Was Given *

	Number of Cases	Number of Deaths	Mortality, per Cent.
Serum given within first 3 days.....	44	4	9.1
Serum given on the fourth day.....	47	13	27.7
Serum given on the fifth day.....	53	5	9.4
Serum given on the sixth day.....	42	8	19.0
			—16.1
Serum after the sixth day.....	70	19	27.1
Day of disease unknown.....	6	0	0.0
	262	49	18.7

* Peter Bent Brigham, Massachusetts General and Boston City Hospitals.

positive deductions. The main fact seems to be that the general mortality rate in the treated and untreated groups is the same (17.2 and 16.9 per cent., respectively) as shown on Table 5.

Dr. Christian of the Peter Bent Brigham Hospital and Dr. Lord of the Massachusetts General Hospital have generously allowed me to use the statistics of the cases treated in those two hospitals. Table 6 combines these with the figures for the Boston City Hospital just given.

The figures for this larger number of cases materially change the results. The apparent advantage of those injected within the first three days over those treated later, as shown in previous tables, becomes much less suggestive, since the mortality rate for the former rises to 9.1 per cent. The percentage of deaths for the fifty-three cases treated on the fifth day is essentially the same as for the forty-four treated on or before the

TABLE 7.—Death Rate with Reference to Stage of Disease When Serum Was Given: Totals from Civilian Hospitals

	Number of Cases	Number of Deaths	Mortality, per Cent.
Serum begun within the first 3 days.....	57	7	12.3
Serum begun on fourth day.....	71	16	22.5
Serum begun on fifth day.....	71	7	9.9
Serum begun on sixth day.....	54	13	24.1
Serum begun after sixth day.....	88	23	26.1
Day of disease unknown.....	12	2	16.7
	353	68	19.3

third day. The ratio of the mortality percentage in those treated before and after the sixth day as shown in the previous table: namely, 11.2 per cent.: 26.8 per cent., is changed to 16.1 per cent.: 27.1 per cent.

Adding to this table all cases reported from civilian hospitals in which the day of treatment is given, we have mortality statistics of a considerable group, namely, 353 cases.

The suggestion given by Tables 4 and 6 of the advantage in the early administration of serum seems to have largely vanished. On the other hand, the relatively high mortality rate of those beginning serum on the fourth day, and the relatively low rate for those begin-

ning treatment on the fifth, persists. In the case of the latter, it is considerably lower than in the fifty-seven receiving serum on the third day or earlier, i. e., 9.9 per cent. and 12.3 per cent., respectively. When the table is changed to show the mortality percentage of all cases treated within three, four, five and six days, the figures are fairly uniform, namely, 12.3, 17.9, 15.1 and 16.9 per cent., respectively. What bearing these figures have on the real question of the efficacy of serum therapy is impossible to state. Indirectly, since they do not indicate any well-defined advantage in early treatment, they furnish important evidence against the value of the serum in general. More direct evidence against the serum as an effective therapeutic agent is

TABLE 8.—Case Fatality Rate in Type I Lobar Pneumonia Treated with Specific Serum

MILITARY HOSPITALS		Number of Cases	Number of Deaths	Mortality, per Cent.
Author and Publication				
Nichols (Mobilization Camp, Texas) Mil. surgeon 41: 149, (Aug.) 1917.....		63	5	7.9
Thomas, H. M., Jr. (Camp Meade, Maryland) J. A. M. A. 71: 1307 (Oct. 19) 1918		50	3	6.0
Stone, Phillips and Bliss (Camp Riley, Kan.) Arch. Int. Med. 22: 409 (Oct.) 1918.....		27	4	14.8
McClelland, J. E. (Camp Beauregard, La.) Clev. Med. J. 17: 226 (April) 1918.....		15	0	0.0
Cecil (Camp Upton, N. Y.) M. Clin. N. Am. 2: 567 (Sept.) 1918.....		20	2	10.0
Vaughan and Schnabel (Camp Servier, N. C.) Arch. Int. Med. 22: 440 (Oct.) 1918...		10	2	20.0
Tenney and Rivenburgh (Camp Upton, N.Y.) Arch. Int. Med. 24: 545 (Nov.) 1919.....		61	9	14.8
Park and Chickering (Camp Jackson, N.C.) J. A. M. A. 73: 183 (July 19) 1919.....		31	2	6.5
Leopold (Camp Dix, N.J.) N. Y. Med. J. 110: 578 (Oct. 4) 199.....		24	2	8.3
Henson (Camp Johnston, Fla.) South. Med. J. 13: 178 (March) 1920.....		22	3	13.6
McGuire (Naval Hospital, Chelsea, Mass.) Boston M. & S. J. 186: 389 (March 23) 1922		35	2	5.7
Total.....		358	34	9.5
CIVILIAN HOSPITALS				
Bloomfield (Johns Hopkins Hospital) Bull. Johns Hopkins Hosp. 28: 301 (Oct.) 1917		11	3	27.3
Hart (Presbyterian Hospital, N. Y.) M. Rec. N. Y. 95: 895 (May 31) 1919.....		30	7	23.3
Thomas, W. S. (St. Luke's Hospital, N. Y.) J. A. M. A. 77: 2101 (Dec. 31) 1921.....		50	9	18.0
Christian (Peter Bent Brigham Hospital, Boston) to be published; compare Alexander, H. L., Boston M. & S. J. 177: 874 (Dec. 20) 1917		53	10	18.9
Lord (Massachusetts General Hospital, Boston) to be published.....		64	14	21.9
Locke (Boston City Hospital) not yet published, except for 75 cases.....		145	25	17.2
Cole (Rockefeller Hospital Series) Nelson Loose-Leaf Living Medicine 1: 269, 1920..		195	18	9.2
Total.....		548	86	15.7

shown in the 19.3 per cent. mortality for the total of 353 cases, a figure that is but insignificantly, if any, lower than the general mortality rate for untreated Type I pneumonia. This collection of cases includes all so far published from civilian hospitals, with the exception of the 195 recently mentioned by Cole⁴ as having been treated at the Hospital of the Rockefeller Institute for Medical Research and concerning which, so far as I am aware, no data with reference to the age of the patients receiving serum and the day when the injections were first given have ever been published.

Figures of the total cases thus far recorded, together with the number of deaths, are given in Table 8. Those from the camps and the civilian hospitals are grouped separately, as the mortality rate is not comparable in the two. Such statistics from the army and navy

4. Cole: Nelson Loose-Leaf Living Medicine 1: 269, 1920.

hospitals are based on lobar pneumonia in robust men between the ages of 18 and 31, a strictly selected group which is generally known to show a very low mortality rate. It is generally conceded that the disease as seen in the army camps ran a mild course, and the mortality was probably not in excess of 10 per cent.⁵ As in the case of the civilian hospitals, none of the series were checked by contemporaneous controls. The combined figures for the army and navy camps give a mortality in the 358 cases of 9.5 per cent. As this figure is practically the same as the general mortality rate for lobar pneumonia in the army and navy, there would seem to be no evidence that these results show any advantage in the use of the Type I serum. Nor is it reasonable for the considerations stated above to combine them with the figures from civilian hospitals.

With the exception of the 195 cases reported by Cole, the mortality figures for all cases reported from civilian hospitals have been given in Table 7. The general mortality rate is 19.3 per cent., a figure that is not significantly lower than the rate for untreated cases. If, however, Cole's series is included, the case fatality rate for the 548 cases from civilian hospitals is 15.7 per cent., a figure that is significantly lower than the general mortality rate for cases not receiving serum.

A final estimate of the value of this serum in Type I lobar pneumonia based on the figures thus far published is impossible. As emphasized above, no analysis of these results is possible, since for the most part no data have been published regarding the day of the disease when serum treatment was begun, the total dosage, the severity of the infection, the age of the patient and the relation to a simultaneous control group of untreated cases. Except in the Rockefeller Hospital series, the results as measured by the final mortality rate are but little, if any, better than in the general run of patients with Type I pneumonia not receiving serum treatment. On the other hand, the very striking figures presented by Cole must be accepted as weighty evidence in favor of this form of specific serum therapy.

Granted that the serum is given every eight hours and in sufficient doses, the most vital consideration is unquestionably the stage of the disease when serum injections are begun. A careful study of the published reports fails to show any indications of benefit from serum given late in its course. My own conviction is that the further compilation of a sufficient number of cases will furnish proof of the value of Type I serum, but confined to those in which its administration was begun within the first three days of the disease.

311 Beacon Street.

5. The Annual Report of the Surgeon General of the United States Army, 1918, p. 176, states that among 6,964 cases of lobar pneumonia, there were 474 deaths, or a case fatality rate of 10.7 per cent.

Alkalosis.—The acid-base equilibrium is shifted toward the alkaline side during an acute clinical fever. If the fever is sufficiently high the alkalosis may result in distressing symptoms.—Koehler, *Arch. Int. Med.* **31**:605 (April) 1923.

AN OPERATION FOR RELIEF OF DISABILITY IN OLD FRACTURES OF OS CALCIS

PAUL B. MAGNUSON, M.D.
CHICAGO

So far as can be learned by reference to the literature there has been little or no attempt made to relieve the serious disability which results from unrecognized or badly treated fractures of the os calcis; and for the workingman, in whom this fracture most frequently occurs, there is none that more often leaves a permanent disability. It occurs practically always as a

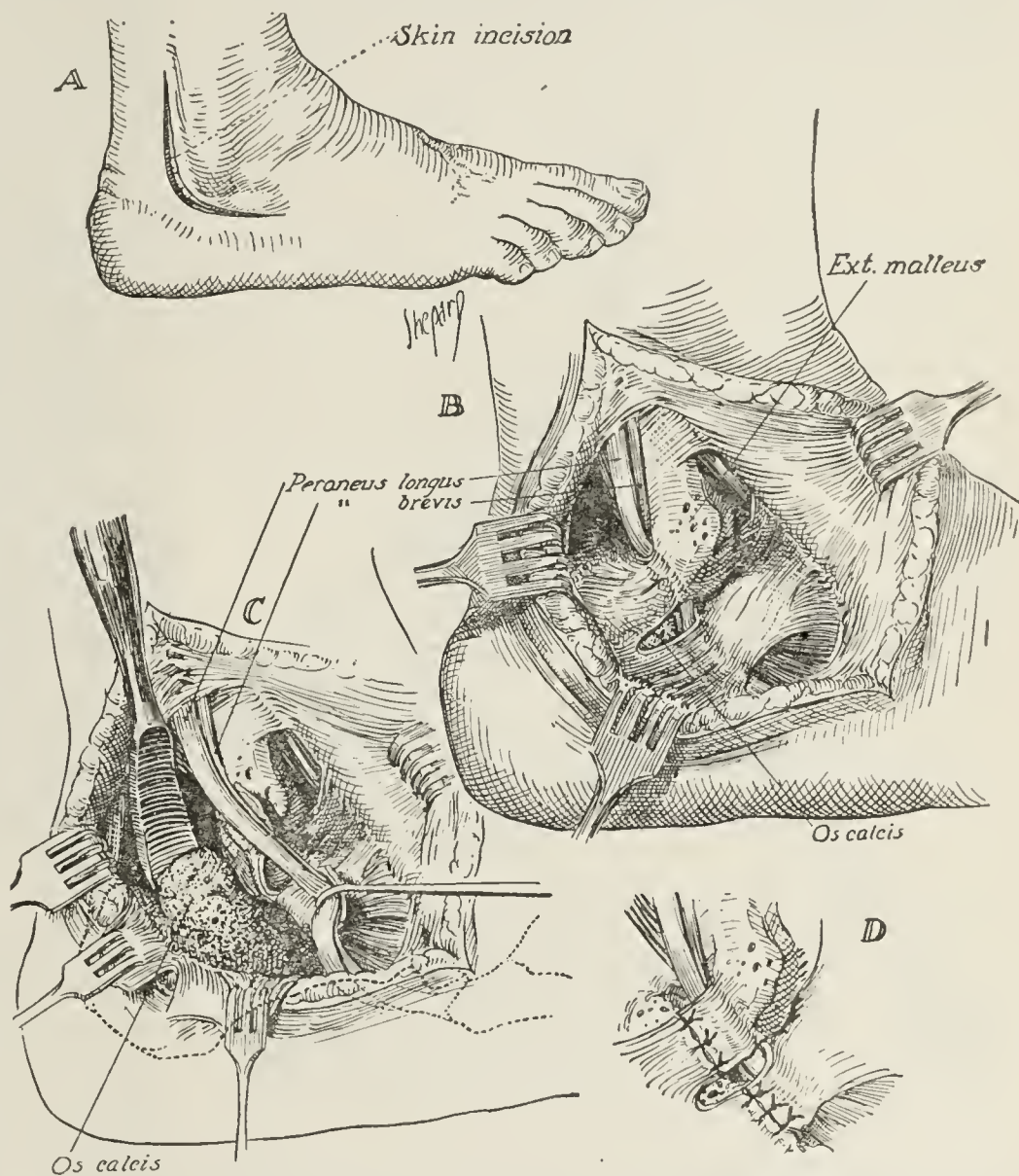


Fig. 1.—A, line of incision; B, excess callus formation under arrow, displaced tendons pinched between external malleolus and callus, or displaced outward; C, method of removal of callus with sharp, curved chisel (no curetting); D, replaced tendons, peroneus longus and brevis, back of the external malleolus.

result of a fall from a high point with the patient landing squarely on his heels, and results in a comminution and impaction, usually, through the middle third of the os calcis with a carrying upward and outward of the posterior fragment, a widening of the heel, and a laceration of the plantar fascia, with a consequent pronation of the foot and a formation of callus behind and underneath the external malleolus. The mechanics and treatment of the acute condition have been described.¹

Cotton, who reported a series of cases followed up for a number of years following injury, stated that 90 per cent. result in a permanent partial disability of the foot; and in my experience as medical director of

1. Magnuson, P. B.: Fractures of Os Calcis, *J. A. M. A.* **68**:530 (Feb. 17) 1917.

the Illinois Industrial Commission, I saw practically no fractures of the os calcis which did not result in from 30 to 75 per cent. disability of the foot.

The symptoms complained of are: (1) Pain underneath and a little posterior to the external malleolus, where a mass, which is callus, may be felt and which presses against the peroneal tendons and the external malleolus; (2) extreme pain in the longitudinal arch as a result of the pronation of the foot and the strain placed on the plantar fascia, and (3) loss of lateral motion. These symptoms are almost always uniform. Added to them, if the patient continues to walk on the pronated foot, there are tenderness and pain at the attachment of the supporting ligaments of the scaphoid bone and up the backs of the legs, sometimes extending into the hips and back, and inability of the patient to rise on the toes or propel weight by the toes in walking.

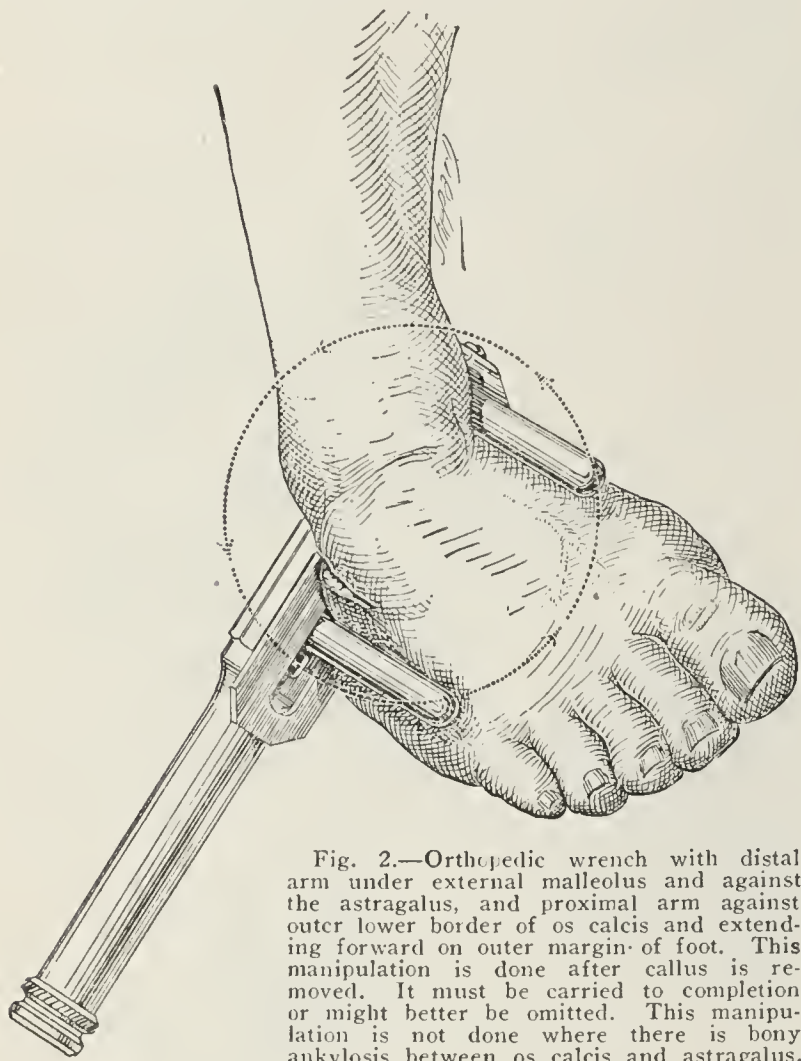


Fig. 2.—Orthopedic wrench with distal arm under external malleolus and against the astragalus, and proximal arm against outer lower border of os calcis and extending forward on outer margin of foot. This manipulation is done after callus is removed. It must be carried to completion or might better be omitted. This manipulation is not done where there is bony ankylosis between os calcis and astragalus.

Because such considerable and permanent disability arose from these fractures, and with the mechanics and pathology in mind, the operation which is here described was designed. It was performed first in 1914. It has been performed in eighteen cases, eleven of which have been followed for varying periods of six months to six years. Three presented fractures of both heels; the fifteen others fractures of one heel. In the eleven cases followed, all patients, including those with double fractures, have gone back to their former occupations. Included among the patients were one teamster, three laborers, one construction engineer, one brakeman, one railroad engineer, one structural iron worker, one painter and two bricklayers. All suffered some remaining disability, which was more apparent in damp, cold weather, for several years following operation. All are able to rise on the toes; all have from 35 to 75 per cent. of normal lateral motion, with no pain under the external malleolus. Pronation of the foot has been relieved and the weight bearing line reestablished.

Cotton has, since 1918, reported three cases in which operation was performed by this method, with recovery. William R. Cubbins also has followed this procedure successfully in a number of cases. It is therefore believed that the value of the operation has been established satisfactorily.

OPERATIVE PROCEDURE

An incision (Fig. 1 A) is made, starting behind and about 2 inches above the external malleolus, following down just back of the posterior edge of the fibula and under the tip of the malleolus about one-half inch below it, and continued forward onto the foot, to the anterior margin of the os calcis. The skin is dissected back, exposing the external ligaments of the ankle joint and the callus which has formed at the site of fracture at the anterior end of the posterior fragment (Fig. 1 B). It will be noticed that the peroneal tendons either are caught between this callus and the external ligaments or have been forced entirely away from behind the external malleolus, and are held tightly under their pulley ligament in the groove between the two structures. The ligament which binds the peroneal tendons between the os calcis and the external malleolus is severed if necessary, and with a sharp, curved chisel, starting above or below, as is convenient, the entire mass of bone lying behind the external malleolus is removed, leaving here a hollow instead of a hump (Fig. 1 C). This must be thoroughly excavated with a sharp chisel; no scraping should be done and sufficient bone should be removed so that there is no possibility of reformation and the pinching again of the peroneal tendons. There will be considerable bleeding from the cancellous bone, which can be easily controlled by hot sponges.

Thus far the procedure has relieved only one symptom, the pain beneath and behind the external malleolus, which results from pressure on the tendons between two bony surfaces. The next step was designed to replace, so far as possible, the weight bearing line of the foot in its normal position, and, if possible, to move the os calcis inward on the astragalus, thereby reestablishing normal relation of the foot to the leg. Before the wound is closed, an orthopedic wrench (Fig. 2) is placed with the handle posterior to the heel, its distal bar under the internal malleolus against the astragalus and pointing toward the toes; the proximal bar underneath the external malleolus against the os calcis, extending forward over the outer margin of the foot. With the operator's hand grasping the foot and the wrench posteriorly, holding them in firm apposition, the opposite hand grasps the distal end of the wrench and the os calcis is forcibly moved in and over on the astragalus. A ripping of ligaments may be heard which almost frightens one on his first attempt, but this procedure cannot be carried too far. The only danger is that of stopping before the os calcis is moved over and the foot thoroughly inverted. It should be possible after this procedure, if it is completed, to invert the foot to its full normal position without any considerable amount of force, and to invert it to its normal limit of inversion on forced motion. If this cannot be done, the procedure has not been carried far enough and should be repeated. There is only one type of case to which this is not applicable and that is one in which a fracture has extended into the astragalocalcaneal joint, and this joint has become ankylosed with bony callus. In these cases it is impossible to reestablish any lateral motion.

The ligaments which have been retracted are replaced behind the external malleolus, no attempt being made to suture the ligaments that have been torn by the inverting process. The wound is closed with fine subcuticular catgut and the cast is applied, extending from the base of the toes to just below the knee, with the foot in strong inversion and at a right angle with the leg. The inverting force must be applied over the anterior part of the os calcis, because it is this that must be inverted and not the anterior part of the foot (Fig. 3). The subcuticular catgut is used to eliminate the necessity of removing the cast or cutting a window to remove the sutures, because it is extremely important to hold the inversion for a sufficient period to allow the supporting ligaments of the foot and internal lateral ligaments of the ankle to contract, and the torn ligaments on the external part of the ankle to heal in the inverted position. Three weeks is usually a sufficient time, after which the cast may be removed.



Fig. 3.—Method of holding os calcis and posterior part of the foot in strong inversion with plaster bandage while applying cast; knee flexed, foot at right angle, inverting bandage exerting pressure over anterior two thirds of os calcis and posterior half of astragalus.

AFTER-TREATMENT

In the interim, while the cast is worn, the surgeon should see that the patient is supplied with a pair of strong shoes, not of the arch support type, but on a good broad last which have been raised from an eighth to a quarter of an inch on the *inner* margin of the heel and sole, the heel being preferably of the extension type commonly called orthopedic. Immediately after the cast is removed, massage and passive and active motion should be started. The passive motion should all be devoted to inverting the foot; the massage to reestablishing the elasticity in the external lateral ligaments of the ankle joint and strengthening the plantar flexors and the invertors of the foot. The active motions should be those which are used for exercises in the cure of weak feet.

The patient is allowed to walk as soon as he can do so with reasonable comfort after the cast is removed, which is usually within a few days. If necessary the longitudinal arch should be supported by a felt pad inside the shoe, attached to a soft leather insole. It has not been found necessary or advisable to use metal arches or arch plates, since these do not contribute to exercise in walking, which would strengthen the plantar

fascia or invertors of the feet. Care should be taken that the patient walks with both feet squarely under him, with the toes pointing straight ahead or a little in pigeon fashion, and that he does not use a cane or crutch, which is conducive to throwing the foot a little out from the perpendicular, and consequently throwing the weight on the arch rather than squarely in the middle or outside of the foot. From four to eight weeks of massage is not too much for most of these cases, and the after-treatment must be carefully watched so that the patient does not continue his bad habit of walking with the toe turned out 45 degrees or more from the anteroposterior line, which he will usually do to prevent throwing weight on the ball of the foot and raising his weight by the calf muscles. It will be found necessary to keep the shoes in constant repair for several months after the patient has fully recovered or it is easy to cause a pain in the arch by a relapse into the former habits of walking.

CONCLUSION

The constant application of this treatment, not only the surgical procedure, but also the careful after-treatment, will in all cases give much relief to the worst cases, establishing a practical cure in the large majority of patients who ordinarily would suffer the rest of their lives with a disability incapacitating them for their occupation.

30 North Michigan Avenue.

LESSONS TO BE LEARNED FROM THE RESULTS OF TONSILLECTOMIES IN ADULT LIFE

OBSERVATIONS IN MORE THAN THREE
HUNDRED CASES *

WALTER C. ALVAREZ, M.D.
SAN FRANCISCO

What are the indications for tonsillectomy in adult life? Why is it that some persons are greatly benefited by the operation, while others get no help? Is there any way in which we can distinguish between the two groups when they first come to us for advice? After puzzling over these questions for a long time and finding little help in the literature, it occurred to me, about two years ago, that I might get the information I desired by questioning the patients who were daily passing through my office with their tonsils already removed. They could tell me why they had consented to have the operation, what they had been promised, and what they had obtained. The objection to this method of study is that presumably only the failures would be represented, because those persons who had obtained good results would no longer have need of a physician. Although it is true that there were some with arthritis, headaches, inanition, etc., who might not have come to see me if their tonsillectomies had been successful, it should be noted that eighty-one, or 32 per cent., of the 251 subjects who were investigated most carefully and listed in Chart 1 were very glad that they had had the work done; and sixty-nine more, or 27 per cent., asserted that they had received some benefit. Some had lost the troubles for which they had sought relief, while others had gained markedly in weight and general

* From the George Williams Hooper Foundation for Medical Research, and the Department of Medicine, University of California Medical School.

health. They returned because, in the course of years, they had developed other troubles, some of them probably in no way related to the success or failure of the tonsillectomy. It seems to me, therefore, that although the sampling from the community is imperfect because it has been done in a doctor's office, the statistics obtained may not be any more defective than those procured in the usual way by sending out questionnaires, because, in that case, the small percentage of people who

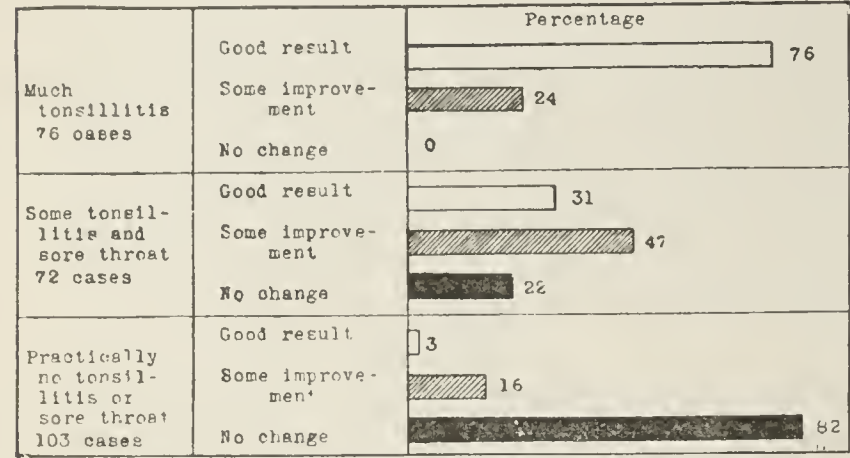


Chart 1.—Results of tonsillectomy in 251 cases.

answer may not, for one reason or another, be representative of the group as a whole.

Every one of the 345 men and women without tonsils who have passed through the office during the last two years has been questioned, but unfortunately not all the data can be used, because in some instances the tonsils had been removed too recently to judge of the result, while in others they had been removed so early in life that we could not speak of an adult tonsillectomy, or the patient could not say what the indications for removal had been. It is hard to classify many of the cases, because the patients were often pleased with the complete relief from tonsillitis, but still disappointed with the failure to get any improvement in general health. Others lost their tonsillitis and gained in general health, but failed to get what they wanted most, that is, relief from some particular affliction. An effort to segregate the cases with these different types of success and failure made the chart so complicated that I have classified most of them under the designation "some" improvement. Some of the data not complete enough for inclusion in Chart 1 have been used in other parts of the paper.

Before proceeding to a study of these statistics, it may be of interest to note that one person out of every four entering my office has had his or her tonsils out. This tonsil-less fraction of the community must be growing rapidly, and it is probably higher among the intelligent and well-to-do than among the poor.

RESULTS OF THE STUDY

The most striking fact which has come out of this study is apparent in Chart 1, in which it will be seen that those who had had much tonsillitis were practically always greatly helped, while those who had had no tonsillitis or sore throat were rarely pleased with their results. Those who had had a moderate amount of sore throat sometimes were helped and sometimes were not.

Chart 2 and Table 1 show that in adults it pays best to remove tonsils for recurring tonsillitis and sore throat; it does not pay so well to remove them for frequent colds; and still less does it pay to remove them on general principles, or because the patient is run down

and nervous, or because he has headaches, deafness, otitis media, enlarged glands in the neck, stomach troubles, or bad breath.

I wish to call particular attention to the poor results obtained after the removal of tonsils simply because something could be squeezed out of them, or because they looked infected. I have no doubt that many of the tonsils in this series did contain more cheesy material than usual, because a number of them were examined by men in whose skill and honesty I have the greatest confidence. Nevertheless, only ten out of the thirty-two in this group could see any improvement, and not one of them was satisfied with the result obtained.

In this series, the results of removal for "rheumatism" were poor, only seven out of forty-seven reporting a cure, and five reporting improvement. I do not stress this point, however, because we would naturally expect to encounter more failures than successes among those still making the rounds of doctors' offices. It should be noted, however, that in a good many of those cases in which the arthritis was partly relieved or uncured, it was so mild that the patient really consulted me about something else. In answer to a question that will undoubtedly arise in the minds of my readers, I will say that in many of these cases the other easily accessible sources of focal infection had been well attended to.

TABLE 1.—Reasons for Removal of Tonsils, with Result

Removed for	Result				
	Good	Some	None	Tempo. Improve.	Worse
Run down state.....	...	1	1	...	2
Duodenal ulcer.....	2	...	1
"Neuritis".....	1	...	...	1	...
Large tonsils.....	3	2	...	...	...
Dropping in throat.....	2	1	1	...	...
Hoarseness.....	...	1	...	...	...
Mouth breathing.....	...	2	...	...	...
Bad breath.....	...	1	3	...	...
Bad taste.....	1	...	1	...	...
Antrum infection.....	1	...	...
Ear noises.....	2	...	...
Ear pain.....	1	...	...	...	...
Attacks of fever.....	2	...	...	...	...
Diphtheria carrier.....	1	...	...	...	...
Bloodshot eyes.....	1	...	...
Facial acne.....	1	...	...
Asthma.....	4	...	1
Hay-fever.....	1
Heart trouble.....	...	1	...	...	2
Anginoid pain.....	...	1	1	...	...
Hypertension.....	2	...	1
Nervousness.....	3	...	2
Insanity.....	1	...	...
Epilepsy.....	1	...	...
Goiter.....	...	1	2	...	...
Mucous colitis.....	2	...	1
Constipation.....	2	...	...
"Autointoxication".....	1	...	...
Cholecystitis.....	1	...
Appendicitis.....	1	...	...
Indigestion.....	2	1	1
Undernutrition.....	1	...	...
Numbness in hands.....	1	...	...
Tuberculosis.....	1	...	...
Cough.....	1	...	...
Dizziness.....	1	...
Great sensitiveness to sound.....	...	1	...	...	...

UNDUE FREQUENCY OF TONSILLECTOMY

I think that a glance down Table 1 will leave many with the impression that tonsillectomy is too often resorted to as a panacea or as a forlorn hope. It is unfortunate that all therapeutic measures which prove valuable in one or two diseases have, for a time, to go through the stage of being tried out on everything and everybody.

Table 2 is of interest, as it shows some of the most probable reasons for the failure to get an improvement

in health after the operation. The large percentage of cases of cholecystitis, appendicitis and duodenal ulcer is due probably to the fact that most of my patients seek my advice with regard to gastro-intestinal troubles. In many cases, it seemed probable that the failure to cure the patient was due to the fact that although the tonsils and teeth had been removed, a diseased gallbladder, appendix or prostate had been left. Hypertension is probably an even more common cause for failure than the table would indicate, as only the most striking and definite cases have been listed.

NEED FOR A CAREFUL PHYSICAL EXAMINATION

In a large proportion of cases, I feel sure that, had a careful physical examination been made at the start, the tonsillectomy would not have been done. Thus, in

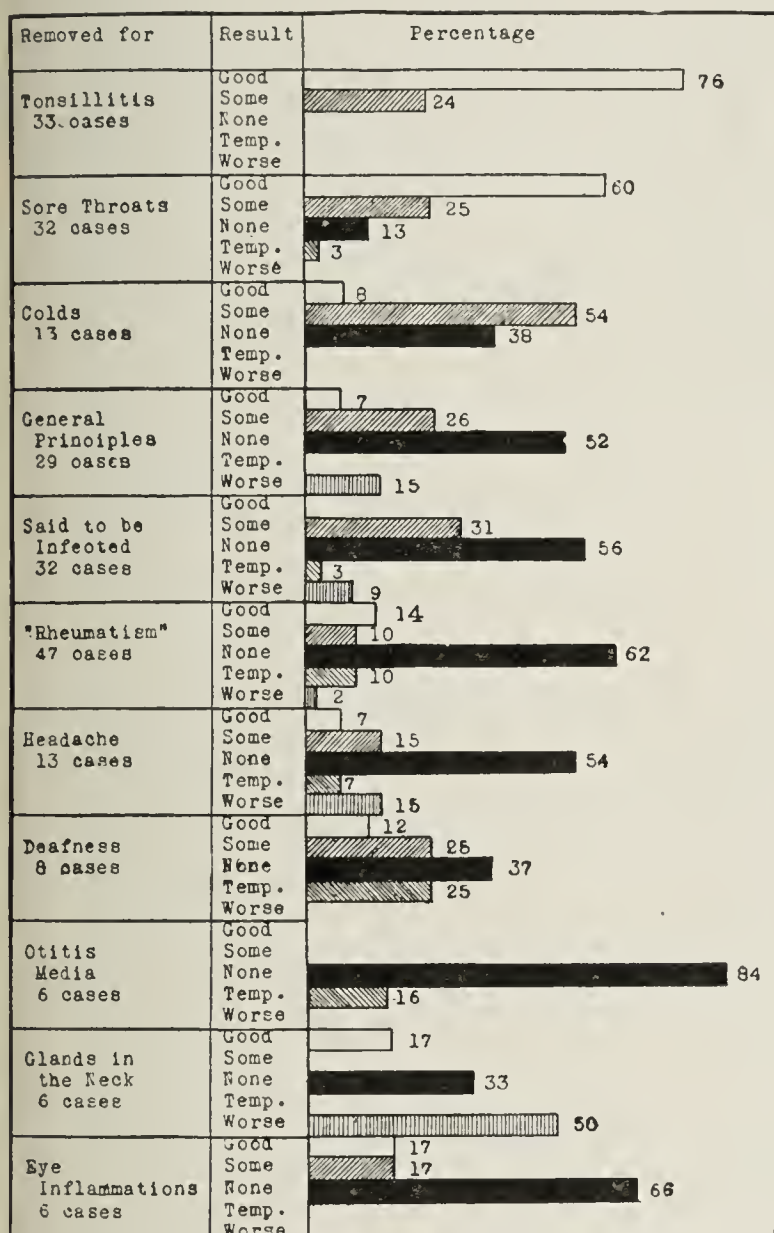


Chart 2.—Reasons for removal of tonsils, with results.

several instances, even a cursory examination would have shown that the enlarged glands in the neck, for which the operation was advised, were secondary to carcinoma elsewhere, or that they were manifestations of a widespread Hodgkin's disease.

On the other hand, in many of the cases, especially those of physicians and their relatives, the rooting out of focal infections had been, if anything, too thorough. One man had parted with his tonsils, all of his teeth, his gallbladder, his appendix, and his prostate, and still he suffered from a disease which, so far as we really know, may have nothing to do with any infection.

REPEATED OPERATIONS

In many other cases, as physicians had kept on insisting that the failure to get relief was due to the

leaving of tonsillar remnants, the patients had submitted to operation after operation, usually without any improvement in the result (Table 3). In one amusing case, the man consulted his physician about a "rheumatism," and the following dialogue took place:

"Your tonsils must come out."
 "But Doctor, they are out already."
 "I don't care—rotten job."
 "But Doctor, you did it!"

The conclusion to which I am driven is that many diseases cannot be influenced by the removal of focal

TABLE 2.—Reasons for Failure

	No. of Cases		No. of Cases
Appendicitis.....	11	Hypothyroidism.....	1
Asthenia	5	Nervous breakdown.....	1
Carcinoma.....	2	Pituitary disease.....	1
Cervicitis.....	1	Poorly removed.....	1
Cholecystitis.....	30	Prostatitis.....	4
Duodenal ulcer.....	8	Pyelitis.....	1
Epilepsy.....	2	Sinusitis.....	5
Giardiasis.....	2	Syphilis.....	4
Heart disease.....	2	Teeth infected.....	4
Hypertension.....	14	Tuberculosis.....	2

infections, no matter how thoroughly it is done. Sometimes, as in arthritis, the joints become so damaged that they represent foci of infection themselves, and it no longer does any good to remove the door through which the bacteria originally entered.

TRIVIAL REASONS FOR TONSILLECTOMY

It was often amusing or saddening to hear the reasons given by the patient for his having submitted to the operation. One man said simply that he had always been well until his brother had his tonsils out and gained 30 pounds in weight, whereupon there was no peace in the family until he went and tried it too. Unfortunately, he got practically no result. Another man explained sheepishly that his tonsils had never bothered him, and the only reason he had them out was that he became very friendly with a doctor's nurse. She introduced him to the physician, who immediately found some excuse to look down his throat, and soon afterward got him to the operating room. Another man was persuaded to have a tonsillectomy because he had one mild attack of constipation. He nearly died of pneumonia after the operation, and never forgave the physician.

TABLE 3.—Results of Repeated Tonsillectomies

Number of Operations	Number of Cases	Result				
		Good	Some	None	Tempo. Improve.	Worse
2	17	2	6	7	1	1
3	6	..	1	5	..	..
4	1	..	1	..	..	..

Another man interested me very much because I think he proved the point that there are no tonsils so small and innocuous that some one will not be willing to take them out. This man traveled extensively, and although always in perfect health, had a penchant for getting a physical examination in every large city through which he passed. One day he rushed in in great distress to say that he had found two physicians who told him his tonsils must come out. He practically never had sore throat and, at the age of 56, the tonsils were almost entirely atrophied. Five physicians had

already told him to forget it, and I joined with them in an effort to calm his fears. Although somewhat reassured, he finally decided that peace of mind could come only with a tonsillectomy, so it was done. His satisfaction was, unfortunately, short lived, for within the year two physicians remarked, while going over him, that his "tonsils ought to come out!" This upset him so that he rushed back to California to have his tonsillar fossae scraped a second time. He now thinks that he feels a little better for all this effort.

Two persons had their tonsils out because they were related to physicians, and the operation would not cost much. One regrets it bitterly, because his faucial pillars were mangled and his throat has not felt right since. Another had his tonsillectomy because he blinked his eyes. He had a nice local result, but he still blinks. Another had his operation for a gonorrheal arthritis and iritis. In this case a little group medicine would have been helpful. Another man was talked into his tonsillectomy because there was a diphtheria scare in town. Another was promised relief from sleeplessness.

Although I have just been emphasizing some unfortunate phases of tonsillectomy, it must not be assumed that I have any antipathy to the operation or that I fail to appreciate its value. I wish only to see its use restricted to those cases in which it is likely to do some good. I might add that, during the period covered by this study, sixteen tonsillectomies were done at my suggestion. Unfortunately, in spite of my conservatism in the matter, several of these patients are now listed among those who got no result.

BAD RESULTS

That the operation should not be done for trivial reasons is shown by the fact that twenty-one out of the 251, or 8 per cent., of these people were the worse for it, or suffered greatly for a while afterward. Five nearly bled to death; one nearly died under the anesthetic; one had a lung abscess; one had a severe pneumonia because he was operated on while he had a cold; one has had recurring bronchitis ever since; two had their throats so badly torn that food regurgitated into their noses for months afterward; one says his throat has never felt right since; three lost greatly in weight and never regained it; four were carried over into severe nervous breakdowns; two feel that they are more subject to colds; one, with deafness, developed ear noises; two developed sinusitis within a few days after the operation, and one developed a cholecystitis which later had to be operated on.

GAIN IN WEIGHT

Only eight reported decided gains in weight. One reported a gain of 30 pounds (14 kg.) in three months, but he still has stomach trouble and a sensitive throat. Another gained 30 pounds but now has a cholecystitis. Another gained 10 pounds (4.5 kg.) in a few weeks, but still had to give up work on account of a nervous prostration.

SUMMARY

It appears that it is not so much what the adult tonsil looks like but what it does that counts; i. e., unless it is inflamed enough to cause sore throat and tonsillitis occasionally, the chances are against the patient's being much benefited by its removal. Furthermore, if the patient suffers from repeated attacks of tonsillitis, he will almost always be grateful for the operation, even if he fails to get relief from some other trouble.

Tonsillectomy should not be done for the relief of troubles outside the throat until the patient has been studied very carefully by a competent internist. Few promises should be made if some chronic disease is found elsewhere in the body.

Conservatism should be the rule except in those cases in which the patient is seriously menaced, or in which there are good reasons for believing that the disease is one that can be influenced by the removal of focal infections.

Some of the experiences reported here may seem to reflect somewhat on the honesty or good sense of the medical profession, but I feel that our faults are no worse than those of humanity in general; that is, we tend to remember our successes and to forget our failures. The worst offenders are often physicians who have been cured of some infirmity by the removal of tonsils or teeth. They are so impressed with the good result obtained that thereafter they give no quarter, but insist that their patients submit to the same therapeutic procedures. If their attention is called to their many failures, they point to the few remarkable successes and maintain that these are worth all the failures. My feeling is that if we use enough care and judgment in the selection of cases, we can still get the successes, with perhaps only a tenth of the failures which we now see.

177 Post Street.

JAUNDICE IN MYOCARDIAL INSUFFICIENCY *

ARTHUR M. FISHBERG, M.D.
NEW YORK

The occurrence of outspoken jaundice with yellow sclerae and bile pigments in the urine as an incident in myocardial insufficiency was long ago observed, but is not common. Very frequent, on the contrary, is the development of a faint yellow or brownish-yellow pigmentation of the skin without the presence of bile pigments in the sclerae or urine. Determination of the exact shade of the coloration is made more difficult by the usual accompaniment of cyanosis, a condition that makes the jaundice more readily perceptible on the skin of the abdomen than on that of the extremities or face. This frequent combination of slight ochrodermia with the dusky tinge of cyanosis has resulted in the application of the term cyanotic icterus to the condition. Recent investigations have shown, in fact, that many patients with myocardial insufficiency have an increased amount of bilirubin in the blood. Bilirubin in the urine is rare, though urobilinogen is usually present. My object here is to report quantitative studies on the bilirubin content of the blood of patients suffering from cardiac insufficiency and the correlation of bilirubinemia with other evidences of disturbed hepatic function and extrahepatic bilirubin production.

METHOD

It was shown by Hijmans van den Bergh¹ and his co-workers that the red color produced on addition of Ehrlich's diazoreagent to an alcoholic bilirubin solution formed an extremely sensitive (detecting one part in 1,500,000) and reliable test for the presence of bilirubin

* From the Medical Division of the Montefiore Hospital.

1. Van den Bergh and Snapper: Die Farbstoffe des Blutserums. Deutsch. Arch. f. klin. Med. **110**:540, 1913. Van den Bergh: Der Gallenfarbstoff im Blute, Leyden and Leipzig, 1918.

in the blood serum. He was able to elaborate this reaction into a colorimetric method for the quantitative estimation of the bilirubin content of the blood. Furthermore, van den Bergh demonstrated that by means of the diazoreaction applied to the blood serum, it is possible to differentiate between cases of jaundice due to mechanical obstruction of the bile passages and those not obviously mechanical (so-called hematogenous or oleo-chromic icterus). He found that the bilirubin present in the serum in cases of mechanical icterus immediately gives a red reaction on the addition of Ehrlich's diazoreagent, while the serum in "hematogenous" icterus gives this red reaction only after several minutes or on the addition of alcohol. The first type of reaction he terms the direct; the second, the indirect. These findings of van den Bergh have been confirmed in principle,² but it seems that the distinction is not always so clear cut as the Dutch investigator believes, and that mixed types occur. The two reactions of van der Bergh apparently correspond to the dialyzable and adialyzable varieties of bilirubin described by Blankenhorn.³

That bilirubin is a physiologic constituent of the blood serum was long denied by Hanmarsten and others, but was conclusively demonstrated by the investigations of Gilbert⁴ and his co-workers. The normal blood bilirubin gives the indirect reaction and varies in amount between one part in 250,000 and one part in 1,000,000 parts of serum. The average of sixteen normal individuals whom I tested was 1:330,000. Following van den Bergh, I shall term a concentration of one part of bilirubin in 200,000 parts of serum as one unit of bilirubin. Hence, the normal bilirubin content of the serum averages 0.6 unit. Values of more than one unit I have found only in pathologic cases.

BILIRUBIN CONTENT OF THE BLOOD IN CARDIAC DECOMPENSATION

The accompanying table shows the blood bilirubin values in twenty-three cases of cardiac decompensation. All bilirubin determinations were made by the technic of van den Bergh, as described in his book, cited above. At the time of examination, the patients presented subjective and objective evidences of severe impairment of the myocardial reserve. In all instances, the myocardial insufficiency was of long standing, and nearly all had a history of one or more previous episodes of decompensation.

The patients in the accompanying table were severely decompensated and had been so for long periods, being mostly in the wards of the Montefiore Hospital, which contain, largely, very chronic cases. Since the normal bilirubinemia is less than one unit, it is readily perceived from the figures how marked the hyperbilirubinemia of cardiac failure may be. In cardiac decompensation of recent inception, we found a marked increase in the blood bilirubin to be less common. Of even such cases, only two presented a bilirubinemia of more than one unit; in both these cases, pulmonary and hepatic congestion was very intense. These findings correspond to the clinical experience that icterus in cardiac patients occurs most frequently in chronic cases and is of ill omen as to the prognosis. The figures in the table show hyperbilirubinemia to be more a feature

of mitral than of aortic disease, this apparently being connected with the more frequent occurrence of venous stasis in mitral disease.

While a few of the patients exhibited ochrodermia marked enough to be immediately obvious, most of the cases with notably increased blood bilirubin presented only a brownish-yellow discoloration which could not be definitely ascribed, on inspection, to bile pigment. Others showed no pigmentation of the skin whatsoever. Thus, Patient 18 had an absolutely white skin, despite the presence of 1.8 units of bilirubin in the blood. Patient 4 was definitely icteric, with yellow sclerae at the time of his first examination, his blood bilirubin being 2.9 units. After venesection, rest and digitalis,

Blood Bilirubin Values in Twenty-Three Cases of Cardiac Decompensation

Patient	Diagnosis	Size of Liver	Urobilinogenuria	Nature of Reaction	Units of Bilirubin in Blood
1	Chronic bronchitis, emphysema, myocardial degeneration	Very large	Present	Indirect	2.9
2	Mitral disease, auricular fibrillation	Large	Present	Indirect	1.8
3	Adherent pericardium, auricular fibrillation	Large	Slight	Indirect	1.2
4	Aortic regurgitation; mitral stenosis and regurgitation; auricular fibrillation	Large	.....	Indirect	2.9
5	Emphysema, right heart dilated	Large	Present	Direct	2.2
6	Arteriosclerosis, myocardial degeneration	Not palpable	Present	Indirect	2.1
7	Hypertension, auricular fibrillation	Large	Present	Indirect	1.7
8	Aortic regurgitation, mitral stenosis and regurgitation	Very large	Present	Indirect	2.5
9	Hypertension, auricular fibrillation	Not palpable	Small amount	Indirect	2.0
10	Hypertension	Not palpable	Present	Indirect	1.1
11	Aortic stenosis and regurgitation	Palpable	Absent	Indirect	0.5
12	Syphilitic aortitis, aortic insufficiency	Large	Present	Indirect	1.4
13	Mitral stenosis and insufficiency, adherent pericarditis, pulmonary infarct	Very large	Present	Indirect	2.4
14	Mitral stenosis, auricular fibrillation, embolic hemiplegia	Very large	Present	Indirect	1.0
15	Chronic nephritis, auricular fibrillation	Large	Present	Direct	3.8
16	Mitral stenosis, myocardial degeneration	Large	.....	Indirect	3.7
17	Aortic insufficiency	Large	Absent	Indirect	0.6
18	Aortic stenosis and insufficiency, mitral regurgitation	Large	Present	Indirect	1.8
19	Auricular fibrillation (moribund)	Very large	Present	Direct	3.1
20	Mitral stenosis	Large	Present	Indirect	2.3
21	Aortic insufficiency and stenosis	Palpable	Absent	Indirect	1.6
22	Aortic insufficiency	Large	Present	Indirect	2.2
23	Mitral stenosis and regurgitation, hypertension, myocardial degeneration	Large	Present	Direct	4.2

he appeared merely sallow and the blood bilirubin was 0.8. He stated that during a previous attack of decompensation he had become very yellow, the jaundice disappearing on treatment for the cardiac condition. We have found, as did Lepelne,² that the high blood bilirubin values occurring in cardiac insufficiency are lowered with an improvement in compensation.

PATHOGENESIS OF CARDIAC ICTERUS

The frequency of ochrodermia in cardiac insufficiency raises the question of the mechanism of its production. That the yellow pigment is bilirubin has been

2. Lepelne, G.: *Deutsch. Arch. f. klin. Med.* **132**: 96, 1920; **135**: 1921.
3. Blankenhorn, M.A.: *Acholic Jaundice*, *Arch. Int. Med.* **27**: 131 (Jan.) 1921.
4. Gilbert: *Herscher et Posternak*, *Compt. rend. Soc. de biol.* **55**: 37, 1903.

surmised from clinical observation, and is conclusively demonstrated by the high blood bilirubin values found in all such cases. The source of the abnormal amount of bilirubin in the blood has been variously explained. Several factors must be taken into consideration in this connection.

1. Congestion of the mucous membrane of the bile passages. This has been thought of by some as the cause of the jaundice in cardiac decompensation. But it would seem that if mechanical blocking of the lumen of the bile ducts by a congested mucous membrane at any point from the papilla on occurs at all, it must be very rare. It has been shown above that the bilirubin in the serums of decompensated cardiac patients gives, in the large majority of instances, the indirect reaction of van den Bergh, while that from cases of mechanical icterus (common duct stones, carcinoma of the head of the pancreas, etc.) gives the direct reaction. Available clinical evidence also suggests that this form of jaundice is not of obstructive origin, for neither bile pigments nor bile salts are found in the urine, though urobilinogen is present usually in copious quantities. Far from being decolorized, the stools are often more highly pigmented than normal. Symptoms of cholemic intoxication are conspicuously absent, but their absence cannot be evaluated in favor of nonobstructive jaundice, for the icterus is rarely intense enough (long-standing though it usually is) to warrant the expectation of cholemia. Itching of the skin we have observed in but one case. In cardiac patients, the bradycardia of cholemia would be difficult of detection. Moreover, post-mortem observation does not reveal swelling of the mucous membrane of the bile passages sufficient to cause biliary retention.

Only in the very rare instances of intense jaundice with marked bilirubinemia does it seem probable that mechanical obstruction in the bile ducts plays a part in the production of the icterus. In the large majority of cases, the jaundice is dissociated, only bilirubin and not other constituents of the bile accumulating in the blood, and the explanation must be sought in the causes of nonobstructive icterus; i. e., injury to the liver cells and excessive destruction of erythrocytes.

2. Injury to the liver cells. The familiar picture of severe chronic passive congestion of the liver with great destruction of the parenchymal cells at the center of the lobule by pressure between the ectatic blood capillaries, and the marked fatty changes in the more peripherally located cells whose nutrition is not maintained by the slow-moving blood stream, immediately suggests that herein lies the cause of the jaundice of cardiac insufficiency. Clinically, this variety of jaundice is most often, though not invariably, associated with a palpably enlarged liver. There can be little question that these anatomically demonstrable changes in the liver cells play a part in at least the more severe cases of cardiac jaundice. But, in his classical work on icterus, Stadelmann⁵ pointed out, years ago, that there are cases of the most intense passive congestion of the liver without any jaundice, and that therefore the venous stasis cannot be the only factor in its pathogenesis. The foregoing estimations of the blood bilirubin are confirmatory of this view, and we have seen cases with high blood bilirubin values and livers not large enough to be palpable; Brulé⁶ also notes such instances. Particularly in cardiac decompensation of recent incep-

tion, there may be most intense congestion of the liver without much increase in the bilirubin content of the blood.

3. Increased destruction of red blood cells. That an abnormally great destruction of erythrocytes occurs in the course of chronic cardiac decompensation is indicated by the postmortem appearance of the organs. The liver, spleen and, in the highest degree, the lungs exhibit large amounts of iron-containing pigment, hemosiderin, which is derived, of course, from the hemoglobin of disintegrated red cells. It is in the lung that the greatest amount of blood destruction occurs. Decompensated cardiac patients constantly give evidence of this by expectorating sputum in which are to be found the so-called heart failure cells, which are merely phagocytic wandering and epithelial cells containing hemosiderin from the broken-down red cells. Eppinger⁷ considers the chief source of the increased bilirubin content of the blood in cardiac insufficiency to be the multiple hemorrhagic infarctions which occur so readily in the congested lung. It seems very probable that pulmonary infarction does play a considerable part in the production of cardiac jaundice. Cases do occur, as one seen by Libman, in which a large pulmonary infarct is followed very quickly by marked jaundice. But in most instances there is no evidence that pulmonary infarction plays a preponderating rôle. Most of the bilirubin apparently comes from the red cells stagnated in the lung and other viscera.

The postmortem appearance of the spleen and liver also points to an increased destruction of red cells. Eppinger⁸ has pointed out the marked similarity of the histologic picture of the spleen in chronic passive congestion and hemolytic jaundice. In the liver are to be found, in nearly all cases, the so-called bile thrombi, indicative of an increased destruction of red cells with consequent higher concentration of the bile. The bile thrombi block the biliary canaliculi, which become dilated behind them and rupture into the adjacent lymph spaces, into which the bile is discharged, adding to the bilirubin content of the blood.

Clinically, the patients show urobilinogenuria and an increased amount of urobilin in the stools as well as of bilirubin in the duodenal juice,⁹ conditions that also point to an increased destruction of erythrocytes. That the patients do not always develop an anemia, in fact, often exhibit a polycythemia, is explained by the increased production of red cells, evidence of which is offered by the red bone marrow in the shafts of the long bones often found in cases of cardiac decompensation.

The evidence presented in the preceding paragraphs indicates that in severe cardiac decompensation there is an increase in the destruction of red cells. There is very little evidence that this takes place within the circulating blood stream, as was thought by Grawitz.¹⁰ The resistance of the red cells is not diminished. The circulatory stasis results in the stagnation of red cells in the various organs, to the highest degree in the lungs, and these stagnated erythrocytes fall prey to the erythrophagic cells of the reticulo-endothelial apparatus. Among the end-products of the decomposition of the hemoglobin molecule are an iron-containing fraction

5. Stadelmann: *Der Icterus*, Stuttgart, 1891, p. 263.

6. Brulé: *Recherches recentes sur les ictères*, Paris, 1919, p. 77.

7. Eppinger, in Kraus-Brugsch: *Spezielle Pathologie und Therapie*, 6: Part 2, p. 295.

8. Eppinger, in Kraus-Brugsch: *Spezielle Pathologie und Therapie*, p. 297.

9. Eppinger: *Die hepatolienalen Erkrankungen*, Berlin, 1920, p. 384.

10. Grawitz: *Klinische Pathologie des Blutes*, Berlin, 1911, Ed. 4, p. 838.

which causes the siderosis of various organs, and bilirubin. It is this anhepatically formed bilirubin that predominates in cardiac icterus. The increased bilirubin content of the blood results in a pleiochromia of the bile, and bile thrombi form in the biliary canaliculi with resulting obstruction, but this is secondary to the increase in anhepatic bilirubin.

SUMMARY

1. Hyperbilirubinemia is very common in myocardial insufficiency, particularly in cases of long standing.
2. The slight yellow or yellowish-brown discoloration of the skin so frequently observed in cardiac insufficiency is a true jaundice, being due to the hyperbilirubinemia.
3. In cardiac insufficiency, there is an increased destruction of stagnated red cells by the reticulo-endothelial cells of the various organs, particularly the lung, liver and spleen. This is compensated for by increased activity of the bone marrow.
4. Anhepatic bilirubin formation from the hemoglobin of the red cells thus destroyed results in the hyperbilirubinemia of cardiac decompensation, though insufficient excretion of bile pigment by the injured liver cells plays an accessory part.

170 West Fifty-Ninth Street.

POSSIBLE APPLICATION OF PHENOL-
TETRACHLORPHTHALEIN TEST TO
OBSTRUCTIVE JAUNDICE*

REUBEN OTTENBERG, M.D.

AND

SAMUEL ROSEN, M.D.

NEW YORK

The diagnosis of complete obstruction of the common bile duct is usually easy. If, however, we are asked on any given day whether complete obstruction is still present, we cannot give a certain answer, because the subsidence of the symptoms on which the diagnosis rests—acholic stools, jaundice, choluria, bilirubinemia—takes a number of days.

There are certain situations in which the answering of this question may be of great practical value. For example, if a surgeon about to operate on a patient with protracted jaundice due to stone in the common bile duct could ascertain that the stone had just passed spontaneously, he would in most instances postpone operation to a time when the patient's general condition was more favorable.

The question might, of course, be answered by the use of the duodenal tube. But in the absence of bile, it is very difficult to be certain that the tip of the tube is in the duodenum. And the objection of many patients to the passage of the tube is so great that this method has not introduced itself into practice.

An accidental observation has led us to believe that the phenoltetrachlorphtalein test (by the new and simple technic of Rosenthal¹) might be useful in answering this question.

In trying out this test of liver function, we have examined, so far, eighteen cases. Four of these were apparently cases of complete obstruction. Of the four, three cases behaved in the typical and expected way;

that is, there was complete retention of the dye. The percentage of dye in the serum at the end of an hour was as high as it had been fifteen minutes after the injection. The figures in these three cases are given in the accompanying table.

Results of Phenoltetrachlorphtalein Test

Case	Duration of Jaundice	Diagnosis	Per Cent. of Dye in Serum at 15 Minutes	Per Cent. at 1 Hour
1	4 months	Carcinoma of pancreas	30	30
2	2 days	Common duct stone	20	25
3	1 week	Common duct stone	22	22

The fourth case gave an entirely different result: The percentage at fifteen minutes was 10, and at one hour was 8. This, according to the results of Rosenthal (and our own have so far been entirely confirmatory of his), is to be interpreted as meaning only slight impairment of liver function (and evident excretion of dye). This patient was operated on two days after the test had been done. The gallbladder contained numerous stones, but the common bile duct, though dilated, showed no stone and was unobstructed. It was evident that the stone must have escaped at some time prior to the operation. The history of the case is as follows:

S. G., a woman, aged 47, housewife, referred, Feb. 5, 1923, by Dr. A. A. Berg, nine weeks previous to admission had had a sudden attack of pain in the right upper quadrant of the abdomen radiating to the shoulder, accompanied by jaundice. Jaundice and clay-colored stools lasted for five days. Then the jaundice lessened, and she was well until four days previous to admission, when another exactly similar attack occurred, lasting eight hours. After the attack, the jaundice grew deeper and the stools became clay colored.

The patient gave evidence of pronounced jaundice. There was tenderness and a small globular mass in the right upper quadrant, and the urine showed a large amount of bile. An operation was performed, February 10, by Dr. Lewisohn, who found numerous stones in a shrunken and adherent gallbladder. Both hepatic and common ducts were probed, and no obstruction was encountered. A cholecystectomy was done. Recovery was uneventful, and the patient was discharged, cured, February 25.

On reviewing the case after the operation, two additional points were noted. The stool recorded by the nurse prior to operation had been described as of a light brownish color; and the patient's serum obtained for the dye tests two days before operation had been only slightly jaundiced (whereas her skin had been deeply jaundiced).

One other point deserves mention. The obstruction had been relieved at the time of the test, but the liver function had not yet returned entirely to normal—presumably as the result of damage to liver parenchyma. After more prolonged obstruction, the injury to the liver cells is much greater, and it is possible that under these circumstances the return to normal function (as shown by the partial excretion of dye) might not occur so promptly. Only a considerable series of observations can answer this question.

We are suggesting the present application of the phenoltetrachlorphtalein method now, because the accident of testing a patient shortly after the escape of an obstructing stone may not happen to us again soon, and it is hoped that the report of the present case may lead others to determine whether this application of the test has any value.

15 West Eighty-Ninth Street.

* From the Medical Service of the Mount Sinai Hospital.

1. Rosenthal, S. M.: New Method of Testing Liver Function with Phenoltetrachlorphtalein, J. A. M. A. 79: 2151 (Dec. 23) 1922.

Clinical Notes, Suggestions, and New Instruments

PRACTICAL RULES FOR THE DIAGNOSIS OF CARDIAC ARRHYTHMIAS

MAURICE LEWISON, M.D., CHICAGO

1. Sinus arrhythmia is the common irregularity of the young; premature contractions cause the common irregularity of those past middle life.

2. The absence of a predominant rhythm indicates auricular fibrillation.

3. Comparison of the heart rate, as determined by auscultation with the pulse rate, will show a pulse deficit in all conditions excepting heart block and sinus arrhythmia.

4. When the pulse rate is increased by exercise, the irregularity is decreased or made to disappear when caused by premature contractions or sinus arrhythmia, and is increased in auricular fibrillation.

5. Deep breathing increases the irregularity in sinus arrhythmia.

6. A rapid regular pulse, persisting under rest treatment, indicates paroxysmal tachycardia or auricular flutter.

7. If the jugular are compared with the radial pulsations, the jugular pulsations will be found absent in fibrillation and more rapid in heart block.

8. If the pulse is compressed with the cuff of a sphygmomanometer, a pulse deficit will be increased in auricular fibrillation and premature contractions. In pulsus alternans, the pulse will be halved.

9. A sudden onset of rapid heart with a regular pulse indicates simple paroxysmal tachycardia. If it is irregular, with a predominant rhythm, it indicates auricular flutter; but when a predominant rhythm is absent, it is auricular fibrillation.

10. A slow regular rhythm below 40 indicates complete heart block.

11. Sudden halving of the pulse indicates development of heart block, premature contractions or pulsus alternans.

12. Auricular fibrillation is the most common arrhythmia associated with cardiac failure.

104 South Michigan Avenue.

PERFORATION OF GASTRIC ULCER BY STOMACH TUBE: REPORT OF CASE

GEORGE SCHWARTZ, M.D., NEW YORK

Adjunct Surgeon, Peoples Hospital; Attending Surgeon, Child Welfare Board

A brief review of the available literature at hand fails to show any reported cases of perforation of gastric ulcer due to a stomach tube or to lavage. I have been in communication with several surgeons of wide experience, all of whom have told me they had never seen a case. Because of the extreme rarity of such a condition, I deem it sufficiently worthy to report, and also to note that gastric lavage, or even the passage of a stomach tube for a gastric analysis, is a dangerous procedure in the presence of a chronic perforating type of ulcer, and the trauma arising from the use of the stomach tube may cause an acute perforation of a chronic ulcer.

REPORT OF CASE

History.—J. B., a man, aged 28, Jewish, had been suffering for the last two years with pain in the pit of the stomach, which came on about twenty minutes after he had partaken of food. The pain varied in degree, at times being only a fulness in the epigastrium, while at other times the pain was severe, but was relieved by sodium bicarbonate and belladonna. When the pain was mild, he did not vomit, but when it was severe, he vomited and then felt relieved. This severe pain was probably due to pylorospasm, as it was relieved by the belladonna, and he vomited only when he had the severe pain due to the spasm. He never had hematemesis. His weight was 135 pounds (61 kg.). He had frequent attacks of heartburn which were relieved by sodium bicarbonate. He had a series of roentgenograms taken by Dr. I. W. Held,

who told him that he had a chronic perforating type of ulcer and advised operation, which the patient refused. February 15, about two weeks after the roentgenograms were taken, he went to a physician, who told him that he would feel better if he had his stomach washed, to which he consented. When the stomach tube was passed, the patient had an agonizing pain in the pit of the stomach, and felt like fainting. The physician withdrew the tube and allowed the patient to recline for a while, after which time he felt slightly better. He was then taken home and given a hypodermic injection (presumably morphin), and spent a fairly comfortable night. On arising in the morning, he felt weak and had a slight pain in the pit of the stomach. For breakfast he ate two soft-boiled eggs, one cracker and a cup of warm milk; in a few minutes he fell to the floor with an agonizing cry and fainted. The family physician, on being called, at once referred the patient to me for operation. He was taken to the Peoples Hospital, Feb. 28, 1923, at 10 a. m.

Examination.—The patient was in profound shock; the extremities were cold and clammy; the temperature (rectal) was 97, the pulse, 136, and respiration, 42. There was an anxious expression on the face, and grunting and crying aloud without any movement of the body. Breathing was costal in character. The abdomen presented a typical picture of perforated ulcer, that is, boardlike rigidity, obliteration of liver dulness, and shifting dulness with fluid in the flanks, with all the other evidences of an acute abdominal calamity. The blood pressure was: systolic, 85; diastolic, 60. Blood count revealed hemoglobin, 75 per cent.; white blood cells, 16,000; polymorphonuclears, 81 per cent. The diagnosis of perforated gastric ulcer (traumatic) was made.

Operation.—Gas, oxygen and ether were administered. The abdomen was discovered full of a seropurulent fluid. The eggs, crackers and milk which the patient had had for breakfast were free in the abdominal cavity. There was a large perforation, which easily admitted the ring finger and which was large enough for a stomach tube to enter it, on the anterior wall of the stomach near the lesser curvature, and about 2½ inches (63 mm.) from the pylorus. The gastrohepatic omentum had made a feeble attempt to encircle the perforation, which, however, was too large to permit its being sealed from the general peritoneal cavity. The perforation was closed with a double purse-string suture and a piece of the gastrohepatic omentum sewed over it for added protection. No gastro-enterostomy was done because the patient was moribund, and I deemed it wisest to perform the quickest operation possible to close the perforation and get out.

All the fluid in the peritoneal cavity was aspirated with the suction apparatus, one drain being placed in the kidney pouch, and another in the pelvis through a suprapubic stab. The patient was given morphin liberally, placed in the Fowler position, and given a rectal drip. He reacted poorly, and his pulse went to 140; so I arranged for a blood transfusion. I had difficulty in securing a donor, and so I waited until the following morning. By that time the patient's condition had so improved that the blood transfusion was not necessary. He was given nothing by mouth for five days, but was given 1,500 c.c. of physiologic sodium chlorid solution by hypodermoclysis daily, with a continuous rectal drip of 5 per cent. glucose and sodium bicarbonate. He was permitted fluids by mouth on the sixth day; he made an excellent recovery and was out of bed and taking a soft diet on the thirteenth day. I have seen him twice since he left the hospital, and he says he feels fine, has gained 9 pounds (4 kg.), has absolutely no pain and has not vomited. He has felt so well that he has eaten steaks and other meats against my orders, apparently without any ill effects.

COMMENT

I think that this patient had a chronic perforating type of ulcer which was acutely perforated by the stomach tube, the tip of the tube going through the stomach wall, and being temporarily walled off by the gastrohepatic omentum.

In the morning the entire breakfast had free access to the general peritoneal cavity, and the profound shock was probably due to the unusually large size of the perforation.

143 East Twenty-First Street.

**A PILLOW AT THE FOOT OF THE BED AFTER
ABDOMINAL OPERATIONS**

THOMAS S. CULLEN, M.D., BALTIMORE

That continued disuse of the muscles is followed by a certain amount of atrophy and flabbiness is well known to all of us, and nowhere can we find a better example than in the legs after the patient has lain in bed some weeks.

For many years I have often made it a practice, unless there were contraindications, to order a pillow placed at the foot of the bed a few days after an operation. This pillow can be pushed down between the lower end of the mattress and the foot of the bed, or be firmly fastened to the latter.

The patient is instructed to use this pillow much as one would use a punching bag, and, in addition, the pillow also acts as a fixed point enabling him to push himself up gently in the bed. The frequent punching of the pillow in large measure prevents the muscles from becoming flabby; and, when the patient is allowed out of bed, he is at once able to walk fairly well instead of wabbling.

I have incidentally referred to the pillow at the foot of the bed in my classes, but in view of the simplicity of the procedure, I never mentioned it to my colleagues.

During the last month it was again necessary for me to spend nearly four weeks in bed, and several of my associates wanted to know why I had the pillow at the foot of the bed—they had never tried it. Perhaps some one has already referred to its value, perhaps not. My sole object is to draw attention to a simple procedure which is of much value and comfort to the patient.

The new hospital bed in which the head or the knees can be easily raised by a crank at the foot of the bed, coupled with the pillow for the feet to practice against, adds greatly to the comfort of the patient during his sojourn in the hospital and helps him on in his convalescence.

New and Nonofficial Remedies

TRYPARSAMIDE**Preliminary Report of the Council on Pharmacy
and Chemistry**

The Council has authorized publication of the following statement on the experimental status of Tryparsamide.

W. A. PUCKNER, Secretary.

Tryparsamide is a new arsenical developed in the Rockefeller Institute for Medical Research. It is manufactured by the Powers-Weightman-Rosengarten Company for the Rockefeller Institute. Pending the outcome of clinical study, the substance is not offered for sale. At present the institute has entire control over the chemical and biologic testing and distribution of the substance.

Tryparsamide is the sodium salt of N-phenylglycineamide-*p*-arsonic acid, the formula of which is $C_6H_5(NHCH_2CONH_2)$. (As $O.OH.ONa$). The dried salt contains 25.32 per cent. of arsenic, in the pentavalent form. Tryparsamide is a colorless, odorless powder, readily soluble in water.

Tryparsamide is primarily a trypanocidal agent, but it possesses some spirocheticidal activity. It is said to produce "tonic" effects. It is proposed for use in the treatment of trypanosomiasis, syphilis of the central nervous system and late stages of syphilis with inactive or indolent lesions, and it is said to be especially indicated in the treatment of cachectic individuals. The use of the drug is not advised during the early stages of syphilis while lesions are actively developing. The drug can be administered subcutaneously, intramuscularly or intravenously.

The toxicity of Tryparsamide has been studied by Brown and Pearce.¹ They found the minimum lethal dose to vary between 0.75 and 2.75 gm. per kilogram of body weight for different species. The toxic effects resemble those of a number of other organic pentavalent arsenic compounds.

Trypanosome infections,² due to various species in different experimental animals, were very favorably influenced by doses well below those that prove toxic. Action on members

of the spirochete group of organisms³ was less pronounced. With *Spirochaeta obermeieri*, it was not possible to obtain cures in more than 75 per cent. of cases. The action on *Spirochaeta pallida* is more pronounced, but the dose required may be large. The lesions may be favorably influenced out of proportion to the action on spirochetes.

Studies have been made of the therapeutic effect of Tryparsamide in human trypanosomiasis.

Pearce⁴ treated seventy-seven cases of trypanosomiasis in various stages of infection by *Trypanosoma gambiense*. It was relatively easy to sterilize the peripheral blood of patients with single doses of from 3 to 7 gm. administered intravenously, but relapses were liable to occur unless treatment was continued. Intramuscular administrations produced a longer immunity against relapse than did the intravenous administrations. The patients improved perceptibly both subjectively and objectively. The dose was repeated at intervals of one or two weeks.

Impairment of vision, occasionally permanent, occurred in a number of cases. The authors suggest that this is not necessarily due to direct toxic action of the drug but may be associated with the process of resolution of a lesion of the disease.

A report on the use of Tryparsamide in the treatment of neurosyphilis, particularly in paresis, has been furnished the Council by Lorenz, Loevenhart, Bleckwenn and Hodges.⁵ The dose usually employed was 3 gm. each week. It is pointed out that there is risk of injury to the optic nerve, although in most cases the visual disturbance clears up rapidly on withdrawal or reduction of the drug. It was found desirable to carry on mercurial treatment at the same time. The authors of the report consider the results very satisfactory, and regard them as superior to those obtainable by any other medication.

The favorable reports of the effect of Tryparsamide on trypanosomiasis and neurosyphilis appear to warrant controlled trials of the drug in these conditions. The possibility of harm to vision should be given due consideration, particularly in cases of neurosyphilis showing involvement of the optic nerve.

The Council has postponed the acceptance of Tryparsamide for New and Nonofficial Remedies until confirmatory evidence of its therapeutic value and safety is submitted, and until it is on the market and standards have been established for the control of its composition and uniformity.

1. Brown, W. H., and Pearce, Louise: J. Exper. Med. **30**: 417 (Nov.) 1919.

2. Brown, W. H., and Pearce, Louise: J. Exper. Med. **30**: 455 (Nov.) 1919.

3. Brown, W. H., and Pearce, Louise: J. Exper. Med. **30**: 483 (Nov.) 1919.

4. Pearce, Louise: J. Exper. Med. (Supp.) **34**: 1 (Dec.) 1921.

5. This appears in THE JOURNAL, this issue, p. 1497.

Gary Infant Mortality Survey.—In a survey of conditions made in Gary by the Children's Bureau of the U. S. Department of Labor, infant mortality in that city was found to have a close relation with economic and civic factors, such as low income, poor housing and sanitation, and lack of public welfare activity. In Gary the basic industry is steel manufacturing, and there is a large and diverse foreign-born population. A subsidiary land company of the steel corporation adopted the policy of renting its houses only to Americanized workmen, a condition which resulted in leaving the foreign-born laborer to house himself. The result has been to concentrate the foreign-born population in certain sections of the city having poorer houses and fewer sewers and water mains, where there has been a much higher infant death rate than in sections developed by the land company. The infant death rate in the former districts was 141.2 per 1,000 births; in the latter, 90.6. As in preceding studies, it was again demonstrated that an increase in infant mortality occurs with a fall in the earning power of the fathers. In the year of study in Gary, when the chief breadwinners' earnings amounted to at least \$1,850, the infant death rate was 89.4; when the earnings were between \$1,050 and \$1,850, the rate was 127.1; when earnings fell below \$1,050, the rate rose to 137.8. The heaviest toll among infants was taken by gastric and intestinal diseases.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, MAY 26, 1923

RURAL MEDICAL SERVICE IN AMERICA

The state of New York has 10,600,000 inhabitants. There are 15,848 physicians in the state, or one physician for each 670 persons. The question as to whether this number of physicians is adequate for the population has received special consideration by the committee on medical economics of the Medical Society of the State of New York, and the published reports seem to indicate that the supply of physicians is adequate. It is, of course, a fact that there will inevitably be some localities in which medical service is temporarily inadequate. Physicians may die, and time must elapse before others take their place. Construction of new roads leads to a rearrangement of medical locations, with temporary changes in distribution and in the ability of a physician to reach certain parts of his community. On the whole, however, the facts assembled lead the committee, headed by Dr. E. M. Stanton, to conclude that the relative magnitude of the rural health problem has been enormously magnified and to suspect that there are some fundamental inaccuracies in the data that have been circulated. In 1913 there was one physician in New York State for each 620 inhabitants, and now there is one for each 670, a relative decrease of only 8 per cent., whereas at the same time there has been a decrease of 20 per cent. in the relative preventives of communicable disease. In one county a special study was made because many complaints had come as to the adequacy of medical service; it was shown by the committee that whereas there had been an actual decrease of sixteen physicians from 1913 to 1922, at the same time there had been a decrease of population and a shifting of physicians so that actually the service was better. With better roads, better telephone facilities, decreased incidence of disease, better hospital facilities and better means of transportation for physicians, medical service appears to be more readily available now than before.

As Dr. Stanton wisely points out, the three chief factors of supplying physicians to rural communities are: (1) getting the physician to the patient sick in a

rural home 5 or 10 miles distant, or getting the patient that is not so sick to the office of the physician for consultation and treatment; (2) a reasonably well-trained home nursing service, and (3) reasonable hospital facilities. The relative importance of these items is 80 per cent. for the first, 12 per cent. for the second and 8 per cent. for the third. Bearing in mind all of the factors involved, it is the conclusion of Dr. Stanton that, instead of a shortage, there is an actual surplusage of physicians in New York State.

Several weeks ago, THE JOURNAL published a report by Dean E. P. Lyon of the Medical School of the University of Minnesota, relative to the supply of physicians in that state. In Minnesota he was unable to find a single town in which an osteopath or a chiropractor was serving the people without a regular physician available. There was no town in Minnesota having more than 750 population which was without a physician. The charge that persons were compelled to receive medical attention from poorly trained cultists because of the lack of physicians was not sustained by his investigation, since it was shown that the cultists tend to locate in the largest centers, just as do the physicians. It is well to have actual studies, such as these, so that claims of shortage of physicians, advanced with a view to lower the standard of medical education, may be met by statements of fact.

"HUMANITY'S DEBT TO MEDICAL SCIENCE"

In the *Current History Magazine* for April, Mr. Fred C. Kelly, who on previous occasions has indulged in antimicrobial propaganda, published an attack on modern medicine entitled, "Is Better Health Due to the Doctors?" It was apparently the view of Mr. Kelly that the great advances in sanitation and hygiene, as well as in the care of disease, were due to other agencies. In the same publication for May, Dr. Ray Lyman Wilbur, President-elect of the American Medical Association, replies to Mr. Kelly and indicates promptly his belief that the attack is a good illustration of what modern medicine is likely to mean to those who lack scientific training and who, even though making the gesture of being fair, have closed their minds to fact. "Better health is due to the doctors," asserts Dr. Wilbur, "because they have discovered and introduced facts regarding the recognition and prevention of disease into ordinary life."

The reasoning of Mr. Kelly was confused by the fact that his knowledge of medical work was not intimate. Every time a physician prevents disease, Dr. Wilbur points out, he prolongs life. First must come diagnosis, and for this the individual physician is responsible. Mr. Kelly's reasoning is like that of many others who criticize and question medical accomplishment blindly and who are unwilling to see. They understand that arsenic will kill parasites on an orchard tree, but seem unable to appreciate that arsphenamin,

when injected into a human body harboring the living spirochete of syphilis, will kill that organism.

"None can sanely deny," continues Dr. Wilbur, "that his [the physician's] services in the aggregate have brought about better health, more comfort and longer life." But the scoffers are those who are unfamiliar with the achievements of modern medicine; who have not experienced the benefits of relief from modern anesthetics; who have not realized the relief afforded by modern surgery. It is easy for those who do not know to ascribe the great results from modern sanitation to other than medical agencies but, Dr. Wilbur pleads, "only those familiar with biological rules can be trusted. It is as unsafe for a community to build a bridge without the authority of a trained engineer to approve the plans, as for a community to make health laws without using the authoritative knowledge of the doctor."

It is well that Dr. Wilbur has presented the case for medical science, but unfortunate that a periodical of high standing should have made necessary a reply to an attack by a writer of the scientific training—or rather of the lack of it—of Mr. Kelly. To those informed there is no question. "I venture to state," concludes Dr. Wilbur, "that if the people of the United States were willing to avail themselves fully of what is now known of the control of diseases and the care of the human body, and would spend as much for this purpose as they do for the protection of the Republic from outside prospective enemies, we could ensure an average additional increase of ten years to the span of human life."

THE "LOCAL" WASSERMANN REACTION

An early diagnosis is possible in virtually all cases of primary syphilis. In about 75 per cent. of the cases, the diagnosis can be made with the dark field microscope, and the earlier this apparatus is used the larger the percentage of positive findings will be. Simple, prompt, unquestionable, it is the ideal method; but it fails to disclose spirochetes in all cases, and especially in those that have been locally treated before the examination is made. Contrary to the opinion of some observers, the ordinary Wassermann reaction is of distinct value in the early diagnosis of primary syphilis. It has occasionally been positive as early as three days after the initial lesion appeared. It was positive by the end of the first week in 36 per cent. of 600 cases,¹ and by the end of the third week in almost 70 per cent. of these cases. A single Wassermann test at a very early date will therefore be negative in most instances, but repeated tests show that the reaction usually becomes positive before secondary symptoms appear. It is positive in some cases when the dark field findings are negative. Both procedures, therefore, should be employed when one or the other fails. A third valuable

method for the diagnosis of primary syphilis has recently been introduced and named the "local" Wassermann reaction.

The local Wassermann reaction is simply the ordinary Wassermann reaction carried out on the serum that exudes from the surface of a primary lesion instead of on a patient's blood serum. Sufficient local serum can be obtained ordinarily without difficulty. The lesion is simply sponged with physiologic sodium chlorid solution, and is then dried and gently squeezed. The serum that exudes is collected by capillary suction in a pipet until 0.1 c.c., or the amount desired, is obtained. If necessary, the surface of the lesion may be lightly scratched with the end of the collecting pipet, since a little blood in the serum does not interfere with the reaction. Usually from 0.1 to 0.2 c.c. of serum may thus be obtained. It seems reasonable to suppose that adding four or five drops of physiologic sodium chlorid solution to the fluid on the surface of the lesion would give a concentration strong enough to yield positive reactions. In a series of thirty-four cases² the reaction was uniformly positive in 0.0125 c.c. of serum. Thus, obtaining serum for the test is as simple as it is for the dark field examination.

Klauder and Kolmer³ have reported observations on the Wassermann reaction on exudates, transudates and secretions. To demonstrate a local as well as a hematogenous origin of the specific complement-fixing antibodies, they performed Wassermann reactions in several cases on the surface serum of primary chancres, and found that "these tests yielded almost uniformly a four plus reaction." Later a series of fourteen cases was reported by the same authors.⁴ Stern and Rypins⁵ have recently reported a series of forty-three cases of demonstrated primary syphilis in which the local Wassermann reaction was positive in 100 per cent. of the cases, the dark field microscope in 95.3 per cent., and the blood Wassermann reaction in 30.2 per cent. Local Wassermann reactions were obtained in this series as early as three days after the initial lesion appeared, and local treatment did not interfere with the reaction, even when the spirochetes had disappeared.

It appears that the local Wassermann reaction is of much more value in primary syphilis than is the blood Wassermann reaction, and that it yields as high a percentage of positives as the dark field microscope. Obviously, the dark field examination will remain the only absolute and unquestionable means for diagnosis. But when a dark field apparatus is not available or when its findings are negative, and when local treat-

2. Stern, D., and Rypins, R.: The Local Wassermann Reaction in the Early Diagnosis of Primary Syphilis, *J. Lab. & Clin. Med.* **8**: 91 (Nov.) 1922.

3. Klauder, J. V., and Kolmer, J. A.: The Wassermann Test with Secretions, Transudates and Exudates in Syphilis, with a note on the Origin of the Complement Fixing Antibody, *J. A. M. A.* **76**: 1635 (June 11) 1921.

4. Klauder, J. V., and Kolmer, J. A.: The Wassermann Test Performed with Chancre Fluid as an Aid in the Early Diagnosis of Syphilis, *Arch. Dermat. & Syph.* **5**: 566 (May) 1922.

5. Stern, D., and Rypins, R.: The Local Wassermann Reaction: A New Diagnostic Aid in Primary Syphilis, *Minnesota Med.* **6**: 167 (March) 1923.

1. Craig, C. F.: The Wassermann Test, Ed. 2, St. Louis, C. V. Mosby Company, 1921.

ment has driven the spirochetes from the lesion, the local Wassermann reaction will be an invaluable aid in making a positive diagnosis at a time when proper treatment will be most effective.

Current Comment

HOW VON MOLTKE DIED

When Gen. Helmuth von Moltke died, June 18, 1916, during a celebration held in honor of Field Marshal von der Goltz in Berlin, the crown prince said, "He died of a broken heart." In 1922, Eliza von Moltke, wife of the famous general, published the memoirs of her husband, containing many letters which he had written to her. From 1911 until the time of his death, General von Moltke had suffered constantly with a disabling disease, and his letters reflect his views of his condition and also of his treatment. During a part of this time he was under the care of Dr. August Herrmann, director of the hospital in Karlsbad. Dr. Herrmann¹ takes exception to some of the medical statements of the famous general, and has recently explained the incidents that led up to von Moltke's death. When von Moltke came to him in 1911, he found the noted military officer suffering with a shortness of breath, which von Moltke ascribed to increased weight and to indigestion. However, the Karlsbad physician, after a serious and painstaking examination, concluded that the chief difficulty was an infection of the walls of the heart. As he inquired into the previous medical history of his famous patient, he discovered that during the previous year von Moltke had suffered with pain in the throat, and that the medical adviser whom he consulted for this pain had massaged the tonsils, which were at that time inflamed. Following this massage, the infection had been forced out of the crypts of the tonsil and carried by the blood stream to the heart, where it had set up a local infection far more serious than the original complaint. Dr. Herrmann relates that he informed General von Moltke of his diagnosis and his belief as to the cause of the disease. Two days after he consulted Dr. Herrmann, von Moltke wrote to his wife: "I had to tell the physician the history of my disease, and he said at once that as a result of the forcible handling of my tonsils the infectious material in the body had been driven out and that I would always suffer as a result of this infection. He was relieved at the present state of my heart. He said, after he had thumped me long and thoroughly, that my present condition was merely a light indisposition of the digestion and a slight inflammation of the liver." Von Moltke returned each year to Karlsbad and appeared to be holding his own; in fact, a year later his physician told him that he found his condition somewhat better than previously. In 1913, however, Dr. Herrmann was unable to assure him so well as before. He discovered that the heart murmur had become louder and that

there had appeared a considerable quantity of albumin in the urine. Furthermore, the width of the heart had increased so that it was certain that the condition was becoming worse. He told his famous patient of his findings, but von Moltke refused to believe that the condition was actually worse, and said, "I am not so sick as you believe." When Dr. Herrmann answered, "Your excellency is nevertheless much more seriously sick than you believe," he replied sharply, "According to your view, doctor, I cannot continue as chief of the general staff." In 1914, von Moltke came twice to Karlsbad, and although he lived in the institution conducted by Dr. Herrmann, he did not consult him medically, but visited instead another Karlsbad physician who had previously taken care of his wife. As has been stated, General von Moltke died suddenly, June 18, 1916, and Dr. Herrmann comments cynically on the statement of Crown Prince Wilhelm that he died of a broken heart. "For the physician, the manner of his death will be more easily understood when I add that he did not die of the sorrow and distress of a disturbed heart, but of a heart, changed through an endocarditis and myocarditis, which had ceased to beat on that day."

PEDICULOSIS, CHIROPRACTICALLY SPEAKING

The ranks of chiropractic are torn with dissension. There are two camps, the Big-endians and the Little-endians, or, more descriptively, the strict constructionists and the liberal constructionists, the literalists and the latitudinarians. The strict constructionists are the 100 per cent. boys. To them, pathology and therapeutics begin and end in chiropractic. All human ailments, from soft corns to hardening of the liver, are due to subluxated vertebrae impinging on nerves, and the cure of all these ailments lies in the "adjustment" of these subluxations. Those in the latitudinarian camp, on the other hand, take a more rational, if less orthodox view, of both pathology and treatment. They admit that there are certain pathologic states that are not explainable on the chiropractic theory, and that there are certain conditions that may be more efficiently treated by methods other than the "chiropractic thrust." The amount of feeling exhibited by the opposing camps is characterized by more heat than light. The chief and most valiant exponent of the orthodox school of chiropractic is B. J. Palmer of Davenport, who is familiarly dubbed by his disciples "B. J." This individual is the son of D. D. Palmer, who founded the "Palmer School of Magnetic Healing," which, as the "magnetic healing" game became passé, evolved into the "Palmer School of Chiropractic." A year or so ago, the Palmer School of Chiropractic at Davenport brought suit against the city of Edmonton, an Edmonton physician and the College of Physicians and Surgeons of the Province of Alberta asking \$20,000 damages for matter that had been published that the Palmer concern considered libelous. It may be said, in passing, that the Davenport institution did not get a verdict but had to pay its own costs. The star witness for the chiropractors was B. J. Palmer, the redoubtable "B. J." Palmer's testimony under oath in this case makes very funny

1. Herrmann, August: Die Erkrankung des Generalobersten Helmuth v. Moltke, München. med. Wchnschr. 70: 534 (April 27) 1923.

reading, or it would be funny if one could forget that chiropractic is a menace to the public health. One of the questions asked Palmer was relative to the chiropractic treatment for lice. Palmer oracularly answered:

"The Chiropractic Philosophy constantly imbues the same fundamental thought that all external or internal germs, or other scavengers, are scavengers strictly in the sense that they live upon body waste and dead matters; the purpose of the Chiropractic adjustment being to make normal tissue that there would be no waste matter upon which any kind of scavenger could live either inside or outside of the body."

Then followed these questions put by the attorney for the city of Edmonton, and the answers made by B. J. Palmer:

"*Question.*—And what particular vertebra did you teach them to adjust for lice on the head, if any?

"*Answer.*—The adjustment for any scavenger would depend entirely upon where that scavenger was.

"*Q.*—Well, take scavengers such as lice on the head: what vertebra would you adjust for those?

"*A.*—In the cervical region.

"*Q.*—And suppose you had body lice in the groin, what vertebra would you adjust for those?

"*A.*—In the lumbar region.

"*Q.*—Any particular vertebra?

"*A.*—It would depend entirely upon the particular one subluxated. It might fluctuate in different individuals.

"*Q.*—What fluctuations would there be there?

"*A.*—From the second to the fifth, inclusive; it could be any one."

Comment on this would be painting the lily and gilding refined gold.

SUGGESTIVE THERAPEUTICS

Public interest in the mental aspects of human health and sickness was greatly stimulated by the experiences of the war period and has been evidenced in many ways, both helpful and harmful. As usual an army of parasitic harpies has been quick to sense this interest, and through cults and books has exploited and taken advantage of it. Unfortunately, the subject lends itself to mysticism, and appeals to deeply rooted, instinctive longings; and simpletons, mountebanks and misguided fanatics can always be found to play the part of the cat in the grab for chestnuts. Recently, Hon. John J. Kindred, a medical member of Congress, addressed the House of Representatives with a timely, frank and instructive history of suggestive therapeutics. He outlined the history of the use and abuse of suggestion from the days of the Assyrians and Egyptians to the present, pointing out that there has never been a time when it has not been practiced in some form or another. The scientific study of these phenomena has also been continuous, and though tinged at times with mysticism and often obscured by clouds of meaningless words and phrases, has gradually discovered something of the laws of operation, if not of the nature, of suggestion. That there is much of a helpful kind in the outcome of these studies for treating and explaining the mechanism of disease, is unquestionably true; but, as Dr. Kindred wisely insists, there are limitations as well as possibilities in its applicability, and if great harm and unnecessary suffering are to be avoided, it is essential that it be not used indiscrimi-

nately and blindly. Physicians have neglected the subject, partly from a fear of being confused with the charlatans who have exploited it; but it is one in which there is much of value and which cannot be properly applied in treatment until it is applied with a knowledge of physiology and pathology.

SMALLPOX IN 1922

The virulence that smallpox displayed in parts of this country and of Canada in 1921 was more than maintained in 1922. There were 495 deaths¹ among 9,936 cases reported in 276 cities. The case mortality rate therefore was 5 per cent., whereas it was 1 per cent. in a much larger number of cases in 1921. It has already been noted² that the case mortality rate for 1921 in ninety-two cities was six times what it was in 1920, and now it appears to have been in 1922 five times what it was in 1921. Among the cities that have been visited by virulent smallpox are Okmulgee, Okla., where 85 per cent. of the patients died; Muskegon, Mich., 38 per cent.; Tucson, Ariz., 20 per cent.; Chicago, 16 per cent.; Moberly, Mo., 39 per cent.; Denver, 31 per cent.; Kansas City, Mo., 46 per cent., and Kansas City, Kan., 42 per cent. It cannot be predicted where or to what extent smallpox will next appear, but with the disease entrenched on this continent, as it apparently is, it is reasonable to believe other severe outbreaks will occur. There is little comfort in the reduction in the number of cases in 1922, when the actual number of deaths increased. A smallpox hazard exists which cannot be surmounted by indifference to the warnings noted above, and which will be more difficult to surmount as the period of inaction increases. The loss of 50,000 lives in the Philippines is a recent example of the danger of smallpox to a country that disregards local outbreaks of the disease.

PITUITARY SECRETION

There is no longer any doubt that parts of the pituitary gland can yield constituents that are capable of exerting potent physiologic reactions. Extracts of the organ are, in fact, used for therapeutic purposes because they bring about desired changes in certain functions. If the hypophysis plays a part in the organism by virtue of specially elaborating some active product concerned with the usual performances of the body, it becomes important to learn how and when the "hormone" or specific secretory substance finds its way into the circulating mediums. The anatomic relation of the pituitary to the cerebrospinal fluid has naturally suggested that the latter may receive the product in question directly from the cells that produce it. Opinion as to the actual conditions existing has been divided. Recently, Dixon³ of the pharmacologic laboratory at Cambridge University has presented seemingly convincing evidence that the pituitary gland secretes into the cerebrospinal fluid. The latter shows the presence of those constituents that have been described under a variety of designations

1. Statistical Bulletin, Metropolitan Life Insurance Company, April, 1923.

2. Smallpox, editorial, J. A. M. A. 79: 304 (July 22) 1922.

3. Dixon, W. E.: Pituitary Secretion, J. Physiol. 57: 129, 1923.

and proprietary names. It is a striking circumstance that pituitary extract injected into the circulation causes the gland to secrete. Pituitary extract injected into the cerebrospinal fluid rapidly causes the ordinary systemic effects by passing into the general circulation. A balance is struck between the amount in the blood and that in the cerebrospinal fluid. This reminds one somewhat of the conditions existing in the liver, which also is stimulated to increased secretory response by injection of bile salts, products of its own activity.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Measles in Montgomery.—Reports of the city and county health officer of Montgomery, May 5, showed that since the measles epidemic appeared in the county, a total of 2,600 cases had been reported. A rapid decline is now noticeable.

ARKANSAS

Physician's License Revoked.—It is reported that the license of Dr. John Wesley Cunningham, Little Rock, has been revoked, following his conviction, April 25, on a charge of having violated the Harrison Narcotic Law. Dr. Cunningham was sentenced to the federal penitentiary.

CALIFORNIA

Belgium Honors Dr. Gay.—Dr. Frederick P. Gay, professor of bacteriology in the University of California, San Francisco, and chairman of the division of medical sciences of the National Research Council, has received from the Belgian ambassador, on behalf of King Albert, the decoration of Commander of the Order of the Crown, in recognition of his scientific work.

Chiropractic Board Sued.—Alleging that none of the members of the newly appointed state board of chiropractic examiners are eligible to hold office under the act passed at the November election, suit was filed in the superior court of San Francisco, May 4, to remove from office the five members of the board appointed by Governor Richardson. In the suit which is filed in the name of the people of the state of California through George D. Gillespie, a chiropractor, the members of the board are declared not to have qualified under the requirement calling for three years of practice prior to appointment on the board. The suit is in the nature of quo warranto proceedings and was filed with the consent of the attorney-general.

IDAHO

Personal.—Dr. William P. H. Habel, Lewiston, has been elected health officer to succeed Dr. Frederick T. Harris, who resigned recently. Dr. Habel has been connected with the U. S. Indian Agency, Fort Lapwai.—Drs. George M. Waterhouse, Weiser, and Frank W. Almond, Boise, were elected president and secretary-treasurer, respectively, of the South Idaho District Medical Society, at Boise, April 14.

ILLINOIS

Senate Passes Sheppard-Towner Bill.—The senate passed the Sheppard-Towner federal aid maternity bill, May 21, by a vote of 27 to 8, with four not voting. The house has not yet passed this measure.

State Medical Election.—At the seventy-third annual meeting of the Illinois State Medical Society at Decatur, May 15-17, the following officers were elected for the ensuing year: president, Dr. Edward H. Ochsner, Chicago; president-elect, Dr. Lewis C. Taylor, Springfield; vice presidents, Drs. Cecil M. Jaek, Decatur, and Blanche A. Burgner, Chicago; secretary, Dr. William D. Chapman, Silvis, and treasurer, Dr. A. J. Markley, Belvidere.

Chicago

St. Luke's Intern Association Entertains.—The association of interns of St. Luke's Hospital will tender a banquet to former interns of the hospital, June 4, at the Hotel Morrison. It is requested that all former interns communicate with Dr. Dean Burns at the hospital.

Prof. Stieglitz Receives Medal.—At a banquet of the Chicago Section of the American Chemical Society, May 25, the Willard Gibbs Medal was presented to Julius Stieglitz, Ph.D., in recognition of his research work on molecular rearrangement and his interpretation of univalent nitrogen. The medal was presented by its founder, Mr. W. A. Converse. Professor Stieglitz is chairman of the department of chemistry, University of Chicago; chairman of the Committee on Synthetic Drugs of the National Research Council and has been a member of the Council on Pharmacy and Chemistry of the American Medical Association since its inception.

Dr. Sachs' Widow Superintends Institute.—Mrs. Theodore B. Sachs, widow of the late Dr. Sachs, has succeeded James Minnick as superintendent of the Chicago Tuberculosis Institute. The staff comprises a physician, a crusade director, a publicity director, a placement bureau director, a supervisor of nurses, two assistant supervisors, eighteen public health nurses, and a custodian of property. The institute has recently arranged to furnish tooth brushes and powder for children at cost. These are dispensed by public health nurses employed throughout Cook County by the institute. To raise money for a cottage for tuberculous nurses, photographs of the London monument to Edith Cavell are being sold.

KENTUCKY

University of Louisville Expands.—Several changes in the University of Louisville Medical Department have recently been announced by the board of trustees. The university has acquired a new \$270,000 campus of about forty acres in the south central portion of the city, to which the College of Arts and Sciences will be moved within two years and on which new buildings will be erected. A new university council has been created, consisting of the chancellor, president and four deans, ex-officio, two faculty representatives each from the College of Arts and Sciences and the school of medicine, and one each from the school of dentistry and school of law, with advisory capacity to the board of trustees in educational matters. A new agreement has been made between the city and school authorities by which the professional administration of the Louisville City Hospital is given over entirely to the university, which undertakes to furnish professional care throughout each year. Dr. Stuart Graves, Syracuse, professor of pathology and bacteriology, and acting dean this year, has been made dean of the school of medicine to succeed Dr. Henry Enos Tuley, who resigned on account of ill health. Dr. Tuley has been made dean emeritus and professor emeritus of pediatrics as well as editor of the *Alumni Bulletin*. During the coming summer, extensive alterations will be made in the medical school building; new laboratory equipment will be installed and additional teachers added to allow a maximum of seventy-five freshmen, sixty-five sophomores and sixty each of juniors and seniors. Requirements for admission and promotion have been entirely revised. The following additions to the faculty have been announced, effective the coming school year:

Anatomy: S. I. Kornhauser, Ph.D., professor of anatomy, histology and embryology, continuing as head of the department; Dr. Sydney E. Johnson, professor of gross anatomy; Dr. Stillman J. Hathaway, assistant professor of anatomy; Dr. Herman Humphrey, lecturer in applied anatomy, and Dr. Lamar W. Neblett, instructor in anatomy.

Physiology and Pharmacology: Dr. Henry G. Barbour, professor of physiology and pharmacology, head of the department.

Pathology and Bacteriology: Dr. William C. Martin, instructor in bacteriology and hygiene; Dr. Earl R. Gernert, resident pathologist and instructor in clinical pathology; Dr. Robert B. Poling, instructor in pathology and bacteriology.

Surgery: Dr. Fred W. Rankin, professor of surgery; Dr. Archibald M. McKeithen, resident in surgery.

Medicine: Dr. John Walker Moore, professor of medicine; Dr. Hulbert V. Noland, resident in medicine, and Dr. Henry H. Turner, assistant in medicine.

LOUISIANA

Portable Picture Outfits for Health Officers.—Pictures will be provided by the U. S. Public Health Service, the Rockefeller Foundation, and other similar organizations for the purpose of equipping every parish health unit with portable motion picture outfits to help eradicate the mosquito, fly and hookworm. A special department will be inaugurated by the state board to provide films for the county health units.

Five additional "suitcase" machines, consisting of a portable electric light plant, slide projector and picture machine, and eight new generators will be put into use.

MAINE

Osteopathic and Chiropractic Bills.—The proposed amendment to the osteopathic practice act which would give such practitioners the right to use drugs and perform surgical operations was defeated. The bill providing for a separate board for the chiropractors was passed. The latter are not permitted to use the prefix "Dr." or the word "doctor" or to use drugs, to do surgical operations, or to practice obstetrics.

MASSACHUSETTS

Physician's License Revoked.—The board of registration in medicine has revoked the registration of Dr. Walter B. Willey of Everett. Dr. Willey was fined last summer for operating an automobile while under the influence of alcohol. Subsequent to this conviction a hearing was held and the board placed the case on file with the understanding that if his behavior should later be unsatisfactory, further action would be taken. Dr. Willey was recently found under the influence of intoxicating liquor. The board has revoked his license to practice medicine.

MICHIGAN

Michigan Health Exposition.—The Michigan Health Exposition will be held in the General Motors Building, Detroit, June 7-16, under the auspices of the Wayne County Medical Society, with the cooperation of the department of health, the board of education, the recreation commission, the police and fire departments, and other official and non-official organizations. The University of Michigan Medical School regents are considering an educational exhibit in the exposition, and the matter has been referred to an executive committee. Dr. Hugh Cabot, dean of the medical school, Ann Arbor, has accepted the offer of Dr. Robert A. C. Wollenberg, general chairman of the exposition, to become a member of the advisory council.

MINNESOTA

Epidemic of Measles.—According to the city health officer, St. Paul is passing through the greatest epidemic of measles in the history of the city. Ninety-seven cases were reported in one day, April 30. In order to check the disease, the health department has extended the quarantine period from ten to fourteen days.

MISSOURI

State Medical Association.—At the annual meeting of the association, in Joplin, May 8-10, the following officers were elected for the ensuing year: president, Dr. George Wilse Robinson, Kansas City; vice presidents, Drs. Joseph W. Love, Springfield, Albert J. Campbell, Sedalia, James B. Wright, Trenton, Robert L. Hamilton, Richmond, and Charles E. Hyndman, St. Louis. Dr. Edward J. Goodwin, St. Louis, who has filled the office of secretary for fifteen years, was reelected, and Dr. J. Franklin Welch, Salisbury, who has served for twenty-five years, was reelected treasurer. A resolution to create a permanent legislative bureau of the Missouri State Medical Association and to make assessments against individual members for the maintenance of the bureau that it might promulgate legislation helpful to public health was adopted by the assembly. Springfield was selected for the 1924 convention.

NEW MEXICO

New Hospital Opened.—The Holy Cross Sanatorium, Mahoney Park, Deming, was formally opened by the Sisters of the Holy Cross, recently. This institution is exclusively for the treatment of tuberculosis, and has a capacity of 125 beds. Dr. W. H. Cryer of the Union Printers' Home and Tuberculosis Sanatorium, Colorado Springs, Colo., is medical director of the new institution.

NEW YORK

New York City

Physician Sentenced.—According to reports Dr. Leonard K. Hirshberg was sentenced to four years in the Atlanta penitentiary, May 11, by Federal Judge Hard, following his conviction for using the mails to defraud investors in a "blind pool." When Dr. Hirshberg left the court, freed in \$15,000 bail after his attorneys had filed notice of an appeal,

he was rearrested on a warrant issued by the state of Maryland on a charge of perjury.

Veterans' Camp in Adirondacks.—Caduceus Post 818, American Legion, composed of more than 400 ex-service medical men, met, May 10. Dr. Samuel Lloyd, New York, past commander of the post, spoke on the Veterans' Mountain Camp in the Adirondacks, recently opened for patients. This camp is for ex-service men who do not receive compensation from the government. It was stated that funds from the sale of poppies on Memorial Day in New York would go to aid this camp.

New York's Century-Old Hospitals.—With the recent celebration of its centennial by the New York Nursery and Child's Hospital attention is brought to the group of institutions in the city that have rounded out more than a century of activity. Some with the date of founding follow: New York Hospital, 1771; Bellevue Hospital, 1811; New York Dispensary, 1791; Lying-In Hospital, 1799; Orphan Asylum Society in the City of New York, 1851; New York Eye and Ear Infirmary, 1820; Hebrew Orphan Asylum, 1822; New York Nursery and Child's Hospital, 1823.

Dental Exhibit at Academy of Medicine.—The earliest works on dentistry by Fauchard and his contemporaries, first dental works published in America, collections of dental histories, bibliographies, indexes and histories, historical photographs, medical text illustrating the history of dentistry, written prior to 1600, and old instruments were exhibited at the New York Academy of Medicine recently in connection with the annual meeting of the state dental society. The Fauchard bicentennial commemorative exercises, celebrating the two hundredth anniversary of the completion of the writing in 1723 of the first dental textbook, "Le Chirurgical Dentiste," were held, May 10.

OHIO

Medical Society Loses Charter.—After the house of delegates refused to review further the quarrel of two years' duration among members of the Sandusky County Medical Society, the Ohio State Medical Association, in annual session in Dayton, revoked the charter of the county organization. It is suspended until a reorganization is made. The trouble arose originally over the organization of a medical staff in the Memorial Hospital, Fremont, when eight members of the society who joined the staff were suspended. The state organization decided that the county society acted illegally in suspending them.

OKLAHOMA

State Medical Meeting.—At the thirty-first annual meeting of the Oklahoma State Medical Association in Tulsa, May 15-17, the following officers were elected for the ensuing year: president, Dr. Everett S. Lain, Oklahoma City; vice presidents, Drs. Charles H. Ball, Tulsa, Abraham L. Blesh, Oklahoma City, and George S. Baxter, Shawnee; secretary-treasurer and editor of the *Journal of the Oklahoma State Medical Association*, Dr. Claude A. Thompson, Muskogee. Resolutions were adopted protesting the training of chiropractic by the U. S. Veterans' Bureau, and asking that certain irksome restrictions now placed on physicians by the regulations in connection with the National Prohibition Law and the Harrison Narcotic Law be removed.

PENNSYLVANIA

Memorial Tablet to College Founders.—Dedication services of a memorial tablet in honor of the founders of the original faculty of the Western Pennsylvania Medical College will be held in the School of Medicine of the University of Pittsburgh, May 31. The tablet has been donated by alumnae of the school.

Open-Air High School.—A new open-air school will be ready to accommodate 150 junior high school pupils in Reading next September. The present fresh-air school, opened in 1912, accommodates only twenty. The Reading Sanatorium for Treatment of Tuberculosis, in cooperation with the school authorities, accomplished the new school.

Pittsburgh Physicians to Use "M.D."—The Allegheny County Medical Society, through its public health legislation committee, is recommending its members to request personally or by letter, the telephone directory publishers to publish "M.D." instead of "physician" after their names in the regular listing of the new Pittsburgh telephone directory.

Philadelphia

Public Health Day.—Under the leadership of Dr. James Anders, president of the Health Day Organization, May 2 was set aside to be observed as public health day in Philadelphia. The Health Day Organization is composed of a number of organizations, which include the Philadelphia County Medical Society, the College of Physicians of Philadelphia, the Civic Club, the New Century Club, the Philomusian Club, the city parks association, the department of public health, the department of public education, the housing committee, the city child playground association and the association of public welfare.

SOUTH CAROLINA

Hospitals Amalgamate.—The Pryor Hospital and the Chester Sanatorium, Chester, combined, May 14. Physicians, nurses, patients and the superintendent of the Chester Sanatorium moved to the Pryor Hospital, of which Dr. R. H. McFadden is superintendent. The Pryor Hospital will be operated and conducted by the trustees named in the will of the late Dr. Stewart W. Pryor.

TEXAS

Chiropractic Bill Killed.—The McMillin chiropractic bill, seeking to establish a state chiropractic licensing board, was killed when the public health committee of the senate unanimously reported unfavorably on the measure, May 4.

State Association News.—At the fifty-seventh annual session of the State Medical Association of Texas in Fort Worth, May 8-10, the following officers were elected for the ensuing year: president, Dr. Arthur C. Scott, Temple; president-elect, Dr. Murff F. Bledsoe, Port Arthur; vice presidents, Drs. Jasper N. White, Texarkana, Alonzo A. Ross, Lockhart, and John W. Torbett, Marlin, and secretary, Dr. Holman Taylor, Fort Worth. Governor Davidson delivered the principal address on: "The Responsibility of the State for the Health of Its Citizens," and Dr. Oscar Dowling, chairman of the board of trustees of the American Medical Association, spoke on the work of the national organization. Dr. Holman Taylor, secretary of the state association and editor of the *Texas State Journal of Medicine*, was presented with a watch for "meritorious service." The council on legislation and public instruction was enlarged and divided into two separate bureaus. San Antonio was selected for the 1924 meeting.—Preceding the opening session of the state medical society, the following special meetings were held: Texas Railway Surgical and Hygienical Association; the State Pathological Society of Texas; Texas Roentgen Ray Society, and the public health conference under the auspices of the state board of health.

VIRGINIA

County Medical Society Reorganized.—At a meeting of the Accomac County Medical Society at Olney, May 3, Drs. Joseph L. DeCormis, Accomac, and John W. Robertson, Onancock, were elected president and secretary-treasurer, respectively. This was the first meeting of the society since 1919. A. H. Payne, epidemiologist, Johns Hopkins Hospital, Baltimore, who has recently been appointed epidemiologist of the Virginia State Board of Health, gave an address.

University Hospital to Enlarge.—The contract has been let for the immediate erection of a new \$115,000 wing at the University of Virginia Hospital, which will be ready for use in September. The wing will be immediately south of the present hospital buildings and will conform to the Steele wing on the north. This new building was made possible by a gift from Paul Goodloe McIntire. The new wing will house the obstetrical and orthopedic departments of the hospital and will provide sixty-three beds and two nurseries.

State Health News.—In order to facilitate the collection of reports of contagious disease and other vital statistics by county health officers so that they may more quickly apply preventative measures, the state health department has sent to each physician, in counties having organized health units, boxes containing report cards and forms, mailing cases for collecting and sending specimens to the state laboratory, and a copy of the revised rules and regulations. Inside the lid of each box is a synopsis of public health laws and a list of supplies furnished by the state board of health.

WASHINGTON

Society News.—The last scientific meeting, until September, of the Pierce County Medical Society was held in Tacoma, May 8. Dr. Lester J. Palmer, Seattle, spoke on "Insulin."

New Deaconess Hospital Opened.—The new Deaconess Hospital at Wenatchee was dedicated, April 22, by Bishop Shepard of Portland, Ore. The building was erected at a cost of \$100,000.

WISCONSIN

Board of Health of Oshkosh.—At a meeting of the commission council at Oshkosh, May 1, Mayor McHenry was elected chairman of the board of health, and Dr. Arthur H. Broche, secretary. Dr. Alvin G. Koehler was appointed city health officer. The board voted that the health commissioner shall hereafter file with the commission council a quarterly report summarizing all health activities of his department.

CANADA

New Health Centers Announced.—The provincial health authorities announce that, providing the necessary cooperation is forthcoming, health centers comprising clinics for tuberculosis and child welfare will be opened this summer at Three Rivers, Quebec. A grant of \$500,000 by the Quebec government is to be expended in five years in an effort to reduce the death rate due to tuberculosis and infantile diseases.

Society News.—The forty-third annual meeting of the Ontario Medical Association will be held in Windsor, May 29-June 1. Dr. Walter R. Parker, Ann Arbor, Mich., and Dr. Don M. Campbell, Detroit, will be among the visiting speakers.—The first annual session of the Canadian Society for the Study of Diseases of Children will be held in Montreal, June 15-16.—At the fourteenth meeting of the Montreal Medico-Chirurgical Society, Dr. Lionel M. Lindsay read a paper on "Food Edema."—The annual banquet of the Halifax Medical Society was held, April 18. Dr. Matthew G. Burris was elected president; Dr. Edward V. Hogan, vice president, and Dr. Solomon J. Turel, secretary-treasurer.—At a meeting of the Norfolk County Medical Society (Ontario), Dr. Ernest W. Zumstein was elected president, and Dr. Alan B. Jackson, Simcoe, secretary-treasurer.

GENERAL

American Bronchoscopic Society.—At the annual meeting of the society in Atlantic City, N. J., May 9, the following officers were elected: president, Dr. Robert C. Lynch, New Orleans; vice president, Dr. Fielding O. Lewis, Philadelphia, and secretary-treasurer, Dr. William B. Chamberlain, Cleveland.

American Laryngological, Rhinological and Otological Society.—At the annual meeting of this association in Atlantic City, N. J., May 10-12, the following officers were elected for 1923-1924: president, Dr. Hanau W. Loeb, St. Louis; vice presidents, Drs. Frederick N. Sperry, New Haven, Conn., Ray Connor, Detroit, and Thomas E. Carmody, Denver; Dr. William Haskin, New York, was reelected secretary, and Dr. Ewing W. Day, Pittsburgh, was reelected treasurer.

Prescription Permits More Readily Obtained.—An order was issued by Prohibition Commissioner Haynes, May 21, stating that hereafter physicians may get liquor prescription permits from state prohibition directors without applying to the Treasury Department at Washington, D. C. According to reports the new regulations were issued after it had been found impossible to investigate thousands of applications for permits which had accumulated in the Treasury Department. There are approximately 150,000 physicians in the United States and of these, it is said, 35,000 are now licensed to prescribe wines and spirits.

Chemical Trade Commissioner Appointed.—The appointment of Dr. Frederick E. Breithut as chemical trade commissioner of the United States to Germany and other European countries has been announced by the Department of Commerce at Washington, D. C. The appointment was made because of significant developments in the chemical industry in Germany and the importance of these developments to the American industry. Dr. Breithut will be attached to the staff of the commercial attaché, Charles H. Herring, Berlin, but will study the chemical industries in England, France and elsewhere in Europe where there have been developments of interest to the United States. The Department of Commerce states that the American industry is facing a critical stage of

its development and it is imperative that this country be advised of the developments in Germany and other countries.

Census Bureau Takes Hospital Census.—The U. S. Bureau of the Census, Washington, D. C., is sending out questionnaires for the purpose of taking the census of all the hospitals and dispensaries in the United States. The schedules for both hospitals and dispensaries were sent out between February 16 and February 26, and the returns must be in before June 30. Returns were received during April from 3,427 hospitals and 1,363 dispensaries. The hospitals and dispensaries conducted by the Federal government and by the American Red Cross, under a cooperative arrangement, are to be separately reported by the various agencies controlling them, thus reducing the number of hospitals and dispensaries from which a direct return of schedules is to be made. Excluding the above classes, there remains a total of 2,498 hospitals and 721 dispensaries for which schedules have not yet been received.

Society News.—The thirty-sixth annual meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons will be held in Philadelphia, September 19-21.—The Sioux Valley Medical Association will hold its midsummer session at Sioux Falls, S. D., July 12. The by-laws specify a one-day session. For those wishing to spend two days in Sioux Falls, the local hospitals will present clinics, July 13.—The annual meeting of the Southern Minnesota Medical Association will be held in Faribault, Minn., July 11.—The thirty-sixth annual meeting of the Clinical Surgical Society of America will be held at Washington University School of Medicine, St. Louis, May 28, and at the clinic of Dr. Willard Bartlett, May 29. Papers by local surgeons will be delivered on recent advances on thoracic and cardiac surgery, roentgenotherapy and kindred subjects.—The seventeenth annual meeting of the Association of American Teachers of the Diseases of Children will be held at San Francisco, June 26.

Hospitals for American Indians.—The Commissioner of Indian Affairs, Washington, has recently issued a statement regarding the health of the American Indian. The Indian population of the United States, he said, is 340,197 and of these 225,000 are under the direct supervision of the bureau of Indian affairs of the Interior Department. It is estimated that there are approximately 25,000 Indians afflicted with some form of tuberculosis, and that approximately 80,000 have trachoma and other eye diseases. These make the greatest health problem which the bureau has to meet. The seventy-eight hospitals for Indians have a total bed capacity of 2,400, and during the past year more than 20,000 Indians received treatment at these institutions, which, in addition to medical treatment, are prepared to give also a modified educational course to patients. The Department of the Interior operates a hospital exclusively for the treatment of nervous and mental diseases among Indians at Canton, S. D.

Physical Standards for Working Children.—Two years ago the Children's Bureau of the U. S. Department of Labor appointed a committee of physicians to prepare a standard form for use in examination of children seeking to enter employment. Their recommendations were published in a bulletin on "Physical Standards for Working Children." According to a newly revised edition of the bulletin, twenty-two states now require the physical examination of every child applying for an employment certificate. Since the publication of the first edition, a considerable number of changes have been made in the various state laws with reference to such examination. Virginia now requires the examination of every working child at regular intervals during the years when it is especially susceptible to the strains of industry; eight other states and the District of Columbia allow the certificate-issuing officer to require an examination when he is in doubt as to the child's physical fitness, but in eighteen states there is still no legal provision of any kind for examination, even when a child first enters employment.

National Conference of Social Workers.—The fiftieth anniversary meeting of the National Conference of Social Workers was recently held in Washington. Hospital service, child welfare, disease prevention, medical research, nursing, public health, social health problems in rural communities, and the organization of health agencies, among other subjects, were discussed. The director of the social welfare department of the New York Association for Improving the Condition of the Poor described how the death rate of small children in a tenement district has been diminished in the last five years by the Mulberry Health Center. Payment of adequate wages as a factor in promoting health and efficiency

among industrial workers was advocated by Dr. Wade Wright, instructor of industrial medicine, Harvard University Medical School, Boston. On May 17, a testimonial luncheon and a silver tea service were tendered Homer Folks, president of the National Conference of Social Work, in honor of his thirtieth anniversary as secretary of the State Charities Aid Association of New York and his thirty-three years in social work. Addresses on Dr. Folks' work in various fields of public welfare were delivered by Secretary of State Hughes, Drs. Edward T. Devine, Livingston Farrand, Hermann M. Briggs, Hastings H. Hart, Lee K. Frankel and others. President Harding opened the grounds of the White House to conference delegates, May 21. Dr. Rene Sand, Belgium, formerly professor of industrial medicine at the University of Brussels, and secretary-general of the League of Red Cross Societies, with headquarters in Paris, was a guest of the conference. He spoke on "The Strategic Position of the School in Programs of Social Work From the Point of View of International Relations," May 22.

The National Rehabilitation Conference.—Vocational educators from twenty-five states attended the National Rehabilitation Conference at Washington, D. C., May 15-16, which was presided over by J. C. Wright, director of the Federal Board of Vocational Training. The principles underlying the federal government's work in vocational training and rehabilitation of civilians are identical to the Sheppard-Towner Law in their receipt of money from the United States and the matching of such money by the several states. The law creating the Federal Vocational Training Board will expire by limitation, June 30, 1924. In resolutions adopted by the conference it was declared "unwise to ask Congress to make any changes in the original act. It is practicable and largely meets the needs of the various states." The conclusion was reached that the existing law is a continuing one, provided Congress appropriates the funds to permit the federal board to function subsequent to June 30, 1924. The resolutions accordingly request that \$1,000,000 be annually appropriated to the states as heretofore, so that no state will receive less than \$5,000 per annum. In this connection the resolutions state: "The work has been inaugurated in thirty-six states, covering 84 per cent. of the country's population. If Congress would make an appropriation to the states for four years it would encourage some of the states which have not started the work to do so. Obviously when states, in which legislatures meet biennially, are reluctant to inaugurate work depending on federal funds for part payment of the expenses, then the federal appropriations must be made annually." It was taken for granted by the conference that the necessary funds will be appropriated by Congress to continue the work of the Federal Board of Vocational Training.

LATIN AMERICA

"Patent" Medicines Restricted in Peru.—According to recent regulations issued by the Peruvian Health Department, no "patent" medicine may be sold in drug stores unless it has been previously analyzed and its sale authorized by the health department. After September 1, no pharmaceutical specialty may be imported unless its formula is stated on the wrapper or label.

Two New Medical Journals.—The Mexican Medical Association has begun publication of a new journal entitled *A. M. M.* Drs. Manuel Zubieta, F. de P. Miranda and Ignacio Chavez are editor, assistant editor and manager, respectively. The association recently appointed officers for its various sections of medical sciences, propaganda, sociology, mutual protection and ethics and organized a new section on consultations, headed by Dr. D. M. Vélez and having among its membership representatives of the various specialties.—Dr. C. E. Roe, former assistant editor of *La Medicina Ibera*, has started at Lima, Perú, another journal entitled *Gaceta Médica Peruana*.

FOREIGN

Substitutes for Cocain.—The minister of health of Great Britain, after consultation with the Medical Research Council, has appointed a committee to investigate the comparative value, for the therapeutic purposes for which cocain is at present used, of various possible substitutes, and the evidence as to risk, if any, of such substitutes becoming drugs of addiction.

Second International Medico-Military Congress.—The permanent committee of the Congrès international de médecine et de pharmacie militaires will convene in Rome, May 28, prior to the meeting of the second congress. Dr. William

Seaman Bainbridge, who was delegate from the United States to the first congress in Brussels in 1921 and who is a member of the permanent committee, left for Rome, May 14. The congress is to be held under the patronage of the king, who, with the premier, will receive the delegates.

Opposition to Sex Literature.—New Zealand has forbidden the importation, sale or distribution of literature on sex hygiene and the venereal peril, stigmatizing it as "immoral." Sir Archibald Reid of New Zealand, an authority on questions of heredity, has published a public protest against this official interdiction.—The city of Genoa has taken the same stand as New Zealand and has forbidden the sale or distribution of the pamphlet written by Dr. Marchisio on the venereal peril. This work won a prize in a national competition for the best pamphlet of the kind for the young. The Italian Association for Hygiene published the pamphlet and awarded the prize. Its title is "Come ci possiamo difendere dal pericolo venereo."

Deaths in Other Countries

Dr. Arthur Latham, physician and lecturer on medicine, St. George's Hospital, London, April 13, aged 56.—Dr. Sol Jervois Aarons of London, noted for his work on sterility; author of *Golden Rules of Gynecology* and *Gynecological Therapeutics*; April 21, following an operation.—Dr. Robert Johnston of Portrush, Ireland.—Dr. Amarendra N. Banerjee, on the faculty of Carmichael Medical College, Calcutta, India; of smallpox, aged 39.—Dr. Carl V. Woegerer, Vienna; in an automobile accident in New York.—Dr. L. Brandt, a specialist in oral surgery at Berlin, aged 69. He studied dentistry in Germany, Russia and at Baltimore, and later qualified for the medical degree. His "Surgery for Dentists" is a popular textbook.—Dr. Pourtal, retired surgeon-general of the French navy.—Dr. Gonçalves Diniz, formerly professor of pharmacy and natural history at Bahia.—Dr. Ferdinand May of Munich, to whose initiative and appeals from the outset of the movement in Germany for sanatorium treatment of tuberculosis is due the founding of a large number of such institutions, aged 64.—Dr. E. Minossi of Rome, physician to the School for Deaf Mutes, author of numerous propaganda works on hygiene.

CORRECTION

Suicide Statistics.—In the editorial on "Suicide Statistics" (THE JOURNAL, May 5, p. 1316), it was stated that "the figures from the United States Census Bureau for the registration area are not available for 1921 and 1922." Dr. William H. Davis, Washington, D. C., Chief Statistician for Vital Statistics, writes that the figures (12.6) for 1921 were given out to the press last December.

Government Services

Army Medical Corps Data

Statistical data concerning personnel of the Medical Corps of U. S. Army recently issued stated that the average age of colonels in the Medical Corps is 53.3 years; of lieutenant-colonels, 47.7 years; of majors, 40.1 years, and of captains and lieutenants, 36.6 years. The University of Pennsylvania has the honor of having furnished more medical officers for the army than any other medical school; Jefferson Medical College of Philadelphia holds second place, with the University of Maryland, Baltimore, and the University of Virginia in the third and fourth places, respectively. As to the state of nativity, Pennsylvania and New York hold the first and second places with 111 and 99 representatives, respectively.

Sergeant Folk of the Medical Department

The retirement of Technical Sergeant Levi E. Folk, after about twenty-five years of almost continuous service in the Hospital and Sanitary Corps of the Army, recalls the achievement of the medical department in establishing the method of transmission of yellow fever. While at Columbia Barracks, Cuba, in 1900, Sergeant Folk volunteered to nurse yellow fever patients, and remained on duty at the hospital until November 30. Having also volunteered for experimentation, he was then transferred to Camp Lazear, where he came down with yellow fever, Jan. 23, 1901, five days after being bitten by an infected mosquito. Sergeant Folk has nine discharges from the Army.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 30, 1923.

The Teaching of Obstetrics and Gynecology

An important report on the arrangements in vogue for the teaching of obstetrics and gynecology in the medical schools of Great Britain has been made to the ministry of health by Dr. Janet Campbell, senior medical officer for maternity and child welfare. The provision of maternity beds in teaching hospitals is a recent innovation. The custom is for medical students or midwives to be trained at maternity hospitals or by attending the poor in their homes. In 1906, only two London hospitals with teaching schools possessed lying-in wards, and these were not used for teaching students; several have still none. The number of maternity beds now varies from seven to twenty-one, and the Royal Free Hospital (which is devoted to women medical students) has forty. But not all these beds are wholly at the service of medical students, for to some, pupil midwives have a prior claim. In the provinces and in Scotland, instruction in practical midwifery is usually less closely associated with the university and medical school. With certain exceptions the general hospitals used for clinical teaching have no maternity beds.

Arising from the practice of expectant mothers coming to hospital to arrange for attendance in their confinements, there has sprung up at Edinburgh in recent years the prenatal clinic, of which the late Dr. J. W. Ballantyne, a great authority on prenatal pathology, was the pioneer. Dr. Campbell points out that prematernal supervision offers the most promising field for preventive work in midwifery, gives opportunity for investigation of abortions, and affords the most hopeful means of reducing the mortality of the newborn. She recommends: (1) when necessary, modification of the medical curriculum so as to provide a minimum of three months' whole time for the study of gynecology and obstetrics, including the care and management of infancy, and the addition, when practicable, of a further period of one month for intern or extern midwifery; (2) a sufficient number of maternity beds to enable all students to obtain suitable intern practice, and, when the student has sufficient knowledge, the supplementing of extern practice; (3) systematic instruction in antenatal and postnatal supervision for all students; (4) instruction in the theory and practice of midwifery by systematic lectures, clinical demonstrations, prenatal clinic, use of the dummy, and attendance on the practice of a maternity hospital (this may largely be taken before the student commences practical midwifery); (5) instruction in clinical midwifery by a teacher of experience; (6) recognition and treatment of puerperal infection and ophthalmia neonatorum; (7) effective control of the teaching of practical midwifery by the medical school so that each student may deliver, personally, the required minimum of cases, and (8) arrangement of the staffs of the department of obstetrics and gynecology so as to admit of the two subjects being taken as integral parts of one whole.

Sex Education

The National Birth-Rate Commission, appointed by the National Council of Public Morals, has presented to the minister of education an important report on sex education. The reports of this commission have been given from time to time in THE JOURNAL, and have been received at home and abroad as original and permanent contributions toward the solution of the problems of population, birth control,

parenthood, sex education and venereal disease. The intention of the commission was to deal with adolescents primarily, but the evidence submitted showed that peril exists from childhood onward. The investigation was pursued on a number of lines—physiologic, psychologic, educational and sociological, with the ethical dominating throughout. The commission is convinced by the evidence heard that, however difficult and delicate is the task, sex education cannot, with due regard to the moral safety and welfare of youth, be shirked. The common assumption that education should be begun only on the approach of puberty was disproved by a great deal of the evidence submitted. All the witnesses insisted that questions asked by children about their own origin should be answered as fully and frankly as the capacity of the child allows. While reticence must be observed as to sex relations, the old legends must not be repeated; the child must not be made to feel that he has asked a question that should not be asked; and even if told that the full answer can only be given later, he must have his curiosity about himself satisfied.

It was generally agreed that it was impossible to fix on the age when such instruction need be given—the individuality, the development and the environment of the child affect the time when curiosity in these matters is awakened. The desire for knowledge should not be anticipated by teaching gratuitously given, but should be honestly satisfied when it shows itself. Knowledge should be imparted gradually, and not come with the shock of surprise at puberty, when harm may be done by the more precise information which must then be given, if it has not been prepared for. Instructions should be given whenever curiosity appears, or when there is any indication that bad habits are being formed. There was not the same agreement among the witnesses as to the content of the sex instruction. But almost without exception they thought that some reticence must be maintained; that a beginning should be made with the fact of motherhood; then, that the relations of the sexes might be referred to in general terms, the ideal of marriage and parenthood being dwelt on. The commission agrees with the more reticent policy, while recognizing that a longer experience and a wider inquiry are necessary to decide what may or may not be imparted. It holds that it is a serious mistake to isolate sex instruction from moral education generally, for this gives it undue emphasis. Chastity should be treated as only one element of a good life. The motive of fear of the consequences of any abuse of the generative function should not be stimulated. Nor should chivalry be unduly stressed, as that may make the relations between the sexes artificial. Even when a bad habit is formed, it should not be treated with harshness. Human parenthood should not be isolated, but treated as part of the evolution of life. The teaching should be as wide and as objective as possible, to awaken an intellectual interest rather than to stimulate an emotional response. As the mental development is gradual, so must the instruction be adapted. As the girl's development is usually in advance of the boy's, the same instruction is not suitable for the two. The insufficiency of knowledge to secure virtue was recognized. Hence the instruction should be given in a proper atmosphere of personal relation between teacher and pupil. While the instruction should not be emotional, it can be fully effective only when there is affection.

There was general agreement that the preparatory instruction as regards the facts of life, birth and growth, in the biologic lessons, might be given to a class, yet the instruction to be given at puberty could be most suitably given only to a small group, and any personal warning should be given individually. When a child leaves home for school, a private

warning of possible difficulty or danger should be given, and again at the end of school life there should be a frank talk of the perils in the new life to be begun. As to who should instruct, there was general agreement that the duty rests first of all with the parents, but no less general was the agreement that many parents are not competent to instruct, fail to realize their responsibility or shirk it because of its delicacy. They are ready to throw the responsibility on to teachers. Even when the task falls on the teacher, the consent of the parents should be obtained and, as far as possible, their cooperation. The commission urges that teachers should be trained to impart the instruction. The danger to adolescence, especially in industrialism, when schools and other agencies lose their hold, is pointed out. The commission is convinced that to industrial hygiene must be added social hygiene, of which the chief aim must be the social protection of adolescence during the hours of leisure. Attention is called to the value of women police for the protection of children and adolescents. The protection of children from the age of 2 years was shown to be necessary. Among the measures recommended were supervision of parks, recreation grounds and streets, better lighting of streets, school attendance at an early age (in view of bad housing conditions), supervision of play hours and provision of open spaces for recreation.

A deputation from the commission presented the report to the ministry of education, and asked for a more careful thinking out of the whole question of sex education. Lord Eustace Percy (parliamentary secretary), in the absence of the minister, replied that the ministry was satisfied that detailed teaching of sex hygiene is inappropriate in public elementary schools, but that much might be done in the training colleges. The objections to mass instruction in sex matters were especially formidable in public elementary schools, including, as they did, children of both sexes, of different social grades, and of various religious beliefs. But individual advice was a duty and privilege which at any time might fall on the teacher.

Boats or Rafts for Life Saving

In the light of recent experience, including the disastrous war period, the Merchant Shipping Advisory Committee, at the instance of the board of trade, has examined the statutory life-saving appliances rules of May, 1914. Those rules originated from the *Titanic* disaster and give effect to the principle that every foreign-going passenger ship should carry sufficient lifeboats to accommodate all on board. The rules prescribe that as many lifeboats as possible shall be attached to davits, distributed along the length of each side of the ship, and that the remaining lifeboats may be grouped under the davits in tiers of two or three, or nested within one another, or in rows across a deck, bridge or poop. But it has been found that in some cases the requirements result in the decks being unduly encumbered, which leads to difficulty in launching, and that provision of a proportion of rafts, instead of boats, might be an advantage. The findings of courts appointed to inquire into the great shipping disasters show that the time available within which transfer of passengers from a sinking ship must be completed depends on the damage sustained and the margin of safety provided in the construction of the vessel. The circumstances of the loss of the *Empress of Ireland*, the *Egypt* and the *Lusitania* show that it is not possible to count on this time exceeding fifteen minutes. Further, emergencies arise in which there is not time to use all the boats that are actually attached to the davits. For such emergencies, there are now only life jackets and lifebuoys. Happily, wireless telegraphy has simplified the problem and reduced it from one of rowing

great distances to safety to one of keeping people afloat until assistance reaches the scene. Indeed, in narrow waters the need is merely to keep people afloat for minutes. The committee, therefore, now lays down the principle that, instead of encumbering the decks with a large number of heavy sea-going craft which may well prove useless and even dangerous, it would be better to carry a supply of light rafts sufficient to support the persons for whom accommodation cannot be provided in the heavy sea-going craft available for immediate launching. Thus, while boats will remain, they should be supplemented by light buoyant apparatus which in extreme emergency can be quickly flung into the sea and provide something to cling to until succor arrives.

PARIS

(From Our Regular Correspondent)
April 27, 1923.

Vital Statistics for 1922

The *Journal officiel* published recently the vital statistics for France for the year 1922. Compared with the statistics for 1921, the results are as follows:

	1922	1921
Marriages	383,220	456,221
Divorces	27,684	32,557
Births (living)	759,846	813,396
Stillbirths	34,854	37,809
Deaths	689,267	696,373
Excess of births over deaths.....	70,579	117,023

As will be seen, the excess of births over deaths was much less in 1922 than in 1921. In general, the statistics for 1922 are less satisfactory than for the two years preceding, especially as regards the birth rate, as is evident from the following table:

Years	Births	Deaths	Excess of Births
1922.....	759,846	689,267	70,579
1921.....	813,396	696,373	117,023
1920.....	834,411	674,621	159,790
1913.....	790,355	731,441	58,914

The demographic situation of France, worse than that of the two previous years, though slightly better than that of the years immediately preceding the war, still remains unfavorable as compared with that of other nations. While the population of France increased in 1922 only 70,579, that of England grew to the extent of 293,358, and that of the Netherlands, 101,389. For the other countries the figures for 1922 have not yet been received; but in 1921, when the population of France increased only 117,023, that of Germany was augmented by 661,128; England, 390,416; Belgium, 62,865; Spain, 192,746; Italy, 461,013; the Netherlands, 112,546, and Sweden, 53,310.

The Relation of Factory Physicians to the Management

For a long time, it had been a generally admitted fact in law that a physician, as the member of a liberal profession, could not be regarded as having hired out his scientific and professional services in any way whatsoever. A physician attached to a factory or a mine received a mandate from the manager of the enterprise to care for the sick and wounded of the plant, but he could not be regarded as an employee or subaltern. In return for his services, the practitioner received an annual salary and extra compensation based on the number of medical calls and consultations. As a result of this juridical conception of a medical man as a mandatary and not an employee, a physician could be dismissed on short notice, and could claim no indemnity. However, a sudden change has come about of late and the idea of members of a liberal profession, such as medicine, contracting their services for a specified sum is coming to be generally accepted. A recent decision of the *tribunal de commerce* of Marseilles grants an indemnity to a physician suddenly dis-

missed from his post where his duties consisted in caring for the sick and wounded of a factory.

Honor Loans to Students

The general association of the students of Paris has inaugurated a lecture course for the benefit of the honor loan fund. The first lecture was given by M. Georges Claude, the chemist, who is well known for his investigations on liquid air and ammonia synthesis. The proceeds will be turned over to Prof. Paul Appell, rector of the University of Paris, to be loaned to students on recommendation of the university council.

The Pasteur Tag Day

On May 27, which has been set apart as a Pasteur tag day for the benefit of the scientific laboratories, there will be sold on the streets insignia (tags) bearing the signature of some one of the following ten great artists: Abel Faivre, Gervex, Béraud, Besnard, Poulbot, Georges Barbier, Cormon, J. P. Laurens, Maurice Denis, Jonas. Each tag will bear this quotation from Pasteur: "Without laboratories scientists are like soldiers without weapons." A number of subscriptions, some of them for considerable amounts, have already been received by the national committee in aid of scientific research, the chairman of which is Professor Appell, rector of the University of Paris. Also the press has collected considerable sums, during recent weeks. Many workmen have consented to put in several hours overtime and to contribute their extra earnings to this urgent cause. Their employers have added their personal subscriptions.

BERLIN

(From Our Regular Correspondent)
April 14, 1923.

The Milk Scarcity in Berlin

Dr. Borinski, of the central public health office, Berlin, discussed the distressing milk situation recently before the Berlin Gesellschaft für öffentliche Gesundheit. According to his figures, the prevailing scarcity of milk in Berlin is due, mainly, to decreased production, as compared with the pre-war basis, which is occasioned, in part, by a decrease in the number of milch cows. In 1913, the total annual production of milk in Germany was 24 billion liters, but in 1921 only 13 billion liters was produced. The year 1921 shows some improvement over 1919 and 1920, but the supply is only sufficient to meet the imperative needs of infants and children. The price of milk is often so high that many persons are unable to buy sufficient to supply their minimal needs. That was true especially while the high prices prevailed in November and December. Not only is the supply inadequate, but the quality is considerably below the standard of the prewar period. About 59 per cent. of milk specimens examined were dirty. When the milk reaches Berlin it is often sour or slightly turned. It has been found that about 50 per cent. of the milk that arrives in apparently sweet condition contains alkali, which has been added in the rural districts or when the milk passed through the provincial dairies, in order to counteract the sourness. The poorer quality of the milk consumed in Berlin is partly due to the difficulties of transportation and delivery, since the radius of the circle about Berlin from which the milk supply is derived (300 km.) is much wider than before the war. In the discussion, the director of the Berlin milk-inspecting service explained, in connection with the present high price of milk, that it is not possible to furnish cities with milk unless the price of milk is in a certain definite relation to that of butter, since, as the price of milk falls more and more below a certain level, increasingly large quantities are used for butter. At present, the price of milk as agreed on by the milk producers' asso-

ciation is 9.75 per cent. of the market price of butter. Another thing that adds to the price is the high cost of the cans required for transportation. In order to transport 20 liters of milk to Berlin, five cans, costing 60,000 marks apiece, or 300,000 marks, are needed. For the distribution of milk throughout the city, 63,000 small cans, costing 3,620,000 marks, are required. The profit that flows into the till of the retailers was, before the war, one-third the retail price but at present it is only one-fourth.

Investigations on the Limitations of Human Hearing

Prof. Martin Gildemeister has been conducting a new series of researches on various questions pertaining to hearing: What are the lowest and what are the highest tones that a person with normal hearing is able to hear? At what time of day, what time of the year and at what time of life does one hear best? Does one hear better with the right or with the left ear? Does one hear better by air or by bone conduction? The former researches to determine the upper limitation of human hearing yielded results varying between 15,000 and 50,000 vibrations per second. This inaccuracy in the findings was due to the fact that an unsuitable instrument, the so-called Galton whistle, had been used for the production of the tones. Gildemeister has now constructed entirely new apparatus for his researches, through which much more accurate results have been secured. His experiments were carried out on fifty-one experimental subjects, comprising pupils, students, girls, teachers, officials, merchants, farmers, and workmen of various kinds. All these persons, whose ages ranged from 6 to 47, were possessed of normal hearing, as was established by careful preliminary examination.

The upper limit of hearing for the youngest (6-year-old) pupil, for air and bone conduction to the right ear, was at 19,800 tone vibrations per second; for air conduction to the left ear, 18,700 vibrations; for bone conduction to the left ear, 19,800 vibrations. In the case of a 9-year-old pupil, hearing ceased for air conduction to the right ear at 20,400 vibrations; for bone conduction at 19,200 vibrations; for the left ear at 20,100 and 20,000, respectively; in an 18-year-old pupil, the best of all those examined, the upper limit for the right ear was at 20,800 and 18,800, respectively; for the left ear, at 20,400 and 19,100. In a 20-year-old student, the upper limit of hearing for the right ear was at 17,900 and 17,100 vibrations per second; for the left ear at 14,900 and 16,300, respectively; in a 33-year-old teacher, for the right ear, at 17,900 and 17,500, respectively; for the left ear, at 17,990 and 17,700, respectively; in a 44-year-old merchant, for the right ear, at 12,700 and 10,300, respectively; for the left ear, at 12,900 and 7,400, respectively.

A number of interesting facts are deducible from the results of Gildemeister's tests on hearing. It is comparatively rare for the hearing of the right and left ears to be equally good. There is often great difference in hearing between the two ears, and the findings during several tests on different days remain the same. But there was no evidence that the right or the left ear, in general, was essentially superior with respect to hearing. Age, however, plays a big part in the matter of hearing. Children and young persons up to 20 years of age hear best the high tones. Even in children, a slow but gradual falling off in hearing can be noted, and from 20, up to the middle of the fourth decade, the diminution becomes more marked. Up to the middle of the fifth decade, then, the hearing remains at approximately the same level, and then sinks rather rapidly up to old age. The diminution in hearing from age 6 to age 47 is represented, on the average, by 7,000 vibrations; that is, it sags from 20,000 to 13,000 vibrations. There is not the slightest evidence for the heretofore advanced assumption that hearing through bone con-

duction is keener and better than through air conduction. Of ninety experiments, hearing of the highest tones was better in fifty-two cases with air conduction; in eleven cases it was equally good, and only in twenty-seven cases was hearing better with bone conduction than air conduction.

The variations in hearing that are brought about by the changes from day to day in physical well-being may be represented by 200 vibrations at the most. On the other hand, occupation and practice play a certain part, for it has been shown that persons who telephone a great deal often present much more than average upper limits of hearing, whereas the limits of hearing in miners and smiths, who, through the nature of their calling, are constantly exposed to loud noises, were much reduced.

Death of Immelmann

Sanitätsrat Dr. Immelmann, general secretary of the Deutsche Röntgengesellschaft, died, April 4, in Berlin, at the age of 56. Immelmann, who was distinguished for his unusual gifts as a technician, after serving for a time as a practitioner in Berlin, established an orthopedic and physiotherapeutic institute. Soon after the discovery of roentgen rays, he included roentgenologic procedures in his methods of treatment, and for several years he was the only one who had a laboratory for private roentgenologic examinations. By his accurate technic and his keen scientific judgment, he achieved for himself not only a marked practical success but acquired also a leading position in the field of roentgenologic diagnosis and roentgenotherapy.

MADRID

(From Our Regular Correspondent)

April 25, 1923.

Lozano's Lecture in Paris

Dr. Ricardo Lozano, professor of clinical surgery at Saragossa, recently gave a lecture at the medical school of Paris, where many courtesies were extended to him. His lecture, entitled "Some Uncommon Cases in My Practice," was divided into three parts. In the first part, he referred to two cases of retraction by shrinkage of the ileocecal valve, which, despite its name, is really a sphincter. He expressed the opinion that foreign bodies are not as harmless as they are considered by modern surgeons; they may even block entirely the ileocecal valve, and cause dyspepsia through irritation.

In the second part of his lecture, Dr. Lozano dealt with hydatid cysts, which are common in his province. In more than 5,000 operations before 1920, 129, 2.4 per cent., were for echinococcus disease. Dr. Lozano feels sure, though he has no proof, that hydatid cysts come chiefly from the sheep, and not from the dog, as is stated in textbooks; transference to man takes place through water and not by vegetables. This view is based on the fact that most cases treated at Saragossa are from a village where no vegetables are grown because of the scarcity of water. The country people drink the water that collects in little pools and carries with it sheep manure from the hills. At sowing and harvest times, this is the only water used, with the manure still lying at the bottom of the pools. From this little village, Ejea de los Caballeros, with 7,700 population, came one seventh (ten cases) of the cases of echinococcus disease seen by Lozano; more than from Saragossa with a population of 142,340. In the Saragossa slaughterhouse, 30 per cent. of the sheep are infected with hydatids. The scolices may circulate through the arteries and pass through the wall of the latter, as shown in some cases and by experiment. In order to confirm this view, Lozano injected the contents of a cyst into the carotid of a lamb. Six months afterward, no traces of

infection could be found in the animal. This suggests that the scolices died on contact with the air, and also that the products of a hydatid cyst in man cannot develop in another animal. Lozano denied that hydatid cysts in the abdomen may, on being opened, cause infection of the peritoneum and originate other cysts.

As to the time required for the development of cysts, a youth from a town where the water is pure and free from echinococcus disease went to Ejea de los Caballeros, and, in two years, developed two hydatid cysts of the liver, each about the size of a cantaloup. The patient, aged 15 years, stated that three months after his arrival at Ejea, he had already noticed the presence of the cysts. Among symptoms, Lozano recalled the almost continuous hydatid tremor, and Weinberg's test, which has never failed him. He described a new sign for differentiating between liver and lung cysts. The patient is placed before the fluoroscopic screen and is instructed to breathe deeply. At the end of expiration and the beginning of inspiration, a seesaw movement occurs in the upper pole of the cyst; in the peripheral zone of the cysts, definite waves may be seen, which are independent of respiratory movements, although caused by them. If no such waves are seen, the cyst is above the diaphragm; if they are present, it is below. In medium sized cysts of the lung which have not reached the surface, a motion of the whole cyst occurs, somewhat similar to that of a buoy shaken by the sea waves. This motion is not seen in sarcoma or cancer of the lung.

In the third part of his lecture, Lozano discussed surgery of the peripheral nerves. He also described the first known case of fracture of the neck of the scapula with nerve injury and decrease of the lumen of the blood vessels. The outer fragment with the joint lay behind the bone. In the future, the possibility of this form of fracture must be considered in cases of paralysis from injury of the brachial plexus. The symptoms are flattening of the shoulder, projection of the acromion and lengthening of the arm, which takes a position similar to that in dislocations. The difference between cases of fracture and dislocation is that, in the former, pain may be caused by pressing on the coracoid process, and pain and hematoma occur at the posterior border of the axilla.

Opening of the Cancer Institute

Through the efforts of Dr. A. Pulido Fernández, senator, the government has finally built and endowed a cancer institute. Dr. Goyanes, a prominent Spanish surgeon, has been appointed director. The institute is provided with every facility for the study and treatment of cancer. As Dr. Neumann of Vienna said at the time of his visit, "You have here everything necessary to find the cause of cancer."

Marriages

WILLIAM M. DABNEY, Ruxton, Md., to Mrs. Elizabeth Martin Brown, of Baltimore, at Media, Pa., May 10.

WILLIAM E. WARREN to Miss Deborah Fleming, both of Williamstown, N. C., at Norfolk, Va., April 30.

WOODFEN GRADY PAGE, Dothan, Ala., to Miss Coral Helene Dikle of Marianna, Fla., April 26.

HARRIS BURNETT OSBORN ENSING to Miss Barbara Wingfelter, both of Detroit, April 26.

KARL M. SCOTT, Atlantic City, N. J., to Miss Marion Eaglestone of Baltimore, April 14.

JOHN H. R. BRODRECHT, Spokane, to Miss Lola M. Titus of Tacoma, Wash., April 11.

FREDERICK W. SMITH to Miss Marie A. Rotzell, both of Philadelphia, April 14.

Deaths

Thomas Edward Dolan ☉ Elizabeth, N. J.; Jefferson Medical College, Philadelphia, 1887; formerly member of the board of health; for six years a surgeon on the American Steamship Line; on the staffs of the Alexian Brothers' and St. Elizabeth's hospitals; aged 59; died, May 7, of epidemic (lethargic) encephalitis, at the Neurological Institute.

Guilford Herman Sumner ☉ Des Moines, Iowa; State University of Iowa College of Medicine, Iowa City, 1896; for twelve years secretary of the Iowa State Board of Health and Medical Examiners; at one time health officer of Waterloo; member of the American Public Health Association; aged 66; died, May 5, of cerebral hemorrhage.

McGuire Newton ☉ Richmond, Va.; University College of Medicine, Richmond, 1897; professor of pediatrics at his alma mater and the Medical College of Virginia; member of the state board of health; on the staffs of the Memorial and Richmond City hospitals; aged 46; died, May 8, following a long illness.

Randolph Breese Brummett, Washington, D. C.; Georgetown University School of Medicine, Washington, 1893; formerly member of the District of Columbia Health Department; recently retired from the U. S. Veterans' Bureau service; aged 53; died, May 7, of heart disease, at the Emergency Hospital.

Albert Raymond Rice, Springfield, Mass.; Jefferson Medical College of Philadelphia, 1861; member of the Massachusetts Medical Society; Civil War Veteran; member of the city council and for eleven years city physician; formerly on the staff of the Mercy Hospital; aged 82; died, April 30, of senility.

William Alfred Belt Sellman ☉ Baltimore; University of Maryland School of Medicine, Baltimore, 1872; formerly professor of diseases of women, Baltimore University School of Medicine; aged 72; died, May 10, following a long illness.

William E. Metzger, Alvira, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1874; member of the Medical Society of the State of Pennsylvania; aged 73; died, April 27, following a long illness.

Hessel S. Yntema, Grand Rapids, Mich.; University of Michigan Medical School, Ann Arbor, 1906; on the staff of the Michigan Soldiers' Home Hospital, where he died, April 27, of cardiac paralysis, aged 46.

Henry Alfred Leipziger, Burlington, Iowa; Bellevue Hospital Medical College, New York, 1881; aged 64; died, May 2, at the Burlington Hospital, as the result of a fall in which he suffered a fractured leg.

James William McClanahan, Forest City, Mo.; American Medical College, St. Louis, 1881; aged 68; died recently, at the Ensworth Hospital, St. Joseph, of carcinoma of the stomach and liver.

Harriet Phebe Cutter, Utica, N. Y.; University of Michigan Medical School, Ann Arbor, 1900; member of the Medical Society of the State of New York; aged 66; died, April 24, of pneumonia.

Harley Leland Acuff ☉ Knoxville, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1911; served in the M. C., U. S. Army, during the World War; aged 36; died, April 5.

Willis R. Smith ☉ El Paso, Texas; University of Texas Department of Medicine, Galveston, 1896; assistant medical director of the Homan Sanatorium; aged 50; died suddenly, April 29.

Edward Hazard Hoxsie ☉ Brooklyn; Medical Department of Columbia College, New York, 1884; attending physician to the Bushwick Hospital; aged 63; died, May 7, of heart disease.

Charles B. Ogden ☉ East Liverpool, Ohio; Medical College of Ohio, Cincinnati, 1878; formerly city health officer; at one time on the staff of the city hospital; aged 71; died, April 4.

Theophilus West, Marianna, Fla.; Oglethorpe Medical College, Savannah, Ga., 1859; Civil War veteran; formerly member of the state legislature; aged 87; died, April 10, of senility.

Michael Sweeney, Wilm, Mich.; Victoria University Medical Department, Toronto, Ont., Canada, 1891; aged 57; died, April 26, at a hospital in Detroit, following a long illness.

James Monroe Strohm, Fredericksburg, Pa.; Medical Department of the University of the City of New York, New York, 1881; aged 65; died, April 18, of embolism.

John Milton Prichard ♂ Ashland, Ky.; Kentucky School of Medicine, Louisville, 1892; aged 54; died, April 30, at the Kings Daughters' Hospital following an operation.

George Amory Sargent ♂ Boston; Medical School of Harvard University, Boston, 1888; formerly member of the board of health; aged 69; died, May 6, of heart disease.

William Eli Kay, Tuscaloosa, Ala.; Maryland Medical College, Baltimore, 1905; member of the Medical Association of the State of Alabama; aged 45; died, May 4.

George Joseph Monroe, Louisville, Ky.; Rush Medical College, Chicago, 1862; Bellevue Hospital Medical College, New York, 1869; aged 83; died, April 30, of senility.

Louis C. F. Schade, Hamburg, Germany; University of Griefswald, Prussia, 1870; for thirty years a practitioner in Buffalo, N. Y.; aged 78; died, March 20.

William L. Bogan, Hamburg, Iowa; Medical Department University of Iowa, Keokuk, 1858; Civil War veteran; aged 90; died, April 3, of uremia.

Henry Newcomb Dunnell, Scranton, Pa.; Medical Department of the University of the City of New York, 1870; aged 83; died suddenly in his office, April 25.

William Runge, Brooklyn; University of Jena, Germany, 1885; aged 66; died at the Wyckoff Heights Hospital, May 1, of pneumonia following cystitis.

William Thomas Miles, La Connor, Wash.; Jefferson Medical College of Philadelphia, 1888; formerly a druggist in Alaska; aged 69; died, April 29.

Elizabeth Neil Brady, Oak Park, Ill.; Northwestern University Woman's Medical School, Chicago, 1900; aged 53; died, May 18, of heart disease.

George Dixon Mahon, Blocker, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1886; aged 62; died, March 8.

Leonard A. Robison, Canton, Ill.; Cincinnati College of Medicine and Surgery, Cincinnati, 1888; aged 70; died suddenly, May 3, of erysipelas.

Fritz E. Skinner, De Soto, Mo.; Barnes Medical College, St. Louis, 1899; aged 52; died, April 22, of sepsis, due to a dento-alveolar abscess.

Jasper Kelsey, Nashville, Tenn.; University of Nashville Medical Department, Nashville, 1869; aged 84; died, April 26, at Fort Meade, Fla.

Henry Frain Womer, Johnstown, Pa.; Jefferson Medical College, Philadelphia, 1878; aged 78; died, April 29, following a long illness.

Edward N. Rice, Providence, Ky.; University of Louisville Medical Department, Louisville, 1893; aged 56; died, April 26, of pneumonia.

Jacob Donelson Moyer, Reading, Pa.; Jefferson Medical College, Philadelphia, 1886; aged 61; died, May 8, of cerebral hemorrhage.

Charles W. Pyle, Kansas City, Mo.; Hahnemann Medical College and Hospital, Chicago, 1884; aged 56; died, May 5, of heart disease.

Benjamin F. Leslie, Convoy, Ohio; Starling Medical College, Columbus, 1864; also a druggist; aged 81; died, May 1, of senility.

Henry G. Bradshaw, Delphos, Ohio; Eclectic Medical Institute, Cincinnati, 1896; aged 68; died, April 28, of carcinoma.

James Lawrence Orr, Jr., La Mesa, Calif.; Medical College of the State of South Carolina, Charleston, 1901; aged 44; died, May 7.

Henry T. Breeden, Colorado Springs, Colo.; Memphis Hospital Medical College, Memphis, Tenn., 1892; aged 68; died, March 12.

Frank H. Elder ♂ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1881; aged 64; died, May 9.

Pine Elijah Bush, New York; University of Buffalo (N. Y.) Department of Medicine, 1885; aged 64; died, May 2.

Charles Adam Reinemund ♂ El Paso, Texas; Jefferson Medical College of Philadelphia, 1904; aged 40; died, May 7.

W. S. Muldrow, Mineral Springs, Ark. (licensed, Arkansas, 1903); aged 73; died suddenly, May 2, of heart disease.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

ANOTHER "CONSUMPTION CURE?"

Introducing "Fibroform" and the "Nolan Inhaler"

"A cure for pulmonary tuberculosis by the use of pure carbon and calcium was claimed by Dr. William P. Nolan of Jeannette, Pa., in an address before the Westmoreland County Medical Society in Greensburg, Pa."

Such is the first paragraph of a news story sent out by the Associated Press on May 2. According to a special dispatch that appeared in the New York *World* on the same

DR. WILLIAM P. NOLAN, M. D.

111 CLAY AVENUE

JEANNETTE, PENNSYLVANIA

JEANNETTE, PENNSYLVANIA

5/11/23

Replying to your letter, asking for information concerning the new treatment known as Fibroform, I would say that I have received some wonderful results to date.

The treatment consists of inhaling Fibroform into the lungs through the nose and mouth which is induced by means of the Nolan Inhaler.

There is nothing harmful or injurious to the person afflicted with tuberculosis and the treatment is non-toxic and non-irritable.

The treatment can be taken at home with wonderful results. From week to week your family doctor can examine the patient and note the changes.

The Nolan Inhaler with sufficient medicine and full instructions will be sent upon receipt of \$100 f. o. b. Jeannette, Pa. or can be sent C. O. D.

We do not run a Sanitarium.

Very respectfully,

William P. Nolan, M. D.

We are doing wonders hereabouts every day. Feel sure we can do same for you.

subject "A treatise on the treatment has been forwarded to the American Medical Association and to the Rockefeller Institute of New York." The American Medical Association has not yet received the treatise at the time this is written. THE JOURNAL, however, has received a large number of inquiries regarding this new "cure." We have seen what is alleged to be the manuscript of the paper read by Dr. Nolan and referred to in the newspaper reports. This manuscript came to THE JOURNAL, not from Dr. Nolan direct, but through the representative of a Pittsburgh newspaper. The paper, which is entitled "A New and Sovereign Method of Treatment for Pulmonary Tuberculosis" goes into a good deal of detail regarding the pathology and bacteriology of tuberculous lung tissue but is somewhat vague regarding the cure itself. The treatment, it seems, consists in the inhalation of a fine powder said to be made by mixing soot with calcium carbonate, phosphate, chlorid and lactate. This Dr. Nolan calls "Fibroform." No quantities are given. The carbon and lime salts are said to be uniformly and thoroughly mixed and the powder is administered by means of

a device known as the "Nolan Inhaler." This inhaler, on which a patent is said to be pending, is being supplied, it seems, by Dr. Nolan.

The tuberculous, ever grasping at therapeutic straws, are beginning to write to Dr. Nolan, presumably in large numbers, as their inquiries are answered by means of a form letter (which we reproduce in miniature) printed on Dr. Nolan's stationery and reading:

"Replying to your letter, asking for information concerning the new treatment known as Fibroform, I would say that I have received some wonderful results to date.

"The treatment consists of inhaling Fibroform into the lungs through the nose and mouth which is induced by means of the Nolan Inhaler.

"There is nothing harmful or injurious to the person afflicted with tuberculosis and the treatment is non-toxic and non-irritable.

"The treatment can be taken at home with wonderful results. From week to week your family doctor can examine the patient and note the changes.

"The Nolan Inhaler with sufficient medicine and full instructions will be sent upon receipt of \$100 f. o. b. Jeanette, Pa., or can be sent C. O. D.

"We do not run a Sanitarium.

"Very respectfully,

"Wm. P. Nolan, M.D."

Dr. Nolan, it is said, claims that he has tried his remedy in seventy-two cases. He gives brief details regarding four of these. There is nothing to indicate that the experimental work was controlled in any way. A rather careful search of contemporary medical literature fails to show that Dr. Nolan has ever described elsewhere his method of treatment.

Such reliable evidence as is available regarding the effects following the inhalation of carbon and calcium particles do not warrant one in assuming that such a treatment as that suggested by Dr. Nolan would have any curative value in tuberculosis. The facts, briefly, are that this latest "consumption cure" (1) is essentially secret in composition (no quantities being given), (2) it is put forward on a basis of utterly inadequate tests made only by its sponsor and (3) it is exploited in connection with an instrument sold only by its inventor.

The tragedy of every episode of this sort lies not in the fact that a reputable physician has allowed his enthusiasm to run away with his judgment but that thousands of optimistic consumptives are once more having their hopes of a short-cut, sure-cure raised only to be blasted. All that the medical profession can do is to warn the tuberculous that much better evidence will have to be forthcoming before it can be asserted that Dr. Nolan has developed even a therapeutic aid in the treatment of tuberculosis, much less a cure for this disease.¹

Correspondence

"TREND OF THE WASSERMANN TEST"

To the Editor:—In THE JOURNAL, May 5, there was an editorial comment on the trend of the Wassermann test. I think that all present day serologists of experience are agreed that positive Wassermann reactions are not obtained when syphilis does not exist if the tests are made by properly trained persons in well equipped laboratories.

In November, 1917, while serologist at the New York State Laboratory in Albany, I published an article in the *Journal of Medical Research*, entitled "The Wassermann Reaction With Diabetic Sera." At that time it was contended that serums from patients with diabetes gave positive Wassermann reactions. I tested seventy-three serums from patients with a known history of diabetes. Of these, only one serum gave a positive reaction, fifty-one were negative, two were doubtful, and with nineteen the serum controls failed to

hemolyze, so that no readings could be made. All the serums giving the so-called anticomplementary results were chylous. The one serum that gave a positive result had been obtained from a patient who had also a history of syphilis. The serums with which doubtful reactions were obtained gave only weak fixation. One of these serums was obtained from a patient who gave a history of a chancre twenty-six years previously. The other patient gave no history of syphilis.

This work would seem to show very conclusively that with properly made tests, serums from diabetic patients do not give positive Wassermann reactions, unless these patients are also syphilitic.

ANNA I. VAN SAUN, New Haven, Conn.

Director, Bureau of Laboratories.

THE ASSOCIATION FOR THE PROTECTION OF CONSTITUTIONAL RIGHTS

To the Editor:—In view of the wide publicity that has been given to the suit brought by Dr. Samuel W. Lambert, president of the Association for the Protection of Constitutional Rights, to test the constitutionality of the medical restrictions of the Volstead Act, the Executive Committee of the association desires to make the following statement to the medical profession of the country:

The increasing tendency of lay legislative bodies to enact laws restricting therapeutic procedure convinced certain New York physicians that the time had come when the medical profession must take some action to meet the actual and threatening dangers by which it was confronted.

Under this conviction, an association was formed and was called the Association for the Protection of Constitutional Rights.

The officers of the association are: Samuel W. Lambert, M.D., president; James F. McKernon, M.D., vice president; Frederic E. Sondern, M.D., treasurer, and Warren Coleman, M.D., secretary. The officers and Drs. Nathan E. Brill, Charles L. Dana, William K. Draper, James T. Gorton and J. Bentley Squier constitute the Executive Committee.

Membership in the association is restricted to physicians, but is unlimited in number. The association has no lay affiliations. Originally consisting only of physicians in and about New York City, the membership has gradually been extended to include others residing in Boston, Philadelphia and Baltimore.

The principal object of the association is to defend the constitutional right of the physician to practice medicine according to his best judgment.

On deciding to take action against the medical restrictions of the Volstead Act, the association passed the following resolution:

Resolved, That it is the sense of this association that the constitutionality of such provision of the act and the validity of such regulation be forthwith submitted to the courts; and that this association request its president, Dr. Samuel W. Lambert, under advice of counsel, to institute litigation to this end, in the interest of the public health and the preservation and prolongation of life, and for the vindication of the rights and honor of the profession; and it is further

Resolved, That the members of this association, however, favor and will advocate the enactment of such regulations as will require physicians prescribing alcoholic liquor in such amounts as they deem proper to file any and all prescriptions with properly designated governmental authorities, in order that any abuse by unworthy practitioners of the right to administer alcoholic liquor may be prevented and the offenders adequately and summarily punished.

Suit was brought in the United States District Court, Southern District of New York, and Judge John Clark Knox, before whom the suit was heard, has declared the limitation by Congress of the amount of alcohol which may be prescribed by physicians, for patients who in their judgment

1. After the above was in type there came to THE JOURNAL a four-page printed leaflet entitled "A New and Sovereign Treatment for Pulmonary Tuberculosis by William P. Nolan, M.D." This seems to be a print, modified here and there, of the manuscript referred to in the opening paragraph of the article above. It gives no more information than that which appeared in the manuscript.

require alcohol, to be null and void, and has issued an injunction restraining the prohibition authorities from enforcing the medical restrictions of the Volstead Act.

In the opinion of the members of the Association for the Protection of Constitutional Rights, the principle for which this fight has been made is of fundamental importance not only to the medical profession, but also to the citizenry of America. The question involved is whether the treatment of the sick shall be dictated by lay legislative bodies, at the behest of powerful lay groups, or whether the selection of remedies and therapeutic procedures and their application to the individual patient shall be left to the scientific judgment of the members of a profession especially trained in the prevention and treatment of disease.

The Association for the Protection of Constitutional Rights will continue its existence however the present contest ultimately is decided, ready to take the offensive whenever the public welfare is threatened by unwise laws directed against the ministry of the physician to the sick.

WARREN COLEMAN, M.D., New York.

Secretary of the Association.

"A CASE OF PHARYNGEAL DIPHTHERIA PROBABLY DUE TO AUTO-INFECTION FROM A DIPHTHERIC LESION OF THE THUMB"

To the Editor:—The report by Baldwin, McCallum and Doull (*THE JOURNAL*, May 12, p. 1375) of a case of pharyngeal diphtheria, probably due to auto-infection from a diphtheric lesion of the thumb, recalls a case that occurred in Durand Hospital, reported by Emge (*THE JOURNAL*, Aug. 7, 1915, p. 529). In this case an intern received an injury to his finger while performing an intubation for laryngeal diphtheria. The infection of the finger preceded the throat infection several days.

GEORGE H. WEAVER, M.D., Chicago.

MEXICAN TAX ON SAMPLES

To the Editor:—It would please the men of the medical profession throughout the republic of Mexico if you would call the attention of the manufacturers of drugs and chemicals, through your columns, to the fact that the Mexican government has imposed an import duty charge on catalogues and samples of drugs, medicines, tablets, etc. The daily receipt of numerous samples of medicines, pills, tablets and ampules of remedies for intravenous and intramuscular use is beginning to pall on us, especially as we are charged from ten cents to a peso for each sample.

EUGENE STADELMAN, M.D., Cananea, Sonora, Mexico.

THE SIZE OF DROPS

To the Editor:—The article of Strong and Wilmaers (*THE JOURNAL*, May 5, p. 1308) is much to the point. I am particularly interested in the matter of the relation of drops to minims. I have tested many digitalis tinctures, and agree with the writers that there are almost always at least 3 drops to a minim. To remove this difficulty, we have tried, at the Post-Graduate Cardiac Clinic, the use of special pipets graduated in minims. We found these difficulties: Inexpensive pipets were found to be grossly inaccurate in their markings. It was difficult to explain to patients of foreign tongues and sometimes limited intelligence how to use the pipets. Last of all, when the directions are plainly written in terms of "minims," many pharmacists persist in translating it into

"drops" on the label. As the graduate pipet can physically be used as a dropper, the patient often simply counts so many drops.

The best solution seems to be to furnish some sort of graduate that cannot be used as a dropper. An alternative is to use a series of mixtures so gaged that a teaspoon represents certain amounts of the digitalis tincture.

BERTON LATTIN, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF TYMPANITES

To the Editor:—I am anxious to know the most effective drug to combat symptomatic tympanites. Please omit name.

—, Pachuea, Mexico.

ANSWER.—A turpentine enema, made of one teaspoonful of oil of turpentine, emulsified by means of yolk of egg and diffused through one pint or quart of hot water, is perhaps the most commonly employed measure in tympanites. This is often combined with the application of turpentine stupes, that is, flannel wrung out of hot water and then out of warm turpentine and applied to the abdomen for from fifteen to thirty minutes. Asafetida in doses of from 0.5 to 1 gm. in capsules is usually considered a rational intestinal carminative for peroral administration. A most effective means, when the foregoing measures fail, is the introduction, as high as possible, and leaving in place, of a thick colon tube.

CHLORINATION — FILTERS — FLY-TRAPS

To the Editor:—1. Please publish information relative to chlorinating water supplies. The Chicago system seems to be effective. 2. We have several large tanks in the mountains through which the water runs; these tanks are used to equalize the pressure. The take-off from these tanks is several inches higher than the lead-in, allowing considerable sedimentation. I would be pleased to get something on filters for the bottom of these tanks, either sand, charcoal or rocks, and how they are used. 3. Do you know of an effective outside fly-trap?

E. D. ABRAHAM, M.D., Gibson, N. M.

ANSWER.—1. Chlorination of water supplies has proved a very effective means of preventing water-borne diseases. Apparatus for chlorination is now in use in several hundred cities in this country. We would suggest that our correspondent write for information about the type of apparatus to be used to the nearest large city employing chlorination.

2. Any good sanitary engineer can design a simple filter for the tanks. The *Engineering News Record*, New York, can doubtless furnish the names of competent engineering consultants.

3. The Hodge fly-trap (described by C. F. Hodge in his "Nature Study") has given good results, but the best measure of suppressing common house-flies is through regulation of breeding places.

Medical and Nonmedical Workers in Hospital.—To select a physician merely because of knowledge to administer a business house or to select a business man to administer a hospital is, we believe, poor judgment, because of the waste of medical knowledge, on the one hand, and the handicap of the lack of it, on the other. It would, however, be equally poor judgment to appoint as the chief executive for either position a person with a predominantly research type of mind. In the personnel of the business concern of today would probably be included physicians and nurses, while the personnel of all modern hospitals includes nutrition workers, statisticians, librarians, accountants, engineers, and an almost endless variety of medical and nonmedical workers.—A. W. Goodrich, *Hospital Social Service* 7:170 (March) 1923.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.
FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.
IOWA: Iowa City, May 31-June 2. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
LOUISIANA: New Orleans, June 7-9. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.
MARYLAND: Baltimore, June 19-22. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.
MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.
MISSISSIPPI: Jackson, June 13-14. Sec., Dr. W. S. Leathers, University.
MISSOURI: St. Louis, June 6-8. Sec., Dr. Cortez F. Enloe, Jefferson City.
NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW MEXICO: Santa Fe, June 18. Sec., Dr. R. E. McBride, Las Cruces.
NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.
NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.
OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.
OREGON: Portland, July 3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.
SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TENNESSEE: Memphis, Nashville and Knoxville, June 15-16. Sec., Dr. Alfred B. DeLoach, 1230 Exchange Bldg., Memphis.
TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg.
UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.
VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.
WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.
WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

Additional Hospitals Approved for Intern Training

Since the publication of the list of Hospitals Approved for Internships in the 1921 edition of the American Medical Directory, and the supplementary lists in THE JOURNAL of October 1, 1921, February 25 and May 13, 1922, the following institutions have been added:

SECTION I: GENERAL HOSPITALS

- Fresno County Hospital, Fresno, Calif.
Seaside Hospital, Long Beach, Calif.
California Lutheran Hospital, Los Angeles, Calif.
Methodist Hospital of Southern California, Los Angeles, Calif.
St. Vincent's Hospital, Los Angeles, Calif.
Fabiola Hospital, Oakland, Calif.
Samuel Merritt Hospital, Oakland, Calif.
San Diego County General Hospital, San Diego, Calif.
St. Joseph's Hospital, San Diego, Calif.
Franklin Hospital, San Francisco, Calif.
French Hospital, San Francisco, Calif.
Hahnemann Hospital, San Francisco, Calif.
Mary's Help Hospital, San Francisco, Calif.
Southern Pacific Hospital, San Francisco, Calif.
St. Francis Hospital, San Francisco, Calif.
St. Joseph's Hospital, San Francisco, Calif.
Chicago General Hospital, Chicago, Ill.
St. Margaret's Hospital, Hammond, Ind.
St. Elizabeth's Hospital, Lafayette, Ind.
Jennie Edmundson Memorial Hospital, Council Bluffs, Ia.
Hotel Dieu, New Orleans, La.
W. A. Foote Memorial Hospital, Jackson, Mich.
Brownsville and East New York Hospital, Brooklyn, N. Y.
St. Mary's Hospital, Cincinnati, Ohio.
Grant Hospital, Columbus, Ohio.
Good Samaritan Hospital, Portland, Ore.
Sacred Heart Hospital, Allentown, Pa.
Altoona Hospital, Altoona, Pa.
Pottsville Hospital, Pottsville, Pa.
Reading Hospital, Reading, Pa.
Columbia Hospital, Columbia, S. C.
Swedish Hospital, Seattle, Wash.
St. Mary's Hospital, Milwaukee, Wis.
Vancouver General Hospital, Vancouver, B. C.

SECTION III. SPECIAL HOSPITALS

- St. Charles Hospital for Crippled Children, Pt. Jefferson, N. Y.
Children's Orthopedic Hospital, Seattle, Wash. (Affiliated with Seattle General Hospital for intern training).

- Firland Sanatorium, Seattle, Wash. (affiliated with Seattle City Hospital for intern training).
Northern Pacific Railway Hospital, Tacoma, Wash.
St. Elizabeth's Hospital, Appleton, Wis.
Madison Methodist Hospital, Madison, Wis.

The complete list¹ of hospitals that are approved for internships now contains 643 hospitals with a total capacity of 186,867 beds and offering 3,671 internships. Section I lists general hospitals to the number of 500, furnishing 3,103 general internships for medical graduates. The 30 hospitals in Section II are all for nervous and mental diseases and afford 57 internships. Other special hospitals, giving internships in the various specialized departments of medicine and surgery, are listed in Section III, which contain 113 hospitals affording 511 special internships.

Book Notices

TRAITÉ DES FRACTURES DES MEMBRES, EXAMEN CLINIQUE, RADIOGRAPHIE, TRAITEMENTS PRATIQUES. Par le Dr. Henri Judet, Ancien Interne des Hôpitaux de Paris. Second edition. Paper. Price, 36 francs. Pp. 617, with 442 illustrations. Paris: "L'Expansion Scientifique Française," 1922.

This comprehensive work on fractures of the extremities is illustrated with reproductions of roentgenograms, drawings from roentgenograms, and diagrams indicating steps in treatment and types of apparatus. Fractures in the adult and in the child are considered separately. Each part of the bones of the extremities is taken up in detail. Rare fractures also are mentioned. Various complications are described, and the method of avoiding some of them is indicated. Other complications are considered under separate chapters, as pseudarthrosis, pathologic fractures, mechanical and infectious, with especial reference to tetanus and gas gangrene. In the treatment of fractures and their complications, the best methods chosen from a large experience during the war are included as applied to civil injuries. Among the forms of treatment described are the many methods of suspension and extension, the use of plaster of Paris, and orthopedic apparatus. Modern nonoperative treatment is completely and graphically covered. Indications for operative treatment are considered, with a discussion of the probable measure of success to be expected, but operative technic is not included. The work consists largely of the experience of the author, but methods used by other leading surgeons are described.

NURSING AND NURSING EDUCATION IN THE UNITED STATES. Report of the Committee for the Study of Nursing Education, and Report of a Survey by Josephine Goldmark. Cloth. Price, \$2. Pp. 585. New York: The Macmillan Company, 1923.

This is the report of an exhaustive survey of nurse training and education. It deals extensively with the multiplicity of problems connected with nurse training and service, including (a) the functions of the nurse in public health, in private duty, and in institutional work, and (b) the training of the nurse in the hospital school, extended reference being made to preliminary, theoretical and practical training and the conditions under which nurses work, and mention being made of the training of subsidiary nurses, of university schools, and of postgraduate courses. This is a thorough discussion of a very live topic and will be of extreme interest not only to the medical and nursing professions, but also to hospital superintendents, public health agencies, and all others who are interested in the training of those who are to aid the physicians in the care of the sick. The book cannot fail to exert an extensive and beneficial influence on the future training of nurses.

THE WONDER BOOK OF CHEMISTRY. By Jean-Henri Fabre. Translated from the French by Florence C. Bicknell. Cloth. Price, \$2.50. Pp. 285. New York: The Century Company, 1922.

The literary art of Fabre and the exactness of his science are now matters of general acknowledgment. In the present book the elements of chemistry are explained by a delightful character, Uncle Paul, to two boys, Jules and Emile, who

1. The complete list, with revised data about each hospital, appears in the eighth edition of the American Medical Directory, now being printed. A separate reprint will be sent on receipt of 25 cents.

are the author's own children, faithfully portrayed even as to their names. The apparatus described is of the most elementary, home-made type; yet though the lessons are as elementary and simple as possible, Fabre presents his subject with such delicate philosophical considerations as to make it attractive to the well-informed adult. For instance:

It is evident that carbonic acid gas is constantly being poured into the atmosphere in torrents that defy computation; and yet animal life has no reason to fear suffocation, either now or in the future. The atmosphere, continually being tainted, is as continually being purified: as fast as it is laden with carbon it is purged of it. Now, the health officer charged with the safeguarding of the general physical welfare is the plant, my little friends, the plant that lives on carbonic acid gas to prevent our dying by breathing it, and with it prepares the food that is to sustain us. This fatal gas in which is taken up so much of the putrefaction of all things is the plant's chief sustenance. To the plant's wonderful stomach, putrefaction is satisfaction. What death has cut down, the blade of grass builds up again.

If the physician is anxious to make chemistry attractive to his children, or to the lay reader, he will find few books for the purpose so suitable as this one by Fabre.

PROTISTS AND DISEASE. Vegetable Protists; Algae and Fungi, Including Chytridiineae; Various Plassomyxineae, the Causes of Molluscum Contagiosum, Smallpox, Syphilis, Cancer and Hydrophobia; Together with the Mycetozoa and Allied Groups. By J. Jackson Clarke, M.B., F.R.C.S., Senior Surgeon to the Hampstead and North-West London Hospital. Cloth. Price, \$4.50. Pp. 229, with 60 illustrations. New York: William Wood & Co., 1923.

The object of this book is to direct the attention to certain bodies in the lesions of molluscum contagiosum, cancer and other diseases, which the author assumes represent pathogenic protists. The author is convinced that "in molluscum we have an easy key to smallpox, the filtrable organisms, and to cancer." The evidence in favor of his view is wholly morphologic in nature, and is in no way convincing; nevertheless, the book will interest the students of the etiology of cancer and other problems of causation.

Medicolegal

Compensation for Services Requested by Employer

(*Weinreb v. Harlem Bakery & Lunch Room, Inc. (N. Y.),*
197 N. Y. Supp. 833)

The Supreme Court of New York, Appellate Division, First Department, in affirming a determination of the appellate term that affirmed a judgment in favor of the plaintiff, says that the action was brought by a physician to recover the reasonable value of his services rendered at the request of the defendant to a man who was injured while in its employ and during the course of his employment. Two defenses were set up: (1) That the court did not have jurisdiction of the action, as the workmen's compensation law of the state confers exclusive jurisdiction on the compensation commission to determine the value of physicians' charges in such cases, and (2) that the action was barred by the workmen's compensation law. But the court does not accept the defendant's views. When the employer provides the medical attendance and treatment, the compensation of the employee for injuries must be based solely on the loss of earning power. It is only in the case of the employer's refusal or neglect to furnish the necessary medical attendance or treatment that the expense thereof can be recovered as a part of the employee's compensation for his injury. In the latter case, the fixing of the reasonable value of such service is exclusively vested in the commission and allowed as a part of the employee's compensation, and the amount fixed becomes a lien on the compensation awarded. The statute does not concern itself with the contract that the employer makes with the physician or surgeon, when the employer provides the medical attendance. He is at liberty to make any agreement that to him seems proper, and make such payment as he may stipulate, for the amount that he pays is not a part of the compensation to be awarded. If the employer hires the physician, it is simply a matter of contract between the physician and the employer. If the amount to be paid is stipulated, the physician is entitled to that sum. If no amount is named, the physician is entitled to receive

the reasonable value of his services. A failure to pay gives rise to a common-law action that may be prosecuted in the courts. There is no more reason for giving the commission the right to limit or control the sum to be paid under this contract of employment than there would be to require all contracts with employees to be submitted to the commission to pass on the reasonableness of the wages agreed to be paid.

Claims of Physicians and Hospitals Under Contracts

(*Western Indemnity Co. v. State Industrial Commission et al. (Okla.),*
211 Pac. R. 423)

The Supreme Court of Oklahoma says that an employee of a company sustained an injury that entitled him to compensation under the workmen's compensation law of that state. Some weeks afterward, the state industrial commission made an award and ordered the employer, or the indemnity company that was its insurance carrier, to pay the amount of the award and also "all medical expenses as may be necessary as the result of said injury during sixty days after the injury or for such time in excess thereof as in the judgment of the commission may be required. Such charges shall not exceed the sum of \$100 unless approved by the commission." When the employee was injured the employer directed him to a physician, and placed him in a hospital. The medical bill incurred was \$135, and the hospital bill \$232.80. The employer paid the hospital bill. The physician's bill was not paid. The insurance carrier paid to the employer, on these amounts, \$100. Thereafter a review was had of the medical bill and hospital bill by the industrial commission, and the commission made finding that the claims of the physician and the hospital were reasonable charges, and ordered the employer or the insurance carrier to pay the physician \$135, and that the insurance carrier reimburse the employer in the sum of \$132, that being the balance of the hospital bill after crediting the insurance company with the \$100 theretofore paid. But the award of the commission is reversed and remanded, with direction to dismiss the claims, because the commission is without jurisdiction to hear and determine claims of this character. In other words, the court holds that the industrial commission of Oklahoma is without jurisdiction to hear and determine the reasonableness or the unreasonableness of claims for medical or hospital services when they are based on a contract between the employer and the physician, or on one between the employer and the hospital furnishing services to an injured employee entitled to compensation under the provisions of the workmen's compensation law.

Compensation of Injured Mentally Defective Workman

(*Belleville Brick & Tile Co. v. Industrial Commission et al. (Ill.),*
137 N. E. R. 401)

The Supreme Court of Illinois, in affirming a judgment which confirmed a decision of the industrial commission that the disability had not diminished or ended for which an award had been made under the workmen's compensation act, says that the applicant for compensation, while wheeling clay with a wheelbarrow, had fallen on his left leg, causing an impacted fracture on the inside of the neck of the femur. There was a great deal of evidence of experts, who testified at length almost entirely concerning the mental condition of the applicant. The evidence was that his mental status was that of a moron 6 or 7 years of age; that he was a high-class imbecile; that he was a hydrocephalic, and that he was mentally deficient from birth. But none of the evidence on the question of mental condition was of any importance on the question submitted for decision as to whether the disability had diminished or ended. The workmen's compensation act makes no distinction based on mental conditions, and if the applicant was mentally defective from birth, a hydrocephalic, or a moron with the mental equipment of a child of 6 or 7 years, he was entitled to the use of his leg and compensation for being deprived of such use. The compensation is based on previous earnings and earning capacity, and is measured by loss of such capacity due to the accident, and not on mental condition except in that regard.

Society Proceedings

COMING EXAMINATIONS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29.
Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association for Thoracic Surgery, Chicago, May 29-30. Dr. Charles Gordon Heyd, 46 W. 52d Street, New York City, Secretary.
American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
American Pediatric Society, French Lick, Ind., May 31-June 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
American Psychiatric Association, Detroit, June 19-22. Dr. C. Floyd Haviland, Drawer 16, Capitol Station, Albany, New York, Secretary.
American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.
American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
California Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
Montana Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.
New Jersey Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
North Dakota State Medical Association, Grand Forks, May 31-June 1. Dr. H. J. Rowe, Lisbon, Secretary.
Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.
Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
Southern Minnesota Medical Association, Faribault, June 11. Dr. H. T. McGuigan, Redwing, Secretary.
Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.
Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL ASSOCIATION OF GEORGIA

Seventy-Fourth Annual Meeting, held at Savannah, May 2-4, 1923

The President, DR. J. M. SMITH, Valdosta, in the Chair

Extramural Psychiatry

DR. GEORGE L. ECHOLS, Milledgeville: The first great problem of extramural psychiatry is mental hygiene and preventive measures. The second great consideration is the early recognition of mental diseases and treatment started months or years earlier than treatment is started at present. Progress with the mental disease problem will be advanced by changing the present pessimistic ideas and views of insanity. Many a psychosis is a problem of internal medicine or surgery. It is absolutely necessary that we develop a more liberal consideration and after-care of patients dismissed from mental hospitals.

The "Semi-Insane"

DR. NEWDIGATE M. OWENBY, Atlanta: There is hardly a physician who does not have among his clientele some person of undoubted social value to his community who shows signs of semi-insanity. It may only be an obsession relative to his health, or it may be of a more pronounced nature. The

drunkard, the nymphomaniac, the moral delinquent and the sexual pervert should all be regarded as semi-insane and therefore only partially responsible.

Gravity of Ovarian Tumors of all Types

DR. T. P. WARING, Savannah: Ovarian tumors, even of small size, should not be considered of little consequence, because they are subject to accidents such as torsion, sepsis, inflammatory obstruction, proliferation and carcinomatous degeneration; therefore, they are fraught with grave danger to the patient, and should come out of the class of elective operations and be put into the class of imperative surgery.

Traumatic Cysts of the Brain

DR. CHARLES E. DOWMAN, Atlanta: The treatment which would probably prevent the occurrence of traumatic cysts of the brain is the principle of débridement employed in the handling of traumatic head cases during the recent war. Operation should be performed at the time of injury in all cases in which localized brain contusion is suspected. The operative procedure consists in exposing the injured area and carefully removing contused brain tissue and blood clots by means of catheter suction. If this is done thoroughly, a satisfactory healing of the brain wound should be expected. If, on the other hand, contused brain tissue and blood clots are allowed to remain, there is apt to occur a liquefaction through the action of enzymes, with a resulting cyst. Such a cyst is liable eventually to give rise to the same symptoms as may be caused by brain tumor, and demand late operative treatment.

A Clinical Study of Pelvic Inflammation in Women

DR. EVERARD A. WILCOX, Augusta: Virulent septic infections developing immediately after full term labor or miscarriage during the latter months will rapidly generalize and end fatally. There will be little local reaction to the infection. A few patients showing some resistance will be saved by prompt resection of the inflamed appendages. Infection after abortion must be waited on to localize. The time to operate will come when the patient's general condition is stabilized, with temperature always above normal, and with a tendency for the general condition to deteriorate. Blood cultures should be made in septic cases, and cultures and films of the exudate should be made in all cases. Gonococcus salpingitis must be given full time to abate before operation.

Mistakes in the Treatment of Acute Appendicitis

DR. FRANK K. BOLAND, Atlanta: Delay in operating may be considered the first great mistake in the treatment of acute appendicitis. The giving of purgatives and food before operating constitutes the second great mistake. The public, and mothers in particular, should be taught not to administer castor oil for every stomach-ache, and to refrain from giving food in the presence of continued abdominal pain. The laity should know three rules for the home treatment of persistent abdominal pain, with or without nausea and vomiting: (1) rest in bed; (2) the summoning of a physician, and (3) absolutely no food or medicine by mouth.

Obstetrics in the Home

DR. J. F. MIXSON, Valdosta: Under conditions found in the average home, good obstetrics may be practiced: (1) by conscientious antepartum care, that the mother may go into labor in the best mental and physical condition; (2) by avoiding meddlesome interference, and practicing cleanliness, that no outside infection be carried into the genital tract, and (3) by the prolongation of postpartum care for weeks, that the rehabilitation of the mother may be complete.

Vital Capacity Readings

DR. RALSTON LATTIMORE, Savannah: Determination of the vital capacity assists in determining whether or not cardiac involvement is present, and it gives a fairly accurate estimate of the functional capacity of the heart. As a rule, the lower the vital capacity, the poorer the prognosis. Vital capacity readings also give an index of the results of the treatment, and show whether the tolerance for work is increasing or diminishing.

The Epidemic of Dengue Fever in Savannah in 1922

DR. WILLIAM H. MYERS, Savannah: Dengue is most frequently encountered in the West Indies, and there is no doubt that from that locality the epidemic of 1922 was introduced into Florida, and thence northward to Georgia. The number of cases reported to me was approximately 2,000. Complications were noted in only seven cases. These were: insanity, appendicitis, peritonsillar abscess, otitis media, suppurative parotitis, septic sore throat, and abdominal trouble, with death.

Purity and Quality of Milk Supply of Cities of Three Thousand or More

DR. N. L. SPENGLER, Donaldsonville: All milk sold in Georgia as certified milk must be free from pus, blood and injurious bacteria, and must not contain more than 10,000 bacteria of any kind to the cubic centimeter at the time of delivery to the consumer. Such milk must have a specific gravity ranging from 1.029 to 1.034, and must be neutral or, at most, but faintly acid in reaction, must not contain less than 3.5 nor more than 4.5 per cent. of proteins, from 3.5 to 4.5 per cent. of butter fat, and from 4 to 5 per cent. of sugar. It must be free from all contaminating foreign matter or chemical substances added for preservative or coloring purposes. Immediately after milking, the milk must be cooled and thereafter kept at a temperature below 50 F. until delivered to the consumer. Milk sold in the city shall be whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and five days after calving, or such longer period as may be necessary to render the milk practically colostrum-free. It shall contain not less than 3.25 per cent. of natural milk fat and otherwise conform with the state laws as required by the state dairy and food department. Raw milk shall conform to these standards and to all other regulations applicable to raw milk, and shall not contain more than 50,000 bacteria to each cubic centimeter when delivered to the consumer. A physical examination shall be made by the dairy inspector, for which no fee shall be charged, at least quarterly of all animals in herds producing raw milk. Pasteurized milk shall have a bacterial count before pasteurization of not more than 500,000 bacteria to each cubic centimeter, and after pasteurization the count shall not exceed 50,000 bacteria to each cubic centimeter when delivered to the consumer.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

6: 257-352 (April) 1923

- Causes of Bitemporal Contraction of Visual Field. E. Hill, Richmond, Va.—p. 257.
Detachment of Retina in Case of Pregnancy with Nephritis. Reattachment and Restoration of Vision. W. L. Benedict and R. D. Mussey, Rochester, Minn.—p. 268.
Quinin Amblyopia. J. N. Evans, Brooklyn.—p. 271.
Immune Reactions of Lens. L. Hektoen, Chicago.—p. 276.
Solarization in Trachoma. J. W. Wright, Columbus, Ohio.—p. 279.
Self-Registering Campimeter and Scotometer. J. W. Downey, Baltimore.—p. 281.
Etiology of Uveitis. B. Chance, Philadelphia.—p. 284.
Increase of Hyperopia in Diabetes. W. H. Roberts, Pasadena, Calif.—p. 291.
Lens Antigen (Vaccines) Used to Absorb Cortical Matter After Extraction of Cataract. A. E. Davis, New York.—p. 295.
Monocular Interstitial Keratitis. J. N. Hoffman, Canton, Ohio.—p. 296.
Iridectomy and Corneal Trephining with a Conjunctival Flap. G. W. Jean, Santa Barbara, Calif.—p. 297.

Archives of Neurology and Psychiatry, Chicago

9: 417-546 (April) 1923

- Teratoid Cyst of Hypophysis. J. H. Globus, New York.—p. 417.
*Charcot-Marie Atrophy: Report of Case with Necropsy. C. S. Potts and G. Wilson, Philadelphia.—p. 431.
Recent Developments in Electrodiagnosis. P. Bailey, Boston.—p. 436.
*Arsphenamin Therapy in State Hospitals for Mental Disorders. G. W. Mills and C. L. Vaux, Central Islip, N. Y.—p. 450.

*Schizophrenic Catatonia with Associated Metabolic and Vegetative Features. Report of Case. T. Raphael, J. P. Parsons and M. N. Woodwell, Ann Arbor, Mich.—p. 471.

*Phenobarbital (Luminal) Treatment of Insane Epileptics. I. A. Darling, Warren, Pa.—p. 478.

*Pathogenesis of Epilepsy. M. Osnato, New York.—p. 488.

Charcot-Marie Atrophy.—The pathologic changes in the case reported by Potts and Wilson corresponded with the two findings most commonly reported in cases of Charcot-Marie atrophy in which necropsies have been recorded: degeneration of the peripheral nerves and of the posterior columns of the cord. Clinically, the case showed the presence of mental changes and Argyll-Robertson pupils. The occasional appearance of these unusual symptoms in Charcot-Marie atrophy may be explained on the ground that hereditary diseases of the nervous system are, at times, blended together; hence atypical findings are to be expected.

Arsphenamin Therapy for Mental Disorders.—For details, of the work done by Mills and Vaux, the original article should be consulted as limited space forbids abstracting. However, the authors believe that, in general, parietic patients should not be treated, at least not those admitted to state hospitals. Patients suffering from what is designated as late cerebral syphilis should usually not be treated. The time to treat neurosyphilis is during the first year or so after the primary infection. They do not believe that the so-called borderline cases should be stressed from a therapeutic standpoint; that, on the contrary, the cases admitted to state hospitals are usually clear-cut clinically. No reliance is placed on one negative Wassermann reaction in a case under treatment; and, in view of the numerous discrepancies and contradictions in the serology, it is recommended that repeated examinations be made in all unclear cases, and especially examinations in more than one laboratory.

Schizophrenic Catatonia.—An analytic report is made by Raphael, Parsons and Woodwell of a case which presented definite indications of primary or fundamental asthenic habitus, the gradual development of an acute schizophrenic catatonia with stupor reaction, and almost complete recovery; and which further, in strikingly phasic association, on the physiologic level, presented marked vagotonia and hypoadrenalism, and in somewhat less degree, hypophyseal and thyroid inadequacy with evidence of general metabolic depression, essentially hypo-oxidative in type. These findings strongly emphasize trends that have been noted in other acute schizophrenic reactions.

Phenobarbital in Epilepsy.—Darling reports the results of treatment with phenobarbital in a series of male patients who were classed as insane epileptics, and required hospital care because of pronounced dementia or periods of extreme and dangerous violence. All of the patients treated belonged to one of four groups: idiopathic, traumatic, senile, or syphilitic. Favorable results were obtained from the administration of phenobarbital in cases diagnosed as idiopathic and traumatic epilepsy. The results in cases diagnosed as senile and syphilitic epilepsy were doubtful. Phenobarbital is not to be considered as a "cure" or specific for epilepsy. The author suggests that phenobarbital and bromid may be combined and better results thus obtained in selected cases. It appears that phenobarbital has a cumulative effect that appears to be successfully combatted by a break of two days in each week during its administration. A sudden break in the administration of phenobarbital is sometimes followed by a series of seizures. There is much less danger of such trouble if bromid is given as soon as the phenobarbital is withdrawn. One and one-half grains (0.09 gm.), given five days in each week, appears to be a safe dosage. If larger amounts are given, very careful observation is necessary to detect possible toxic symptoms early and to prevent the more serious disorders. The use of this drug may be followed by: rash, simulating measles or scarlet fever; symptoms like those of alcoholic intoxication; severe, cholera-like diarrheas; mental hebetude; delirious states, and other like troubles.

Pathogenesis of Epilepsy.—The factor of importance in epilepsy, Osnato asserts, is the acidosis, regardless of whether this depends on a viciously functioning carbohydrate metabolism which causes a general toxicosis, or on the local production of the toxic substance from disintegrating cellular

structures, secondary to vascular disturbances. The effect is the same, the only difference is the extent of the convulsive reaction.

American Journal of Obstetrics and Gynecology, St. Louis

5: 225-288 (March) 1923

- Palliative and Operative Treatment of Prolapse of Uterus. J. C. Hirst and C. Mazer, Philadelphia.—p. 225.
- Clinical Aspects of Blood Loss in Labor. P. T. Harper, Albany, N. Y.—p. 233.
- Uterine Displacements and Pregnancy. B. R. McClellan, Xenia, Ohio.—p. 242.
- *Functional Dystocia in Normal Pelves: Recognition and Management. J. A. Harrar, New York.—p. 246.
- Pituitary Extract in Second Stage of Labor. M. A. Tate, Cincinnati.—p. 252.
- Malformations of Uterus and Appendages. Report of Six Cases. A. T. Jones, Providence, R. I.—p. 254.
- *Should Pubiotomy be Recognized as Justifiable Operation in Obstetrics? A. H. Bill, Cleveland.—p. 258.
- *Genital Abnormality and Acute Appendicitis in a Girl of Eight. H. W. Yates, Detroit.—p. 261.
- Case of Sacral Periosteal Sarcoma. F. Reder, St. Louis.—p. 266.
- Case of Toxemia of Pregnancy, with Acute Yellow Atrophy of Liver. F. R. Oastler and H. G. Jacobi, New York.—p. 271.
- Focal Infections and Their Clinical Relations to Metastases in Female Genitalia. A. B. Keyes, Chicago.—p. 277.
- *New Measurement as Aid in Diagnosis of Rachitic and Generally Contracted Pelves. W. E. Welz and R. W. Alles, Detroit.—p. 283.
- *Menstruation. Its Etiology. I. Kross, New York.—p. 285.
- Identification of Babies in Maternities. J. B. De Lee, Chicago.—p. 288.

Functional Dystocia in Normal Pelves.—In Harrar's opinion it is proper to interfere in delay due to a posterior occiput, (1) when despite good contractions there is no advance, or (2) when with advancement there is an increasing extension of the head. Version with head above midpelvis in such conditions, manual rotation and forceps extraction with the head below midpelvis are the operations of choice. Molding of the head through the brim is no contraindication to version if under complete anesthesia the uterus relaxes with sufficient elasticity to readily admit the passage of the hand and wrist through the retraction ring. In fact, a well molded head is much easier to deliver in the breech extraction after version than one that has not molded. Complete Scanzoni rotation of the posterior occiput with the forceps, Harrar asserts, is a dangerous procedure in most hands. If there is but slight resistance the maneuver is satisfactory and is a beautiful operation. But if at all difficult, the leverage is so powerful that the anterior blade frequently cuts into the child's scalp and cheek just in front of the anterior ear and there is risk of high and deep vaginal tears. Under complete anesthesia, manual rotation with external assistance is much to be preferred and is usually successful.

Pubiotomy.—Bill emphasizes the fact that in certain cases pubiotomy offers something which no other obstetric procedure can replace. He does not consider pubiotomy to be an elective procedure, but merely an emergency operation, to be applied in those cases in which the child cannot be saved by other means without seriously endangering the life of the mother. Bill would not even advocate a broadening of its field and would especially speak against reckless performance of podalic version in cases of contracted pelvis under the safeguard of the prophylactic saw.

Exstrophy of Bladder and Genital Abnormality.—In Yates' case the umbilicus was about 9 cm. below its normal location. There was a diastasis of the recti muscles extending from a line drawn transversely from the anterior spines of the ilium downward for 7.5 cm. and separated at its widest portion 4.5 cm. There was an apparent exstrophy of the bladder through this diastasis up to and immediately beneath the integument. It was in the center of this apparently exstrophied part that the umbilicus was seen. Union of the pubic bones was absent—the ramus of each side apparently dipping down without fusion. The external genitals were in irregular and undefined folds, the clitoris alone appearing most normal. The urethral meatus was very small, scarcely admitting a uterine probe, the nymphae were so immature that they could only be distinguished with difficulty and in no sense were a guide to the stream while urinating, so that during urination the urine was thrown upward toward

the abdomen. The vagina was entirely wanting, unless it could be marked by a slight aperture which admitted the smallest probe for about 0.5 cm. Repeated attempts were made to carry the probe farther in without success.

New Measurement as Aid in Diagnosis of Rachitic and Generally Contracted Pelves.—Welz and Alles believe that the measurement of the pelvic height is not only more easily determined but also is consistently of greater interpretive value than the measurement of the conjugata externa (of Baudeloque). It requires no particular skill to be determined exactly and, when it is found to be 20 cm. or below, a thorough internal examination of the pelvis is indicated. In view of the ease with which the measurement is taken and the apparent value in diagnosing certain types of pelvic contraction, the authors recommend it for the use of every one who practices obstetrics. The method of determining this measurement is very simple, requiring only the use of an ordinary pelvimeter. The patient is placed on either side, preferably the right, in the exaggerated Sims position. The left leg is flexed about 120 degrees with the body, and the patient instructed to relax all of the muscles of the leg. The tuberosity ischii is then easily palpable and the one point of the pelvimeter is placed firmly upon it being held by the left hand of the operator. The fingers of the right hand then seek the highest point of the crest of the ilium which furnishes the other point for the measurement. The tips of the pelvimeter are then depressed to bring them as closely as possible to the bony landmarks, and the reading taken. One centimeter is deducted from this reading to allow for the thickness of overlying tissue. Of 200 normal pelvises examined the average height was 20.89 cm. For rachitic and generally contracted pelvises the average was 19 cm.

Etiology of Menstruation.—Kross believes that the statement is justified that clinical and experimental evidence is directly opposed to the theory that the corpus luteum is the causative factor in menstruation and that it points clearly and definitely to the mature graafian follicle as the responsible factor in this process.

Journal of Biological Chemistry, Baltimore

55: 323-548 (March) 1923

- Creatinin and Creatin in Muscle Extracts. IV. Formation of Creatin from Methyl Guanidin in Muscle. F. S. Hammett, Philadelphia.—p. 323.
- Exposure to Light as Source of Error in Estimating Uric Acid by Folin and Wu Method. H. Rogers, Indianapolis.—p. 325.
- New Method for Separate Extraction of Vacuole and Protoplasmic Material from Leaf Cells. A. C. Chibnall, New Haven, Conn.—p. 333.
- Gravimetric Determination of Organic Phosphorus. W. Jones and M. E. Perkins, Baltimore.—p. 343.
- Refractometric Determination of Serum Proteins. B. S. Neuhausen and D. M. Rioch, Baltimore.—p. 353.
- Ingested Fat and Body Fat as Precursors of Acetone Bodies. R. S. Hubbard, Clifton Springs, N. Y.—p. 357.
- Synthesis of Amino-Acids in Animal Organism. II. Synthesis of Ornithine in Body of Fowl. J. H. Crowdle and C. P. Sherwin, New York.—p. 365.
- *Studies in Uric Acid Metabolism. III. Influence of Fats and Carbohydrates on Endogenous Uric Acid Elimination. H. B. Lewis and R. C. Corley, Urbana, Ill.—p. 373.
- *Studies on Yeast. V. Vitamin B Content of Yeast. V. G. Heller, Ames, Iowa.—p. 385.
- Vitamin B. I. Modified Technic in Use of Rat for Determinations of Vitamin B. H. Steenbock, M. T. Sell and E. M. Nelson, Madison, Wis.—p. 399.
- Vitamin B. II. Storage of Vitamin B by Rat. H. Steenbock, M. T. Sell and J. H. Jones, Madison, Wis.—p. 411.
- *Colorimetric Determination of Iron and Hemoglobin in Blood. S. Y. Wong, Peking, China.—p. 421.
- Use of Persulphate in Estimation of Nitrogen by Arnold-Gunning Modification of Kjeldahl's Method. S. L. Wong, Peking, China.—p. 427.
- Use of Persulphate in Estimation of Nitrogen by Folin's Direct Nesslerization Method. S. Y. Wong, Peking, China.—p. 431.
- Action of Diazomethane on Xanthosine. P. A. Levene, New York.—p. 437.
- Nutritive Properties of Milk with Special Reference to Reproduction in Albino Rat. II. H. A. Mattill and N. C. Stone, New York.—p. 443.
- Relation of Lipoids to Suprarenal Physiology. I. Cholesterol and Lipoid Phosphorus Contents of Blood of Rabbits Before and After Suprarenalectomy. E. J. Baumann and O. M. Holly, New York.—p. 457.
- *Immediate Effect of Heavy Exercise (Stair Running) on Some Phases of Circulation and Respiration in Normal Individuals. II. Oxygen and Carbon Dioxid Content of Blood Drawn from Cubital Vein at Different Intervals After Exercise. C. Lundsgaard and E. Moller, Copenhagen, Denmark.—p. 477.

Action of Ammonium Cyanid on Dilestons. H. D. Dakin and C. R. Harington, New York.—p. 487.
*Physiology of Muscular Exercise. I. Changes in Acid-Base Equilibrium Following Short Periods of Vigorous Muscular Exercise. D. P. Barr, H. E. Himwich and R. P. Green, New York.—p. 495.
Id. II. Comparison of Arterial and Venous Blood Following Vigorous Exercise. D. P. Barr and H. E. Himwich, New York.—p. 525.
Id. III. Development and Duration of Changes in Acid-Base Equilibrium. D. P. Barr and H. E. Himwich, New York.—p. 539.

Uric Acid Metabolism.—It is believed by Lewis and Corley that the results they have obtained from their experiments support the theory that the increases in the output of endogenous uric acid, following the ingestion of nonpurin food-stuffs, are due, in part at least, to a general stimulation of cellular metabolism, occasioned by the presence of the food-stuffs or their products of catabolism in the cells.

Vitamin B in Yeast.—The vitamin B potency of yeast (*Saccharomyces cerevisiae*, Race F) has been determined by Heller. He found that 2.5 per cent. of this yeast is sufficient for growth at the normal rate. Reproduction is possible at this level, but it is perhaps not normal, although young may be brought to maturity. Five per cent. of this yeast allows growth at the normal, and even better than normal, rate. Normal young have been obtained and weaned. Shortly before weaning time, the young on this ration do not develop as normal young should. Drying of yeast (*Saccharomyces cerevisiae*, Race F) destroys some of the vitamin. *Saccharomyces cerevisiae* grown in a synthetic medium is not as rich in vitamin B as that grown in wort. *Saccharomyces cerevisiae* not only synthesizes the growth promoting vitamin, but the antineuritic vitamin as well.

Iron and Hemoglobin in Blood.—A simple and rapid colorimetric method is described by Wong for the determination of iron in blood. The proteins are completely destroyed by the action of concentrated sulphuric acid and sodium or potassium chlorate, and the resulting solution is treated directly with sulphocyanate. The entire procedure is carried out in a single test tube, much in the same fashion as in the determination of total nitrogen by the direct nesslerization method of Folin. The determination of iron in blood by the new method is said to be quite as simple as a determination of the hemoglobin by any of the colorimetric methods. Since the iron in blood is practically equal to the iron in the hemoglobin, Wong suggests the determination of hemoglobin. The former has the advantage that it is applicable to old as well as to fresh blood and that the standard solution is easily prepared and keeps indefinitely.

Effect of Heavy Exercise.—The period during which the oxygen content of blood drawn from a cubital vein is found to be low after fast stair-running five times, Lundsgaard and Möller state, is of very short duration (about one minute after the exercise is finished). From two to four minutes after exercise, venous blood drawn from the arm may contain almost as much oxygen as arterial blood. From five to eight minutes after exercise the value again decreases somewhat and becomes more like the "normal average." The carbon dioxid content of the blood decreases markedly (from 5 to 10 volumes per cent.) during the first few minutes after the exercise is finished.

Muscular Exercise Changes Acid-Base Equilibrium.—Barr, Himwich and Green state that following short periods of vigorous muscular exercise, remarkable changes occur in the acid-base equilibrium of the blood. The carbon dioxid combining capacity is greatly diminished. The arterial carbon dioxid tension is reduced, and the reaction of both arterial and venous blood becomes less alkaline. The degree of change varies considerably in different normal persons. The change in carbon dioxid capacity is accompanied by an increase in the concentration of lactic acid. The observed increase in lactic acid was compared with that calculated from the change in carbon dioxid capacity. No strict quantitative relationship could be demonstrated. The slope of the carbon dioxid absorption curves is flatter after exercise. As a consequence, the efficiency of the blood as a carbon dioxid carrier is diminished. In the change between any two physiologic tensions, a given volume of blood takes up less carbon dioxid from the tissues and eliminates less carbon dioxid from the lungs. Easy muscular exercise may be performed

with scarcely detectable changes in the acid-base equilibrium of venous blood. With heavier work the degree of change, both in reaction and in carbon dioxid combining capacity, increases rapidly with each small increase in the amount of work.

Missouri State Medical Association Journal, St. Louis

20: 113-152 (April) 1923

Diagnosis and Management of Calculi in Upper Urinary Tract. N. S. Moore, St. Louis.—p. 113.
*Suggestion for Standard Technic in Application of Phenolsulphonephthalein Test, in Determination of Relative Functional Capacity of Two Kidneys. H. McC. Young, St. Louis.—p. 117.
Experience with Mazingo Method of Treatment for Empyema. A. L. Fuerth, Cape Girardeau.—p. 122.
Morphin-Hyoscin Hydrobromid Semimarcosis Preceding Operation (One Hundred Cases). C. D. O'Keefe, St. Louis.—p. 126.

Standard Technic for Phenolsulphonephthalein Test.—Young urges the adoption of a standard technic for this test and insists that the dye be collected simultaneously from the two sides, that the test should be brought to a conclusion on the two sides at the same time, and that the bladder should be catheterized at once. The regularity of flow on the two sides and the total quantity of fluid, in cubic centimeters, collected from each side during the test is important, and some note should always be made on the subject. If collection on one side begins and ends four minutes later than on the other the two kidneys are not working simultaneously.

Ohio State Medical Journal, Columbus

19: 245-270 (April) 1923

Advisability of Early High Amputation in Senile Gangrene of Lower Extremity. Report of Four Cases. D. B. Gilliam, Columbus.—p. 245.
Cured Case of Ankylosis of Jaw. W. G. Stern, Cleveland.—p. 248.
*Method Employed for Controlling Diabetics in Outpatient Department of Lakeside Hospital. C. D. Christie, Cleveland.—p. 250.
Lethargic Encephalitis. G. F. Zininger, Canton.—p. 253.
Local Health Department, County Medical Society and American Red Cross. J. R. McDowell, Lakewood.—p. 256.
Relation of Immediate Intermediary Operation to Modern Obstetrics. J. L. Bubis, Cleveland.—p. 259.
What We Know About Psoriasis. H. J. Parkhurst, Toledo.—p. 261.
Hemorrhage of the New-Born. L. E. Leavenworth, Canton.—p. 265.
Vertigo. J. N. Hoffman, Canton.—p. 269.

Controlling Diabetics in Outpatient Department of Lakeside Hospital, Cleveland.—The diabetic clinic in connection with the outpatient department at Lakeside Hospital meets once weekly and is in charge of a physician, who has for his assistants a trained dietitian, a social service worker and a laboratory assistant. All diabetic patients who have been in the hospital for treatment are referred to this clinic for further education and follow-up work. The milder cases are sent to this department without ever being admitted to the hospital. The physician in charge sees all patients individually on clinic day if they have anything to discuss with him, and then he lectures to the assembled group concerning various phases of the disease. The dietitian gives set demonstrations on foods, showing the methods of preparation of certain special things and she is responsible for seeing that the patient is able either to calculate or to estimate with accuracy the diet which has been recommended by the physician. The duties of the social worker are to see that all patients referred to the department attend; to investigate home conditions and see if it is necessary to supply any particular or all foods; to make satisfactory boarding arrangements for those without homes; to see that those responsible for the preparation of the patient's food understand what they are about; and to keep accurate records of all attendance and see that laboratory and dietetic data are kept up to date. The laboratory assistant examines the urine specimens brought in weekly, does blood sugar determinations under direction of the physician, and teaches the patients how to examine their urine and do other simple tests if they are thought necessary. A patient is required to attend this clinic once every week. When he has been able to keep his urine sugar-free for one month, and occasional blood-sugar determinations have shown his glycemia to be nearly normal, the patient is then taught how to examine his own urine, after which he needs to report back but once monthly.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Edinburgh Medical Journal

30: 85-118 (March) 1923

- *Tuberculosis of Lymphatic System. R. Philip.—p. 85.
- *Experimental Work Bearing on Virulence of Tubercle Bacillus and On Localization of Tuberculous Lesions in Lungs. C. H. Browning.—p. 96.
- *Complement Fixation in Tuberculosis. H. L. Coulthard.—p. 101.
- Lymphatics and Lymph Glands: Their Role in Absorption of Foreign Particles and Tubercle Bacilli. P. T. Herring and F. G. Macnaughton.—p. 108.
- Artificial Pneumothorax: Its Value in Early Stages of Tuberculosis. J. Crockett.—p. 110.
- Special Diploma in Tuberculosis. J. L. Smith.—p. 115.

Tuberculosis of Lymphatic System.—Philip is of the opinion that the part played by the lymphatic system in the early spread of tuberculosis should be emphasized. Patients should be examined with that in mind, and the more important groups of glands should be reviewed systematically. In cases of general delicacy, all the readily accessible lymphatic glands should be investigated carefully. In young children, the lymphatic system should be investigated with special care, from time to time. Lymphatic tuberculosis, conspicuous in children, becomes less marked in later life. In cases of gross enlargement of one or more glands, exacting search should be made into the state of adjacent glands and other groups of glands. Operative treatment should be limited to emergencies—for example, the immediate removal of an ugly deformity in certain cases or the evacuation of an obviously softened gland. Save in exceptional cases, such operative treatment should not involve extensive incision. Operative treatment should not be regarded as radical. Tuberculous involvement of the lymphatic system can be combated effectively by continuous vaccine therapy.

Virulence of Tubercle Bacillus and Localization of Tuberculous Lesions.—The conclusion is reached by Browning that localization of infection and development of lesions in a given organ which is remote from the site of entry of the organisms may be the result of a special affinity of the tissue. Whether such affinity is due to structural or to chemical characters is not determined. The presence of extensive lesions, practically restricted to the lungs, can be brought about by organisms which certainly do not reach these organs by inhalation.

Complement Fixation in Tuberculosis.—Coulthard asserts that the complement fixation test in tuberculosis, rather than being diagnostic, possesses prognostic import. A strong positive reaction means well developed resistance to the tubercle bacillus, and, in consequence, a relatively long lease of life may be expected. On the contrary, a weak reaction in a well established case denotes lack of response to the infection, and, therefore, a guarded prognosis.

Lancet, London

1: 731-778 (April 14) 1923

- *Lethargic Encephalitis (Epidemic Encephalitis). A. J. Hall.—p. 731.
- *Importance of Protein Hypersensitivity in Diagnosis and Treatment of Special Group of Epileptics. R. L. M. Wallis and W. D. Nicol.—p. 741.
- Some Congenital Anomalies of Eye and Their Confusion with Acquired Conditions. I. C. Mann.—p. 743.
- *Heating of Tissues of Body by Light and Heat Rays. L. Hill and J. A. Campbell.—p. 746.
- Treatment of Stuttering. E. W. Scripture.—p. 749.
- Case of Inverted Pylorus Obstructing Gastrojejunostomy Aperture. J. McClure and H. E. Claremont.—p. 750.
- Case of Torsion of Ovarian Cyst in 5 Months Old Infant. E. M. Powell.—p. 751.

Lethargic Encephalitis.—Hall makes an extensive review of the clinical history, epidemiology, relation to other diseases, etc., of this disease and includes a bibliographic summary.

Value of Protein Hypersensitivity Tests.—The results of protein hypersensitivity tests in cases of epilepsy are presented by Wallis and Nicol. Five groups of proteins were used: (1) Egg proteins; (2) meat and fish proteins; (3) milk of various animals; (4) vegetable proteins; (5) cereals. Tests were carried out on 122 epileptics. Of these, forty-six gave positive reactions to different proteins, while seventy-

six did not react at all. The result of these observations has shown that in some cases in which it has been possible to adjust the diet on the basis of skin tests, no further treatment has been necessary. Peptone was given orally to twenty-four patients. In some cases the fits have become less frequent, and, in a small proportion of cases, there has been some mental improvement as well. In two cases the peptone made the patients decidedly worse. The tests are said to serve as a guide not only to diagnosis, but also to treatment.

Heating of Tissues by Heat and Light Rays.—Experiments were made by Hill and Campbell in which they exposed rabbits to the rays from the sun and from a carbon arc lamp, paying particular attention to the comparative effects on the temperature of the brain and of the body in general. They also endeavored to determine the comparative effects of the total rays from the same source, and total rays from a carbon arc lamp on the temperature of the human subcutaneous tissue. Exposure of the whole body of a rabbit to the sun's rays rapidly increased the temperature of the deeper tissues, the fur temperature rising as high as 54 C. Exposure of the head and upper part of the body was followed by a fall of temperature in the deeper tissues, the fur temperature in the sun not exceeding 46.5 C. Local exposure of the head of a rabbit to the carbon arc greatly increased the temperature under the scalp and in the brain, the fur temperature rising above 60 C. The body temperature—rectum—was often not greatly altered. The respiration was always very rapid—more than 100 per minute. These results are taken to show that local heating may occur, and confirm the utility of pith helmets and spinal pads on exposure to tropical sun. Using the skin of the human knee and ordinary sources of rays—carbon arc and gas radiators—Sonne's results were confirmed—i. e., luminous rays heat up the subcutaneous tissues to a greater degree than do nonluminous rays, the skin temperature being the same in both cases.

Medical Journal of Australia, Sydney

1: 253-280 (March 10) 1923

- Recent Progress in Child Hygiene. H. Sutton.—p. 253.
- Artificial Cyanosis in Hysterical Patient. O. W. Rawson.—p. 266.
- 1: 281-308 (March 17) 1923
- Historic Notes from Records in Brisbane Hospital (1850-1870). E. S. Jackson.—p. 281.
- Cardiac Muscle and Valvular Lesions in Chronic Heart Disease. W. N. Horsfall.—p. 287.
- *Pneumococcal Pericarditis. S. F. McDonald.—p. 291.
- Complete Separation of Facial Bones from Base of Skull. A. Aspinalli.—p. 292.

Pneumococcus Pericarditis.—In McDonald's case the attack of pericarditis followed sore throat. The pericardial sac was incised and a drain inserted. It was removed after about two weeks. The pus from the pericardium yielded a pure culture of pneumococcus. Later on aspiration was done and 200 c.c. of fluid removed. The patient eventually made a complete recovery.

South African Medical Record, Capetown

21: 121-144 (March 24) 1923

- Compound Sanitation. A. J. Orenstein.—p. 122.
- Adenoids and Their Causation. S. E. Kark.—p. 133.
- Case of Apparent Cure of General Paralysis of Insane by Arsenic and Mercury. G. B. Wilkinson.—p. 135.
- Treatment of Penetrating Abdominal Wound. J. A. Clements.—p. 136.
- Recent Outbreak of Anthrax at Paarl, Cape Province. A. M. Moll.—p. 137.

Japan Medical World, Tokyo

3: 41-66 (March) 1923

- *Isolation of Causative Organisms of Tsutsugamushi Disease and Blood Constituents, Also on Weil-Felix's Reaction. R. Kawamura.—p. 41.
- *Artificial Production of Cancer in Lungs Following Intrabronchial Insufflation of Coal Tar. N. Kimura.—p. 45.
- New Medium Favorable for Pigment Production by Staphylococcus, Also Contribution to Knowledge of Pigment Production. A. Fujita and S. Yoshioka.—p. 47.

Blood in Tsutsugamushi Disease.—Kawamura suggests that the virus of tsutsugamushi disease is in the leukocytes, especially in the polymorphonuclear leukocytes. It is not, however, firmly attached to the cells. The virus is not in the blood platelets. There is no positive result with red blood corpuscles alone, but according to various experimental results, it appears that red blood corpuscles have no impor-

tant meaning with the causative agent of the disease. The Weil-Felix's reaction with serum and the vesicle fluid taken during convalescence, and that of monkeys is entirely negative.

Experimental Cancer of Lung.—The intrabronchial insufflation of coal tar in a rabbit, killed on the eightieth day, caused an adenoma-like growth in the lung. In a guinea-pig, which had survived for 140 days, there occurred an overproduction of the bronchial epithelium, which often penetrated the wall and finally made its way into the peribronchial tissue.

Annales de Médecine, Paris

13: 93-188 (Feb.) 1923

*Pathogenesis of Carcinoma. L. Bard.—p. 93.

*Basal Metabolism. G. Marañon and E. Carrasco.—p. 124.

*Blood and Tissue Fluid Interchanges. R. Lévy.—p. 147.

*Cardiotonic and Diuretic Action of Calcium Chlorid. Loewenberg.—p. 172.

Oculo-Esophagal Reflex. Daniélopou et al.—p. 182.

Pathogenesis of Cancer.—Bard finds that the pathogenesis of malignant tumors is much less obscure than generally assumed. He recalls his studies on the subject which appeared between 1885 and 1894. The results he then announced are now partly accepted (without being quoted), partly unknown. He maintained, in 1885, the unifocal origin and the absolute cellular specificity of the tumors, which may be derived from any of the tissues of the organism. The differences between tumors are due to physiologic differences between the normal cells from which they originate. It is important to distinguish between etiology, pathogenesis, and mechanism of action of pathogenic causes. The cells of malignant tumors have lost their ability to accept the moderating influence of the whole organism. The loss may be only partial, which accounts for the different degrees of malignancy. If the loss of this moderating influence of the organism—which he called “vital induction”—were the cause, the cancer would appear all over the body, at least in all the cells of the same kind. Therefore it must be the malformation of the cell, which does not accept the influence of vital induction, and thus starts to proliferate without limits. Any dysgenic influence may lead to formation of tumors. The “vital induction” which regulates the normal growth and renovation of tissues must be explained as the influence of the whole organism upon every one of its cells. The cells which escape this influence, give rise to malignant tumors. Heterotopic cells are predisposed, because they are already more or less refractory toward the general harmony of the development of the organism. This theory does not postulate a new acquired quality of the tumor cells, but on the contrary the loss of one of its fundamental normal properties, the ability to submit to the moderating action of the whole organism on its single constituents. It is not impossible that a treatment which would have a eugenic action on such cells might succeed. The methods of fight against cancer are quite different from the fight against tuberculosis. There is no social prophylaxis, except in instruction of the public. Individual prophylaxis consists in treating local predisposing affections.

Clinical Significance of Basal Metabolism.—Marañon and Carrasco find a distinct diagnostic and prognostic value in determination of basal metabolism only in affections of the thyroid. It usually allows the differentiation of them from pathologic states grouped under the heading of “pseudo-hyperthyroid vegetative neuroses.” Sex glands and the pituitary act in the same sense as the thyroid. If the disturbances of their function are associated with hypothyroidism or hyperthyroidism, the influence of the thyroid changes prevails, even if the other glands are affected in the opposite sense.

Interchanges Between Blood and Tissue Fluids.—Since the exchanges of substances between the blood, tissues and kidneys are too rapid in healthy persons, Lévy resorted to the investigation of pathologic cases, especially in nephritis and pleurisy, where the equilibrium was changed. He found that potassium and calcium chlorid, introduced by mouth or intravenously, pass quickly into the tissue fluid. Intravenous injection of calcium chlorid is almost constantly followed

by an immediate concentration of the blood which precedes the diuresis. It continues and increases during the diuresis, after which dilution of the blood occurs. Sodium chlorid produced dilution of the blood, without a diuretic effect, in patients kept on salt-free diet.

Cardiotonic and Diuretic Action of Calcium Chlorid.—Loewenberg found that comparatively large doses of calcium chlorid (over 1.5 or 2 gm.) are necessary to produce diuresis. Small doses (0.1-1 gm.) are sufficient for a simple cardiotonic effect. Thus the diuretic action of the substance is not due to its influence on the heart. Small doses of calcium chlorid do not produce a concentration of the blood nor diuresis. Large doses cause both concentration of the blood and diuresis.

Bulletin Médical, Paris

37: 267-294 (March 10) 1923

*Bacteriophagy in Therapeutics. Beckerich and Hauduroy.—p. 273.

*Inoculation of Herpes in Encephalitis. Teissier et al.—p. 276.

The Bacteriophage in Treatment of Colon Bacillus Infection of Urinary Apparatus.—Beckerich and Hauduroy treated eight adults and three children with colon bacillus pyelitis or cystitis. They injected colon bacilli from cases of puerperal pyelocystitis, cultivated in bouillon and treated with the bacteriolysate representing the bacteriophage. The colon bacillus infection was rapidly and completely cured in six of the cases, and clinically cured in one. No effect was apparent in two others and in normal control cases. The action of the bacteriophage in the living subject seems to correspond with the phenomena in the test tube, the urine soon becoming sterile. They exclude from this treatment all cases in which the individual colon bacilli seem to resist the lysant action of the bacteriophage strain.

Inoculability of Herpes in Epidemic Encephalitis.—The seven patients inoculated with herpes responded with the same skin lesions as the healthy and patients with other diseases.

Bulletins de la Société Médicale des Hôpitaux, Paris

47: 143-182 (Feb. 2) 1923

Foreign Body Simulating Chronic Bronchitis. Lemaitre.—p. 144.

Combination of Digitalis and Ouabain in Heart Disease. Laubry et al.—p. 147.

*Urticaria Stopping During Measles. E. Apert and R. Broca.—p. 152.

*Polynucleosis of Spinal Fluid in Epileptic. Baylac et al.—p. 154.

*Hemorrhage in Suprarenal Capsules. Michaux and Marsset.—p. 161.

*Exudate in Gonorrheal Arthritis. Pagniez and Ravina.—p. 164.

*Cancerous Pleurisy. Loeper, Joly and Tonnet.—p. 166.

*Fatal Epileptic Etat de Mal After Ovariectomy. Marchand and Adam.—p. 168.

Protuberant Syndrome. E. Duhot and L. Pardoën.—p. 172.

*Fissural Hemorrhages in Chronic Aortitis. Chabrol and Blum.—p. 176.

*Aneurysm of Aorta with Secondary Endocarditis. Laubry and Bordet.—p. 179.

Urticaria Stopping During Measles.—Apert and Broca treated without success a girl, aged 9, suffering from urticaria. The affection disappeared during ten days before and ten days after an eruption of measles in the child. This may be an instance of the anergy in measles, similar to that against tuberculin. On the other hand, a serum sickness (with urticaria) may be present in measles. Even without an injection of serum, urticaria can precede the rash.

Polynucleosis of Cerebrospinal Fluid in Epilepsy.—Baylac, Bize and Stillmunkes observed an increase in polynuclears in the cerebrospinal fluid during status epilepticus. The patient had also a marked hemoclastic crisis. They think that epilepsy is perhaps of anaphylactic nature.

Hemorrhage in Suprarenal Capsules.—Michaux and Marsset's patient died after severe diarrhea. He gave off a cadaverous odor, like certain patients with Addison's disease. The blood pressure was high (168). Necropsy revealed a normal heart and aorta, indurated kidneys and large hemorrhages in both suprarenal capsules.

Cytologic Variations in Exudate During a Gonorrheal Arthritis.—Pagniez and Ravina confirm the good prognostic significance of an increase in mononuclears in the exudate of gonorrheal arthritis. Yet a new attack may cause a new increase in polymorphonuclears.

Cytology and Chemistry of Irradiated Carcinomatous Pleurisy.—Loeper, Joly and Tonnet treated a carcinomatous pleurisy (after a carcinoma of the breast) with roentgen rays. The treatment led quickly to a disappearance of the fluid. The carcinomatous cells of the exudate showed progressive cytolysis during treatment, while the number of lymphocytes remained unchanged. The serum globulin fraction of the exudate increased from 1.5 per cent. to 2.75, while the albumins decreased from 3.25 to 2.1. Amino-acids increased from 0.0135 to 0.0225 per cent. after irradiation.

Status Epilepticus After Ovariectomy.—Marchand and Adam's patient was a woman, aged 60, with goiter of ten years' standing, whose uterus and ovaries had been removed for uterine fibroids. Three months after the operation the first epileptic attack occurred. Two months later the patient died in status epilepticus. The partial necropsy showed arteriosclerosis of the brain and a hemorrhage in the center of the anterior lobe of the pituitary gland.

Fissural Hemorrhages in Chronic Aortitis Simulating Gastroduodenal Ulcer.—Chabrol and Blum's patient suffered for eighteen months from melenas and apparent hematemesis. Only her refusal prevented an operation for pyloric ulcer. The patient died suddenly. They found a small fissure in the dilated and atheromatous aorta and a corresponding fissure in the trachea at the bifurcation.

Aneurysm of Ascending Aorta with Secondary Endocarditis.—Laubry and Bordet demonstrated the heart and aorta of a patient who died from a dissecting aneurysm of the aorta perforated into the pericardium. The aneurysm started in an ulcer probably above the valves, which were covered by endocarditic vegetations.

Gynécologie et Obstétrique, Paris

7: 113-192 (Feb.) 1923

Chronic Appendicitis and Appendicectomy. E. Rouffart.—p. 115.

*Localization of Pain in Gynecology. M. Muret.—p. 122.

*Wassermann Reaction in Pregnancy and After Delivery. P. Lasseur and H. Vermelin.—p. 130.

Vulvar Anus. H. Mondor and Gaudart D'Allaine.—p. 147.

Present Conceptions of Prognosis of Pulmonary Tuberculosis in the Pregnant. L. Cleisz.—p. 150.

Usual and Paradoxical Localization of Certain Pains in Gynecology.—Muret does not agree with Lomer who considers all the supposed lumbar abdominal neuralgias as hysterical phenomena. Yet he admits that they may exist without any lesion of the sex organs. He twice observed pains localized on the side opposite to the lesion. "One should not forget the frequency of superficial pains and pains which are simply psychic. The lack of knowledge of this fact is the reason for hundreds of useless appendectomies."

Wassermann Reaction in Pregnancy and After Delivery.—Lasseur and Vermelin applied the Wassermann test to 148 pregnant or recently delivered women. They had 63 positive and 85 negative results. Wherever the clinical findings showed syphilis, the reaction was positive. Treatment made the birth of living children possible. They had no false positive results in other diseases. The false results may be due to the anticomplementary action of the serum, which is to a certain small degree present in every case. The antigen binds also a very small quantity of complement. One must not forget that other biologic reactions do not always give the expected results. Yet the value of the Wassermann test is considerable.

Presse Médicale, Paris

31: 241-296 (March 14 to March 28) 1923

Serotherapy and Vaccines in Treatment of Tuberculosis. Jousset.—p. 241.

*Pathogenesis of Hemogenia. P. Emile-Weil and Isch-Wall.—p. 243.

Tubercle Bacilli in the Blood in Children. H. Lemaire and Turquet.—p. 245.

*Pathogenesis of Cirrhosis. N. Fiessinger and M. Wolf.—p. 253.

Tuberculous Bone and Joint Disease and Trauma. Sénèque.—p. 258.

*Akathisia and Tasikinesia. J. A. Sicard.—p. 265.

*Thoracoscopy for Severing Adhesions. Piguet and Giraud.—p. 266.

Immediate Mobilization of Fractured Olecranon Held in Place with Screw. R. Olivier.—p. 268.

Comparison of Digitalis and Strophanthin. Daniélopou.—p. 273.

Are All Chronic Coughers Tuberculous? Halbron and Potez.—p. 275.

Regeneration of Clavicle After Removal. Hecquet.—p. 276.

"Mechanism of Digestive Leukocytosis." C. Ciaccio.—p. 277.

Is Hexamethylenamin a Diuretic? L. Cheinisse.—p. 278.

*Etiology of Cancer. J. Magrou.—p. 285.

Case of Syphilis of Lower Jaw. G. Picot and C. Ruppe.—p. 288.

Combined Radiotherapy of Cancer of Uterine Cervix. L. Mallet.—p. 289.

Leishmaniasis Appendicitis. G. L. Hartmann-Keppel.—p. 291.

Pseudohemophilia.—For the tendency to hemorrhages from anomalies in both blood and vessels, the term hemogenia has been coined. The special features of this pseudohemophilia are here described in detail. The fact is emphasized that it affects women, both in its sporadic and hereditary forms. The manifestations of the hemogenia may be restricted to the genital organs, and the excessive menstrual or supplementary hemorrhages may alternate with periods of amenorrhea. Thyroid anomalies are common, and girls with these excessive hemorrhages at puberty may present symptoms suggesting pituitary or suprarenal disorder. The instability of the blood is marked in hemogenia; although the blood coagulates defectively, yet intravascular thrombosis is sometimes observed. In hemophilia, on the other hand, the blood is stable, and symptoms suggesting anaphylaxis or colloidoclasia scarcely ever develop under any medication. The liver and blood are substandard in hemogenia, and tuberculosis and syphilis, especially inherited syphilis, may tip the scale in favor of the development of the hemorrhagic diathesis.

Pathogenesis of Cirrhosis.—Fiessinger and Wolf classify cases of cirrhosis according to the anatomic-clinical findings, not as "somebody's disease." They reiterate that the pathology of the liver is very much like that of the kidneys. Widal classifies the functional kidney syndromes as chloruremic, azotemic and hypertensive. This includes all the pathology of acute nephritis, parenchymatous nephritis and renal sclerosis. The arterial hypertension with renal sclerosis might be compared to the ascites of cirrhosis; the albuminuria to the jaundice with cirrhosis, and the retention of chlorids and nitrogen to the heart disturbances accompanying the cirrhosis. It is difficult to determine the relative share of alcohol and syphilis in the etiology. Benefit from treatment as for syphilis is decisive only if the size and consistency of the liver show a pronounced change, and it must not be forgotten that ascites may disappear under the simple diuretic action of intravenous injections of mercury cyanid. The fate of a patient with hepatitis depends on the functional capacity of his liver cells; but, with the exception of hypertrophy of the liver—which is often an unreliable symptom—we have no means for exact investigation of the liver cells.

Akathisia and Tasikinesia.—Sicard discusses the psychoses marked by morbid fear of sitting down and resulting inability to do so, and the morbid inclination to get up and walk and the resulting inability to remain seated. Certain cases of epidemic encephalitis begin with a tendency to tasikinesia. He describes a number of examples of each of these psychoses, his experience confirming the assumption that the centers for rhythm and cadence and rhythmic clonus are in the midbrain. When these centers are abnormally excited by the virus, the cortex loses control of them, and the midbrain functions automatically.

Thoracoscopy for Severing Pleural Adhesions.—Two cases are described to illustrate the harmlessness and efficacy of Jacobæus' method of breaking up adhesions in the pleura with the galvanocautery, under direct visual inspection, to facilitate artificial pneumothorax.

Etiology of Cancer.—Magrou theorizes on the cause of malignant disease, taking as his basis Perrin's recent research on the rays forming visible and invisible light as the cause of displacements of molecules. His theory seeks to explain the evolution of matter and of the universe and cancer growth as a cosmic phenomenon. One of Magrou's arguments is the distinct influence exerted on karyokinesis by radiation. His theory also opens a definite field for research on experimental malignant disease by cooperation of biologists, chemists and physicists.

Schweizerische medizinische Wochenschrift, Basel

53: 133-160 (Feb. 8) 1923

*Fat Embolism. C. Wegelin.—p. 133.

*Hereditary Element in Friedreich's Ataxia. E. Hanhart.—p. 139.

Determination of Basal Metabolism. M. E. Bircher.—p. 143.

Latent Exophthalmic Goiter. Holst.—p. 147.

*Diagnosis and Treatment of Nervous Dizziness. Kollarits.—p. 148.
Anatomy of Heart Muscle. Schweizer and Ujiie.—p. 149. Conc'n.

Fat Embolism.—Wegelin reports on Kojo's experiments and on three fatal cases. Lymphatic transport of fat is negligible in the etiology of fat emboli. The fat of the species (rabbits) is better split than foreign fats. In Kojo's experiments the minimal lethal dose of olive oil was 1 c.c. per kg. of body weight; of rabbit fat only 0.5 c.c. The resorption of the emboli is complete after two or three weeks.

Hereditary Element in Friedreich's Ataxia.—Hanhart recommends "Nature's experiments" for scientific study. Friedreich's disease is comparatively frequent in Switzerland, and he asks for more cases (to supplement his forty-six) in order to investigate the families.

Diagnosis and Treatment of Nervous Dizziness.—Kollarits finds that hysteric or neurasthenic dizziness is relieved by motion.

Rivista di Clinica Pediatrica, Florence

21: 1-64 (Jan.) 1923

*Inhalation of Foreign Body. Muggia.—p. 1.

Chronic Invagination of Appendix in Movable Cecum. Trinci.—p. 10.

Sudden Late Death After Aspiration of Foreign Body.—Muggia publishes a report on an infant who inhaled a piece of bone. Neither clinical nor roentgenologic symptoms of occlusion of bronchi were present. Yet the child died suddenly the next day, and necropsy showed that the foreign body had probably lodged first in the left bronchus and had caused atelectasia. Then it was thrown into the right side, which led to suffocation. The case shows that the physician should not rely on negative findings.

Semana Médica, Buenos Aires

1: 229-300 (Feb. 8) 1923

*Subacute Inguinal Adenitis. F. Destéfano and R. F. Vaccarezza.—p. 229.
Treatment of Scoliosis. R. A. Rivarola.—p. 292.

Hemoptysis with Bronchial Glandular Disease. Spangenberg.—p. 295.

Subacute Inguinal Lymphogranulomatosis.—This long study of the nonvenereal bubo fills sixty-three pages. It was described by Nélaton in 1890 and nearly every writer since has called it by a different name. The one preferred by Destéfano and Vaccarezza is subacute inguinal paradenitis. It occurs in endemic and sometimes epidemic form, but the pus is sterile, or the micro-organisms found have no causal significance. The lesion is contagious; the period of incubation ranges from ten to twenty-five days. The suppuration occurs in successive multiple and isolated foci, with an essentially chronic course.

1: 301-344 (Feb. 15) 1923

Present Status of Experimental Cancer. M. Beatti.—p. 301.

*Amputation of the Thigh. R. Finochietto.—p. 307.

Asthma and Asthmatic Bronchitis. J. C. Navarro.—p. 308.

Intraperitoneal Escape of Bile. C. L. García.—p. 311.

The Hemoclastic Crisis in the Pregnant. E. Zarate.—p. 317.

Nephrectomy for Tuberculosis. Silvetti and Ramírez.—p. 319.

Biochemical Research on Bacterial Cultures. R. Cárcamo.—p. 322.

Biochemical Study of Spleen Extract. M. P. Raurich.—p. 334.

Amputation of the Thigh.—Finochietto lays a long sheet, folded to a width of about 20 cm., to form a loop that passes under the thigh. After the amputation, the anesthetist, by pulling on the ends of the sheet at the neck, draws the stump of the thigh up vertical, and it is thus held firmly by the sheet for the surgeon to work on.

Deutsche medizinische Wochenschrift, Leipzig

49: 137-172 (Feb. 2) 1923

*Classification of Nutritional Disturbances. Langstein.—p. 137.

*Removal of Liver and Avitaminosis. A. Bickel.—p. 140.

*Anatomic Nature of Kidney Disease. Schlayer.—p. 141.

Symptoms of Funicular Sclerosis. P. Schröder.—p. 144.

Prevention of Prolonged Suppuration After Operation on Middle Ear. Boenninghaus.—p. 146.

Psychomotor Disturbances. S. Loeb.—p. 147.

Monster with One Head, Four Arms and Four Legs. W. Junginger.—p. 148.

Bean in Child's Trachea. F. Knab.—p. 149.

Diagnostic Import of Faust's Tapping Pain. F. Ehrlich.—p. 149.

Auto-Observation of Vasomotor Neurosis. A. Ehrlich.—p. 150.

Thiosinamin Preparation as Resolvent for Scar Tissue. Reh.—p. 151.

*Permanency of Roentgen Ray Depilation. F. M. Meyer.—p. 152.

Advice to Practitioners on Pulmonary Diseases. Goldscheider.—p. 153.

Epidemiologic Study of Smallpox in Austria. Kantor.—p. 156.

Classification and Treatment of Nutritional Disturbances.

Langstein says that internal medicine and pediatrics have gone separate ways under the flag of "nutrition disturbances." A uniform and systematic nomenclature of the diseases under this name is necessary. Diarrhea, loss of weight, emaciation and a number of other symptoms are spoken of as nutritional disturbances, though these conditions may be due to different causes: underfeeding, abnormal cellular functioning, etc.

Removal of the Liver and Avitaminosis in Their Relation to Sugar Metabolism.—Bickel, as a result of experiments with removing the liver in dogs—which he has accomplished without disturbance to the circulation by means of an inverse Eck fistula and later ligation of the portal vein at its entrance into the liver—asserts that bilirubin to a large extent must be formed outside the liver, as it appears in the blood plasma and fatty tissues even in a few hours after the hepatectomy. The animal minus its liver appears normal for a period of from five to eight hours. Then it suddenly collapses, and becomes incapable of movements except those of respiration. The blood sugar level sinks from 0.08 to 0.12 per cent. glucose noted before the operation, to 0.02 or 0.05 per cent. By introducing glucose solution by mouth, rectum or by the vein, the glycemia rises, and the life of the animal may be prolonged for eighteen hours. Though there are many similarities between the clinical picture in the animals suffering from the loss of the liver and in those suffering from avitaminosis, yet there is one essential difference: In the former, introduction of glucose prevents intoxication, at least temporarily, while in avitaminosis, injection or ingestion of glucose promotes the fatal intoxication. In the first group, glucose prolongs life; in the second group, it shortens it. It is evident that the liver plays an important part in maintaining the normal index figures of the blood, and that a functional disturbance of the liver plays an early part in the symptoms of avitaminosis.

The Present Methods of Recognizing the Anatomic Nature of Internal Kidney Disease.—Schlayer, in a postgraduate lecture on diagnosis of kidney diseases, says that albuminuria may be absent in certain stages of some kidney diseases, and tube-casts have been found in healthy athletes. The waxy tube-cast is generally a sign of dyscrasic influence and is often found in amyloid nephrosis, nephrosis, and pseudo-nephrosis. The presence of erythrocytes is of greater importance, as they indicate irritability, especially of the vessels. Chronic glomerular nephritis with edema is not always accompanied by high blood pressure. Hypertension may have other causes than renal disturbance, but the possibility of kidney disease should always be remembered. The form and fulness of the pulse should be noted. An overfull pulse is found mostly in benign arteriosclerotic diseases; strong pulse with fulness in severe arteriosclerotic contracted kidney. The composition of the urine after test meals should be carefully noted, as the relation between the anatomic nature and the condition of the functioning of the kidney is most important. The functioning of the kidney may be independent of the anatomic nature of the disease, and the changes may be the same in basically different diseases. There is no fixed relation between diffuse affections and functional changes. High blood pressure (without other cause) accompanies acute and chronic parenchymatous disease of the kidneys only when severe, and not always then. Anatomically similar injuries may express themselves in different functioning.

Permanency of the Result of the Removal of Hair by Roentgen Rays.—Meyer is of the opinion that as long as only rays of moderate strength can be used, hair cannot be permanently removed in one treatment. At least three treatments are required for permanent results. From six to eight weeks must elapse between the first and second treatment, and from eight to ten between the second and third. That no uniform dosage can be established is shown by the fact that he has by the same technic treated several epitheliomas which were alike in regard to location, macroscopic appearance, breadth, depth, etc., and found that one epithelioma would disappear quickly after the applied radiation, while others would show only improvement, and still others would continue to grow unaffected by the treatment.

Deutsche Zeitschrift für Chirurgie, Leipzig

177: 145-288 (Feb.) 1923

- *Diarrhea with Paralysis of the Intestines. A. Szenes.—p. 145.
 *Regeneration of Tendons. E. Wehner.—p. 169.
 *Traumatic Cysts in the Brain. Wagner.—p. 196.
 Is Focal Tuberculin Reaction Specific? C. Mau.—p. 224.
 Digitalis to Ward Off Postoperative Lung Complications. Klug.—p. 236.
 Treatment of Fracture of Upper Humerus. L. Ritter.—p. 245.
 Chronic Traumatic Edema. L. Cadenbach.—p. 283.

Paralysis of the Intestines with Diarrhea.—Szenes refers to cases in which the bowel is paralyzed in consequence of peritonitis. He compares three cases personally observed with several from the records. Suppurative pancreatitis was the primary affection in a few instances, including the one case with recovery in his own series. The fetid diarrhea accompanying signs of paralysis of the large intestine suggests that the small intestine is still functioning properly, and that the loss of the bowel peristalsis is limited to the upper portion of the large intestine, and that conditions are reparable. The course was twelve days in one fatal case in which the peritonitis was encapsulated. The severe meteorism, pushing up the diaphragm, hampered the lungs and heart. Among the measures applied in treatment are atropin—to reduce secretion and check the liquefaction of the bowel contents. Drugs and enemas to promote peristalsis may have to be supplemented by enterostomy. This should be at the lowest point of the colon, that gravity may aid in emptying the bowel, instead of making the opening in the most distended loop. The paralysis seemed to be restricted to the colon in his cases. The fluid and gases thus formed a vertical column which ran over at times, and this caused the diarrhea. In his two fatal cases, multiple pericecal abscesses had rendered the bowel wall extremely fragile.

Regeneration of Tendons.—Wehner excised the patella in dogs and rabbits and reports that the quadriceps tendon regenerated to form a high grade tendon. The extent of the defect did not affect the regeneration. The experiments were made without suturing or resting the leg; regeneration occurred even when the course of the tendon had been altered.

Traumatic Cyst of the Ventricle.—Wagner reports that a smooth walled cyst of the right lateral ventricle, consecutive to a shrapnel tangential wound, was packed with two pieces of fat which healed in place. The young man's earning capacity is apparently normal, five years later, and there have been practically no symptoms from the large defect in the brain. This and other experiences related show that the ventricle system forms a living bridge to implanted fat tissue. The fat must touch the cyst walls all around, and leave as little space as possible for fluid. The fat implant may become emulsified and act as a foreign body. The symptoms therefrom subside after evacuation of the fat emulsion. The fat does not appear in the lumbar puncture fluid. The fine results with fat implants in traumatic cysts may justify their use in nontraumatic hydrocephalus.

Münchener medizinische Wochenschrift, Munich

70: 167-196 (Feb. 9) 1923

- *Sterility of Women. M. Nassauer.—p. 167.
 *Treatment of Infected Abortion. H. Albrecht.—p. 169.
 *Catarrhal Icterus. F. Lindstedt.—p. 170.
 *Treatment of Pyelitis with High Enemas. Sack.—p. 173.
 *Prophylaxis of Arsphenamin Injuries. Schumacher.—p. 175.
 Curative Vaccination in Actinomycosis. Friedmann.—p. 176.
 Stomachics as Basis for Pills and Tablets. Heinz.—p. 176.
 *Postpleuritic Scolioses in Children. Rey.—p. 176.
 Supports for Severe Scolioses. Hohmann.—p. 177.
 Apparatus for Centering Roentgen Rays. Grashey.—p. 177.
 Localization of Cervix in Gynecologic Treatment by Roentgen Rays. Bartram.—p. 178.
 Paraffin Spray in Burns. Rebaudi.—p. 179.
 Portable Apparatus for Pneumothorax. Apel.—p. 179.
 Excelsior in Plaster of Paris Technic. W. Müller.—p. 180.
 "Blood Pressure in Sleep." C. Müller.—p. 180.
 "Sputum Droplets and Tuberculosis Infection." Flügge.—p. 181.
 Reply. Seiffert.—p. 181.
 Etymology of "Scorbut." S. Müller.—p. 182.
 *On American Publications. E. Zucker.—p. 183.
 Syphilitic Disease of Organs of Circulation. Grassmann.—p. 184.

Sterility of Women.—Nassauer reports four additional cases with favorable results from his method. It consists in the application of a tube into the cervix, and is indicated in cases in which a spasm of the uterus prevents conception.

Treatment of Infected Abortion.—Albrecht pleads for early evacuation of the uterus, which, however, requires sometimes more skill and is more dangerous than a laparotomy.

Catarrhal Icterus.—Lindstedt reports an epidemic of six cases of seemingly "catarrhal icterus" with one necropsy. He believes that it is—at least in Sweden—a specific infectious disease with a long incubation. The icterus is a result of a parenchymatous lesion of the liver.

High Enemas in Treatment of Colon Bacillus Pyelitis and Sepsis.—Sack recovered from a severe acute pyelitis due to the colon bacillus, after a course of enemas introduced for 40 cm. into the bowel.

Prophylaxis of Arsphenamin Injuries.—Schumacher had good results with Sicard's method in seventeen patients who had previously had after-effects from arsphenamin injections. He injects without removing the constricting band for stasis of the blood, which should be placed as high as possible. He loosens the band slowly five minutes after the injection has been made.

Postpleuritic Scolioses in Children.—Rey found scoliosis in twenty-five of thirty children who had had pleurisy, with or without effusion, at the age of 1 or 2 years.

Access to American Publications.—Zucker points out that many American papers are published not only in the journals, but also in "Collected Papers" of different institutions. Therefore it may be frequently possible to get a reprint even if the journal is not accessible.

Wiener klinische Wochenschrift, Vienna

36: 101-120 (Feb. 8) 1923

- Histology of Chronic Tonsillitis. O. Mayer.—p. 104.
 *Fleming's Lysozym. O. Bail.—p. 107.
 Autumnal Trombidiasis in Schlern District. K. Toldt.—p. 108.
 *Arena's Homogenization Method for Sputum. Rosenblüth.—p. 111.
 Medical History: Johann Emanuel Veith, 1787-1876. Fischer.—p. 112.

Fleming's Lysozym.—Bail draws attention to studies published long ago by Weil and Suzuki, who found in leukocytes a lytic agent with the same properties Fleming described, under the name of lysozym, in almost all tissues and secretions of the organism. Fleming demonstrated an increase in the lytic property by the action of the lysozym, and the possibility of acquired resistance of bacilli against it.

Homogenization Method for Tubercle Bacilli in Sputum.—Rosenblüth recommends Arena's method: 10 c.c. of sputum are mixed with 90 c.c. of a 10 per cent. solution of ammonium chlorid for five to ten minutes. If this is not sufficient for homogenization, 10 to 20 c.c. of glycerin may be added. The mixture is put for an hour into an incubator and afterward centrifugated at a speed of 2,000-2,500 turns. The decolorization must be made with at least 2.5 per cent. nitric acid.

Zeitschrift für Tuberkulose, Leipzig

37: 321-400 (Jan.) 1923

- *Spontaneous Pneumothorax in Tuberculosis. G. Barth.—p. 321.
 *Spondylitis with Ankylosis in Relation to Tuberculosis. K. Griep.—p. 328.
 *To Enhance the Rest Cure in Tuberculosis. S. A. Knopf (New York).—p. 335.
 Fight Against Tuberculosis in a Poor Country. A. Wolff-Eisner.—p. 343.
 The Prussian Tuberculosis Law. Braeuning.—p. 354.
 *Diagnostic Use of Passive Movements of Lungs. E. Ladeck.—p. 360.
 Tuberculosis of Skin as Portal of Tuberculosis Infection and Its Relation to Tuberculosis of Epididymis. Hochstetter.—p. 362.

Spontaneous Pneumothorax in Tuberculosis.—Barth observed spontaneous pneumothorax in 0.2 per cent. of his cases of pulmonary tuberculosis. The condition is prognostically very bad.

Chronic Spondylitis and its Relation to Tuberculosis.—Griep publishes a case of Bechterew's disease, which perhaps may have been due to pulmonary tuberculosis. The ankylosis of the vertebrae has a favorable influence on the pulmonary tuberculosis, but cripples the patient hopelessly, since exercise treatment of the ankylosis might revive the infection.

Physiologic Enhancement of the Rest Cure in Pulmonary Tuberculosis.—Knopf recommends volitional reduction of the number of breaths to ten in the minute, and diaphragmatic breathing.

Diagnostic Use of Passive Movements of Lungs.—Ladeck examined the borders of the lungs in 120 cases of active and eighty of inactive pulmonary tuberculosis in the erect and prone positions. The lack of passive descent of the lower border, which Tar claimed as a test for activity of the process, was present in 42 per cent. of the active (only 36 per cent. in early cases) and 26 per cent. of the inactive cases. It is therefore without diagnostic value.

Zeitschrift für Urologie, Leipzig

17: 65-128, 1923

*Extirpation of Cancerous Bladder. K. Scheele.—p. 65.

*Aseptic Catheterization of Ureters. M. Klika.—p. 77.

*Bilateral Mycosis of Kidney Pelvis. J. Tannenbergs.—p. 82.

*Sarcoma of Prostate. I. Bettoni.—p. 106.

Removal of Cancerous Bladder.—Scheele tabulates the details and outcome in 62 cases in which the entire bladder was removed on account of malignant disease. The outcome is not known in 4 cases,* but 32 of the patients were permanently cured by the intervention. The operation is too extensive for a single sitting; 53.5 per cent. of the 43 patients treated in this way died. Radiotherapy can be given a trial under cystoscopic supervision, but, at the first sign of recurrence, no more time should be lost with it or with palliative operations. The entire bladder should be removed at once. He advises this even with benign papillomatosis if it cannot be thoroughly treated with diathermia. Bad general condition and severe pyonephrosis contraindicate radical removal of the bladder; mild infection of the kidney healed afterward in his own two cases, both in aniline dye workers.

Aseptic Catheterization of the Ureter.—Klika has modified his method for aseptic introduction of the catheter into the ureter passing through the infected bladder. He uses a No. 4 catheter inside a No. 8. The tip of the inner one is not pushed to the tip of the outer one. The whole is introduced into the bladder inside the cystoscope, while an assistant forces a weak disinfectant solution through the inner catheter. This fluid pouring from the catheter prevents contamination from entering. The disinfectant is still forced through it until the tip of the outer catheter is 1 or 2 cm. in the ureter. Then the inner catheter is pushed out beyond, and up into the ureter.

Mycosis of Kidney Pelvis.—Tannenbergs relates that the kidney pelvis on both sides in the male diabetic, aged 32, was obstructed with masses of the thrush fungus. Infection seems to have been ascending, and the changes in the kidneys indicated a chemical toxic action from the fungus in addition to an ordinary pyelonephritis.

Sarcoma of the Prostate.—Bettoni adds another case to the 48 he has found recorded since 1902. Only 2 patients survived longer than two months in the 20 operative cases, and one of these died the fifth year from recurrence. Fully 34 per cent. of the cases were in children under 10. The success of Paschkis and Marion with radium treatment is encouraging.

Zentralblatt für Gynäkologie, Leipzig

47: 385-416 (March 10) 1923

*Promontory Fixation in Prolapse of Uterus. Schmid.—p. 385.

*Purulent Adnexitis in the Pregnant. G. Richter.—p. 393.

Fistula from Empyema of Ovary. Lindemann.—p. 397.

Active Rotation of Child After Version from the Dorsoposterior Transverse Presentation. F. Heinlein.—p. 403.

Atypical Epithelial Growths on Cervix Uteri. Geller.—p. 406.

Hydrotherapy and Balneotherapy in Gynecology. W. Momm.—p. 411.

Promontory Fixation in Prolapse of the Uterus.—Schmid emphasizes that the indications for the operation must be drawn very closely. In the first three of the reported eight cases, which constituted only 2 per cent. of the 417 prolapse operations in the same period, he used the same technic he described in his report of the first case (1914). In the last five cases, however, he followed the modifications proposed by Oehlecker, fastening the posterior wall of the cervix to the intervertebral disk. On the whole, the end-results in his cases leave much to be desired. Although the lasting results in many cases were excellent, postoperative ileus is a real menace, having been reported by others in several instances.

Promontory fixation is indicated only in procidentia with a deep Douglas pouch, when, for other reasons, a laparotomy is to be done; also in recurrent prolapse and in prolapse of the vagina following extirpation of the uterus or supravaginal amputation. For the vast majority of prolapses—also total prolapse—the vaginal operative methods have proved entirely satisfactory.

Inflammatory Tumors of the Adnexa in Pregnancy.—Richter brings out that the very grave prognosis demands energetic and active operative treatment, instituted as early as possible, in every inflammatory tumor of the adnexa associated with pregnancy. Reports in the literature show that even in advanced pregnancies, operation on the adnexa of the pregnant uterus is unusually well borne, and that interruption of the pregnancy is by no means a necessary consequence. But even if this does occur after removal of the pus tube, it is much less dangerous than abortion with the focus of infection still present. Laparotomy will practically always be necessary. Abscesses and pyosalpinx, impinging on the posterior fornix, may be opened by the vaginal route, but there is then danger of ascending intra-uterine infection and sepsis. Gross, however, describes a favorable outcome in such a case. The removal of the pregnant uterus together with the tumor, leaving intact, if possible, the ovary on the other side, as Richter did in this case, he regards as the method of choice in every case. To be content with the extirpation of the pus-containing adnexa leaves, he thinks, a doubtful if not grave prognosis.

Ugeskrift for Læger, Copenhagen

85: 217-230 (March 29) 1923

*Pulmonary Tuberculosis in Greenland. S. Rohleder.—p. 217.

A Case of Myoclonia. P. Schultzer.—p. 220.

*Wassermann Reaction in Nonsyphilitics. Boas and Kissmeyer.—p. 221.

*Emetin Treatment of Amebic Dysentery. C. Holten.—p. 222.

*An Improvised Ophthalmologic Magnet. F. C. Lund.—p. 222.

*Pituitary Treatment of Herpes Zoster. S. N. Vendel.—p. 222.

Pulmonary Tuberculosis in Northern Greenland.—Rohleder, district physician in the Upernivik district, examined 98 per cent. of the 1,063 inhabitants, and found stethoscopic, or doubtful stethoscopic changes in the lungs of 13.4 per cent. of the total population. Of these, 66.8 per cent. were women, and 25.4 per cent. men.

Is a Positive Wassermann Reaction Possible in Nonsyphilitics?—Boas and Kissmeyer, referring to the positive Wassermann reactions in nonsyphilitic patients after one or more injections of arsphenamin, reported in THE JOURNAL of Nov. 27, 1920, believe that these were due either to faulty technic or to unreliable drugs. They have tested fifty positively nonsyphilitic individuals by the technic used at the state serum institute in Copenhagen, seven of whom were given arsphenamin; six neo-arsphenamin; twenty-six silver arsphenamin, and eleven neosilver arsphenamin. Thirty-nine of the patients had gonorrhea, and eleven had various kinds of skin diseases. From one to five injections were given to each patient, and they were examined once a week for the Wassermann reaction. All responded negatively before, during and after treatment.

Emetin Treatment of Acute Amebic Dysentery.—Holten, as ship physician, treated a case of acute dysentery by subcutaneous injection of emetin chlorid. He comments on its prompt, almost miraculous action.

An Improvised Ophthalmologic Magnet.—Lund, after unsuccessful efforts to remove an iron scrap from a workman's eye, took the patient to a paper mill and utilized the magnet used for removing iron fragments from the paper pulp, with entirely satisfactory results.

Cure of Herpes Zoster by Pituitary Treatment.—Vendel, contradicting the general opinion that only time can cure herpes zoster, presents the results of his experiments with eighteen cases, nine of which were treated in the usual way with the usual results. The others were cured by a subcutaneous injection of 1 c.c., or less, of pituitary extract, within a few days after treatment. High blood pressure and advanced age should be considered contraindications for this treatment.

THE SAN FRANCISCO SESSION

AMERICAN MEDICAL ASSOCIATION, SEVENTY-FOURTH ANNUAL SESSION
SAN FRANCISCO, JUNE 25-29, 1923

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The seventy-fourth annual session of the American Medical Association will be held in San Francisco, June 25-29, 1923.

The House of Delegates will convene at 10 a. m., Monday, June 25. In the House the representation of the various constituent associations for 1923 is as follows:

Alabama	2	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	4	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	6
District of Columbia.....	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	2	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	3	South Dakota	1
Iowa	3	Tennessee	3
Kansas	2	Texas	5
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	2	Alaska	1
Missouri	4	Canal Zone.....	1
Montana	1	Hawaii	1
Nebraska	2	Philippine Islands.....	1
Nevada	1	Porto Rico.....	1

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting to be held at 7:45 p. m., Tuesday, June 26. The sections will meet Wednesday, Thursday, and Friday, June 27, 28 and 29, as follows:

CONVENING AT 9 A. M., THE SECTIONS ON	
Practice of Medicine.	Stomatology.
Obstetrics, Gynecology and	Urology.
Abdominal Surgery.	Orthopedic Surgery.
Laryngology, Otology and	Gastro-Enterology and
Rhinology.	Proctology.
Pathology and Physiology.	

CONVENING AT 2 P. M., THE SECTIONS ON	
Surgery, General and Ab-	Nervous and Mental Dis-
dominal.	eases.
Ophthalmology.	Dermatology and Syphilology.
Diseases of Children.	Preventive and Industrial
Pharmacology and Thera-	Medicine and Public Health.
peutics.	

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, June 25, 26, 27 and 28, and from 8:30 a. m. to 12 noon, on Friday, June 29.

GEORGE E. DE SCHWEINITZ, President.

FREDERICK C. WARNSHUIS, Speaker, House of Delegates.

OLIN WEST, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members (indicated by *) who have been reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA J. D. Heacock, Birmingham. *S. W. Welch, Montgomery.	*F. B. Lund, Boston. *E. F. Cody, New Bedford.
ARIZONA John W. Flinn, Prescott.	MICHIGAN A. W. Hornbogen, Marquette. F. C. Warnshuis, Grand Rapids. G. E. Frothingham, Detroit. J. D. Brook, Grandville.
ARKANSAS William R. Bathurst, Little Rock. *George S. Brown, Conway.	MINNESOTA J. W. Bell, Minneapolis. *J. L. Rothrock, St. Paul.
CALIFORNIA Charles D. Lockwood, Pasadena. Victor G. Vecki, San Francisco.	MISSISSIPPI Henry Boswell, Sanatorium. *S. W. Johnston, Vicksburg.
COLORADO L. H. McKinnie, Colorado Springs. *C. N. Meader, Denver.	MISSOURI W. J. Ferguson, Sedalia. A. W. McAlester, Jr., Kansas City.
CONNECTICUT John Edward Lane, New Haven. *Walter Ralph Steiner, Hartford.	MONTANA Creswell T. Pigot, Roundup.
DELAWARE *W. O. LaMotte, Wilmington.	NEBRASKA A. D. Dunn, Omaha. *R. W. Fouts, Falls City.
DISTRICT OF COLUMBIA William Gerry Morgan, Washington.	NEVADA *Horace J. Brown, Reno.
FLORIDA	NEW HAMPSHIRE D. E. Sullivan, Concord.
GEORGIA W. E. McCurry, Hartwell. *J. W. Palmer, Ailey.	NEW JERSEY Edward Guion, Atlantic City. George E. Reading, Woodbury. *Wells P. Eagleton, Newark.
IDAHO *E. G. Braddock, Lewiston.	NEW MEXICO
ILLINOIS T. O. Freeman, Mattoon. C. J. Whalen, Chicago. E. H. Ochsner, Chicago. G. Henry Mundt, Chicago.	NEW YORK Arthur J. Bedell, Albany. E. Eliot Harris, New York City. Grant C. Madill, Ogdensburg. Thomas Clark Chalmers, Forest Hills. J. Richard Kevin, Brooklyn. Edward Livingston Hunt, New York City.
INDIANA Albert E. Bulson, Jr., Ft. Wayne. George F. Keiper, Lafayette. *J. Rilus Eastman, Indianapolis.	NORTH CAROLINA M. L. Stevens, Asheville. *H. A. Royster, Raleigh.
IOWA Donald Macrac, Jr., Council Bluffs. William L. Allen, Davenport. *M. Nelson Voldeng, Woodward.	NORTH DAKOTA *E. A. Pray, Valley City.
KANSAS C. S. Kenney, Norton. *M. L. Perry, Topeka.	OHIO J. H. J. Upham, Columbus. B. R. McClellan, Xenia. G. E. Follansbee, Cleveland. *John P. DeWitt, Canton. *W. D. Haines, Cincinnati. *H. M. Hazelton, Lancaster.
KENTUCKY Irvin Abell, Louisville. *L. S. McMurtry, Louisville. *W. W. Richmond, Clinton.	OKLAHOMA J. M. Byrum, Shawnee. *W. Albert Cook, Tulsa.
LOUISIANA W. H. Block, New Orleans. *W. H. Seemann, New Orleans.	OREGON Joseph A. Pettit, Portland.
MAINE Bertram L. Bryant, Bangor.	PENNSYLVANIA William F. Bacon, York. Edward B. Heckel, Pittsburgh. Walter S. Stewart, Wilkes-Barre. Wilmer Krusen, Philadelphia. C. C. Cracraft, Claysville. *Walter F. Donaldson, Pittsburgh. *George A. Knowles, Philadelphia.
MARYLAND Randolph Winslow, Baltimore. *Thomas S. Cullen, Baltimore.	
MASSACHUSETTS C. E. Mongan, Somerville. H. G. Stetson, Greenfield. J. F. Burnham, Lawrence.	

*John D. McLean, Harrisburg.
*Cyrus L. Stevens, Athens.†
RHODE ISLAND
J. F. Mowry, Providence.
SOUTH CAROLINA
*Edgar A. Hines, Seneca.
SOUTH DAKOTA
J. B. Vaughn, Castlewood.
TENNESSEE
J. A. Witherspoon, Nashville.
L. L. Sheddan, Knoxville.
*Jere L. Crook, Jackson.
TEXAS
J. W. Burns, Cuero.
E. H. Cary, Dallas.
*Holman Taylor, Fort Worth.
*S. P. Rice, Marlin.
*Joseph D. Becton, Greenville.
UTAH
*E. M. Neher, Salt Lake City.
VERMONT
*Fred T. Kidder, Woodstock.
VIRGINIA
Ennion G. Williams, Richmond.
Southgate Leigh, Norfolk.
*Joseph T. Buxton, Newport News.
† Deceased.

WASHINGTON
Frederick Epplen, Spokane.
*D. E. McGillivray, Port Angeles.
WEST VIRGINIA
Henry P. Linsz, Wheeling.
*J. R. Bloss, Huntington.
WISCONSIN
Joseph F. Smith, Wausau.
*Horace M. Brown, Milwaukee.
*Rock Sleyster, Wauwatosa.
WYOMING
*George P. Johnston, Cheyenne.
ALASKA
HAWAII
ISTHMIAN CANAL ZONE
PHILIPPINE ISLANDS
*W. de Leon, Manila.
PORTO RICO
Jacinto Aviles, San Juan.
GOVERNMENT SERVICES
United States Army, Albert E. Truby.
United States Navy, Charles N. Fiske.
United States Public Health Service, John W. Kerr.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
Walter L. Bierring, Des Moines.
SURGERY, GENERAL AND ABDOMINAL
Carl B. Davis, Chicago.
OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY
George Gray Ward, Jr., New York.
OPHTHALMOLOGY
Cassius D. Wescott, Chicago.
LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY
Burt R. Shurly, Detroit.
DISEASES OF CHILDREN
I. A. Abt, Chicago.
PHARMACOLOGY AND THERAPEUTICS
Leonard G. Rowntree, Rochester, Minn.

PATHOLOGY AND PHYSIOLOGY
David J. Davis, Chicago.
STOMATOLOGY
Eugene S. Talbot, Chicago.
NERVOUS AND MENTAL DISEASES
Charles R. Ball, St. Paul.
DERMATOLOGY AND SYPHILOLOGY
Walter J. Highman, New York.
PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH
W. S. Leathers, University.
UROLOGY
Carl L. Wheeler, Lexington.
ORTHOPEDIC SURGERY
John Ridlon, Chicago.
GASTRO-ENTEROLOGY AND PROCTOLOGY
Louis J. Hirschman, Detroit.



THE SAN FRANCISCO SKY LINE FROM THE BAY

CALIFORNIA INVITES

The Welcome of the State Association—Information Concerning the Convention City

Map makers and courts define a San Francisco, but the sons and daughters of this City of Enchantment are children of a social and spiritual city of St. Francis whose boundaries no man may fix. It is this symbolic San Francisco that offers her hospitality to the American Medical Association. The same social and spiritual unity on a larger scale, which we call California, extends her hospitality through the session week and the postsession activities of the following week. In order not to confuse, roundabout San Francisco will be considered session zone, and the rest of the state, postsession zone.

The American Medical Association will hold its seventy-fourth annual session in San Francisco, June 25 to 29, 1923, as the guest of the California Medical Association. This is the first time that the Association has held its annual session as the guest of a state medical association. While the session is to be held in San Francisco, every one of the forty-one county medical societies of California and every member of each one of these societies has been charged by resolution of the house of delegates with the duties, responsibilities and pleasures of host.

THE SESSION ZONE

In order that this annual conference of representatives of the 90,000 members of the American Medical Association may be of the greatest use to physicians themselves, to hospitals and to other medical agencies, and particularly to the general public, the program has been arranged in two sections—that for the session week, and that for the postsession week. To make these two periods complementary, it has been necessary to classify San Francisco and roundabout as session zone and the rest of the state as postsession zone.

"MEDICAL CALIFORNIA"

The California committees are issuing for visiting Fellows and guests a book of 148 pages that attempts to present those features of California as a whole, as well as of its individual counties and other centers, that are considered to be what would most likely interest the medical visitor. The preparation of this book has taken a great deal of time, and it contains much information not previously published anywhere. Included in this book also is a complete outline of all social and entertainment features connected with the session. In fact, the attempt has been made to make the book itself so complete that it will not be necessary to issue to the visiting

Fellows and guests any other literature, except the scientific program. Copies of this book will be presented to Fellows and members of their parties when they register and receive the official program from the Association registration office.

THE CENTRAL COMMITTEE

Following these ideas to their logical conclusion, the California Central Committee of Arrangements is made up entirely of members who are elected officers of the state and county societies or who are chairmen of some one or

separate them into integral parts. A veritable network of land and water transportation, including numerous ferry lines, with fast schedules, connecting with still more numerous fast electric railway lines, together with fine roads, combine to link the interests of the bay district as are the streets of a great city.

The principal centers for all this transportation are the Ferry Building at the foot of Market Street, San Francisco; the Oakland Mole; the Key Route terminal in Berkeley, and the Sausalito Ferry Station in Marin County. More than 60,000,000 pass through the San Francisco Ferry Building annually.

The principal centers that connect this great community with more distant points are the railway terminals at Oakland Mole; Southern Pacific station at Third and Townsend streets, San Francisco; the Western Pacific Mole at Oakland; the Santa Fe at Point Richmond, and the great ship berthing places in San Francisco, Oakland and elsewhere on the bay.

SAN FRANCISCO BAY

This, a large and beautiful land-locked harbor, is almost



another of the various committees or sections. This committee, therefore, represents officially every county society, every section of the state society, and all organizations having to do with medical progress.

In addition to the central committee representing the entire state, each county has a county hospitality and clinic committee.

There are three outstanding features in connection with the California session which ought to be of interest and which are expected to add to the value of the session, both to physicians and to the public: These are the extensive arrangements for session and postsession diagnostic clinics; the publication by the local committee of "Medical California," and the post-session program arranged in many places of the state for the benefit of physicians and the public.

SAN FRANCISCO AND ROUNDAABOUT

San Francisco, Oakland, Berkeley, Alameda and many smaller cities, as well as many of the several counties forming the San Francisco Bay district, are so closely connected by social, commercial and family ties that it is difficult to



ABOVE: A BIT OF CHINATOWN.

BELOW: A SLICE OF SAN FRANCISCO BEACH

seventy miles long, from four to ten miles wide, and is connected with the ocean only by the Golden Gate, a strait a mile across at the narrowest point.

The statement has been made that all the navies and all the merchant ships of all the nations of the world could find anchorage together in this magnificent bay, which has a total water area of four hundred and fifty square miles. The upper portion of the harbor is divided into two smaller bodies of water, called San Pablo and Suisun bays, and into the latter flow the great rivers of California—the Sacramento and the San Joaquin.

In all cosmopolitan America there is no place more cosmopolitan, more distinctive, than San Francisco, a city built on commanding heights, overlooking the broad waters of its matchless harbor, the hills, valleys and surrounding cities and distant mountains of the hinterland. The city occupies the northern end of a peninsula, with the Pacific Ocean on the west and the Bay of San Francisco on the east. The famed Golden Gate is hinged both on the hills of Marin County and on the mainland, and is locked by heavy ordnance at the nearby military reservation on the Presidio.

Among the places that should be seen are the Ocean Beach, with its Cliff House, seal rocks, Sutro Heights, and miniature Coney Island along the Esplanade, all of which will please and gratify the visitor.

The civic center is conveniently located, and is an imposing and impressive group of public buildings and plaza. It includes the Civic Auditorium, where the annual session will be held, all sections, the house of delegates, and committees meeting under one roof; the library, city hall and state building.

HOTELS AND RESTAURANTS

No visitor to San Francisco can get the full savor of the city without having an intimate peep into its famous hotels and restaurants. The palm court and gold ballroom of the Palace; the tapestry and fable rooms and the garden at the St. Francis; the terraced balconies, rainbow lane and laurel court at the Fairmont, commanding the Nob Hill skyline; the distinctive atmosphere of Tait's-at-the-Beach; the Cliff House, with the ocean surf booming at its base, all mean much to San Francisco and its people. These, together with the many other attractive places to dine, must be visited to appreciate to the full the buoyancy and the laughter-laden atmosphere that have endeared



The hills of San Francisco give to the city's skyline its picturesque effect, and they seem to impart a certain variety to the life of the inhabitants; in fact, one can scarcely imagine a many-sided city like San Francisco lying on a flat. Of the hills, Telegraph Hill, Russian Hill, Nob Hill and Twin Peaks are the most important, and each has its own particular and attractive view. Not often is a city truly spoken of as possessing scenery; but because of its wonderful setting and its varied terrain, San Francisco justly may be so described, and a trip to the top of even one of its hills will convince the visitor that it is a scenic city without a peer.

Chinatown, with its exotic architecture; exotic yellows, greens and reds; exotic sights and sounds—San Francisco's Chinatown is America's largest and most interesting Oriental colony.

Golden Gate Park is a fine expression of landscape engineering. All of its 1,013 acres have been transformed from bare sand dunes into areas of living beauty.



ABOVE: BERKELEY, SHOWING THE CAMPANILE OF THE UNIVERSITY OF CALIFORNIA.
BELOW: STANFORD UNIVERSITY CAMPUS.

San Francisco to the hearts of so many world-famous men and women.

CLIMATE AND CLOTHING

The thermometer varies but slightly throughout the year in San Francisco. The average temperature in winter is 51, and in summer, 59. There are 280 sunny days. The coolest months are January and February, July and August. At the time of the session, the last week in June, it is likely that there will be a certain amount of wind and some fog, and that the evenings will be quite chilly. Rain is not usual at this time, and the days should be pleasant and delightful.

Persons coming to the session should bring overcoats and evening wraps; furs are worn by the San Francisco women in the evening at this time of the year. In the southern part of the state and the central valleys, the climate will be warmer, corresponding somewhat to the summer climate in the Eastern states. In the mountain districts and the mountain resorts of all parts of the state, the climate will more nearly approach that of San Francisco. Visitors who expect to travel much in the state will be more comfortable with the ordinary weights of underclothing, using overcoats and wraps to meet the varying climates in different parts of the state.

CALIFORNIA

It lies not East nor West,
But like a scroll unfurled,
Where the hand of God hath hung it,
Down the middle of the world.

California is an empire, extending from Mexico on the South to Oregon on the North. It includes 18,000,000 acres of virginal national forest land; 26,000 miles of fishing streams and 862,000 acres of lakes.

All climates, from balmy semitropical warmth to snow-caps on the mountains, are found closely mingled in many parts of the state every day of every year. The population is so cosmopolitan that any one from any part of the world may find congenial companions in many places in the state who speak his language. The population is nearly 4,000,000.

The educational opportunities are among the best, and the per capita wealth of the citizens is the second highest in the United States.

Of California scenery, David Starr Jordan says:

"To know the glory of California scenery, one must live close to it through the changing years. From Siskiyou to San Diego, from Alturas to Tia Juana, from Mendocino to

Mariposa, from Tahoe to the Farallones, lake, crag or chasm, forest, mountain, valley or island, river, bay or jutting headland, every one bears the stamp of its own peculiar beauty, a singular blending of richness, wildness and warmth. Coastwise everywhere sea and mountains meet, and the surf of the cold Japanese current breaks in turbulent beauty against tall 'rincones' and jagged reefs of rock. Slumbering amid the hills of the Coast Range, 'A misty camp of mountains pitched tumultuously,' lie golden valleys dotted with wide-limbed oaks, or smothered under overweighted fruit trees. Here, too, crumble to ruins the old Franciscan missions, each in its own fair valley, passing monuments of California's first page of written history.

"Inland rises the great Sierra, with spreading ridge and foothill, like some huge, sprawling centipede, its granite back unbroken for a thousand miles. Frost-torn peaks, of every height and bearing, pierce the blue wastes above. Their slopes are dark with forests of sugar pines and giant sequoias, the mightiest of trees, in whose silent aisles one may wander all day long and see no sign of man. Dropped here and there rest turquoise lakes which mark the crater of dead volcanoes, or which swell the polished basins where vanished glaciers did their last work. Through mountain meadows run swift brooks, overpeopled with trout, while from the crags leap full-throated streams, to be half blown away in mist before they touch the valley floor. Far down the fragrant cañons sing the green and troubled rivers, twisting their way lower and lower to the common plains, each larger stream calling to all his brooks to follow him as down they go headforemost to the sea. Even the hopeless stretches of alkali and sand, sinks of lost streams, in the southeastern counties, are redeemed by the delectable mountains that on all sides shut them in. Everywhere the landscape swims in crystal-like ether, while over all broods the warm California sun. Here, if anywhere, life is worth living, full and rich and free."

TRANSPORTATION

The Trans-Continental Passenger Association, in letters addressed to the Secretary of the American Medical Association, authorizes the statement that summer excursion tickets will be on sale at all offices within its jurisdiction from May 15 to Sept. 30, 1923, for those who will attend conventions and meetings to be held on the Pacific Coast. The return limit on such tickets will be Oct. 31, 1923. The prices at which these excursion tickets will be sold represent a substantial reduction from the fares in effect ordinarily, and are less than those that would apply under the certificate plan.

From Eastern Points

Fares from points east of the territory within the jurisdiction of the Trans-Continental Passenger Association will be based on the rates established by that association. The Central Passenger Association is authority for the statement that the same summer excursion rates in effect last year will apply this year.

Stopovers

* Summer excursion tickets will permit stopovers at all points on going and return trip within final return limit, information to conductors being all that is required to secure stopovers.

Official Transportation Representative

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements, San Francisco, announces that the American Express Company has been designated official transportation representative for that committee. This company has offices in all principal cities and is in close touch with all steamship, railroad and other transportation agencies. Its offices are in a position to answer all inquiries and furnish information about any contemplated trip. In San Francisco, the American Express Company is located on the ground floor of the Balboa Building, in which the Local Committee of Arrangements has its headquarters. A branch office will be maintained at the Civic Auditorium during the week of the annual session.

Routes from Chicago

C. B. & Q. R. R. or Rock Island R. R. to Denver; D. & R. G. W. R. R. to Salt Lake; Western Pacific or Southern Pacific R. R. to San Francisco.

C. B. & Q. R. R. or Rock Island R. R. to Denver; Union Pacific to Ogden or Salt Lake; Western Pacific or Southern Pacific R. R. to San Francisco.

C. B. & Q. R. R., Rock Island R. R. or C. & N. W. and Union Pacific R. R. to Denver; D. & R. G. W. or Union Pacific R. R. to Salt Lake; Union Pacific to Los Angeles; Southern Pacific to San Francisco.

C. M. & St. P. R. R. to Omaha; Union Pacific to Ogden; Southern Pacific to San Francisco.

I. C. R. R. to New Orleans; Southern Pacific to Los Angeles and San Francisco.

C. & N. W. R. R. to Omaha; Union Pacific to Ogden; Western Pacific or Southern Pacific to San Francisco.

C. & N. W. R. R. and Union Pacific to Denver; thence by one of routes above indicated to San Francisco.

Rock Island R. R. to Denver; D. & R. G. W. or Union Pacific to Salt Lake; Union Pacific to Los Angeles; Southern Pacific to San Francisco.

Santa Fe R. R. to Los Angeles; Southern Pacific to San Francisco.

The foregoing are submitted as some of the possible routes to San Francisco. It will be seen that various routes may be selected somewhat different from those mentioned.

Return Routes

Those who go to San Francisco by any of these routes may return to Chicago the same way or by the following routes without any extra cost:

Southern Pacific R. R. to Los Angeles:

Thence by Santa Fe (Grand Canyon Route); or Southern Pacific to Los Angeles and El Paso and then by Rock Island R. R.; or Southern Pacific to New Orleans then by I. C. R. R.; or from Los Angeles by Union Pacific to Salt Lake



ABOVE: Left, OAKLAND, LOOKING ACROSS LAKE MERRITT. Right, MOUNT SHASTA.
CENTER: Left, A SOUTHERN CALIFORNIA ORANGE GROVE. Right, A MOUNTAIN HIGHWAY.
BELOW: Left, THE STATE CAPITOL, SACRAMENTO. Right, BALBOA PARK, SAN DIEGO.

or Ogden; from Salt Lake to Denver by D. & R. G. W. R. R.; from Denver to Chicago by any direct line; from Ogden to Omaha by Union Pacific; then to Chicago by C. B. & Q., C. M. & St. P., or C. & N. W. R. R.; or from Los Angeles by Santa Fe R. R. to Denver, and thence by any direct line to Chicago.

Northern Routes

While, of course, all northern routes are available for going to San Francisco, it is probable that these will be most largely used for the return trip. From San Francisco to Portland the Southern Pacific is the only available road. From Portland the following are routes that may be selected:

Northern Pacific (Yellowstone Park Route) to St. Paul; Great Northern (Glacier Park Route) to St. Paul; S. P. & S. Ry. (Columbia River Route) to Spokane, thence Northern Pacific, Great Northern, or C. M. & St. P. to St. Paul; Northern Pacific, Great Northern, or Union Pacific to Seattle, thence Great Northern R. R. or Canadian Pacific Steamship Line to Vancouver and to St. Paul over the Canadian Pacific; any line from St. Paul to Chicago. The C. M. & St. P. R. R. operates through trains between Seattle and Chicago.

The return trip to Chicago from Portland may also be made by way of Ogden and Omaha, or by way of Salt Lake and Denver.

By Steamship from Los Angeles to San Francisco

Steamship service from Los Angeles to San Francisco is available to those who prefer it, and no extra cost will attach. It will be necessary to state that it is desired to go by steamer from Los Angeles when original tickets are purchased.

Yellowstone, Glacier and Rainier Parks

Those returning by way of Portland over the Northern Pacific may conveniently visit Yellowstone Park. The usual tour through the park consumes four and three-fourth days. Hotel and camp accommodations, including meals, lodging and transportation for the complete trip, will cost approximately \$100. Glacier and Rainier National Parks are also easily reached, and are among the greatest of the scenic attractions of the great Northwest.

Railroad Fare

The following railroad fares are submitted as approximately correct and are based on the best information available. Additional information of authentic nature can be secured by applying to ticket agents.

From			
Chicago	\$ 86.00	New York.....	\$138.32
Kansas City.....	72.00	Philadelphia	133.14
Minneapolis	87.50	Pittsburgh	113.05
Denver	64.00	Washington	130.45
St. Louis.....	81.50	Boston	144.80
Omaha	72.00	Buffalo	116.10
Milwaukee	89.40	Richmond	130.45
Detroit	101.70	Atlanta	106.85
Cincinnati	101.35	Nashville	94.85
Cleveland	105.65	Memphis (by St. Louis)...	85.15
Indianapolis	95.70	Memphis (by Chicago)....	93.20
New Orleans.....	85.15	Louisville	97.75
Houston	72.00	Asheville	114.41

PULLMAN RATES FROM CHICAGO AND ST. LOUIS

	Lower	Upper	Drawing Room Compartment	
Chicago	\$23.63	\$18.90	\$84.00	\$66.75
St. Louis.....	22.50	18.00	79.50	63.00

Those who go to San Francisco by more southerly routes, but who wish to return by way of Portland, Seattle and the North Pacific Coast, will be required to pay \$18 additional. There will also be additional cost for Pullman accommodations to those returning by this route.

The return trip may be made by any one of the several more southerly routes without additional cost. It will be necessary to state, when original tickets are purchased, what routes will be used in returning.

Those who desire to go to San Francisco direct and then go to Los Angeles and return to San Francisco and from there by way of Portland, Seattle and Northern Pacific Coast points will be required to pay \$11.40 additional.

Special Trains

NEW YORK SPECIAL

A special train will be operated from New York to San Francisco by way of Chicago, and over the Santa Fe through the Grand Canyon and Los Angeles. THE JOURNAL, January 27, gives further details. Dr. E. Livingston Hunt, 17 West Forty-Third Street, New York, is chairman of the committee in charge of this train.

MICHIGAN GOLF SPECIAL

The "Michigan Golf Special" from Chicago to San Francisco will leave Chicago, June 17, at 8 p. m., and will stop at Omaha, Denver, Salt Lake City, Lake Tahoe and Del Monte, at each of which places a round of golf will be played by those aboard. This train is due to arrive in San Francisco at 8 a. m., June 23. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Mich., will give information.

OHIO SPECIAL

The Ohio State Association Special will be operated under the direction of the officers of that association. Mr. Don K. Martin, executive secretary of the Ohio State Medical Association, Columbus, Ohio, will furnish information concerning reservations.

HARLAN TOURS

The Harlan Tours of Chicago will operate the "Medical Special De Luxe." Information about this train was given in THE JOURNAL, February 3.

SANTA FE CHICAGO SPECIAL

The Santa Fe Railroad will run a train, to be called the "American Medical Special," which will leave Chicago at 8:15 p. m., June 16. Short stopovers will be made at Kansas City, Colorado Springs, Santa Fe and Albuquerque. The day of June 20 will be spent at the Grand Canyon. This train is due in Los Angeles at 3:30 p. m., June 21. From Los Angeles, choice may be made of rail or boat service to San Francisco. Detailed information may be obtained from J. R. Moriarty, Division Passenger Agent, A. T. & S. F. Ry., 179 West Jackson Street, Chicago.

SPECIAL TRAIN OF THE CHICAGO MEDICAL SOCIETY

Arrangements have been completed by the Chicago Medical Society to operate a special train by way of the Chicago and Northwestern, Union Pacific, Denver and Rio Grande Western and Western Pacific railroads from Chicago to San Francisco for the annual session of the American Medical Association. This train will leave Chicago over the C. & N. W. Ry., at 11:30 p. m., Thursday, June 21, and will arrive at San Francisco at 5:45 p. m., Monday, June 25. The train will be composed of the finest equipment, and the schedule has been so arranged that practically all the principal points of scenic interest, including Denver, Colorado Springs, Pueblo, the Royal Gorge, Salt Lake City and the Feather River Canyon, will be passed in the daylight hours.

For accommodation of the members of the Chicago Medical Society who will not find it possible to leave Chicago, June 21, a second schedule has been arranged whereby members and Fellows going to San Francisco may leave Chicago at 8:10 p. m., Friday, June 22, on the San Francisco Overland Limited and arrive in San Francisco at 2:30 p. m., Monday, June 25. Special sleepers will be attached to the regular Overland Limited for the benefit of members of the Chicago Medical Society.

Railroad and Pullman rates from Chicago and other Western cities were printed in THE JOURNAL, February 3. Reservations may be secured by communicating with Mr. H. G. Van Winkle, General Agent, C. & N. W. Ry., 148 South Clark Street, Chicago. Dr. R. R. Ferguson, secretary of the Chicago Medical Society, 25 East Washington Street, Chicago, represented that society in the completion of the arrangements for the special trains referred to above.

AMERICAN MEDICAL SCENIC SPECIAL

A special train has been arranged for to leave Chicago over the Burlington Railroad at 11 p. m., June 20. Stops will be made at Aurora, Mendota, Galesburg, Burlington,



ABOVE: Left, CALIFORNIA RED WOODS; Right, A STREET SCENE IN LOS ANGELES.
BELOW: WESTLAKE PARK IN LOS ANGELES CENTER: THE YOSEMITE VALLEY.

Ottumwa, Creston, Council Bluffs, Omaha, Lincoln, Denver, Colorado Springs, Glenwood Springs and Salt Lake City. This train will arrive at Omaha at 3:50 p. m., and at Lincoln about 5:30 p. m., June 21; at Denver at 7:30 a. m., June 22, where a short stop will be made, and at Colorado Springs at 10:30 a. m., June 22. A stopover of approximately twenty-four hours will be made at Colorado Springs to permit sight-seeing trips to the Garden of the Gods, Pike's Peak and other places of interest. Sleeping cars will be placed conveniently, while at Colorado Springs, to meet the convenience of the party. Leaving Colorado Springs at 4 a. m., June 23, opportunity will be had to see the Royal Gorge and the Canyon of the Arkansas in daylight. About five hours will be spent in Salt Lake City, June 24. From Salt Lake City, the train will proceed over the Western Pacific Railway, known as the Feather River Canyon route, which offers some of the most interesting sights between Chicago and the Coast. San Francisco will be reached at 5:30 p. m., June 25. This special train will be made up of the finest Pullman equipment, with dining car and observation car. More specific information can be secured by addressing J. R. Van Dyke, General Agent, Passenger Department, C. B. & Q. Railroad, 179 West Jackson Boulevard, Chicago.

INDIANA SPECIAL TRAIN

Dr. Ralph S. Chappell, 305 Terminal Building, Indianapolis, has been delegated by the Indiana State Medical Association to arrange for a special train for the accommodation of members of that association, their families and friends who will go to San Francisco to attend the annual session of the Association, June 25-29. This train will be assembled at Indianapolis and will proceed to San Francisco by way of St. Louis, Kansas City, Colorado Springs, the Grand Canyon and Los Angeles. Dr. Chappell will give information concerning the details of the tour to those who are interested.

NORTHERN PACIFIC RAILWAY SPECIAL TRAIN

The Northern Pacific Railway will operate a special train for the accommodation of visitors to the annual session who wish to return by way of the Pacific Northwest. The tour will be conducted personally by Dr. A. W. Ide of St. Paul. The train will be designated the "M.D. Special," and will leave San Francisco at 10:20 p. m., June 29, for Portland, where a day will be spent. Seattle, Tacoma, Rainier National Park, Spokane, Livingston and Yellowstone Park will be visited. From Portland, Seattle, Tacoma and Gardiner, trips will be taken for the purpose of visiting the points of scenic and historical interest. About two days will be spent in Rainier National Park, and three days will be spent in Yellowstone Park. The train will leave Gardiner at 7:30 p. m., July 10, and will arrive in Chicago at 9 p. m., July 12. Full particulars about this train and all stops and side trips may be secured by writing to Dr. A. W. Ide, 914 Northern Pacific Building, St. Paul, Minn.

SPECIAL TRAIN FOR MASSACHUSETTS MEDICAL SOCIETY

A special tour for the Massachusetts Medical Society has been arranged under the direction of the Raymond and Whitcomb Company for the Fellows of that society and their friends who will attend the Annual Session. Leaving Boston at 2:10 p. m., June 14, the Massachusetts party will go to San Francisco by way of Chicago, Colorado Springs, the Royal Gorge, Salt Lake City, Riverside, Los Angeles, Yosemite and Big Trees, reaching San Francisco, Sunday, June 24. The return trip may be made either by way of Portland, Seattle, Vancouver and the Canadian Rockies, or by the direct Overland route by way of Ogden, Omaha and Chicago. For more detailed information concerning this tour communicate with the Raymond and Whitcomb Company, 112 South Dearborn Street, Chicago, or 17 Temple Place, Boston.

ST. LOUIS MEDICAL SOCIETY SPECIAL

The St. Louis Medical Society will have an all Pullman special train to Los Angeles, leaving St. Louis at 9:30 p. m., June 16, and arriving at Los Angeles at 3:30 p. m., June 21. This train will go over the Missouri Pacific to Kansas City and then over the Santa Fe to Los Angeles. Stops will be

made at Kansas City, Colorado Springs, Sante Fe, Albuquerque and Grand Canyon. For information or reservations, write Dr. Noxon Toomey, Secretary, St. Louis Medical Society.

SOUTHERN MEDICAL ASSOCIATION TRAIN

The Southern Medical Association will operate a train to San Francisco to be known as "Our President's Special," starting from St. Louis and going by Kansas City, Colorado Springs and Salt Lake City, leaving St. Louis at 9 a. m. Tuesday, June 19. A part of Wednesday, June 20, and a part of Thursday, June 21, will be spent at Colorado Springs. Salt Lake City will be reached at 12:25 p. m., Friday, June 22, and departure for San Francisco will be at 11:40 a. m., Saturday, June 23. Information about this train can be secured by addressing the Southern Medical Association, Birmingham, Ala.

Special Train from Seattle: A special train will be operated over the Union Pacific for the accommodation of members and visitors to the meeting of the Pacific Northwest Medical Association to be held in Seattle, June 19-21. This train will leave Seattle at 9:30 a. m., June 22, Portland at 5:30 p. m., June 22, and is timed to arrive in San Francisco at 7 p. m., June 23. While in Portland, the party will be entertained by the Portland members of the Pacific Northwest Medical Association. Dr. F. R. Underwood of Seattle is the chairman of the transportation committee, and can be communicated with for information concerning this train.

Postsession Tour to Hawaii

In connection with the telegraphic invitation extended by Hon. Wallace R. Farrington, governor of Hawaii, as published in THE JOURNAL, March 10, the following comprehensive tour has been arranged:

Leaving San Francisco, night of June 29, the party will sail from Los Angeles, June 30, on the *Calawaii*. Visit to live volcano at Kilauea. Automobile drives round Honolulu and the island of Oahu. Reception by Governor Farrington. Visits to Kalihi leper receiving station and hospitals. Returning, arrive at Los Angeles, July 21. Total inclusive cost from Los Angeles back to Los Angeles, \$415. Reservations and booklets may be obtained from Fred. J. Halton, 714 Marquette Building, Chicago, former secretary, Hawaii Tourist Bureau, who will personally escort the party to Hawaii.

Week End Trips After the Annual Session

Arrangements have been made for week end trips from San Francisco to Yosemite Valley and to Del Monte for parties who wish to visit these noted resorts. The trip to Yosemite Valley has been arranged as follows: Leaving San Francisco Saturday, June 30, at 11 p. m., and returning on Tuesday, July 3, at 10:05 p. m. The expenses, including Pullman berths, meals and lodging, will be included in the charge of \$59. Special parties of six each can make arrangement for this trip by automobile at the same rate. Among the main points of interest to be visited are Artist Point, Inspiration Point, Signal Peak, Wawona, Mariposa Grove of Big Trees, Chinquapin, Bridal Veil Meadows, Mono Meadows, Ostrander Rock, Glacier and Overhanging Rock.

The trip to Del Monte will cost \$30, and will be made by automobile. Parties for this trip must include at least six persons. Leaving San Francisco, June 30, at 10 a. m., the return to San Francisco will be at 6 p. m., July 2. Del Monte is one of California's largest and most popular resorts, consisting of a vast estate of approximately 18,000 acres, and is situated on the historic Monterey Peninsula. It is located 125 miles south of San Francisco. It is stated of Del Monte that it is the one place in America where one can do everything or nothing. Golf, polo, tennis, horseback riding, swimming, fishing, hunting, sailing, dancing, idling or working are all provided for. A special postsession golf tournament is being arranged for the morning of Sunday, July 1, and there may possibly be a polo game during the afternoon of that day.

Reservations for the Yosemite trip or for the Del Monte automobile trip must be made through the American Express Company, Market and Second streets, San Francisco.

Side Trips from San Francisco

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements at San Francisco, has submitted information concerning tours which may be taken, with San Francisco as a starting point, after the annual session:

A three weeks' trip to Honolulu on a special boat, touching all principal ports, including the leper colony, and return to San Francisco.

A trip up the western coast to Alaska and return. Those desiring to do so may leave the boat at Vancouver and return east over the Canadian Pacific, or at Seattle and return east over the Great Northern, or at Portland and then east over any available line. Returning to San Francisco, those who take this coast trip may return east by way of Los Angeles or the Panama Canal.

A comprehensive tour that will take four weeks for sight-seeing in the Canadian Rockies.

Inquiries concerning transportation from eastern ports to San Francisco by way of the Panama Canal should be referred to steamship offices. It will be possible for those who wish to go to San Francisco by way of the Panama Canal to return by railroad.

For further information regarding side trips, address Chairman, Committee of Arrangements, 806 Balboa Building, San Francisco.

Automobile Routes to San Francisco

Many motorists in single cars, small parties and motor caravans from various parts of the United States are already in correspondence with the Local Committee on Arrangements. California is the motorists' paradise. Any part of the



THE CIVIC AUDITORIUM AND PLAZA WHICH HOUSES GENERAL HEADQUARTERS, EXHIBITS AND SECTION MEETINGS

An oriental tour beginning at San Francisco, and leaving that city a day or two after the close of the annual session. Such tours will include Japan, China and the Philippine Islands and return to San Francisco, or a return by way of the Suez Canal and Europe.

A trip to Honolulu, with six days in that city and on the Island of Oahu, and two days in Hilo and the Kilauea National Park, with a visit by day and by night to the active volcano of Kilauea.

An Alaskan tour, embracing a twenty-four day cruise. Stops will be made at Ketchikan, Wrangell, Petersburg, Taku Glacier and Juneau. At Skagway a railroad trip to Bennett Station will be begun; returning, the boat will proceed to Sitka, from which place six days will be spent in the inside passage en route to Seattle. From Seattle a four days' trip to Rainier National Park will be made.

A tour which includes visits to Yellowstone, Glacier and Rainier national parks.

state is now easily accessible from anywhere. Nothing could be more delightful than to combine vacation and pleasure by coming from anywhere to the annual session by motor. There are four main transcontinental motor road arteries from Eastern and Midwestern states to California.

The Lincoln Highway alone will be traveled by more than 60,000 cars this year. This is the most direct route from New York and Chicago to San Francisco. It passes through Omaha, Cheyenne, Salt Lake City and Reno.

The National Old Trails route is through Kansas City, Trinidad, Albuquerque, Flagstaff, Needles, Los Angeles and San Francisco.

The Yellowstone Trail is from Chicago through Milwaukee, Minneapolis, Aberdeen, across Montana, Idaho, and into Seattle or Portland by way of Spokane or Pendleton, and thence down the west coast into California.

Victory Highway makes good California connections from Denver through Salt Lake City. Salt Lake City is the key

position between coast cities and most of the main motor arteries from the Eastern and Midwestern states. From Salt Lake City motorists can turn north through Pocatello, Idaho, Boise and Walla Walla to Portland, and thence south over excellent boulevard roads into California, or one can turn south at Salt Lake and follow the Arrowhead Trail through Provo, Beaver, St. George and Las Vegas to the National Old Trail through Goffs, and into Los Angeles and thence to San Francisco.

There are other good routes leading to the coast and into California. Once in the state of California, the motorist encounters a veritable network of splendid roads leading to all cities and points of interest. Those interested in this method of transportation to the session should write for information or help of any character.

Address communications to Dr. W. E. Musgrave, California Headquarters 1923 American Medical Association Convention, 806-809 Balboa Building, San Francisco.

REGISTRATION

The Bureau of Registration will be located on the first floor of the Civic Auditorium. A committee of local physicians will assist those desiring to register. A branch post-office will be opened and a bureau of information established in connection with the Registration Bureau. Here may be secured copies of the *Daily Bulletin*, which announces the names of visitors and other important session items.

Only Fellows, Affiliate, Associate and Honorary Fellows, and Invited Guests may register and take part in the work of any of the sections of the Scientific Assembly. Members of the organization, i. e., members in good standing in the constituent associations, are eligible to Fellowship in the Scientific Assembly. The Fellows of the Scientific Assembly are those members who have, on the prescribed form, applied for Fellowship, subscribed to THE JOURNAL, and paid their annual Fellowship dues for the current year. These annual Fellowship dues provide a subscription for THE JOURNAL for one year. In a word, members of component county medical societies are *ipso facto* members of their several constituent state associations and are eligible for Fellowship in the Scientific Assembly. Members should qualify as Fellows before they start for San Francisco, and receive a pocket card certifying to their Fellowship. This card will enable its holder to register at the San Francisco Session readily and without undue delay. Those who do not have pocket cards should secure them by writing to the American Medical Association, 535 North Dearborn Street, Chicago.

Arrangements for Securing Pocket Card

Arrangements will be made so that it will be possible for members of the organization to qualify as Fellows of the Scientific Assembly after they reach San Francisco; but it will require more time to register, and the delay will not only be a hardship to the physician who postpones qualifying as a Fellow, but also will be an inconvenience to others waiting their turn to register.

Register Early

Physicians of San Francisco and California, as well as other Fellows who are in San Francisco on Monday and Tuesday, should register as early as possible. It will be an accommodation to visiting physicians to find the names and addresses of the members of the San Francisco profession listed in the *Daily Bulletin* for Tuesday, June 26.

Suggestions That Will Facilitate Registration

Fellows should fill out completely the spaces on both sections of the front of the *white* registration card, which will be found on the tables in front of the Registration Bureau. (Ignore the application on the reverse side of card.)

Physicians who desire to qualify as Fellows should fill out completely the spaces on both sections of the front of the *blue* registration card, and sign the application on the back. These blue cards also will be found on the tables.

Physicians who take THE JOURNAL but who are not at present Fellows should fill out completely the spaces on both sections of the front of the *blue* registration card, and sign the application on the reverse side.

Entries on the registration cards should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the

filled out *white* registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in *white* registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster may occupy a considerable time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1923 dues are unpaid should present his filled in *white* registration card with the amount of his Fellowship dues (\$6) at one of the windows marked "Cash." Here, too, there will be some delay; but the work of registering will be conducted as promptly as possible.

4. As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than June 6. Any applications received later than June 6 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time so that he can use it in registering at the San Francisco Session.

As already stated, it will be possible for members of the organization to qualify as Fellows at San Francisco. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the *blue* registration card and sign the formal application printed on the reverse side. It is suggested that those who apply for Fellowship at San Francisco shall provide themselves, before leaving home, with certificates signed by the secretary of their state association, attesting that they are members in good standing in the state and county branches of the organization. A state membership card for 1923 will be acceptable. The certificate or membership card should be presented along with the filled in *blue* registration card at the window in the registration booth marked "Applicants for Fellowship and Invited Guests."

MEETINGS OF WESTERN STATE MEDICAL ASSOCIATIONS

The Medical Society of the State of California will hold its annual meeting at San Francisco, June 21-23. Dr. W. E. Musgrave, 806 Balboa Building, San Francisco, Secretary.

The Arizona Medical Association will have its annual meeting at Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

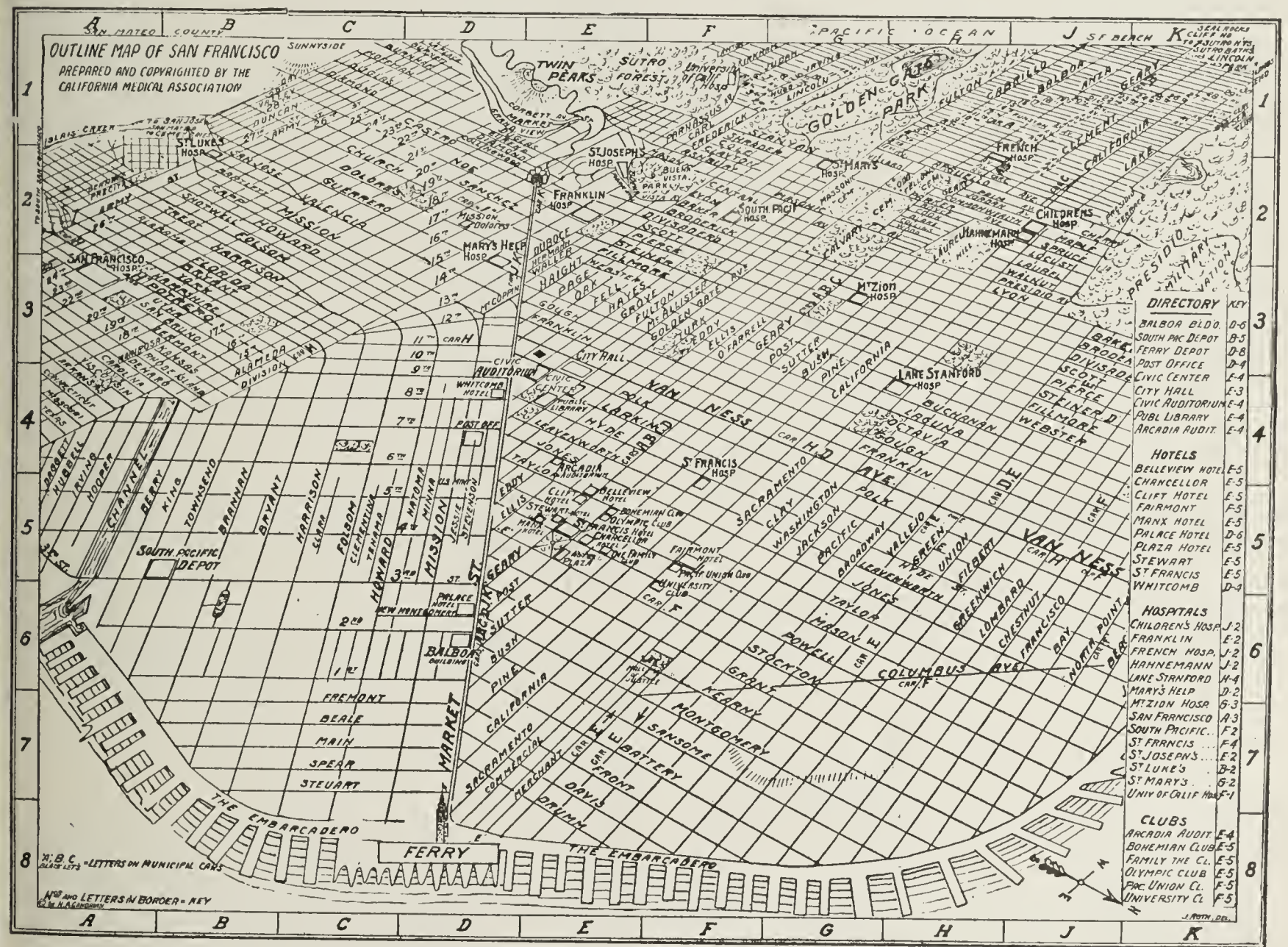
The New Mexico Medical Society will meet at Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.

The Wyoming State Medical Society will have its annual meeting at Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary. All of these state associations have extended very cordial invitations to the members of the Association going to San Francisco.

MEETING PLACES AND SECTION HEADQUARTERS

HOUSE OF DELEGATES: Fourth floor of Civic Auditorium.
GENERAL MEETING: Arcadia Auditorium, Jones and Ellis streets.
PRACTICE OF MEDICINE: Larkin Hall, first floor of Civic Auditorium.
SURGERY, GENERAL AND ABDOMINAL: Polk Hall, first floor of Civic Auditorium.
OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Polk Hall, first floor of Civic Auditorium.
OPHTHALMOLOGY: Memorial Hall, third floor of Civic Auditorium.
LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY: Memorial Hall, third floor of Civic Auditorium.
DISEASES OF CHILDREN: Larkin Hall, first floor of Civic Auditorium.
PHARMACOLOGY AND THERAPEUTICS: Washington Hall, third floor of Civic Auditorium.
PATHOLOGY AND PHYSIOLOGY: Washington Hall, third floor of Civic Auditorium.

STOMATOLOGY: McKinley Hall, third floor of Civic Auditorium.
NERVOUS AND MENTAL DISEASES: Veteran Firemen's Hall, third floor of Civic Auditorium.
DERMATOLOGY AND SYPHILOLOGY: Lincoln Hall, third floor of Civic Auditorium.
PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH: Convention Hall, fourth floor of Civic Auditorium.
UROLOGY: Lincoln Hall, third floor of Civic Auditorium.
ORTHOPEDIC SURGERY: Veteran Firemen's Hall, third floor of Civic Auditorium.
GASTRO-ENTEROLOGY AND PROCTOLOGY: Convention Hall, fourth floor of Civic Auditorium.
MOVING PICTURE THEATER: Fourth floor of Civic Auditorium.
GENERAL HEADQUARTERS: SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, COMMERCIAL EXHIBITION, INFORMATION BUREAU AND ASSOCIATION BRANCH POSTOFFICE, first floor of Civic Auditorium.



OUTLINE MAP OF SAN FRANCISCO: AT CENTER, CIVIC AUDITORIUM CONTAINING GENERAL HEADQUARTERS, SECTION MEETING PLACES, REGISTRATION, POSTOFFICE AND SCIENTIFIC AND COMMERCIAL EXHIBITS.

FOREIGN GUESTS

The following distinguished physicians and surgeons from foreign countries will be Invited Guests at the San Francisco Session: Prof. F. K. Wenckebach, Vienna, Austria; Dr. Charles F. Martin, Montreal, and Dr. F. G. Banting and Dr. T. C. Routley, Toronto, Canada; Dr. V. Pardo-Castello, Havana, Cuba; Dr. Pavel Kucera, Prague, Czechoslovakia; Dr. J. M. H. MacLeod and Dr. S. A. Kinnier Wilson, London, England; Dr. Gabriel Malda and Gen. Enrique Osornia, Mexico City, and Dr. J. S. Fraser, Edinburgh, Scotland.

Dr. T. C. Routley, acting general secretary of the Canadian Medical Association, is the official delegate from that association to the American Medical Association.

POSTOFFICE

A branch postoffice will be installed, in connection with the Registration Bureau, on the first floor of the Civic Auditorium. Members and guests are requested to order mail addressed to them "Care American Medical Association, Civic Auditorium, San Francisco, California," unless they prefer to receive mail at their hotels.

SAN FRANCISCO HOTELS

The following list of hotels with locations and prices is furnished by the Local Committee of Arrangements. Several hotels, as shown by the star, are already booked to capacity. All hotels are conveniently located except those in Oakland and Berkeley, which are about an hour from the Civic Auditorium.

The California Committee will be able to house all guests comfortably. In order that the most agreeable arrangements

may be made, it is requested that from now on Fellows write directly to California Headquarters, 806 Balboa Building, for hotel reservations. Please give the date of expected arrival in all applications.

The lower prices quoted below refer to one person. The higher are for one to two persons in a room. Some hotels charge the same for one or two persons. All rooms have baths. Please make reservations early.

Leading Hotels of San Francisco (All European Plan)—Location and Rates

Name and Address	All Rooms with Bath	Name and Address	All Rooms with Bath
Alcazar, 326 O'Farrell.....	\$ 3.00	Manx, Powell and O'Farrell Sts.....	4.00 — 5.00
Alexander, 352 Geary St.....	2.50 — 4.00	Maryland, 490 Geary St.....	2.00 — 3.50
Ambassador, Mason and Eddy.....	2.50 — 4.00	Mentone, 387 Ellis St.....	2.50 — 3.00
Antlers, 245 Powell St.....	3.50 — 5.50	Normandie, 1499 Sutter St.....	1.75 — 3.50
Argonaut, 44 Fourth St.....	2.00 — 3.50	Paisley, 432 Geary St.....	2.00 — 3.00
Baldwin, 321 Grant Ave.....	3.00	*Palace, Market and Montgomery Sts.....	8.00 — 10.00
Bellevue, Geary and Taylor Sts.....	3.50 — 5.00	*Plaza, Post and Stockton Sts.....	5.00 — 6.00
Beresford, 635 Sutter St.....	2.50 — 5.00	*Ramona, 174 Ellis St.....	2.50 — 3.50
Cadillac, 380 Eddy St.....	2.00 — 2.50	Regent, 562 Sutter St.....	2.00 — 3.50
Cartwright, 524 Sutter St.....	2.50 — 4.00	Richelieu, Geary and Van Ness Ave.....	5.00
Cecil (American plan), 545 Post St.....	8.00 — 12.00	Robins, 711 Post St.....	2.00 — 2.50
*Chancellor, 433 Powell St.....	2.50 — 4.00	Somerton, 440 Geary St.....	2.00 — 4.00
Clark, 217 Eddy St.....	2.50 — 3.50	Spaulding, 240 O'Farrell St.....	2.50 — 5.00
*Clift, Geary and Taylor Sts.....	8.00	Stanford, 250 Kearny St.....	1.00 — 2.00
Colonial, 650 Bush St.....	4.00 — 5.00	State, 16 Turk St.....	1.50 — 2.00
Columbia, 411 O'Farrell St.....	2.00 — 2.50	*St. Francis, Union Square.....	4.00 — 10.00
Court, 205 Bush St.....	3.00 — 4.00	*Stewart, 353 Geary St.....	3.50 — 7.00
Dalt, 34 Turk St.....	2.50 — 3.50	Stratford, Powell and Geary Sts.....	6.00
*Fairmont, California and Mason Sts.....	7.00 — 10.00	Sutter, Sutter and Kearny Sts.....	4.00
Federal, 1087 Market St.....	2.50 — 3.50	Travelers, 255 O'Farrell St.....	2.00 — 3.50
Fielding, 386 Geary St.....	2.50 — 3.50	Terminal, 60 Market St.....	2.50 — 4.00
Garfield, 354 O'Farrell St.....	2.00 — 3.50	Turpin, 17 Powell St.....	3.00 — 3.50
Garland, 505 O'Farrell St.....	2.00 — 3.00	Victoria, Bush and Stockton Sts.....	2.50 — 4.00
Grand, 57 Taylor St.....	2.00 — 3.00	Washington, Grant and Bush Sts.....	2.50 — 4.00
Herald, Eddy and Jones Sts.....	2.00 — 3.50	Wellington, 610 Geary St.....	2.50 — 4.00
Herbert's (men only), 151 Powell St.....	2.00 — 3.00	*Whitcomb, Market and Civic Center.....	4.00 — 8.00
Kensington, 580 Geary St.....	2.00 — 3.00	Wiltshire, 340 Stockton St.....	3.00 — 4.50
Keystone, 54 Fourth St.....	2.50 — 3.50	Worth, 641 Post St.....	2.00 — 2.50
King George, 334 Mason St.....	2.50 — 5.00	Hotel Oakland, Oakland, Calif.....	3.00 — 10.00
Lankershim, 55 Fifth St.....	3.50	Hotel Claremont, Berkeley, Calif.....	3.00 — 5.00
Larne, 210 Ellis St.....	3.00 — 4.50	Hotel Whitecotton, Berkeley, Calif.....	3.00 — 5.00

* Booked to capacity.

ENTERTAINMENT

(NOTE.—The official badge will be required for admission to entertainments and other places to which entrance is granted to those in attendance on the annual session.)

The Scientific Assembly will open with the general meeting convening at 7:45 p. m., Tuesday, June 26, in the Arcadia Auditorium, Jones and Ellis streets.

The Local Committee of Arrangements announces the following entertainments:

Monday, June 25

The Alameda County Medical Association, through its Committee on Hospitality and its Women's Entertainment Committee, will have a luncheon for visiting Fellows at the close of the diagnostic clinics. This luncheon will be at Mount Diablo. Afterward, a drive along the wonderful Skyline Boulevard and other points of interest in the transbay cities will be enjoyed.

Golf tournaments will be held in the afternoon at the San Francisco Golf and Country Club and the Lakeside Golf and Country Club. The annual golf banquet will be held at the San Francisco Golf and Country Club in the evening.

Fellows visiting the session diagnostic clinics will be entertained at luncheon by the staffs of the hospitals where these clinics are held.

Tuesday, June 26

There will be a tea given under the auspices of the Women's Entertainment Committee at the Fairmont Hotel, to which all visitors are invited.

After the General Meeting at the Arcadia Auditorium, there will be dancing until midnight.

Wednesday, June 27

The Women's Entertainment Committee will have women visitors as their guests at a luncheon at Tait's at the Beach.

In the evening, the President's reception will be held at the Fairmont Hotel. There will be dancing. Preceding the President's reception, a number of dinners have been arranged for fraternities and other special groups.

Thursday, June 28

Women visitors will be invited to go on an automobile drive about San Francisco to see the principal points of interest. At about 4 o'clock, the visitors will be escorted to a number of private homes for informal teas.

Alumnus and fraternity dinners and other forms of entertainment will be provided for the evening.

Friday, June 29

President and Mrs. Ray Lyman Wilbur will be at home at Stanford University to all Fellows and guests. There will be an organ recital in the Memorial Chapel, and opportunity will be given the guests to see the Stanford University campus, while enjoying the hospitality of President and Mrs. Wilbur.

For the evening, dinners for special groups, including alumnus associations and fraternities, have been arranged.

Saturday, June 30

Through the courtesy of the Mare Island Navy Yard and the Naval Hospital, Fellows and guests are invited to take the beautiful boat ride from San Francisco to Mare Island, have luncheon on the boat and spend the afternoon in visiting the great naval station, playing golf and otherwise enjoying the hospitality of officers and their families at the naval station.

In the evening, several hundred Fellows, all men, will enjoy a dinner and jinks at the Bohemian Club. Other club and special entertainments have also been arranged for this evening.

Sunday, July 1

Two hundred Fellows will be taken for a motor ride down the bay, and over the famous Crystal Springs road to the Family Farm, where luncheon will be served. The return trip to San Francisco will be over the El Camino Real.

Monday, July 2, and Tuesday, July 3

A social entertainment combined with the postsession diagnostic clinics will be offered in many places in the state. The programs at Los Angeles and at San Diego will take all of both days, and will culminate on Tuesday evening with a series of dinners and other forms of entertainment.

A Committee on Outdoor Entertainment has arranged for a number of short tours and sightseeing trips on these days, while the Golf Committee, in addition to the tournaments that will be held at San Francisco, has arranged for the complete cooperation of all golf and country clubs throughout the state.

"Medical California," a booklet prepared by the Local Committee of Arrangements will be given to all Fellows who register, and will contain complete and specific information about all entertainments, as well as about practically all other matters in which the Fellows may be interested as visitors to San Francisco.

NONAFFILIATED ORGANIZATIONS

The following organizations have announced that they will hold meetings in San Francisco during the days immediately preceding or immediately following those on which the Scientific Assembly of the American Medical Association will meet: The Medical Women's National Association; the American Association of Anesthetists; the Radiological Society of North America; the Medical Veterans of the World War; the American Radium Society; the American Society of Clinical Pathologists; the American Society of Tropical Medicine; the American Therapeutic Society; the Association for the Study of Internal Secretions; the Western Society for the Study of Hay-Fever, Asthma and Allergic Diseases.

The National Tuberculosis Association will meet at Santa Barbara, Calif., June 20-23.

The American Proctologic Society will meet at Los Angeles, June 22-23.

The Pacific Northwest Medical Association will meet at Seattle, June 19-21.

Associations of Alumni and Fraternities at San Francisco

The alumni of Jefferson Medical College in San Francisco are represented by a committee, which is arranging a program of entertainment for all visiting alumni of that institution during the annual session. The committee consists of Dr. W. P. Read, Flood Building, San Francisco; Dr. Claude A. Phelan, 760 Market Street, San Francisco, and Dr. Dudley Smith, Hutchinson Building, Oakland. Members of this committee will be glad to hear from Jefferson alumni in other parts of the country.

The Alpha Kappa Kappa fraternity has arranged for a banquet to be held on the evening of June 28. All members attending the annual session are strongly urged to com-

municate with the chairman of the banquet committee at 100 Judah Street, San Francisco. Sigma chapter's new home at this address will be open to all members, and opportunity will be afforded them to register as soon as they arrive. Dr. Louis W. Achenbach is secretary of the chapter.

The Nu Sigma Nu Fraternity has arranged for a banquet to be held at the Bohemian Club at San Francisco, Thursday, June 28, at 7 o'clock. Dr. H. D. Crall, 1242 A-2d Avenue, San Francisco, will be in charge of arrangements for this banquet. Any members of the Nu Sigma Nu Fraternity who wish to attend should write to Dr. Crall.

All members of the Phi Beta Pi Fraternity who attend the annual session are urged to make reservations for the dinner to be given by that fraternity at the "Plantation" at 7 o'clock, June 28. Dr. C. M. Johnson, 1344 Third Avenue, San Francisco, will be glad to receive applications for reservations.

Dinners and Other Group Entertainments at San Francisco

Dr. Harry E. Alderson, chairman of the Committee on Entertainment, 806 Balboa Building, San Francisco, asks that members and Fellows of alumnus associations and medical fraternities send suggestions to him as to dinners or other meetings that they may wish to have arranged for during the annual session.

Dr. Lawrence A. Draper has been appointed chairman of a special subcommittee of the Local Committee of Arrangements to arrange for dinners or other entertainments for special groups during the annual session of the American Medical Association. Several section dinners have already been arranged for, as well as other group entertainments. Those who may be interested may write directly to Dr. Draper, 806 Balboa Building, San Francisco.

CALIFORNIA DIAGNOSTIC CLINICS

Session Diagnostic Clinics

Each of the eighteen hospitals in San Francisco, Oakland and session zone that are accredited by the Council on Medical Education and Hospitals of the American Medical Association will hold diagnostic clinics on Monday and Tuesday, June 25 and 26. Each one of these hospitals has a committee of its own to arrange all details of the clinics, and the chairmen of these various committees form the central Committee on Diagnostic Clinics.

Altogether, 136 clinics will be given during the two first days of the session. About half of these clinics will be conducted by invited distinguished visiting Fellows, and the other half will be given by California Fellows, mostly by members of the staffs of the individual hospitals.

Postsession Diagnostic Clinics

More than 100 postsession clinics will be held, Monday and Tuesday, July 2 and 3, representing twenty counties, cities or accredited hospitals in various parts of California. In the large centers, such as Los Angeles and San Diego, the clinics will last the two days, while in smaller centers they will con-

stitute a special program for a special meeting of the county society of one day, either July 2 or 3. These programs are all very similar, consisting of a special meeting of the county medical society at 10 o'clock in the morning, with clinics until 1 o'clock; then luncheon, with the visiting Fellows as guests; social entertainment during the afternoon, and a public banquet, with the visiting Fellows as speakers, in the evening, by this method giving the public in each of the many communities an opportunity to hear prominent visiting physicians discuss pertinent problems of public health.

Like the session clinics, these are all arranged by committees of county medical societies or accredited hospitals, or the two working together, and the chairmen of these committees form the central committee on postsession clinics.

Postsession Programs

In addition to the postsession clinics already discussed, an extensive social and entertainment program in a number of counties has been arranged by hospitality committees selected by the county medical societies and aided by women's entertainment committees.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the main floor of the Civic Memorial Auditorium. Among the exhibits will be the following:

DR. JOSEPH BLOODGOOD, Baltimore; DR. WILLIAM CARPENTER MACCARTY, Rochester, Minn.; DR. BENJAMIN T. TERRY, Nashville, Tenn.: Frozen section technic and diagnosis by the Departments of Surgical Pathology of Johns Hopkins University, the Mayo Clinic and Vanderbilt University. The technic of selecting, freezing, sectioning, staining, mounting and diagnosing fresh and fixed tissues will be demonstrated, as well as quick methods of preparing the polychrome methylene blue stains employed.

DEPARTMENT OF ANATOMY, UNIVERSITY OF CALIFORNIA: (1) DR. HERBERT N. EVANS and DR. P. E. SMITH: Experiments with hormone of the anterior hypophysis; (2) DR. EVANS and DR. K. S. BISHOP: Experiments on the relations between fertility and nutrition; (3) DR. EVANS and DR. SMITH: Experiments on amphibia with the hormones of the anterior and posterior hypophysis; (4) DR. EVANS: The estrual cycle of the rat, and experimental alterations of it as a study of the physiology of the ovaries; (5) DR. EVANS and DR. R. O. MOODY: The position of the stomach and some other abdominal viscera in a great number of healthy young adults.

DR. CHARLES R. GOWEN, Shreveport, La.: Demonstration of circulatory channels of lung, kidney and liver. Exhibit of casts in colors of the various circulatory channels of the lung, kidney and liver, showing the relation of these channels to one another.

DR. FRANK HINMAN and ASSOCIATES, San Francisco: The mechanism of hydronephrosis, an experimental and clinical study. Exhibit of specimens, microscopic slides, binocular preparations, stereopticons for photographs and photomicrographs, and a continuous lantern slide demonstration.

MAYO CLINIC and MAYO FOUNDATION, Rochester, Minn.: Research work of the clinic and the foundation. Exhibit of photographs and drawings, slides of specimens and roentgenograms dealing with operations and with clinical, pathologic and experimental studies.

DR. JEAN OLIVER, San Francisco: Biologic reactions of arsphenamin. Exhibit of charts showing biologic reactions occurring after intravenous injections of arsphenamin, and their modifications by the addition of gelatin.

DR. WILLIAM OPHULS, San Francisco: (1) Periarthritis nodosa: exhibit of microscopic slides and photomicrographs illustrating lesions in a case of periarthritis nodosa. (2) Statistical review of necropsies: exhibit of charts showing results of a review of a large series of necropsies.

MR. RALPH SWEET, San Francisco: Medical illustrations. Exhibit of drawings of operations, specimens and microscopic drawings.

DR. BENJAMIN TERRY, Nashville, Tenn.: Necropsy and surgical specimens, by the Department of Pathology, Vanderbilt University Medical Department. Exhibit of gross pathologic specimens showing common as well as unusual lesions.

DR. MILEY B. WESSON, San Francisco: Glass model of pelvis of term fetus. Exhibit of sections of fetus drawn in colored inks on glass plates, and stacked so as to show relationship of structures.

DR. T. HOMER COFFEN, Portland, Ore.: Electrocardiograms. Exhibits illustrating disturbances in conduction, articular flutter, articular fibrillation and abnormal Q R S T complexes.

DR. H. J. CORPER, Denver: Experimental tuberculosis exhibit: photographs covering the effect of carbon dioxide on tubercle bacilli; experimental tuberculosis produced by aspiration and posture; experimental eye tuberculosis.

DR. LOUIS CLIVE JACOBS, San Francisco: Original wax models of pathologic lesions in the posterior urethra.

DR. MORRIS KAHN, New York: Unusual electrocardiographic records: exhibit of electrocardiographic records of the human dying heart, reversed rhythm and heart block.

DR. HANS LISSER, San Francisco: Some types of ductless gland disease: exhibit of photographs of patients, with explanatory legends. Cases of colloid goiters, exophthalmic goiter, childhood and adult myxedema, acromegaly, Froehlich's syndrome, dystrophia adiposogenitalis and pituitary obesity.

DR. PAUL D. WHITE, Boston: The electrocardiogram in uremia.

DR. WALTER J. WILSON, Detroit: Exhibit of electrocardiograms.

DR. LUIS P. BERNE, New York: Plastic surgery of the face.

DR. VILRAY P. BLAIR, St. Louis: Reconstruction of the face: exhibit of photographs, drawings and plaster casts showing the original condition, the steps of repair and the final results.

DR. LEONARD W. ELY, San Francisco: Experimental and pathologic work on bones and joints. Exhibit of specimens, slides, photographs, photomicrographs and roentgen films.

DR. R. E. FARR, Minneapolis: Local anesthesia technic: exhibit of drawings illustrating the technic of operating under local anesthesia.

DR. AMÉDÉE GRANGER, New Orleans: New method for roentgenographing the sphenoid and ethmoids: exhibit of roentgenograms of skulls and of heads in which the sphenoid sinus is identified. Examples of diseased sphenoids correctly diagnosed before operation.

DR. J. RAWSON PENNINGTON, Chicago: Gastro-enterology and proctology: exhibit of portraits illustrating history of gastro-enterology and proctology; also charts illustrating the embryology and anatomy of the rectum and anus, and the topography of rectal and anal diseases.

DR. IRVING F. STEIN, Chicago: Roentgenograms in pregnancy: exhibit of a series of films of the fetus and abnormal pelvis; also a few of pneumoperitoneum in pregnancy.

AMERICAN ASSOCIATION OF MEDICAL MILK COMMISSIONS, Chicago: Exhibit of the commissions' work with certified milk—bacterial counts, microscopic slides, cleanliness, sanitation, etc.

AMERICAN LIBRARY ASSOCIATION, Chicago: Hospital libraries: exhibit of photographs, charts, hospital book truck and hospital literature.

AMERICAN SOCIAL HYGIENE ASSOCIATION, New York: Researches in the diagnosis and treatment of syphilis and gonococcal infection: exhibit of pathologic specimens, bacterial cultures and slides, photographs, photomicrographs, statistical tables, etc., illustrated by work done at Johns Hopkins, Harvard, University of Michigan, Washington University and other colleges.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York: Exhibit of work of the association.

AMERICAN WOMEN'S HOSPITALS COMMITTEE OF THE MEDICAL WOMEN'S NATIONAL ASSOCIATION, New York: American Women's Hospital: exhibit of photographs of surgical, medical, quarantine and general public health work in Serbia, Russia, Transcaucasus, Turkey, Greece and Greek Islands.

ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE, New York: Exhibit showing work of the organization.

CONFERENCE FOREIGN MISSIONS BOARDS OF NORTH AMERICA, New York: Medical missions exhibit: pictures, posters, charts, literature, specimens, etc., illustrating medical work in foreign fields.

LEAGUE FOR THE CONSERVATION OF PUBLIC HEALTH—BETTER HEALTH SERVICE, San Francisco: Hospital betterment and

better health: exhibit of modern hospital accounting, hospital record forms, Better Health Magazine, better health publicity service for newspapers, every physician's office a medical health center.

U. S. DEPARTMENT OF INTERIOR, BUREAU OF MINES, Washington, D. C.: Exhibit of typical Bureau of Mines standard first aid dressings on dolls; mine rescue self-contained oxygen breathing apparatus; oxygen inhalators; all-service gas mask; miner's self-rescue mask; carbon monoxid detector; carbon monoxid blood analysis outfit; dust sampling apparatus; photomicrographs of harmful dusts; roentgenograms showing lung conditions due to silicosis; also protographs and other apparatus connected with mine safety and the work of the bureau.

U. S. PUBLIC HEALTH SERVICE, Washington, D. C.: (1) Food poisoning, including botulism. (This work is cooperative with UNIVERSITIES OF STANFORD, CALIFORNIA, CHICAGO and HARVARD.) Exhibit of epidemiology, thermal death point and investigative procedures in outbreaks. (2) Various aspects of tularemia (Francis). (3) Control of biologics, Hygienic Laboratory.

AMERICAN MEDICAL ASSOCIATION

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS: Exhibit of charts and maps showing statistics on medical school enrolment, graduation and licensure; also charts and maps showing results of survey of dispensaries, outpatient departments, group practice and clinics, their growth and distribution.

COUNCIL ON PHARMACY AND CHEMISTRY: Cards and specimens illustrating the effort of the Council in the interests of scientific medicine and rational prescribing.

THE AMERICAN MEDICAL ASSOCIATION CHEMICAL LABORATORY: Cards and specimens bearing on such subjects as the newer synthetics, comparative prices of proprietary and non-proprietary remedies and drug control.

PROPAGANDA DEPARTMENT OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: Exhibit of (1) a series of educational posters; (2) specimens of pamphlets published for the purpose of furnishing information easily and quickly to the public, and (3) the two volumes of "Nostrums and Quackery." There will also be (4) an automatic projection apparatus displaying the stereopticon slides that have been prepared by the department for the use of physicians who may wish to give talks on the nostrum evil.

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION: (1) Exhibit of charts on health problems, and baby welfare, educational pamphlets and *Hygeia*—the new journal of health for the public; (2) Cooperative work of the National Education Association and the Council.

MOTION PICTURE THEATER

In the same building as the Scientific Exhibit, but on the fourth floor, will be the Motion Picture Theater. The theater will open at noon on Monday, and run continuously each day thereafter from 9 a. m. until 5:30 p. m. and until noon on Friday. Each speaker will demonstrate the talk with either lantern slides or motion pictures.

DR. FRED H. ALBEE, New York: The history and use of motion pictures as a teaching medium. Illustrated with motion pictures.

DR. WALTER C. ALVAREZ, San Francisco: Practical points in the diagnosis of gastro-intestinal diseases. Illustrated with lantern slides.

DR. LUIS P. BERNE, New York: Plastic surgery of the face. Illustrated with lantern slides.

DR. HARRY BOWING, Rochester, Minn.: Carcinoma of the breast favorably influenced through the application of radium and roentgen rays. Illustrated with lantern slides.

DR. ISRAEL BRAM, Philadelphia: Toxic goiter: its types and treatment. Illustrated with lantern slides.

DR. WALTER V. BREM, Los Angeles: The problem of pathologic service in a large community center. Illustrated by lantern slides.

DR. W. F. BRAASCH, Rochester, Minn.: Urography as an aid to diagnosis. Illustrated by lantern slides.

DR. ARTHUR J. CRAMP, Director, Propaganda for Reform Department, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: (1) Nostrums and Quackery; (2) Some Forgotten Fakes.

DR. ROLAND S. CRON, Ann Arbor, Mich.: Transuterine and transabdominal inflation of the female pelvis combined with roentgenography. Illustrated with lantern slides.

DR. CARL H. DAVIS, Milwaukee: Normal labor. Illustrated by motion pictures.

DR. D. J. DAVIS, Chicago: Pathology of gangrenous processes in the body. Illustrated by lantern slides.

DR. ERNEST C. DICKSON, San Francisco: The prevention and treatment of botulism. Illustrated by lantern slides.

DR. LEONARD ELY, San Francisco: Chronic arthritis—the two great types. Illustrated by lantern slides.

DR. R. E. FARR, Minneapolis: Major surgery under local anesthesia. Illustrated by animated motion pictures.

DR. OTTO GLOGAU, New York: Researches in the normal and pathologic microscopy of the inner ear. Illustrated by lantern slides.

DR. CHARLES L. GREENE, St. Paul: Factors vital to earlier diagnosis of chronic heart diseases. Illustrated by lantern slides.

DR. PAUL J. HANZLIK, San Francisco: Dangers of intravenous therapy: physical and chemical changes in the blood. Illustrated by lantern slides.

DR. JULIUS H. HESS, Chicago: Care and feeding of premature infants. Illustrated by lantern slides.

DR. W. G. HERMS, Berkeley, Calif.: Medical entomology. Illustrated by motion pictures.

DR. E. L. HUNT, New York: Common forms of nervous diseases. Illustrated by motion pictures.

DR. ALEXANDER LAMBERT, New York: Interpretation of cardiac instrumental records. Illustrated by lantern slides.

DR. DEAN LEWIS, Chicago: Fractures and associated injuries. Illustrated by lantern slides.

DR. H. LISSER and DR. CHARLES E. NIXON, San Francisco: Ductless gland syndromes. Illustrated by lantern slides.

DR. A. H. PEACOCK, Seattle: Changes in the ureter found by routine pyelograms and ureterograms. Illustrated by lantern slides.

DR. CHARLES G. STIVERS, Los Angeles: Development of vocal and other expression in orthopedic and subnormal children. Illustrated by slow motion pictures.

DR. WALTER J. WILSON, Detroit: Angina pectoris. Illustrated by lantern slides.

AMERICAN SOCIAL HYGIENE ASSOCIATION, New York: An efficient arrangement for a small town clinic. Motion picture films.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York: The reward of courage (Rockefeller cancer film).

AMERICAN WOMEN'S HOSPITALS COMMITTEE OF THE MEDICAL WOMEN'S NATIONAL ASSOCIATION, New York: Medical and quarantine work of the American Women's Hospitals in Greece and the Greek Islands. Motion picture film.

BUREAU OF ANIMAL INDUSTRY, U. S. DEPARTMENT OF AGRICULTURE, Washington, D. C.: Exhibit *Ascaris*. Motion picture film.

BUREAU OF MINES, U. S. DEPARTMENT OF THE INTERIOR, Washington, D. C.: Safety Lessons in a metallurgical plant. Motion picture film.

UNITED STATES PUBLIC HEALTH SERVICE, Washington, D. C.: Motion picture films dealing with public health problems and the science of life.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING MEETING

Tuesday, June 26—7:45 p. m.

Music.

Call to Order by the President, GEORGE E. DE SCHWEINITZ, Philadelphia.

Invocation. THE RIGHT REVEREND E. J. HANNA, Archbishop of California.

Address of Welcome. HON. FRIEND RICHARDSON, Governor of California.

Address of Welcome. H. G. BRAINERD, Past President, Medical Society of the State of California.

Address of Welcome. T. C. EDWARDS, President, Medical Society of the State of California.

Announcements. W. E. MUSGRAVE, CHAIRMAN, Local Committee of Arrangements.

Music.

Introduction and Installation of President-Elect RAY LYMAN WILBUR, Stanford University, Calif.

Address. RAY LYMAN WILBUR.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program, nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, as well as lists of committees, programs of the General Meeting, lists of entertainments, map of San Francisco and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN LARKIN HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—NELLIS B. FOSTER, New York.

Vice Chairman—ALFRED FRIEDLANDER, Cincinnati.

Secretary—EUGENE S. KILGORE, San Francisco.

Executive Committee—HENRY S. PLUMMER, Rochester, Minn.; LEWELLYS F. BARKER, Baltimore; NELLIS B. FOSTER, New York.

Wednesday, June 27—9 a. m.

1. Results in the Treatment of Pulmonary Tuberculosis by Means of an Artificial Pneumothorax (Lantern Demonstration). RAY W. MATSON, Portland, Ore. Discussion to be opened by F. M. POTTINGER, Monrovia, Calif., WILLIAM C. VOORSANGER, San Francisco, and ROBERT A. PEERS, Colfax, Calif.
2. The Total Metabolism in Exophthalmic Goiter (Lantern Demonstration). WALTER M. BOOTHBY, Rochester, Minn. Discussion to be opened by ALBERT ROWE, Oakland, Calif., and LOVELL LANGSTROTH and J. MARION READ, San Francisco.
3. Infectious Jaundice. GEORGE BLUMER, New Haven, Conn. Discussion to be opened by ALEXANDER LAMBERT, New York, and PHILIP KING BROWN, San Francisco.
4. Auscultation in the Diagnosis of Abdominal Conditions. JOSEPH SAILER, Philadelphia. Discussion to be opened by W. S. THAYER, Baltimore, and WALTER C. ALVAREZ, San Francisco.
5. Chronic Carbon Monoxid Poisoning. ANFIN EGDAHL, Grand Forks, N. D. Discussion to be opened by JAMES L. WHITNEY, San Francisco.

6. Hydrotherapy: General Principles and Certain Therapeutic Indications. JAMES M. ANDERS, Philadelphia. Discussion to be opened by A. J. SANDERSON, Berkeley, Calif., JOSEPH CATTON, San Francisco, and NEWTON EVANS, Loma Linda, Calif.

Thursday, June 28—9 a. m.

Election of Officers

7. Chairman's Address. NELLIS B. FOSTER, New York.
8. Heart Findings Compared with Heart Lesions—Post-mortem. WILLIAM H. ROBEY, Boston.
9. Some Toxic Effects of Digitalis (Lantern Demonstration). WILLIAM DUNCAN REID, Boston.
10. The Favorable Prognosis of Auricular Fibrillation. T. HOMER COFFEN, Portland, Ore.
11. Cinchona Derivatives in the Treatment of Heart Disorders. F. K. WENCKEBACH, Vienna, Austria. Discussion of Papers 8, 9, 10 and 11 to be opened by EMANUEL LIBMAN, LEWIS A. CONNER and HARLOW BROOKS, New York, and A. W. HEWLETT and WILLIAM J. KERR, San Francisco.
12. A Review of a Group of Professional Blood Donors (Lantern Demonstration). H. Z. GIFFIN, Rochester, Minn. Discussion to be opened by E. H. FALCONER, San Francisco.
13. The Therapeutic Value of Germanium Dioxid in Anemia. LUDWIG KAST, New York.

Friday, June 29—9 a. m.

JOINT MEETING OF SECTIONS ON PRACTICE OF MEDICINE, ON PHARMACOLOGY AND THERAPEUTICS, AND ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON FOODS

14. Basic diets in the treatment of nephritis. W. D. SANSUM, Santa Barbara, Calif.
15. Food Idiosyncracies. W. W. DUKE, Kansas City, Mo.
16. The Complete Diet. A. E. TAYLOR, Stanford University, Calif.
17. A Hitherto Unknown Dietary Factor Essential for Reproduction. KATHARINE SCOTT BISHOP, Berkeley, Calif.
18. Pathologic Effects of Lack of Vitamin A and the Antineuritic Vitamin. E. V. MCCOLLUM, Baltimore. Discussion of Papers 14, 15, 16, 17 and 18 to be opened by GEORGE DOCK, Pasadena, Calif., HERBERT EVANS, Berkeley, Calif., THOMAS ADDIS, San Francisco, and WARREN COLEMAN, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN POLK HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—EUGENE H. POOL, New York.

Vice Chairman—HARRY P. RITCHIE, St. Paul.

Secretary—URBAN MAES, New Orleans.

Executive Committee—GEORGE P. MULLER, Philadelphia; WALLACE I. TERRY, San Francisco; EUGENE H. POOL, New York.

Wednesday, June 27—2 p. m.

1. Congenital Occlusion of the Small Intestine (Lantern Demonstration). R. C. BRYAN, Richmond, Va. Discussion to be opened by A. A. STRAUSS, Chicago, and D. L. DAVIS, Omaha.
2. Intestinal Surgery (Lantern Demonstration). HARRY H. KERR, Washington, D. C. Discussion to be opened by HAROLD BRUNN, San Francisco, and WAYLAND A. MORRISON, Los Angeles.
3. The Ever Present Possibility of Diagnostic Error in Lesions of the Right Iliac Fossa. A. B. COOKE, Los Angeles.
4. The Baffling Symptoms of Chronic Appendicitis: Study of Two Hundred and Twenty-Five Cases. HARRY BLACKFORD, Seattle.

5. Surgery of the Appendix. WILLIAM E. LOWER, Cleveland.
Discussion of Papers 3, 4 and 5 to be opened by A. J. OCHSNER, Chicago, and FRED W. BAILEY, St. Louis.
6. Posttraumatic Bone Tumors with Infection (Lantern Demonstration). S. D. FOSTER, Toledo, Ohio.
7. A Clinical and Pathologic Study of Ten Bone Tumors (Lantern Demonstration).
JOHN J. MORTON and W. C. DUFFY, New Haven, Conn.
Discussion of Papers 6 and 7 to be opened by MELVIN S. HENDERSON, Rochester, Minn., and EDWIN I. BARTLETT, San Francisco.

Thursday, June 28—2 p. m.

8. Chairman's Address. EUGENE H. POOL, New York.
9. The Treatment of the Velum Palati in Operations for the Repair of Congenital Fissure of the Palate (Lantern Demonstration).
JAMES E. THOMPSON, Galveston, Texas.
Discussion to be opened by G. V. I. BROWN, Milwaukee, and HARRY P. RITCHIE, St. Paul.
10. The Significance of a Hemorrhagic Discharge from the Nipple (Lantern Demonstration).
EDWIN M. MILLER and DEAN LEWIS, Chicago.
11. Recurrences in Cancer of the Breast.
JOHN E. SUMMERS, Omaha.
12. The Diagnosis of Early Breast Tumors Based on the Clinical History and Pathology at the Exploratory Incision (Lantern Demonstration).
JOSEPH C. BLOODGOOD, Baltimore.
Discussion of Papers 10, 11 and 12 to be opened by ALSON R. KILGORE, San Francisco; MALCOLM L. HARRIS, Chicago, and L. P. MCCALLA, Boise, Idaho.
13. The Condition of the Common Duct After Cholecystectomy (Lantern Demonstration).
E. S. JUDD, Rochester, Minn.
14. The Diagnosis and Management of Stones in the Common Duct: Review of Thirty Cases.
WILLIAM D. HAGGARD, Nashville, Tenn.
Discussion of Papers 13 and 14 to be opened by GATEWOOD, Chicago, and IRVIN ABELL, Louisville, Ky.

Friday, June 29—2 p. m.

Election of Officers

15. Causative Factors and Treatment of Chronic Empyema.
CARL A. HEDBLUM, Rochester, Minn.
16. The Treatment of Bronchial Fistulas: A Report of Thirty-Five Cases (Lantern Demonstration).
W. L. KELLER, Washington, D. C.
17. A Safer Substitute for Lobectomy in Cases of Chronic Suppuration of the Lung (Lantern Demonstration).
EVARTS A. GRAHAM, St. Louis.
Discussion of Papers 15, 16 and 17 to be opened by LEO ELOESSER, San Francisco, and GEORGE J. HEUER, Cincinnati.

JOINT MEETING OF THE SECTIONS ON SURGERY,
GENERAL AND ABDOMINAL, AND ON NERVOUS
AND MENTAL DISEASES

SYMPOSIUM ON NEUROSURGERY

18. Fractures of the Skull. ERNEST SACHS, St. Louis.
19. Brain Abscess, Clinical and Operative Data (Lantern Demonstration). CHARLES BAGLEY, JR., Baltimore.
20. Recent Advances in the Diagnosis of Compression of the Spinal Cord and Cauda Equina (Lantern Demonstration).
WILLIAM J. MIXTER, Boston.
Discussion of Papers 18, 19 and 20 to be opened by HOWARD NAFFZIGER, San Francisco; GILBERT HORRAX, Boston, and LAWRENCE SELLING, Portland, Ore.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN POLK HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—HARRY S. CROSSEN, St. Louis.
Secretary—CARL H. DAVIS, Milwaukee.
Executive Committee—JOHN O. POLAK, Brooklyn; SIDNEY A. CHALFANT, Pittsburgh; HARRY S. CROSSEN, St. Louis.

Wednesday, June 27—9 a. m.

1. Chairman's Address: Abdominal Surgery Without Detached Pads or Sponges (Lantern Demonstration).
HARRY S. CROSSEN, St. Louis.
2. The Therapeutic Value of Transuterine Inflation (Lantern Demonstration).
REUBEN PETERSON and ROLAND S. CRON, Ann Arbor, Mich.
Discussion to be opened by GEORGE GRAY WARD, JR., New York.
3. Pregnancy After Interposition of the Uterus.
IRVING F. STEIN, Chicago.
4. Retrodisplacements of the Uterus Following Childbirth: A Study of the Development of Its Symptoms (Lantern Demonstration).
FRANK W. LYNCH, San Francisco.
5. Local Anesthesia in the Upper Abdomen: The Factors upon Which Success Depends (Lantern Demonstration).
R. E. FARR, Minneapolis.
6. The Value of Sacral Nerve Block Anesthesia in Obstetrics (Lantern Demonstration).
B. E. BONAR, Salt Lake City, and WILLIAM R. MEEKER, Rochester, Minn.
7. Scopolamin-Morphin Seminarcosis.
OTTO H. SCHWARZ and O. S. KREBS, St. Louis.
8. Obstetric Analgesia and Anesthesia: A Consideration of Nitrous Oxid-Oxygen and Various Combined Methods (Lantern Demonstration).
WILLIAM C. DANFORTH, Evanston, Ill., and C. HENRY DAVIS, Milwaukee.
Discussion of Papers 5, 6, 7 and 8 to be opened by HENRY A. STEPHENSON and W. F. WAKEFIELD, San Francisco.

Thursday, June 28—9 a. m.

9. Ocular Disturbances in Pregnancy and During the Puerperium.
NELSON M. BLACK, Milwaukee.
Discussion to be opened by WALTER R. PARKER, Detroit.
10. A Contribution to the Study of Pyelitis in Pregnancy (Lantern Demonstration).
FREDERICK HOWARD FALLS, Iowa City.
11. The Treatment of Pyelitis of Pregnancy.
HERMAN L. KRETSCHMER, Chicago.
Discussion of Papers 10 and 11 to be opened by LUDWIG A. EMGE, San Francisco.
12. Brain Injuries in the New-Born.
WILLIAM SHARPE, New York.
13. Care of the New-Born in the First Weeks of Life.
E. J. HUENEKENS, Minneapolis.
Discussion of Papers 12 and 13 to be opened by HENRY HELMHOLZ, Rochester, Minn.
14. The Midwife Problem.
ANNA E. RUDE, Washington, D. C.
15. Results Gained in Maternity Cases That Have Received Antenatal Care (Lantern Demonstration).
FRED L. ADAIR and C. O. MALAND, Minneapolis.
16. How the General Practitioner Can Do Better Obstetrics: Practical and Clinical Hints.
JOHN O. POLAK, Brooklyn.
Discussion of Papers 14, 15 and 16 to be opened by HUGH A. COWING, Muncie, Ind.; G. C. H. MCPHEETERS, Fresno, Calif., and W. S. LEATHERS, University, Miss.

Friday, June 29—9 a. m.

Election of Officers

17. Incomplete Inversion of the Uterus.
RALPH W. FRENCH, Fall River, Mass.
Discussion to be opened by J. MORRIS SLEMONS, Los Angeles.
18. Electrothermocautery Treatment of Leukorrhoea Due to Endocervicitis.
LINDSAY PETERS, Alameda, Calif.
Discussion to be opened by A. B. SPALDING, San Francisco.
19. Nephrotresis in Recurrent Bilateral Pyelolithiasis in Horse Shoe Kidney (Lantern Demonstration).
KERWIN KINARD, Kansas City, Mo.
20. Right Paraduodenal Hernia.
GUNTHER W. NAGEL, Rochester, Minn.
21. The Relation of Right Sided Abdominal Pain to Right Sided Pathology (Lantern Demonstration).
R. C. COFFEY, Portland, Ore.

22. The Choice of Operations for Gastric and Duodenal Ulcers, with Special Reference to Pyloroplasty (Lantern Demonstration).
J. SHELTON HORSLEY, Richmond, Va.
23. Achlorhydria in Gallbladder Disease (Lantern Demonstration).
GATEWOOD, Chicago.
Discussion of Papers 20, 21, 22 and 23 to be opened by Frederick A. Speik, Los Angeles; E. STARR JUDD, Rochester, Minn., and DEAN LEWIS, Chicago.

SECTION ON OPHTHALMOLOGY

MEETS IN MEMORIAL HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—JOHN O. McREYNOLDS, Dallas, Texas.
Vice Chairman—JOHN GREEN, JR., St. Louis.
Secretary—GEORGE S. DERBY, Boston.
Executive Committee—JAMES BORDLEY, JR., Baltimore;
NELSON MILES BLACK, Milwaukee; JOHN O. McREYNOLDS, Dallas, Texas.

Fellows are reminded that the meetings of the section will be called to order promptly on the hour scheduled for opening. The formal reading of the papers will be omitted, as reprints of the papers on the program have already been delivered to Fellows.

Each essayist will be given ten minutes in which to summarize the points in his paper and introduce the discussion (except in the case of five minute papers), and five minutes in which to close the discussion.

The Fellows appointed to open the discussion of any paper will be allowed ten minutes. Subsequent speakers will be limited to five minutes.

The papers and all discussions will be printed and bound, forming the Transactions of the Section on Ophthalmology for 1923. Copies of the Transactions may be obtained at \$1.50 each, if subscriptions are sent to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, Chicago, by June 1, as only enough copies are printed to cover subscriptions received to the time of going to press.

Fellows are requested to register in the section registration book at the entrance. The full name and complete post-office address should be written plainly.

Wednesday, June 27—2 p. m.

1. Chairman's Address.
JOHN O. McREYNOLDS, Dallas, Texas.
2. Ophthalmia Myiasis Externa, Due to Larvae of Oestrus Ovis (Lantern Demonstration).
H. H. STARK, El Paso, Texas.
3. Filaria Loa in Subconjunctival Tissues.
J. W. KIMBERLIN, Kansas City, Mo.
Discussion to be opened by EDWARD F. GLASER, San Francisco.
4. Thrombosis of Central Retinal Vein and Its Branches.
ALLEN GREENWOOD, Boston.
Discussion to be opened by WILLIAM ZENTMAYER, Philadelphia.
5. Proposed Classification of Iritis and Iridocyclitis.
LEE MASTEN FRANCIS, Buffalo.
Discussion to be opened by CASSIUS D. WESCOTT, Chicago.
6. Iritis (Lantern Demonstration).
E. V. L. BROWN and ERNEST E. IRONS, Chicago.
Discussion to be opened by C. A. Veasey, Spokane, Wash.
7. Lens as Seen with Gullstrand Slit Lamp and Corneal Microscope.
ARTHUR J. BEDELL, Albany, N. Y.
Discussion to be opened by A. C. MACLEISH, Los Angeles.
8. Ocular Phenomena Produced by Intracranial Lesions Involving Optic Tracts Near Chiasm (Lantern Demonstration).
WALTER I. LILLIE, Rochester, Minn.
Discussion to be opened by GILBERT HORRAX, Boston.

Thursday, June 28—2 p. m.

DEMONSTRATION SESSION: EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

9. "All-or-Nothing" Principle of Nerve Conduction and Muscle Contraction in Its Relation to the Eye.
WALTER B. LANCASTER, Boston.
Discussion to be opened by EDWARD JACKSON, Denver.

10. Control of Pain in Functional Hyperesthesia of Ciliary Muscle (Painful Accommodation) Through Nasal (Sphenopalatine, Meckel's) Ganglion.
JOHN GREEN, JR., and GREENFIELD SLUDER, St. Louis.
Discussion to be opened by LLOYD MILLS, Los Angeles.
11. Technic of Iridectomy Done Under a Conjunctival Flap for Glaucoma Using a Broad Keratome (Lantern Demonstration).
ROBERT G. REESE, New York.
Discussion to be opened by A. L. MACLEISH, Los Angeles.
12. Iridotaxis.
WILLIAM H. WILDER, Chicago.
Discussion to be opened by JOSEPH L. MCCOOL, Portland, Ore.
13. Posterior Sclerotomy with Permanent Drain, for Retinal Detachment.
MEYER WIENER, St. Louis.
Discussion to be opened by VARD H. HULEN, San Francisco.
14. Treatment of Methyl Alcohol Blindness, with Especial Reference to Use of Arsphenamin and Neo-Arsphenamin.
HERBERT MOULTON, Fort Smith, Ark.
Discussion to be opened by T. B. HOLLOWAY, Philadelphia.

Friday, June 29—2 p. m.**Executive Session****Election of Officers**

15. Ossification in a Chalazion.
WALTER SCOTT FRANKLIN and FREDERICK C. CORDES, San Francisco.
Discussion to be opened by WILLIAM C. FINNOFF, Denver.
16. Active Agent in Milk Injections (Lantern Demonstration).
OTTO BARKAN, San Francisco.
Discussion to be opened by FREDERICK KIEHLE, Portland, Ore.
17. Antidiphtheric Serum in Ocular Infection: A Clinical Experimental Study of Ninety-One Cases (Lantern Demonstration).
BEN WITT KEY, New York.
Discussion to be Opened by WILSON JOHNSTON, Portland, Ore.
18. Orbital Changes Produced by Radium in Cancer of the Upper Jaw.
ARNOLD KNAPP, New York.
Discussion to be opened by EDWARD C. SEWALL, San Francisco.
19. Cataract Extractions Performed by Prof. Josef Meller of Vienna, 1919-1921: Review of Two Hundred and Forty-Nine Operations.
HANS BARKAN, San Francisco.
Discussion to be opened by WILLIAM H. WILMER, Washington, D. C.
20. Modern Aids to Cataract Extraction.
GEORGE S. DERBY, Boston.
Discussion to be opened by CHARLES A. MAGHY, San Francisco.
21. Premature Presbyopia.
WILLIAM F. BONNER, Wilmington, Del.
Discussion to be opened by W. O. LAMOTTE, Wilmington, Del.

SECTION ON LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

MEETS IN MEMORIAL HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—WILLIAM B. CHAMBERLIN, Cleveland.
Vice Chairman—J. WILKINSON JERVEY, Greenville, S. C.
Secretary—SAMUEL IGLAUER, Cincinnati.
Executive Committee—ROSS H. SKILLERN, Philadelphia; J. A. STUCKY, Lexington, Ky.; WILLIAM B. CHAMBERLIN, Cleveland.

Wednesday, June 27—9 a. m.

1. Chairman's Address. WILLIAM B. CHAMBERLIN, Cleveland.
2. Some Observations on Causes and Prevention of Otologic Conditions Following Swimming and Diving.
H. M. TAYLOR, Jacksonville, Fla.
Discussion to be opened by HILL HASTINGS, Los Angeles.

3. Systemic Manifestations of Sinus Disease (Lantern Demonstration). MILLARD F. ARBUCKLE, St. Louis.
Discussion to be opened by ROBERT CALDWELL, Little Rock, Ark.
4. Clinical Observations of Adenoids Removed with a Direct Vision Adenotome (Lantern Demonstration). I. D. KELLEY, St. Louis.
Discussion to be opened by FREDERICK W. LAMB, Cincinnati.
5. Roentgen-Ray Technic for Tonsil Treatment. M. WILLIAM CLIFT, Flint, Mich.
Discussion to be opened by HOWARD E. RUGGLES, San Francisco.
6. Removal of Tonsils, with Especial Reference to Methods Other Than Complete Enucleation. BURT E. SHURLEY, Detroit.
Discussion to be opened by GEORGE H. KRESS, Los Angeles.
7. Children's Upper Respiratory Abscesses Descending Into the Neck and Mediastinum. OTTO GLOGAU, New York.
Discussion to be opened by J. D. CONDIT, Pasadena, Calif.

Thursday, June 28—9 a. m.

8. The Clinical Picture of Streptococcic Osteomyelitis of the Temporal Bone. HARRY BOYD-SNEE, South Bend, Ind.
Discussion to be opened by AUSTIN A. HAYDEN, Chicago.
9. Hypodermic General Anesthesia. EUGENE R. LEWIS, Los Angeles.
Discussion to be opened by NEIL C. TREW, Los Angeles.
10. The Sphenoid and Ethmoid Positively Identified in Roentgenograms Made with the Head Held in the Author's Position (Lantern Demonstration). AMÉDÉE GRANGER, New Orleans.
Discussion to be opened by M. P. BURNHAM, San Francisco.
11. Congenital Obstruction of the Larynx and Pharynx (Lantern Demonstration). GORDON B. NEW, Rochester, Minn.
Discussion to be opened by THOMAS E. CARMODY, Denver.
12. Mastoiditis Without Apparent Middle Ear Involvement (Lantern Demonstration). BERT E. HEMPSTEAD, Rochester Minn.
Discussion to be opened by WILLIAM ELLERY BRIGGS, Sacramento, Calif.
13. Some Comments on Diagnosis and Treatment of Septic Sinus Thrombosis. WENDELL C. PHILLIPS, New York.
Discussion to be opened by RALPH A. FENTON, Portland, Ore.

Friday June 29—9 a. m.

Election of Officers

Exhibition of New Instruments and Appliances

Report of Committees

14. Reeducation of an Aphasic (Moving Picture Demonstration). CHARLES G. STIVERS, Los Angeles.
Discussion to be opened by ELMER E. KENYON, Chicago.
15. Surgery of the Cerebrospinal Circulatory System in Suppurative Intracranial Disease (Lantern Demonstration). WELLS P. EAGLETON, Newark, N. J.
Discussion to be opened by GEORGE S. WELLS, Santa Barbara, Calif.
16. The Correction of External Nasal Deformities (Moving Picture and Lantern Demonstration). LUIS P. BERNE, New York.
Discussion to be opened by PHILLIP C. MEANS, Santa Barbara, Calif.
17. Corrective Rhinoplasty: Some Reasons for Faulty Results (Lantern Demonstration). LEE COHEN, Baltimore.
Discussion to be opened by GRANT SELFRIDGE, San Francisco.
18. Neurotologic Studies in Epilepsy: Preliminary Report. ISAAC H. JONES, Los Angeles.
Discussion to be opened by HUGO A. KIEFER, Los Angeles.

SECTION ON DISEASES OF CHILDREN

MEETS IN LARKIN HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—BORDEN S. VEEDER, St. Louis.
Vice Chairman—JOHN A. FOOTE, Washington, D. C.
Secretary—EDGAR J. HUENEKENS, Minneapolis.
Executive Committee—FRANK C. NEFF, Kansas City, Mo.;
EMANUEL C. FLEISCHNER, San Francisco; BORDEN S. VEEDER, St. Louis.

Wednesday, June 27—2 p. m.

1. Chairman's Address. BORDEN S. VEEDER, St. Louis.
2. Active Immunization Against Diphtheria in Private Practice (Lantern Demonstration). FRANK C. NEFF, Kansas City, Mo.
Discussion to be opened by E. C. FLEISCHNER, San Francisco, and E. J. HUENEKENS, Minneapolis.
3. The Relation of Infections of Upper Respiratory Tract to Pyelitis (Lantern Demonstration). H. F. HELMHOLZ, Rochester, Minn.
Discussion to be opened by LANGLEY PORTER, San Francisco.
4. Epidemiology of Colds in Children (Lantern Demonstration). WALTER FRITZ WINHOLT and EDWIN OAKES JORDAN, Chicago.
Discussion to be opened by OLIN W. ROWE, Duluth, Minn.
5. Rôle of Parental Nutrition in Causation of Rickets. A. H. BYFIELD and A. L. DANIELS, Iowa City.
Discussion to be opened by WILLIAM PALMER LUCAS, San Francisco.
6. Some Observations from Nature. M. L. TURNER, Des Moines, Iowa.
Discussion to be opened by HENRY DIETRICH, Los Angeles.

Thursday, June 28—2 p. m.

JOINT MEETING OF SECTIONS ON DISEASES OF CHILDREN AND ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

SYMPOSIUM ON PREVENTIVE PEDIATRICS

Neonatal Mortality: Its Causes and Prevention

7. Syphilis and Other Maternal Infections (Lantern Demonstration). ARTHUR BAKER SPALDING, San Francisco.
8. Birth Injuries, Congenital Defects and Hemorrhagic Disease of the New-Born (Lantern Demonstration). JOHN A. FOOTE, Washington, D. C.
9. Relation of Infant Feeding to Early Infant Mortality. F. P. GENGENBACH, Denver.

Relation of Private Physician to Health Centers, Etc., in Public Health in General

10. Place of Medicine in Public Health. WALTER M. DICKIE, Sacramento, Calif.
Discussion to be opened by W. S. RANKIN, Raleigh, N. C., and HAVEN EMERSON, New York.
11. Prevention and Control of Tuberculosis as It Concerns the Medical Profession. HENRY BOSWELL, Sanatorium, Miss.
Discussion to be opened by FRANCES M. POTTENGER, Los Angeles, and CHARLES L. MINOR, Asheville, N. C.
12. Growing Importance of Preventive Medicine in General Practice. JOHN M. DOBSON, Chicago.
Discussion to be opened by VICTOR C. VAUGHAN, Chicago, and OSCAR DOWLING, New Orleans.

Friday, June 29—2 p. m.

Election of Officers

SYMPOSIUM ON THE MENTAL ASPECT OF CHILD HEALTH

13. The Psychology of the Normal Child. OLGA S. BRIDGMAN, San Francisco.
14. The Neuropathic Child. ISAAC A. ABT, Chicago.
15. The Subnormal and Psychopathic Child as Exemplified in Special Clinic. LOUIS A. LURIE, Cincinnati.
Discussion of Papers 13, 14 and 15 to be opened by WILLIAM PALMER LUCAS, San Francisco.

16. Measles: Data Gathered in a Period of Forty Years.
H. M. McCLANAHAN, Omaha.
17. Study of the Physical Signs of Hilum Gland Enlargement in Children.
EDWARD DYER ANDERSON, Minneapolis.
Discussion to be opened by H. F. HELMHOLZ, Rochester, Minn.
18. Foreign Bodies in the Bronchi (Lantern Demonstration).
HENRY DIETRICH and HUGH K. BERKLEY, Los Angeles.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN WASHINGTON HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—CARY EGGLESTON, New York.
Vice Chairman—PAUL J. HANZLIK, San Francisco.
Secretary—PAUL D. WHITE, Boston.
Executive Committee—LEONARD G. ROWNTREE, Rochester, Minn.; CARL VOEGTLIN, Washington, D. C.; CARY EGGLESTON, New York.

Wednesday, June 27—2 p. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON DERMATOLOGY AND SYPHILOLOGY

SYMPOSIUM ON SYPHILIS

1. Effect of Treatment on Bone Lesions of Congenital Syphilis.
J. H. MITCHELL and G. F. SUTHERLAND, Chicago.
2. The Pharmacology of Mercury.
R. V. A. LEE, San Francisco.
3. The Treatment of Early Syphilis.
H. G. IRVINE, Minneapolis.
4. The Treatment of Visceral Syphilis.
ALBERT KEIDEL, Baltimore.
5. The Treatment of Neurosyphilis.
H. C. SOLOMON, Boston.
Discussion of Papers 1, 2, 3, 4 and 5 to be opened by HARRY ALDERSON and E. D. CHIPMAN, San Francisco, and E. F. RISTINE, Seattle.

Thursday, June 28—2 p. m.

Election of Officers

6. Chairman's Address: The Absorption and Elimination of Drugs by Man.
CARY EGGLESTON, New York.
7. The Treatment of Mercuric Chlorid Poisoning.
H. B. WEISS, Cincinnati.
8. The Function of Occupational Therapy as a Remedial Agent in Medical Treatment.
E. G. BRACKETT and JOHN D. ADAMS, Boston.
9. The Treatment of Diabetes with Insulin (Lantern Demonstration).
FREDERICK M. ALLEN, Morristown, N. J.
10. The Treatment of the Precomatose Case of Diabetes.
R. T. WOODYATT, Chicago.
Discussion on Papers 9 and 10 to be opened by W. D. SANSUM, Santa Barbara, Calif., and F. G. BRIGHAM, Boston.

Friday, June 29—9 a. m.

JOINT MEETING OF SECTIONS ON PRACTICE OF MEDICINE, ON PHARMACOLOGY AND THERAPEUTICS, AND ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON FOODS

11. Basic Diets in the Treatment of Nephritis.
W. D. SANSUM, Santa Barbara, Calif.
12. Food Idiosyncrasies.
W. W. DUKE, Kansas City, Mo.
13. The Complete Diet.
A. E. TAYLOR, Stanford University, Calif.
14. A Hitherto Unknown Dietary Factor Essential for Reproduction.
KATHARINE SCOTT BISHOP, Berkeley, Calif.
15. Pathologic Effects of Lack of Vitamin A and the Anti-neuritic Vitamin.
E. V. MCCOLLUM, Baltimore.
Discussion of Papers 11, 12, 13, 14 and 15 to be opened by GEORGE DOCK, Pasadena, Calif.; HERBERT EVANS, Berkeley, Calif.; THOMAS ADDIS, San Francisco, and WARREN COLEMAN, New York.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN WASHINGTON HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—ARNO BENEDICT LUCKHARDT, Chicago.
Vice Chairman—KENNETH M. LYNCH, Dallas, Texas.
Secretary—JOSIAH J. MOORE, Chicago.
Executive Committee—EDWIN R. LECOUNT, Chicago; JOHN A. KOLMER, Philadelphia; ARNO BENEDICT LUCKHARDT, Chicago.

Wednesday, June 27—9 a. m.

1. Chairman's Address.
ARNO B. LUCKHARDT, Chicago.
2. Fungus Diseases of Man in the State of Nebraska (Lantern Demonstration).
MICHAEL G. WOHL, Omaha.
3. Actinomycosis of the Abdominal Wall.
HENRY ALBERT, Reno, Nev., and J. W. HARRISON, Guthrie Center, Nev.
4. The Distribution of Actinomycosis in the United States (Lantern Demonstration).
A. H. SANFORD, Rochester, Minn.
5. A Comparative Study of the Actinomycosis-Like Granules in the Tonsils of Man, Hog and Cow (Lantern Demonstration).
DAVID J. DAVIS, Chicago.
6. The Occurrence of Blastocystis in Intestinal Inflammation (Lantern Demonstration).
KENNETH M. LYNCH, Dallas, Texas.
7. The Kolmer Technic in the Wassermann Test.
F. W. HARTMAN, Detroit.
8. The Euscope as an Aid to Microscopy.
WILLIAM G. EXTON, New York.

Thursday, June 28—9 a. m.

Election of Officers

9. Studies on Aneurysm of the Aorta (Lantern Demonstration).
BALDWIN LUCKE and M. H. REA, Philadelphia.
10. Periarthritis Acuta Nodosa (Lantern Demonstration).
WILLIAM OPHULS, San Francisco.
11. Agglutination Studies After Triple Typhoid Vaccination.
WALTER V. BREM, Los Angeles.
12. Endothelioma of the Pleura—the Pathologic Significance of the Term (Lantern Demonstration).
H. E. ROBERTSON, Rochester, Minn.
13. Studies on the Etiology of Cancer (Lantern Demonstration).
MONTROSE T. BURROWS, St. Louis.
14. The Cytologic Diagnosis of Neoplasms (Lantern Demonstration).
WILLIAM CARPENTER MACCARTY, Rochester, Minn.
15. The Effect of Passive Congestion of the Liver in Tubercle Formation (Lantern Demonstration).
WILLIAM F. PETERSEN and S. A. LEVINSON, Chicago.
16. Some Chemical Blood Changes in Chronic Alcoholism.
F. R. NUZUM and G. D. MAUER, Santa Barbara, Calif.

Friday, June 29—9 a. m.

JOINT MEETING OF SECTIONS ON PRACTICE OF MEDICINE, ON PHARMACOLOGY AND THERAPEUTICS, AND ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON FOODS

17. Basic Diets in the Treatment of Nephritis.
W. D. SANSUM, Santa Barbara, Calif.
18. Food Idiosyncrasies.
W. W. DUKE, Kansas City, Mo.
19. The Complete Diet.
A. E. TAYLOR, Stanford University, Calif.
20. A Hitherto Unknown Dietary Factor Essential for Reproduction.
KATHARINE SCOTT BISHOP, Berkeley, Calif.
21. Pathologic Effects of Lack of Vitamin A and the Anti-neuritic Vitamin.
E. V. MCCOLLUM, Baltimore.
Discussion of Papers 17, 18, 19, 20 and 21 to be opened by GEORGE DOCK, Pasadena, Calif.; HERBERT EVANS, Berkeley, Calif.; THOMAS ADDIS, San Francisco, and WARREN COLEMAN, New York.

SECTION ON STOMATOLOGY

MEETS IN MCKINLEY HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—ROBERT H. IVY, Philadelphia.
Vice Chairman—STEWART D. RUGGLES, Portsmouth, Ohio.
Secretary—G. V. I. BROWN, Milwaukee.
Executive Committee—HENRY S. DUNNING, New York; HERBERT A. POTTS, Chicago; ROBERT H. IVY, Philadelphia.

Wednesday, June 27—9 a. m.

1. Tuberculous Lesions of the Oral Cavity (Lantern Demonstration).
ROBERT H. IVY and JOSEPH L. APPLETON, Philadelphia.
2. Osteitis Fibrosa (Von Recklinghausen's Disease).
HERBERT A. POTTS, Chicago.
3. Results Following Removal of Dental Infection in Chronic Gastro-Intestinal Disorders (Lantern Demonstration).
G. REESE SATTERLEE, New York.
4. A Consideration of Impacted Teeth.
E. F. THOLEN, Los Angeles.
5. Adjustment of the Nostril in Congenital Lip Cleft.
VILRAY P. BLAIR, St. Louis.

Thursday, June 28—9 a. m.

6. Changes in Tooth Structures Resulting from Deficient Diet.
JOHN ALBERT MARSHALL, San Francisco.
7. Vitamin Content of the Diet at San Quentin Prison and the Effect of Such Diet on the Health of the Men Over a Period of Fifteen Years.
L. L. STANLEY, San Quentin, Calif.
8. Observations of the Oral Manifestations Associated with General Systemic Disturbances.
J. S. EVANS, Madison, Wis.
9. The Contribution of Oral Lesions to the Cause of Cancer (Lantern Demonstration).
JOSEPH A. PETTIT, Portland, Ore.
10. The Treatment of Cancer with Particular Reference to the Region of the Maxillary Sinus.
ALBERT J. OCHSNER, Chicago.

Friday, June 29—9 a. m.

Election of Officers

11. The Teeth of the Cyclostomata (Lampreys) and the Teeth and Spines of the Elasmobranchii (Dog-fish, True Sharks and Rays) (Lantern Demonstration).
EUGENE S. TALBOT, Chicago.
12. Combating Infectious Diseases Arising in the Oral Cavity and Their Sequelae, with Special Reference to the Dental Problem.
GUY S. MILLBERRY, San Francisco.
13. Oral Prophylaxis and Preventive Dentistry: What the Physician Can Do to Help.
PERCY B. WRIGHT, Pasadena, Calif.
14. Further Studies of the Histopathology of Pyorrhea.
F. V. SIMONTON, San Francisco.
15. Organisms Associated with Pyorrhetic Conditions.
IVAN C. HALL, San Francisco.
16. The Effect of Instrumental Treatment of Pyorrhea on the Quantity of Micro-Organisms in the Mouth.
MR. BATCHELDER, San Francisco.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN VETERAN FIREMEN'S HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—WALTER TIMME, New York.
Vice Chairman—MALCOLM A. BLISS, St. Louis.
Secretary—JAMES B. AYER, Boston.
Executive Committee—ARTHUR S. HAMILTON, Minneapolis; PETER BASSOE, Chicago; WALTER TIMME, New York.

Wednesday, June 27—2 p. m.

1. Chairman's Address. WALTER TIMME, New York.
2. Modern Conceptions of the Origin and Seat of the Epileptic Phenomena. CECIL E. REYNOLDS, Los Angeles.
3. Leptomeningitis and Temporary Dissociation of Personality: Report of Case.
JOSEPHINE A. JACKSON, Pasadena, Calif.

4. Rôle of Trauma in the Etiology of Organic and Functional Nervous Diseases.
S. A. KINNIER WILSON, London, England.
5. Demonstration Psychiatric Clinics for Juvenile Courts and Public Schools Conducted by the National Committee for Mental Hygiene.
V. V. ANDERSON, New York.
6. Constitutional Psychopathic Individuals, and Some of the Problems They Present.
THOMAS J. ORBISON, Los Angeles.
7. Endocrine Aspect of Certain Neuropsychiatric Cases.
CHARLES E. NIXON and HANS LISSER, San Francisco.
8. Rôle of Physical Therapy in Nervous and Mental Diseases.
J. MADISON TAYLOR, Philadelphia.

Thursday, June 28—2 p. m.

9. Puncture of the Cisterna Magna: Discussion of Its Value After Three Years of Clinical Use (Lantern Demonstration).
JAMES B. AYER, Boston.
10. Value of Labyrinthine Tests in Cerebellar Diagnosis.
LAWRENCE SELLING, Portland, Ore.
11. Abnormalities of Visual Fields Associated with Organic Brain Lesions (Lantern Demonstration).
SAMUEL D. INGHAM and T. C. LYSTER, Los Angeles.
12. Facial Paralysis Associated with Recurring Edema of the Face (Lantern Demonstration).
WALTER D. SHILDEN, Rochester, Minn.
13. Concerning Certain Peculiarities in the Development of Neurosyphilitic Types of Congenital Syphilis.
EDWIN G. ZABRISKIE, New York.
14. Epidemic (Lethargic) Encephalitis: Studies of the Recent New York Epidemic.
EDWARD LIVINGSTON HUNT, New York.
15. Treatment of Encephalitis. ROSS MOORE, Los Angeles.
16. The Causation of Spasticity.
I. LEON MEYERS, Los Angeles.
17. Arachnoiditis Simulating Brain Tumor, Its Surgical Treatment and End-Results.
GILBERT HORRAX, Boston.

Friday, June 29—2 p. m.

Election of Officers

18. A Clinical Entity Usually Included in the Trigeminal Neuralgias.
BYRON STOOKEY, New York.
 19. Anatomic Considerations in Ventriculography.
HOWARD C. NAFFZIGER, San Francisco.
- JOINT MEETING OF SECTIONS ON SURGERY, GENERAL AND ABDOMINAL, AND ON NERVOUS AND MENTAL DISEASES
- SYMPOSIUM ON NEUROSURGERY
20. Fractures of the Skull. ERNEST SACHS, St. Louis.
 21. Brain Abscess: Clinical and Operative Data (Lantern Demonstration). CHARLES BAGLEY, JR., Baltimore.
 22. Recent Advances in the Diagnosis of Compression of the Spinal Cord (Lantern Demonstration).
WILLIAM J. MIXTER, Boston.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

MEETS IN LINCOLN HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—MARCUS HAASE, Memphis, Tenn.
Vice Chairman—FRANKLIN W. CREGOR, Indianapolis.
Secretary—HAROLD N. COLE, Cleveland.
Executive Committee—WALTER J. HIGHMAN, New York; ERNEST DWIGHT CHIPMAN, San Francisco; MARCUS HAASE, Memphis, Tenn.

Wednesday, June 27—2 p. m.

- JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON DERMATOLOGY AND SYPHILOLOGY
1. Chairman's Address. MARCUS HAASE, Memphis, Tenn.
- SYMPOSIUM ON SYPHILIS
2. Effect of Treatment on Bone Lesions of Congenital Syphilis (Lantern Demonstration).
JAMES HERBERT MITCHELL and G. F. SUTHERLAND, Chicago.

3. Pharmacology of Mercury. R. V. A. LEE, San Francisco.
4. Treatment of Early Syphilis. H. G. IRVINE, Minneapolis.
5. Treatment of Visceral Syphilis (Lantern Demonstration). ALBERT KEIDEL, Baltimore.
6. Treatment of Neurosyphilis. H. C. SOLOMON, Boston.
Discussion of Papers 2, 3, 4, 5 and 6 to be opened by HARRY E. ALDERSON and E. D. CHIPMAN, San Francisco, and E. F. RISTINE, Seattle.

Thursday, June 28—2 p. m.

7. Xanthoma Tuberosum (Lantern Demonstration). FRED D. WEIDMAN and WALTER J. FREEMAN, Philadelphia.
8. Precision in Dermatologic Roentgenotherapy: The Value of Recent Refinements in Apparatus (Lantern Demonstration). LYLE B. KINGERY, Portland, Ore.
9. Roentgen Ray Versus Vaccines in the Treatment of Acne. HOWARD FOX, New York.
10. Chromogenic Indicators in Dermatology (Lantern Demonstration). HERMAN SHARLIT and WALTER J. HIGHMAN, New York.
11. Erythema Dose of Radium: An Experimental Study (Lantern Demonstration). W. H. GUY and F. M. JACOB, Pittsburgh.
Discussion of Papers 8, 9, 10 and 11 to be opened by WILLIAM ALLEN PUSEY, Chicago, and I. C. SUTTON, Anaheim, Calif.
12. Hyperglycemia as an Etiologic Factor in Certain Dermatoses (Lantern Demonstration). I. L. MCGLOSSON, San Antonio, Texas.
Discussion to be opened by DOUGLAS W. MONTGOMERY, San Francisco, and W. E. NESBIT, San Antonio, Texas.

Friday, June 29—2 p. m.

Election of Officers

13. Surgical and Roentgen-Ray Results in Facial Deformities: Particularly the Effect of Roentgen Ray in Operative Scars in Rhinophyma (Lantern Demonstration). JAMES F. GRATTAN, New York.
14. Match Dermatitis (Lantern Demonstration). O. H. FOERSTER, Milwaukee.
15. Roentgen-Ray Therapy Twenty Years Ago (Lantern Demonstration). WILLIAM ALLEN PUSEY, Chicago.
16. Treatment of Leprosy with Chaulmoogra Oil and Its Derivatives. V. PARDO-CASTELLO, Havana, Cuba.
Discussion to be opened by H. M. H. MACLEOD, London, England, and HOWARD MORROW, San Francisco.
17. Dermatoscopy: A Study of Blood Vessel Form and Arrangement in Various Dermatoses (Lantern Demonstration). JEFFREY C. MICHAEL, Houston, Texas.
18. Chronic Actinic Cheilitis. SAMUEL AYRES, JR., Los Angeles.
Discussion to be opened by KENDALL P. FROST, Los Angeles.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

MEETS IN CONVENTION HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—JOHN A. FERRELL, New York.
Vice Chairman—JOHN SUNDWALL, Ann Arbor, Mich.
Secretary—W. S. LEATHERS, University, Miss.
Executive Committee—JOHN D. MCLEAN, Philadelphia; S. W. WELCH, Montgomery, Ala.; JOHN A. FERRELL, New York.

Wednesday, June 27—2 p. m.

1. Chairman's Address: The Trend of Preventive Medicine in the United States. JOHN A. FERRELL, New York.
2. Reciprocal Responsibility of the Health Officer and Other Public Officials. OSCAR DOWLING, New Orleans.
Discussion to be opened by C. W. GARRISON, Little Rock, Ark.; I. D. RAWLINGS, Springfield, Ill., and S. W. WELCH, Montgomery, Ala.

3. Blue Sky Health Propaganda. FREDERICK D. STRICKER, Portland, Ore.
Discussion to be opened by A. T. MCCORMACK, Louisville, Ky., and JOHN DILL ROBERTSON, Chicago.
4. Typhus Fever in Southern California. L. M. POWERS, Los Angeles.
Discussion to be opened by WALTER M. DICKIE, Sacramento, Calif.; WILLARD J. STONE, Pasadena, Calif., and WILLIAM M. KERR, Washington, D. C.
5. Preventive Medicine Problems Peculiar to Pacific Coast. PAUL A. TURNER, Seattle.
Discussion to be opened by JOHN M. DODSON, Chicago, and A. T. MCCORMACK, Louisville, Ky.
6. Problems in the Control of Diphtheria. JAMES A. HAYNE, Columbia, S. C.
Discussion to be opened by F. M. MEADER, Detroit, and S. W. WELCH, Montgomery, Ala.
7. The Administrative Value of the Virulence Test for Diphtheria Bacilli, with a Report on the Use of Field Cultures. FRANK L. KELLY, Berkeley, Calif.
Discussion to be opened by JOHN N. FORCE, Berkeley, Calif., and N. E. WAYSON, San Francisco.
8. Constructive Health Activities in Public Schools. JOHN SUNDWALL, Ann Arbor, Mich.
Discussion to be opened by ADELAIDE BROWN, San Francisco, and JAMES A. HAYNE, Columbia, S. C.

Thursday, June 28—2 p. m.

JOINT MEETING OF SECTIONS ON DISEASES OF CHILDREN AND ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

SYMPOSIUM ON PREVENTIVE PEDIATRICS

Neonatal Mortality: Its Causes and Prevention

9. Syphilis and Other Maternal Infections (Lantern Demonstration). ARTHUR BAKER SPALDING, San Francisco.
10. Birth Injuries, Congenital Defects and Hemorrhagic Disease of the New-Born (Lantern Demonstration). JOHN A. FOOTE, Washington, D. C.
11. Relation of Infant Feeding to Early Infant Mortality. F. P. GENGENBACH, Denver.

Relation of Private Physician to Health Centers, Etc., in Public Health in General

12. Place of Medicine in Public Health. WALTER M. DICKIE, Sacramento, Calif.
Discussion to be opened by W. S. RANKIN, Raleigh, N. C., and HAVEN EMERSON, New York.
13. Prevention and Control of Tuberculosis as It Concerns the Medical Profession. HENRY BOSWELL, Sanatorium, Miss.
Discussion to be opened by FRANCES M. POTTINGER, Los Angeles, and CHARLES L. MINOR, Asheville, N. C.
14. Growing Importance of Preventive Medicine in General Practice. JOHN M. DODSON, Chicago.
Discussion to be opened by VICTOR C. VAUGHAN, Chicago, and OSCAR DOWLING, New Orleans.

Friday, June 29—2 p. m.

Election of Officers

15. Disappearance of Hookworm Disease from the South. WILSON G. SMILLIE, New York.
Discussion to be opened by SEALE HARRIS, Birmingham, Ala., and W. S. RANKIN, Raleigh, N. C.
16. Fundamentals of Rural Health Service. W. F. DRAPER, Washington, D. C.
Discussion to be opened by WILSON G. SMILLIE and VICTOR HEISER, New York.
17. Use Antiserums. FREDERICK P. GAY, Washington, D. C.
Discussion to be opened by FRANK BILLINGS, Chicago, and WALTER V. BREM, Los Angeles.
18. Menace of the Unvaccinated. VICTOR HEISER, New York.
Discussion to be opened by HUGH S. CUMMING, Washington, D. C., and WILLIAM H. SHARPLEY, Denver.
19. Smallpox and Vaccination. J. P. LEAKE, Washington, D. C., and JOHN N. FORCE, Berkeley, Calif.
Discussion to be opened by E. H. BULLOCK, Kansas City, Mo.
20. Fatigue as a Factor in the Cause and Treatment of Tuberculous Disease. H. A. PATTISON, New York.
Discussion to be opened by J. W. PETTIT, Ottawa, Ill., and ROBERT A. PEERS, Colfax, Calif.

21. Miners' Silicosis, an Occupational Hazard: Its Etiology and Prevention. ROBERT T. LEGGE, Berkeley, Calif.
Discussion to be opened by CLIVE E. KINDALL, Oakland, Calif.

SECTION ON UROLOGY

MEETS IN LINCOLN HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—HENRY G. BUGBEE, New York.
Vice Chairman—CYRUS E. BURFORD, St. Louis.
Secretary—HERMAN L. KRETSCHMER, Chicago.
Executive Committee—RICHARD F. O'NEIL, Boston; JAMES A. GARDNER, Buffalo; HENRY G. BUGBEE, New York.

Wednesday, June 27—9 a. m.

1. Fascias of the Urogenital Triangle (Lantern Demonstration). MILEY B. WESSON, San Francisco.
Discussion to be opened by ARTHUR B. CECIL, Los Angeles.
2. Surgical Trigon: Its Pathology, a New Method of Diagnosis and Its Operative Management (Lantern Demonstration). ERNEST M. WATSON, Buffalo.
Discussion to be opened by FRANK HINMAN, San Francisco.
3. New Procedure for Performing Litholapaxy (Lantern Demonstration). ALBERT E. GOLDSTEIN, Baltimore, and J. F. LUTZ, Glenn Rock, Pa.
Discussion to be opened by EDWARD L. KEYES, JR., Forest Hill, N. Y., and WILLIAM F. BRAASCH, Rochester, Minn.
4. Study of Chemical Solvents Used in Dissolving Foreign Substances in Urinary Bladder, Such as Paraffin, Beeswax, Gum and Urethral Pencils. HAROLD L. MORRIS and CLARENCE I. OWEN, Detroit.
Discussion to be opened by ALBERT E. GOLDSTEIN, Baltimore.
5. Stone-Evacuating Cystoscope. RAYMOND L. SCHULZ, Los Angeles.
Discussion to be opened by O. S. LOWSLEY, New York.
6. Chyluria: Report of One Case with Cystoscopic Findings. JOSEPH WELFELD, Chicago.
Discussion to be opened by B. A. THOMAS, Philadelphia.

Thursday, June 28—9 a. m.

7. Chairman's Address: The Present Scope of Urology. HENRY G. BUGBEE, New York.
8. Examination and Treatment of Cases of Seminal Vesiculitis (Lantern Demonstration). W. R. DELZELL and O. S. LOWSLEY, New York.
Discussion to be opened by FRANK HINMAN, San Francisco.
9. Seminal Vesicles in Arthritis, with a Discussion of the Symptomatology and the Surgical and Nonsurgical Treatment (Lantern Demonstration). DANIEL E. SHEA, Hartford, Conn.
Discussion to be opened by GEORGE F. FARMAN, Los Angeles.
10. Factors in the reduction of Morbidity and Mortality in Prostatectomy (Lantern Demonstration). B. A. THOMAS, Philadelphia.
Discussion to be opened by HERMAN L. KRETSCHMER, Chicago.
11. Prostatectomy, Perineal and Suprapubic (Lantern Demonstration). ROBERT V. DAY, Los Angeles.
Discussion to be opened by HOMER G. HAMER, Indianapolis.
12. Perineal Prostatectomy by a Modified Technic (Lantern Demonstration). JAMES R. DILLON, San Francisco.
Discussion to be opened by WILLIAM C. QUINBY, Boston.

Friday, June 29—9 a. m.

Election of Officers

13. Unusual Clinical Data with Renal Tuberculosis (Lantern Demonstration). WILLIAM F. BRAASCH and A. J. SCHOLL, JR., Rochester, Minn.
Discussion to be opened by ANDERS PETERSON, Los Angeles.

14. Repair in Hydronephrosis, with Reference Particularly to the Late Changes of Repair Following Obstructions of Short Duration (Lantern Demonstration). FRANK HINMAN and O. W. BUTLER, San Francisco.
Discussion to be opened by WILLIAM E. LOWER, Cleveland.

15. Urology in Women (Lantern Demonstration).

WILLIAM E. STEVENS, San Francisco.
Discussion to be opened by WILLIAM F. BRAASCH, Rochester, Minn., and HERMAN L. KRETSCHMER, Chicago.

16. Changes in Ureter Found by Routine Pyelograms and Ureterograms (Lantern Demonstration).

ALEXANDER H. PEACOCK, Seattle.
Discussion to be opened by JAMES GARDNER, Buffalo.

17. Necessity of the Simultaneous Use of Cystoscope and Roentgen-Ray (Lantern Demonstration).

JOHN W. MARCHILDON and EMIL E. HEIN, St. Louis.
Discussion to be opened by WILLIAM E. STEVENS, San Francisco, and HERMAN L. KRETSCHMER, Chicago.

18. New Method of Performing Complete Urethrectomy in Extensive Strictures of the Bulbar Urethra (Lantern Demonstration).

GRANVILLE MACGOWAN, Los Angeles.
Discussion to be opened by HENRY G. BUGBEE, New York.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN VETERAN FIREMEN'S HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—WILLIS C. CAMPBELL, Memphis, Tenn.
Vice Chairman—HENRY B. THOMAS, Chicago.
Secretary—J. ARCHER O'REILLY, St. Louis.
Executive Committee—MELVIN S. HENDERSON, Rochester, Minn.; H. WINNETT ORR, Lincoln, Neb.; WILLIS C. CAMPBELL, Memphis, Tenn.

Wednesday, June 27—9 a. m.

1. Further Studies on the Survival of Bone After Removal from the Body (Lantern Demonstration). S. L. HAAS, San Francisco.
Discussion to be opened by L. W. ELY, San Francisco.
2. An Operative Method for Correction of Certain Forms of Flat-Foot. CHARLES LEROY LOWMAN, Los Angeles.
Discussion to be opened by J. W. Cokenower, Des Moines, Iowa, and A. L. FISHER, San Francisco.
3. The Value of Osteotomy of the Os Calcis and Inward Displacement of the Posterior Fragment (Gleich Operation) in Operations for Extreme Flat-Foot (Lantern Demonstration). JOHN PRENTIS LORD, Omaha.
Discussion to be opened by JOHN RIDLON, Chicago, and J. T. WATKINS, San Francisco.
4. Notes on Foreign Orthopedic Clinics. F. J. GAENSLER, Milwaukee.
Discussion to be opened by W. G. STERN, Cleveland.
5. Metaphyseal Tuberculosis of the Hip Joint Region (Lantern Demonstration). ARTHUR STEINDLER, Iowa City.
Discussion to be opened by H. B. THOMAS, Chicago, and S. FOSDICK JONES, Denver.
6. Treatment of the Pathologically Flexed Knee. CHARLES A. PARKER, Chicago.
Discussion to be opened by H. WINNETT ORR, Lincoln, Neb., and M. S. HENDERSON, Rochester, Minn.
7. Synovectomy in Chronic Arthritis of the Knee Joint (Lantern Demonstration). ELLIS JONES, Los Angeles.
Discussion to be opened by S. C. BALDWIN, Salt Lake City; FRED H. ALBEE, New York, and WALTER I. BALDWIN, San Francisco.

Thursday, June 28—9 a. m.

8. Arthrogryposis Multiplex Congenita. WALTER G. STERN, Cleveland.
Discussion to be opened by WILLIS C. CAMPBELL, Memphis, Tenn., and G. J. MCCHESENEY, San Francisco.

9. Fusion for Scoliosis (Lantern Demonstration).

H. B. THOMAS, Chicago.
Discussion to be opened by FRED H. ALBEE, New York,
and F. J. GAENSLER, Milwaukee.

10. Nonunion of Fractures.

MELVIN S. HENDERSON, Rochester, Minn.
Discussion to be opened by DEAN LEWIS, Chicago, and
WALTER B. COFFEY, San Francisco.

11. Chairman's Address: Fracture of the Neck of the Femur (Lantern Demonstration).

WILLIS C. CAMPBELL, Memphis, Tenn.

12. Fractures of the Lower End of the Humerus in Children (Lantern Demonstration).

C. F. EIKENBARY, Spokane, Wash.
Discussion to be opened by ARTHUR STEINDLER, Iowa
City, and A. L. DRAPER, San Francisco.

13. Compression Fracture of the Spine, Developing Delayed Symptoms (Posttraumatic Spondylitis or Kuemmel's Disease) (Lantern Demonstration).

S. FOSDICK JONES, Denver.
Discussion to be opened by HAROLD BRUNN, San
Francisco, and ALFRED E. GALLANT, Los Angeles.

14. The Second Great Type of Chronic Arthritis: Fourth Study (Lantern Demonstration).

LEONARD W. ELY, San Francisco.
Discussion to be opened by A. W. HEWLETT, San
Francisco, and JOHN V. BARROW, Los Angeles.

15. Rehabilitation Surgery (Moving Picture and Lantern Demonstration).

FRED H. ALBEE, New York.
Discussion to be opened by ALANSON WEEKS, San
Francisco, and CHARLES LEROY LOWMAN, Los
Angeles.

Friday, June 29—9 a. m.

Election of Officers

16. My Final Results in the Treatment of Congenital Dislocation of the Hip.

JOHN RIDLON, Chicago.
Discussion to be opened by W. G. STERN, Cleveland,
and C. A. PARKER, Chicago.

17. Certain Improvements in Technic in Operating on and the After-Care of Chronic Infections of the Bone (Lantern Demonstration).

H. WINNETT ORR, Lincoln, Neb.
Discussion to be opened by J. C. BLOODGOOD, Baltimore,
and G. M. BARRETT, San Francisco.

18. A Preliminary Report on the Treatment of Osteomyelitis.

JOHN DUNLOP, Los Angeles.
Discussion to be opened by PHILIP K. GILMAN and S.
NICHOLS JACOBS, San Francisco.

19. Osteomyelitis Variolosa (Chiari) (Lantern Demonstration).

W. L. BROWN, El Paso, Texas.
Discussion to be opened by W. E. MUSGRAVE, San
Francisco, and F. B. SHIELDON, Fresno, Calif.

20. The Mechanism of Low Back Pain, with Special Reference to the Sacro-Iliac Joints (Lantern Demonstration).

ALFRED E. GALLANT, Los Angeles.
Discussion to be opened by C. R. MCCLURE, Portland,
Ore., and GEORGE MARTYN, Los Angeles.

21. Obstruction to the Lymph Channels by Scar (Lantern Demonstration).

LEO ELOESSER, San Francisco.
Discussion to be opened by W. G. STERN, Cleveland;
LEROY P. KUHN, Chicago, and EMMET RIXFORD, San
Francisco.

22. The Value of Selective Voluntary Exercise in Restoring Certain Diseased or Traumatic Joints.

H. W. CHAPPEL, Los Angeles.
Discussion to be opened by A. L. FISHER, San Fran-
cisco, and HENRY W. WILCOX, Denver.

SECTION ON GASTRO-ENTEROLOGY
AND PROCTOLOGY

MEETS IN CONVENTION HALL, AUDITORIUM

OFFICERS OF SECTION

Chairman—J. RAWSON PENNINGTON, Chicago.
Vice Chairman—FRANKLIN W. WHITE, Boston.
Secretary—SIDNEY K. SIMON, New Orleans.
Executive Committee—LOUIS J. HIRSCHMAN, Detroit; H. W.
SOPER, St. Louis; J. RAWSON PENNINGTON, Chicago.

Wednesday, June 27—9 a. m.

1. Chairman's Address: Historical Sketch of the Development of Gastro-Enterology and Proctology in the United States.

J. RAWSON PENNINGTON, Chicago.

2. On the More Practical Functional Tests of the Liver.

MAX EINIHOEN, New York.
Discussion to be opened by A. W. HEWLETT and W. F.
CIENEY, San Francisco.

3. Present Day Problems in Regard to the Gallbladder.

WALTER C. ALVAREZ, San Francisco; KARL F. MEYER,
Berkeley, and FLETCHER B. TAYLOR, San Francisco.
Discussion to be opened by JOSEPH SAILER, Philadelphia,
and ROLAND CUMMINGS, Los Angeles.

4. Pancreatitis as Related to Gastro-Intestinal and Gallbladder Infections: With Special Reference to Diet in the Prevention and Treatment of Diabetes.

SEALE HARRIS, Birmingham, Ala.
Discussion to be opened by F. M. ALLEN, Morristown,
N. J., and E. P. JOSLIN, Boston.

5. The Hysterical Rectum and Anus.

W. M. BEACH, Pittsburgh.
Discussion to be opened by ALFRED J. ZOBEL, San Fran-
cisco, and JEROME M. LYNCH, New York.

Thursday, June 28—9 a. m.

6. Benign Strictures of the Rectum.

L. A. BUIE, Rochester, Minn.
Discussion to be opened by LOUIS J. HIRSCHMAN,
Detroit, and JOHN L. JELKS, Memphis, Tenn.

7. Carcinoma of the Rectum: Diagnosis and Surgical Prognosis.

F. C. YEOMANS, New York.
Discussion to be opened by ALOIS B. GRAHAM, Indian-
apolis, and COLLIER F. MARTIN, Philadelphia.

8. Forced Milk Feeding in Adult Undernutrition.

E. C. FISHBAUGH, Los Angeles.
Discussion to be opened by THOMAS R. BROWN, Balti-
more, and WILLARD J. STONE, Pasadena, Calif.

9. The Three Meal a Day Regimen: Comparative Caloric Values.

C. D. SPIVAK, Denver.
Discussion to be opened by W. W. BOARDMAN, San
Francisco, and H. G. WALCOTT, Dallas, Texas.

10. Phytobezoars: A Study of Seven Cases (Lantern Demonstration).

W. E. HART, Decatur, Ill.
Discussion to be opened by RUDOLPH MATAS, New
Orleans, and F. A. KINSLOW, San Francisco.

11. Results of a Roentgenologic Study of the Position of the Stomach, Liver and Colon in Six Hundred Healthy Adults.

R. O. MOODY and R. G. VAN NUYS, Berkeley, Calif.,
and W. E. CHAMBERLAIN, San Francisco.
Discussion to be opened by R. D. CARMAN, Rochester,
Minn., and J. M. BLACKFORD, Seattle.

Friday, June 29—9 a. m.

Election of Officers

12. The Fundamental Principles of Gastric Analysis.

M. E. REHFUSS, Philadelphia.
Discussion to be opened by FREDERICK EPPLEN, Spokane,
Wash., and E. J. BEST, San Francisco.

13. Amebic Infections in the State of Washington.

G. A. DOWLING, Seattle.
Discussion to be opened by GEORGE DOCK, Pasadena,
Calif., and NOBLE W. JONES, Portland, Ore.

14. Acute Total Volvulus of the Stomach (Lantern Demonstration).

MAX THOREK, Chicago.
Discussion to be opened by JAMES T. PILCHER,
Brooklyn.

15. The Intimate Relation Between Rectal Affections and Diseases of the Upper Digestive Tract.

G. S. HANES, Louisville, Ky.
Discussion to be opened by LOUIS G. VISSCHER, Los
Angeles, and MAURICE LESCALE, New Orleans.

16. The Relation of Pruritus of the Anus to Chronic Diseases of the Abdominal and Pelvic Viscera (Lantern Demonstration).

J. F. MONTAGUE, New York.
Discussion to be opened by JOHN W. VISHNER, Twin
Falls, Idaho, and W. M. BEACH, Pittsburgh.



THE COMMERCIAL EXHIBITS

AT THE

SAN FRANCISCO SESSION



A FORUM OF PRESENT DAY ACHIEVEMENTS

Those who attended the last San Francisco Session in 1915 will remember the Exposition Auditorium, its ideal location and adaptability for housing the activities of the Convention. This Auditorium was erected as a permanent memorial to the Panama Pacific International Exposition. It covers one entire square in San Francisco's civic center and is undoubtedly the largest and most convenient building ever obtained by the American Medical Association for its Annual Session. It will house, in its various meeting rooms, the scientific assemblies, the scientific and commercial exhibits, Registration Bureau, post office, etc. Consequently, the conventionist can very conveniently attend the section meetings and spend the time at the exhibits which is required to appreciate thoroughly their educational and practical value.

While it is true that commercial houses exhibit at the Convention now as in the past, essentially to promote the sales of their various wares, their salesmanship is of a different quality than that found in dealing with other consumers. It is grounded primarily on service and helpfulness to the medical profession. The salesmen are not mere trades people, but in most cases trained, scientific experts, inventors, research students, many of whom have devoted a lifetime of intelligent effort and study in improving the apparatus, pharmaceutical products and technical equipment used in your daily practice.

You will find that these exhibits have become refined to a point where they are no longer an agglomeration of just books or apparatus to sell. They now feature the newer developments which you are seeking. It will be your opportunity to examine improved equipment that you have probably heard about or read about in advertisements, but never actually saw demonstrated.

You can spend several hours with the book people, examining the newest medical works and new editions of old works brought out in the past year.

Much profitable time can also be spent visiting the various instrument, apparatus and equipment exhibits, meeting the trained experts who can demonstrate and tell the visitor more in five minutes than could probably

be obtained from other sources in hours and days of time.

Get acquainted with the pharmaceutical houses who are supplying you and the rest of the profession. This offers an opportunity to bring up problems that you have had stored up, unsolved, for some time. The pharmaceutical and biologic products on exhibit will be limited to those that stand accepted by the Council on Pharmacy and Chemistry. There will be many new products for your inspection. Note the genuine effort on the part of these houses in conforming to the high standard set for them by scientific medicine. The old days are gone when the popularity of the pharmaceutical exhibit depended on how many samples they could pass out. Today these exhibits get a real "looking over." The attraction to the visitor is not so much size and pomp, but the more practical interest in what has been achieved in making finer, better, more efficient medicaments, conforming with the rapidly advancing requirements of the scientific man.

With an eye to further achievements, you will want to find out everything the manufacturers of X-ray equipment have done in your interests. It will stimulate you to witness the developments in this line of manufacture—to have these technicians and engineers explain and demonstrate the finer points and modern accomplishments in the therapeutic and diagnostic application of roentgen rays.

When you are in the exhibit hall you should not at any time feel that you are in a salesroom. It is rather a "material clinic," where you have come to observe and learn. You will be free to examine, ask questions and seek demonstrations without that uncomfortable feeling that you are expected to buy.

Here is a list of most of the firms that will exhibit, as well as the brief descriptions of most of their proposed showings.

Owing to the magnitude of the exhibits as a whole, it would be impractical to try to see all of them in one trip through the hall. There will be ample time before, after and between Sessions to make your inspection of these exhibits leisurely and thoroughly. The Auditorium will be open from 8 a. m. to 6 p. m.

Rene Bine, M.D.,

Local Chairman of Exhibits.

Will C. Braun,

Director of Exhibits.

ANESTHESIA APPARATUS

Manufacturers of apparatus for the administration of anesthetics will contribute their newest developments and improvements for the inspection of visiting physicians. This is becoming more and more an important subject with the surgeon and the hospital. Any advances made that lessen the dangers of anesthesia are gladly welcomed.

The Gwathme Apparatus, latest models and other up-to-date anesthesia devices will be shown by the Foregger Company of New York, Booth 110.

The Safety Anesthesia Apparatus Concern of Chicago, in south half of

Space 72, will show their latest models of Safety Gas-Oxygen Apparatus, both hospital and portable type. Their expert anesthetist, who will be in charge, has not only had experience in nitrous oxide-oxygen anesthesia, but can also tell you about *Ethylene*, the new gas anesthesia.

The Toledo Technical Appliance Company of Toledo, Ohio, at Booth 47, will show the well known McKesson Anesthetic Appliances with some interesting new inhalers; the McKesson Metabolor for the estimation of the basal metabolism, minute volume and vital capacity, and also the new McKesson Surgical Pump.

APPARATUS AND FURNITURE FOR THE OFFICE AND HOSPITAL

It is sometimes difficult for the average physician to appreciate the importance of the constant research that is being made by manufacturers of apparatus and equipment. While their efforts are associated with commercial enterprise, their accomplishments are of distinct benefit to the practitioner whose time is saved and work facilitated every time a really worthwhile development is placed on the market. Show these exhibitors that you appreciate their efforts by calling at their booths. Your

presence and interest will encourage them to more and greater effort in your behalf.

The Albatross Metal Furniture Company of Portland, Ore., will be represented during the Convention at Space 64. An exhibit of their newest creations in Instrument Cabinets and Office Equipment will be presented, featuring the Albatross Straight Line Design. A special display of grained finishes, mahogany and walnut, will prove of interest.

The W. D. Allison Company of Indianapolis will exhibit in Booth 68. As in the years past, they will have an exhibit of the "Allison Line" high grade office equipment. In addition to wood furniture, this company will have on exhibit a Specialist Chair made of steel and iron, finely finished and upholstered.

Stop a minute at Space 37 for a demonstration of the Baumanometer. See how quickly and easily it gives the systolic and diastolic blood pressure. Get a free copy of "Instructions for Taking Blood Pressure," prepared by the American Institute of Medicine.

E. Leitz, Inc., of New York, in Booths 98 and 99, will feature several new apparatus, among them: a Binocular Loupe for ear, nose and throat examination, and a Blood Pressure Recorder, which by graphic methods, records by curve the blood pressure and permits an automatic control. A few other important apparatus will be shown, such as the new model Mackenzie Ink Polygraph, "Dressler" Modification, Combination Microscope and the Stereo Binocular Magnifier for dissecting purposes.

Reid Bros., Inc., of San Francisco, Spaces 11, 12 and 25, will have an extensive showing of white Aseptic Steel Office and Hospital Furniture. Their new modern factory is located thirty-five miles from San Francisco and for that reason they anticipate making their exhibit an extra fine one. They extend a cordial invitation to those attending the convention to visit their factory and offices.

BASAL METABOLISM APPARATUS

The showing of metabolism apparatus will be in keeping with the great importance that the medical profession now accords the determination of the basal metabolism rate. There has been a great deal of scientific work coupled with real mechanical and engineering ability in developing this type of equipment. The exhibit at this convention typifies the best results so far obtained in the manufacture of this apparatus.

Middlewest Laboratories Company of Chicago, in Space 3, will feature the Metabolimeter and accessories for making basal metabolic rate determinations. Demonstrations will be made on normal subjects, and the complete test followed through to the final result which requires a total of less than five minutes. Clinical applications of the test will also be discussed for those unfamiliar with the subject.

Sanborn Company of Boston, Space 8, will have trained technicians to demonstrate diagnostic apparatus by actual tests on patients. The past year has

shown unusual advances in autographic recording devices; in Metabolism Apparatus, by the Kymograf; in Heart Cases by the Pulse Wave Recorder for tracings of artery and vein. Sanborn technicians will endeavor to answer technical questions.

BOOKS

The publishers here represented will offer an excellent and varied showing of medical books. In a short time one can conveniently acquire a first hand knowledge of what is new and worthwhile in the realm of medical literature by browsing about the book booths. One will soon perceive that these exhibits are not merely a profuse agglomeration of books, but a systematic presentation of the newest and best the medical publishing industry has to offer its friend and customer, the American physician.

P. Blakiston's Son & Co. of Philadelphia will show at Booth 77 a number of works covering the big vital medical problems of today. Some of the authors represented are men who are doing original work, and who are widely recognized authorities. Do not fail to see the new Rost's "Pathological Physiology," Deaver's "Prostate," Lovett's "Lateral Curvature," Stitt's "Tropical Medicine," Greene's "Medical Diagnosis," etc.

Lea & Febiger of Philadelphia, Space 29, will feature a number of new editions and entirely new works. Among the latter are Lyon's "Non-Surgical Drainage of the Gall Tract," Leonard's "History of Physical Education," Hill on "Anus and Rectum," Farr's "Local Anesthesia." New editions to be featured are Joslin's "Diabetes Mellitus," Jelliffe and White on "Diseases of the Nervous System," Brown's "Tuberculosis," Carter's "Dietetics," Cabot's "Urology," Simon's "Chemistry," Whittman's "Orthopedic Surgery," Peter on "Perimetry," Knowles' "Diseases of the Skin," Wiggers' "Circulation in Health and Disease" and Bowen's "Anatomy and Kinesiology."

J. B. Lippincott of Philadelphia will have a special exhibit in Booths 34 and 35. A full line of practical medical, surgical, chemical and pharmaceutical and nursing books will be presented. In addition, there will be a display of the well-known Piersol Anatomical Charts, showing every muscle, nerve, vein and artery with beautiful accuracy.

The C. V. Mosby Company, St. Louis, publishers of medical, dental, surgical, and nursing books and journals, will show their complete line of standard books in Space 54. Among the new books on display will be Barnes' "The Tonsil," Watson on "Hernia," Sluder on "Tonsillectomy," Green and Ewing's "Optotypes," Sauer's "Nursery Guide," Beck's "Pathology in Nose, Throat and Ear Diseases," Sampson's "Physiotherapy Technique," Ivy and Ennis' "Interpretations of Maxillary Roentgenograms," and the new edition of Levinson's "Cerebrospinal Fluid."

Thomas Nelson & Sons of New York, Booth 95, will feature Nelson's Loose Leaf Living Medicine, a complete practice of medicine in seven volumes (250 contributors) and Index Volume, bound on the loose-leaf plan and brought up-

to-date by regular issues of renewal pages which are substituted for out-of-date pages. This work was prepared and is under the continual supervision of an international advisory board and edited by sixty-seven prominent clinicians.

The W. F. Prior Co., Inc., Hagerstown, Md., will exhibit in Booth 103 their Threefold Unit of Service in such a way as to give every physician a definite idea of how this service meets his every need, (1) through the use of their Consulting Bureau, which supplies the literature of the world on any phase of a medical problem; (2) the International Medical Digest; (3) the Clinical Reference Section—Tice's Loose-Leaf Medicine.

Rebman Company of New York will show at their booth, north half Space 72, their beautifully illustrated books on skin diseases, both medical and surgical, and other standard publications contained in their catalogue.

W. B. Saunders Company of Philadelphia, Booths 55 and 76, will exhibit new books and new editions, including Gant's three volume work on Diseases of the Rectum, Anus and Colon; Labat's Regional Anesthesia; new edition of Crile's work on the Thyroid Gland; new (ninth) edition of Scudder's Treatment of Fractures; Lewellys Barker's Clinical Medicine; Jackson's Bronchoscopy; Stevens' new Practice of Medicine; latest numbers of the Medical Clinics of North America and the Surgical Clinics of North America; new (sixth) edition of Stevens' Therapeutics; new (second) edition of Peterson, Haines & Webster's two volume work on Legal Medicine and Toxicology, and Thomas' "The Successful Physician." Also advance sheets of important new works.

William Wood and Company of New York will welcome old and new friends at Booth 53. Every visitor is invited to examine all the new books, and the latest editions of their well-known standard works, without obligation to purchase. The outstanding feature will be the opportunity (which no traveling salesman can provide) to look over a complete set of the new fourth edition of the famous medical encyclopedia, the Reference Handbook of the Medical Sciences.

The American Institute of Medicine, Inc., Space 44, has perfected an international organization which abstracts the original articles appearing in all the important medical periodicals of the world. These abstracts are translated and gathered into sections, each of which covers a special field in medicine, and is supplied monthly to the members of the Institute.

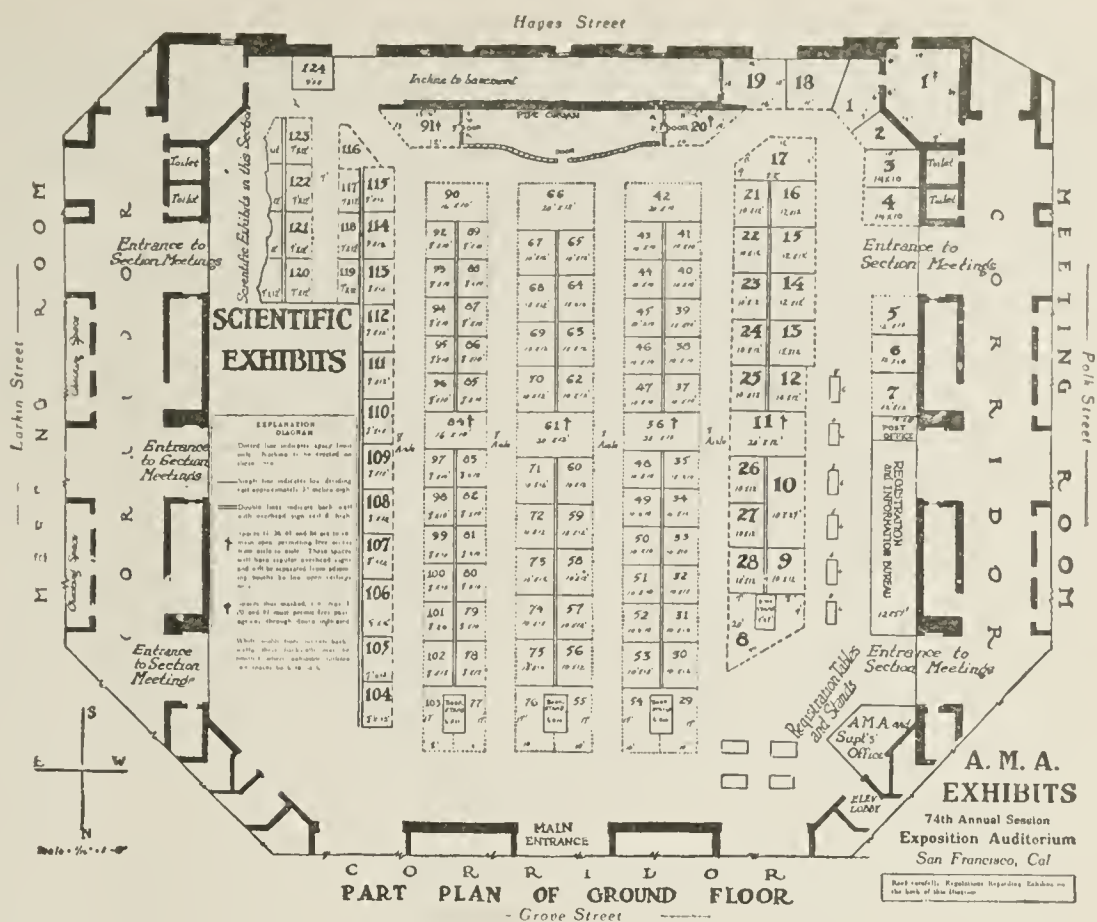
COMPRESSED AIR, SPRAYING AND NEBULIZING EQUIPMENT

Those specializing in eye, ear, nose and throat work as well as the general practitioner will be interested in noting the fine improvements that have been made in this line of manufacture and that are here offered for inspection and approval.

The DeVilbiss Co., of Toledo, Space 52, will, as usual, demonstrate the De-

List of Exhibitors

Name	Space No.
Abbott Laboratories, Chicago.....	5-6-7
Aemie Internat'l X-Ray Co., Chicago.....	16-17
Albatross Metal Furn. Co., Portland, Ore....	64
Allison Co., W. D., Indianapolis.....	68
Aloe Co., A. S., St. Louis.....	26-27
Amer. Ass'n of Med. Milk Commissions.....	123
American Inst. of Med., New York.....	41
Amercan Laundry Machy. Co., Cincinnati.....	
Am. Optical Co., Southbridge, Mass.	104-105-106
American Sterilizer Co., Erie, Pa.	69
Arlington Chem. Co. Yonkers, N. Y.	122
Astier Labs., P., New York.....	75
Bard-Parker Co., Inc., and Chas. R. Bard, N.Y.	39
Baum Co., W. A., Inc., New York.....	37
Bauseh & Lomb Opt. Co., Rochester, N. Y....	91
Beeton, Dickinson, Rutherford, N. J.	41-43
Bennett, Harold M., New York.....	112-113
Berger Bros. Co., New Haven, Conn.	30
Bischoff's Surg. House, Oakland, Calif.....	93-94
Blakiston's Son & Co., P., Philadelphia.....	77
Brady & Co., Geo. W., Chicago.....	9
Buck X-Ograph Co., St. Louis.....	96
Burdick Cabinet Co., Milton, Wis.	90
Buzzell-Flanders Co., Boston.....	23
Calif. Citrus Fruit Juice Co., San Francisco...	59
California Packing Corp'n, San Francisco....	62
Cambridge & Paul Instr. Co., New York....	33
Cameron's Surg. Spec., Chicago.....	109
Carnrick Co., G. W., New York.....	19
Castle Co., Wilmet, Rochester, N. Y.	46
Cutter Laboratory, Berkeley, Calif.....	121
DeVilbiss Mfg. Co., Toledo.....	52
Dry Milk Co., New York.....	45
Earnshaw Knitting Co., Chicago.....	111
Eastman Kodak Co., Rochester, N. Y.	20
Engeln Electric Co., Cleveland.....	42
Fischer & Co., Inc., H. G., Chicago.....	114-115
Foregger Co., New York.....	110
General Optical Co., Inc., Mt. Vernon, N. Y..	24
Hanovia Chem. & Mfg. Co., Newark, N. J. 83-84	
High Tens. Tr. and Equip. Co., Hoboken, N.J.	86
Hittenberger Co., C. H., San Francisco....	40
Horlick's Malted Milk Co., Racine, Wis.....	4
Hospital Social Service Assn., Inc., New York	88
Hynson, Westcott & Dunning, Baltimore....	73
Jaekkh Mfg. Co., Cincinnati.....	So. 1/2 28
Johnson & Company, Mead, Evansville, Ind..	10
Kloman Instrument Co., Washington, D. C. ...	31
Kolynos Co., New Haven, Conn.	57
Laboratory Products Co., Cleveland.....	63
Lea & Febiger, Philadelphia.....	29
Leitz, Inc., E., New York.....	98-99
Levy, David B., New York.....	117
Lippincott Co., J. B., Philadelphia.....	34-35
Maltbie Chemical Co., Newark, N. J.	13
Maltine Co., Brooklyn.....	70
McIntosh Electric Corp'n, Chicago.....	2
Medical Protect. Co., Fort Wayne, Ind. No. 1/2	28
Mellin's Food Co., Boston.....	14-15
Merrell-Soule Sales Corp., Syracuse, N. Y....	22
Metz Laboratories, Inc., H. A., New York....	74
Meyrowitz, Inc., E. B., New York.....	58
Middlewest Laboratories Co., Chicago.....	3
Mosby Company, C. V., St. Louis.....	54
Nelson & Sons, Thos., New York.....	95
Pacific Wassermann Labs., San Francisco....	81
Patterson Sreen Company, Towanda, Pa.....	92
Pelton & Crane Co., Detroit.....	89
Pfau's Amer. Instr. Co., New York.....	118
Prior Co., Inc., W. F., Hagerstown, Md.....	102
Radium Chemical Co., Pittsburgh.....	56
Radium Company of Colorado, Denver.....	36
Rebman Company, New York.....	No. 1/2 72
Reid Brothers, Inc., San Francisco.....	11-12-25
Riggs Optical Co., San Francisco.....	85
Safety Anaest. App. Co., Chicago.....	So. 1/2 72
Sanborn Company, Boston.....	8
Saunders Co., W. B., Philadelphia.....	55-76
Scherer & Co., R. L., Los Angeles.....	65
Sch. for the Tuberculous, Colfax, Cal.....	97
Sherman, G. H., Detroit.....	48
Siebrandt Mfg. Co., Kansas City, Mo.....	82
Smith, Inc., Upsher, Minneapolis.....	108
Spencer Lens Co., Buffalo.....	107
Squibb & Sons, E. R., New York.....	60-61-71
Standard X-Ray Co., Chicago.....	32-51
Sweetbriar Labs., Inc., Pittsburgh.....	87
Taylor Instr. Cos., Rochester, N. Y.	38
Toledo Tech. Appl. Co., Toledo.....	47
Travers Surgical Co., San Francisco.....	21
Victor X-Ray Corp., Chgo. 78-79-80-100-101-102	
Vulcan Electric Company, Los Angeles.....	50
Wappler Elec. Co., Long Island, N. Y.	66-67
Welch Grape Juice Co., Westfield, N. Y.....	18
Wilson Laboratories, Chicago.....	49
Wood & Co., Wm., New York.....	53



Vilbiss Nose and Throat Sprays in an interesting and creditable manner. There will be a full showing of these well-known sprays, both for professional use and prescription purposes.

The Jaekkh Manufacturing Co., Cincinnati, will occupy Space 28, where they will make an interesting demonstration of electrically operated, compressed air and vacuum and anesthesia apparatus; atomizers, nebulizers, powder blowers and sinus and suction devices. An important feature will be the Improved Robertson Ether Vapor and Suction Cabinet, designed especially for surgical work.

ELECTRO-THERAPEUTIC AND DIAGNOSTIC EQUIPMENT

Scientific developments in electrotherapy have contributed new types of equipment that may be seen at the booths of firms listed under this classification. Many notable advances have been made in the construction, variety and uses of electrically lighted diagnostic equipment.

The Burdick Cabinet Company of Milton, Wis., will exhibit in Booth 90 a complete series of appliances for the generation and therapeutic application of their most recent adaptation of Radiant Energy—the Infra-red Rays. Their latest developments in Radio-Vitand Bath Cabinets and Deep Therapy Lamps will also be available for inspection by visiting physicians.

Cameron's Surgical Specialty Company of Chicago, Space 109, expect to interest every visitor in their new and improved Electro-Cautery which will be demonstrated continuously at their booth. Cameron's Electro-Diagnostoset De Luxe Model No. 3, and Cameron's Surgilites, of equal interest to surgeon, specialist and general practitioner, will also be on exhibit.

The Hanovia Chemical & Mfg. Co. of Newark, N. J., will exhibit, in Booths 83 and 84, two power maximum pro-

ducers of Ultra-Violet Rays, the Kromayer Lamp and the Alpine Sun Lamp. Used as modalities in treating many different diseases, these lamps may be seen in active operation during the exhibit, and it will be well worth one's time to see and hear what actually can be accomplished by their use. In the present year, the use of Ultra-Violet Ray Therapy by the medical profession has increased to a remarkable extent.

FOODS AND BEVERAGES

The producers of foods and beverages have contributed much valuable information toward the solution of dietetic problems which years ago puzzled the average physician. Aside from seeing and sampling the newer preparations offered by these firms the visitor to these booths can learn wider uses for the products he has known for years.

The American Association of Medical Milk Commissions will have a scientific (Space J) as well as a commercial (Space 123) exhibit. Petri plates, microscopic slides and other exhibits comprising a clinical description of milk will be featured in the Scientific Exhibit, together with the methods and standards which have made certified milk the high art in the dairy industry. By means of stereopticon slides they will show in detail the production and handling of certified milk. This and the actual serving of certified milk to thirsty and hungry visitors will constitute the feature of the commercial exhibit.

The California Citrus Fruit Juice Co. of San Francisco, Space 59, will introduce "Valna" Concentrated Orange Juice and sampling demonstrations will also be conducted. Because of the extensive use of orange juice in the diet of infants, children and adults and in the treatment of deficiency diseases this exhibit should prove of interest to the visiting profession.

California is the home of Del Monte Canned Fruits and Vegetables. At Booth 62, visiting physicians will find an opportunity to become better acquainted with these well-known food products. The head office of the California Packing Corporation is located in San Francisco, operating about one hundred packing establishments in California and along the Pacific Coast.

The Dry Milk Company, New York, Space 45, are to show their two well-known products, Dryco, a special dry milk for infants and invalids, and Protolac, a calcium caseinate used particularly in infant diarrheas. They will have complete clinical data to give their medical friends, as well as the Dryco re-fill pencils, as souvenirs of their visits.

The Horlick's Malted Milk Company, Racine, Wis., invite the attention of all to their exhibit, Space 4, where the well-known pioneer products, "Horlick's," the Original Malted Milk, in powder and tablet forms, and Horlick's Food will be interestingly presented. The representatives in attendance will explain the use of the "Horlick's" products in the feeding of infants and invalids and in special conditions.

Infant Feeding Service. Doctors who will register at Booth 10 will be furnished with Mead's Infant Feeding Service, which makes it easier for the general practitioner to obtain better cooperation from mothers. Leave your name with the representative who will send you a physician's file index of loose-leaf cards containing Diets for Nutritional Disturbances of Infants, Prescription Blanks, Growth Charts, Weight Charts, History Charts, Diets for Older Children, and Mead's Reliable Infant Diet Materials. Mead's Dextri-Maltose Nos. 1, 2 and 3, Mead's Casec, Mead's Barley Flour, Mead's Oat Flour and Mead's Arrowroot Flour.

The Maltine Company of Brooklyn will show, in Space 70, various materials, such as Malt, Cod Liver Oil, Cascara Sagrada, Yerba Santa, etc., which enter into the composition of the Maltine preparations, together with the finished products. Handy souvenirs to visitors.

Mellin's Food Company of Boston will occupy Spaces 14 and 15. Holding the opinion that physicians are especially appreciative of detailed information in regard to such products that they find applicable in their practice, representatives of this company, well qualified to discuss the subject, will be prepared to give individual attention to all inquiries.

Merrell-Soule Sales Corporation will exhibit their Klim Brand Powdered Milk and Merrell-Soule Powdered Protein Milk. Klim Brand Powdered Milk will be served. Every means will be used in enabling visiting physicians to ascertain its natural taste and its perfect solubility. Opportunity will also be given to sample Powdered Protein Milk, and scientific literature on the subject will be available. Space 22. A service by which special formulas will be put up at the request and for the use of any physician will be discussed with all interested.

A notable contribution to infant feeding in recent years has been the development of S. M. A. (Synthetic Milk

Adapted). The story of how this milk was developed in the Babies' Dispensary and Hospital of Cleveland so as to simulate breast milk physically and chemically will be told at Booth 63 by the representatives of the Laboratory Products Company.

The Welch Grape Juice Co. will be on the job, yes indeed! Call at No. 18 when your throat gets dry or your lips parched. Or if you just get the inclination for refreshments a glass of cold, tart-sweet, pure juice of Concord grapes will be right there to relieve you.

INSTRUMENTS

The surgical instrument industry, which was seriously handicapped during the war by reason of the shutting off of importations, has now gained not only its former power, but has forged ahead. The conventionist this year may be assured of seeing a wide variety of instruments, of new and improved design, of both foreign and domestic manufacture.

The A. S. Aloe Company of St. Louis will exhibit at Booths 26 and 27, located near the Registration Bureau. They will have on display the new 1923 models of the Spencer Microscope, the Lightning Electro Therapeutic Cabinet, and Deep Therapy Lamp, and the new model of the Brown-Buerger Cystoscope, surgical furniture and a complete line of surgical instruments.

The Bard-Parker Company of New York have made no changes or addition to their line of detachable blade knives since the last meeting. The full assortment will be shown at Booth 39. C. R. Bard will also display here a very complete line of Eynard Urological goods, including Ureteral Catheters, both regular and X-Ray; Soft Rubber and Woven Urethral Catheters; Suprapubic and Perineal Drains and Bougies; also Syringe for Regional and Spinal Anesthesia. Model of Dr. Labat.

Becton, Dickinson & Co., Rutherford, N. J., Spaces 41 and 43, will demonstrate the new B-D Manometer for blood pressure work and the new Luer-Lock Syringe for Local Anesthesia (needle locks securely with a quarter turn). They will also exhibit the complete line of genuine Luer Syringes, Yale Quality Needles, B-D Thermometers, ACE Bandages, Asepto Syringes and Fleischer Stethoscopes.

Charles F. Hindle of New York, recently incorporated with the Cambridge and Paul Instrument Co. of America, Space 33, will exhibit Electrocardiographs, Polygraphs, Microtomes, Alveolar Air, CO₂ instruments. This announcement should be of interest to physicians and scientists as this incorporation makes available the splendid scientific apparatus manufactured by the Cambridge and Paul Instrument Co. of England, so well known in this country.

The Kloman Instrument Company of Washington, D. C., Space 31, will exhibit several new instruments, chief among which will be the Electron Pulsator, Muncy Snare for taking off the posterior tip of the turbinate and Bishopp's Antrum Trocar. This company specializes in eye, ear, nose and

throat instruments of high standard and will have an exhibit well worthy of the attention of the most exacting specialists.

David B. Levy of New York will occupy Space 117 and will exhibit the well-known "Levy" Luer Syringes, Hypodermic Needles, Herff's New Woundlip Clips and various other specialties. The feature of this exhibit will be the standard goods sold at special Convention prices.

The Pfau's American Instrument Co. of New York will show in Booth 118 a large and exclusive line of their famous European and American novelties of Ear, Nose and Throat Instruments. An especially attractive feature will be a splendid assortment of scientific anatomical preparations made under the personal supervision of professional authorities.

Riggs Optical Companies will exhibit in Booth 85 a full line of Mueller Surgical Instruments together with a well chosen representation of equipment for the ophthalmologist. Care has been used in selecting only the latest successful achievements of the manufacturers for this exhibit. Of special interest among these is the New Kratometer-Hazen used in measuring and for the treatment of muscular anomalies.

The Tycos display (Taylor Instrument Co., Rochester, N. Y.) at Booth 38 will include a complete line of fully efficient Urinalysis Glassware, which will be of interest to every physician. Of special interest, doubtless, will be the new Tycos Fermentation Sacchrometer, after the Lohnstein pattern. Also the Standard Albuminometer, which permits the use of either the Esbach or the Pfeiffer's reagents. There are also other attractive improvements in Urinalysis Glassware, which will materially assist in efficient diagnostic work. Special ethical medical bulletins will be given to those interested, containing practical information on reagents, etc.

OPTICAL GOODS

This industry has also rallied from the serious setback it suffered during the war and is now offering the profession a quality and quantity production never before attained. It will be to the advantage of all physicians to see the best in optical and ophthalmological goods of both foreign and American make which will be featured in these booths.

The American Optical Company of Southbridge, Mass., through the F. A. Hardy & Company Division and Merry Optical Company Division will exhibit in Spaces 104, 105 and 106 a full line of eye, ear, nose and throat instruments, ophthalmological equipment, office furniture and compressed air outfits.

Among the instruments displayed by the Bausch & Lomb Optical Co. of Rochester, N. Y., Space 91, will be their new Hemoglobinometer, Hand Centrifuge, Haemacytometer with one-piece construction, Bürker type counting chamber, and the FFSE binocular microscope. Ophthalmic instruments shown will include the Precision and Simplified Test Frames, Ophthalmic Test Lenses, Visual Acuity Apparatus with Ives Screens, Lancaster Astig-

matic Chart, Gullstrand and Hand Ophthalmoscope, Corneal Microscope with Slit Lamp Attachment, Interpupillary Gauge, Keratometer, and other B. & L. specialties.

The Spencer Lens Co., Buffalo, N. Y., will exhibit in Space 107. They will have on display many types of microscopes of which several will be shown for the first time. Their Clinical Microtome which is being used in more than 2,000 hospitals in the United States will be in operation.

Carl Zeiss of Jena, Germany, through their U. S. Agent Harold M. Bennett of New York, will exhibit in Booths 112 and 113. A representative line of Zeiss optical instruments will be shown, including new microphotographic eyepiece; new dipping refractometer; simple dark-field equipment; operating lamps; Wolf's diagnostic instruments, with Zeiss optics; an extensive range of monocular and binocular magnifiers; special spectacles, including such for eyes with low vision; instruments for microscopy of the living eye, and irradiating apparatus for light treatment.

ORTHOPEDIC, SUPPORTIVE AND CORRECTIVE APPLIANCES

The exhibits of these firms include many items of interest as explained in the following descriptions.

J. R. Siebrandt Mfg. Co. of Kansas City, in Booth 82, will show their complete line of "Eveready" fracture appliances and instruments. Of especial interest will be their "Eveready" Universal Splint. This splint serves as a Transport, Ambulatory, Suspension or Modified Thomas Splint. A practical demonstration will be a daily feature of the exhibit. Another interesting feature will be a new plaster cutting knife which moistens and cuts the cast in one operation.

Spencer Supporting Corsets, made by the Berger Brothers Company, New Haven, Conn., will be exhibited in Space 30. This exhibit will prove of particular value to those physicians interested in the subject of faulty posture. The models in the exhibit show clearly the different supports that are used for the relief of such conditions as faulty posture, floating kidney, sacro-iliac strain, enteroptosis, etc.

PHARMACEUTICAL AND BIOLOGICAL PRODUCTS

Well known pharmaceutical houses with a multitude of high grade, standard and accepted products will greet the visitor this year. Much could be said concerning the conscientious manner in which these firms have striven to supply the profession with goods of quality and dependability, co-operating with the Council on Pharmacy and Chemistry of the American Medical Association at every step of the way. The research and the astonishing results that have been accomplished in some of the newer drugs make dramatic stories. The physician who is interested in scientific and exact medication will be glad of this opportunity to talk personally to the men who can explain the latest developments in pharmaceuticals.

The exhibit of The Abbott Laboratories of Chicago will this year include, in addition to their own line of Council-passed specialties, the arsphenamins of the Dermatological Research Laboratories, Philadelphia. Physicians will find it worth while to stop and look over the newer medicinal specialties including Butyn, Neocinchophen, Neutral Acriflavine, Sulpharsphenamin, etc. You are invited to make the Abbott Spaces 5, 6 and 7 your headquarters for appointments in the exhibit hall.

P. Astier Laboratories, Paris, France, Space 75, will exhibit their Arheol, active principle of Santalwood oil, and Riordine, a 66 per cent. solution in oil, of an iodized ether of ricinoleic acid. At the same booth will be exhibited the new Tulle Gras: Lumière's T. G. (Balsam of Peru). Wide mesh medicated gauze for surgical use. A non-adhering, cicatrizing and deodorizing dressing.

G. W. Carnrick Co., New York, Space 19, will exhibit a line of organotherapeutic products including single glands, ampoules, etc. There will be an exhibit of Kaiserling preparations of the several endocrine glands of food animals used in medicine.

Hynson, Westcott & Dunning of Baltimore, Space 73, will feature the H. W. & D. line of prescription specialties as well as their diagnostic appliances and agents. Phenoltetrachlorophthalein Ampoules for the Rosenthal liver functional test and Heparin, a new anticoagulant, are the latest scientific developments on display.

The Maltbie Chemical Company of Newark, N. J., Booth 13, will greet their many friends in attendance. They will show their creosote product, Calcreose, which they claim overcomes the objections to creosote. The "Calcreose Detail Man," who has frequently left a cheery word with physicians throughout the country, through the medium of the mails, will be present in person to explain this product.

The Salvarsans, Novocain in its various forms, Pyramidon, and other of the standard Metz pharmaceuticals, will be shown at the booth of the H. A. Metz Laboratories, Space 74. Those in charge are amply qualified to give all possible information in connection with the drugs mentioned and such well-known products as Anaesthesin and Orthoform, local anesthetics for use on abraded surfaces, and other Metz products.

Upsher Smith (Digitalis), Inc., Minneapolis, will exhibit at Booth 108, colored photographs showing the cultivation and preparation of the leaf at Foxglove Farm. It is hoped to display specimens of both Digitalis purpurea and D. lutea in flower. Every physician who prescribes Digitalis should be interested in visiting this booth and talking with these producers of high grade tincture and capsules of Digitalis. Messrs. Upsher Smith and James Smith will be present to greet old and new friends.

E. R. Squibb & Sons of New York will occupy Spaces 60, 61 and 71, about the center of the hall. They will in a measure show the entire Squibb line. Sulpharsphenamin, a new arsphenamin compound, capable of being administered intramuscularly and subcutane-

ously, will be shown for the first time, and a special display will be made featuring the latest development in curative allergens.

The Wilson Laboratories of Chicago, Booth 49, will show an interesting collection of fresh animal glands, both whole and in section, and also a series of large photographs illustrating various steps in the collection and processing of endocrine derivatives. There will also be a selected assortment of endocrine pharmaceuticals, and surgical sutures and ligatures. The exhibit is entitled "From Farm to Pharmacy."

RADIUM APPLICATORS AND EQUIPMENT

Radium and its scientific application is a subject of continuous and increasing interest. It is a great advantage for the visitor to be able to talk with representatives of the following companies who are versed in their subject and in a position to explain the questions that have been puzzling you.

The Radium Company of Colorado, Denver, Booth 36, will exhibit a very elaborate equipment of radium needles, tubes, and plaques of the latest and most improved design, together with instruments, screens, and accessories designed to facilitate their proper therapeutic application.

The Radium Chemical Company of Pittsburgh, Space 56, will exhibit many new instruments for the handling and placing of radium tubes and needles. Technical and clinical experts will be in attendance to demonstrate the latest methods of application. Radium operators and all others interested in this work will find it well worth their while to visit this exhibit.

STERILIZING EQUIPMENT

What can be more interesting to the physician and surgeon than to witness the newest features in sterilizing equipment? The importance of efficient sterilization cannot be overestimated. Upon it depends many a reputation and life. If you have any sterilization problems it will please and encourage these exhibitors to have you consult them. These firms have brought out some highly specialized equipment, the crystallization of applied thought and engineering skill, to meet the requirements of modern surgery and medical practice.

The American Sterilizer Co. of Erie, Pa., will demonstrate, in Booth 69, their new Lakeside Model Saline Mixer, of particular interest to surgeons and hospitals doing major surgery in a large way. They claim that it is now possible to quickly secure a normal solution, sterile free from sediment, with foreign elements absent and with absolute assurance of uniformity. This apparatus can be attached to any ordinary water sterilizer with little alteration.

Physicians interested in complete sterilizing units which combine beauty with practicability will be interested in examining the exhibit of the Wilmot Castle Company of Rochester, N. Y., Booth 46. They will show a new sterilizer which will attract the eye of every

professional man, because it not only sterilizes instruments and water, but also has a large cabinet with two glass doors. Complete demonstrations will be given of the new Castle automatic cut-off which protects all Castle Electric Sterilizers from boiling dry.

The Pelton & Crane Company of Detroit, Space 89, will exhibit a complete line of "Pelton" Indestructible Sterilizers and Compressed Air Equipment. For the first time will be shown the new "Pelton" Water Sterilizers, of a design insuring positively sterile water.

X-RAY APPARATUS AND ACCESSORIES

The importance of the x-ray as a diagnostic aid is being more widely recognized every day. Here is your opportunity to see first hand demonstrations and talk personally with the men who understand all phases of scientific roentgenology. Devices for diathermy and other physiotherapeutic equipment will be presented to the profession in these exhibits.

The Acme International X-Ray Co. of Chicago will exhibit in Spaces 16 and 17 a complete line of X-Ray apparatus. Among these new items is their new tube-holder used for deep therapy. With this piece of apparatus the complete installation is made coronaless from and including the transformer all the way through and including the tube terminals. Another new item is their new split second X-Ray Exposure Timer and Circuit Breaker, which can be used for serial exposures, or one continuous exposure of any desired time from one-thirtieth second up.

George W. Brady Company of Chicago will exhibit in Space 9 their new model Potter Bucky Diaphragm with signal attachment for automatic X-Ray exposure. Also something new in Intensifying Screens that are guaranteed non-spotting. They have a new numbering device for Duplitzed Films and a line of Developing Tanks and other accessories. A special type Bucky Diaphragm Table will also be shown.

The Eastman Kodak Company, Medical Division, Space 20, will exhibit for the first time their Dupli-Tized X-Ray Films, Super-Speed. This is a new film which is nearly three times faster than standard Dupli-Tized X-Ray Films, with consequent advantages in exposure technique. Accessories developed for x-ray use will also be shown. There will be a special exhibit of clinical photography, showing results possible with a small photographic unit. This unit will also be exhibited.

The Engeln Electric Company, Cleveland, report that their exhibit this year, in Booth 42, will far surpass any they have had in the past. They will exhibit a new type of X-Ray Unit which fills a long desired need in the medical profession. In addition, several new and desirable x-ray accessories will be exhibited. You will also see the latest Duplex-ray, a compact and efficient X-Ray Plant for Radiography and Fluoroscopy.

H. G. Fischer & Co., Inc., of Chicago, will have a splendid exhibit of Physio-

therapy Apparatus in Spaces 114 and 115. Developments in this field have been very rapid and of vast importance to the medical profession, and they will show not only their most modern Electrophysiotherapeutic Apparatus but will demonstrate the latest technique as well. Under their banner will be found their New Low, Medium and High Voltage High Frequency Apparatus for all forms of Diathermy, Medical Diathermy Cabinet, Surgical Diathermy Cabinet, High Frequency Cabinets, High Frequency Portables, the Thompson-Plaster Combinations, the Morse Wave Generator, and an Improved 30 Milliamper Coolidge X-Ray Unit.

The High Tension Transformer and Equipment Corporation of Hoboken, N. J., will demonstrate, in Booth 86, the "Intermediate" X-Ray Unit, the "Standard, Jr." high frequency machine, a "Combination" X-Ray and high frequency apparatus and an improved generator of radiant energy. The "Infra-Ultra Rays Generator," which provides all wave lengths of the long infra-red, the visible and the far ultra-violet. A new device developing surgical diathermy will also be presented.

In booth 2, the Hogan Super Power High Frequency Apparatus No. 8400, the latest product of the McIntosh Electrical Corporation, Chicago, will be demonstrated. This apparatus is specially adapted for heavy Electro-Coagulation and affords up to 5000 M.A. for Diathermy of deep penetration. The McIntosh Polysine Generator No. 1058 will also be shown, demonstrating the 10 different modalities which it affords.

The Patterson Screen Company of Towanda, Pa., will show in Booth 92 the fine radiographic results obtained with Patterson Cleanable Intensifying Screens, which are impervious to dirt, dust and all of the factors that ordinarily destroy the unprotected type of Intensifying Screens. The Patterson Fluoroscopic Screen and Patterson Operating Fluoroscope will also be shown and demonstrated.

The Sweetbriar Laboratories, Inc., of Pittsburgh, will have a very interesting exhibit at Booth 87, consisting of washable Sweetbriar Screens, pictures taken with them, and other related matters.

You are going to attend the meeting with a view to acquiring worth-while facts and helpful ideas. Today the X-ray is admittedly one of the important aids to medical science. That you may inspect the latest developments in the design and construction of X-ray equipment, the Victor X-Ray Corporation of Chicago will have on display in Spaces 78, 79, 80, 100, 101 and 102 apparatus perfected after months of research and experimental work.

The Wappler Electric Company of New York, in Spaces 66 and 67, will display most of their principal products for the practice of Radiography, Fluoroscopy, Massive Dose X-Ray Therapy, Surgical and Medical Diathermia, and in addition, a complete assortment of their Genito-Urinary, Eye, Ear, Nose and Throat Instruments. Particularly interesting is the display of the Wappler Duplex Model, Roentgen-Ray Machine, and the Safety Deep Therapy Tube Holder and Table.

MISCELLANEOUS

Various special firms that appeal to the interest of the physician and offer him some professional service will be among the exhibitors at the 1923 convention. Each one of these booths represents a special service to the individual physician or his patients. It will be well worth your time to "stop, look and listen" at all of these exhibits. Several other firms who are not represented in these write-ups will be in attendance at convention and their booths promise features of just as much interest.

If you are interested in the administration of hospitals and institutions be sure to visit the exhibit of the American Laundry Machinery Co. This exhibit will be arranged so as best to demonstrate the latest developments in ironing machinery for the hospital or institution laundry. An experienced engineer will be in attendance.

The Buzzell-Flanders Co. of Boston, Space 23, will display Ligatures and Sutures of all kinds. These include Catgut, Silk, Derma, Silkworm Gut, Horsehair and Kangaroo Tendon. The Kangaroo Tendon is prepared by the special formula of Dr. Henry O. Marcy. Mr. Howard A. Flanders will be in charge of the demonstration.

The Colfax School for the Tuberculous of Colfax, Calif., Space 97, will have one of its employees in charge of its booth to answer questions regarding its institutional methods and to give to inquiring doctors information regarding the treatment and care of tuberculous patients.

The Earnshaw Knitting Co. of Chicago, manufacturers of "Vanta" Baby Garments, Space 111, will have their eleventh annual appearance at the convention this year. The Vanta Garments dress the baby complete without a pin or button, without turning the child once to put on a complete outfit. Be sure to see this exhibit and have the attending nurse send our Gift Box to some of your patients.

The Kolynos Company, New Haven, Conn., Space 57, extends to all doctors a cordial invitation to witness a new experiment which strikingly shows the destruction of living micro-organisms by Kolynos Dental Cream. This experiment is made possible by the Euscope which projects a microscopic field upon a ground glass 17 inches square.

The Medical Protective Company of Fort Wayne, Ind., will hold forth in the north half of Space 28, and explain the service which this company renders to the profession. Two of the company's experienced men will be in attendance for imparting information on the subject.

The Pacific Wassermann Laboratories of San Francisco will demonstrate in a very interesting manner at Booth 81 the Wassermann reaction and other clinical laboratory methods. Open house will also be kept at their local laboratory, Suite 928 Flood Building, corner of Market and Powell Streets, where demonstrations in clinical laboratory research will be made. Qualified men will be present at both places and will be pleased to meet friends and visitors.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 22

CHICAGO, ILLINOIS

JUNE 2, 1923

THE ROUTINE TREATMENT OF DIABETES WITH INSULIN

ELLIOTT P. JOSLIN, M.D.

BOSTON

Successful treatment of diabetes with insulin depends on the utilization of all those measures that have proved of the greatest value in the treatment of diabetes without insulin. These are: adherence to a diet which will keep the urine sugar-free; avoidance of over nutrition or extreme undernutrition, and a method of life compatible with the strength such a diet affords. A knowledge of the fundamental principles of the diet and of the food values of a few foods is essential; otherwise the insulin will be squandered and the patient placed in jeopardy.

Insulin does not cure diabetes. Insulin does not allow a diabetic to eat anything he desires. It is cruel for prominent individuals to make such statements and arouse false hopes. It is true that heretofore there has never been anything discovered as valuable for the diabetic as insulin; but diabetes, though subdued, is not yet conquered.

Insulin is no more dangerous than morphin, and it has these advantages: Whereas an excess of morphin leads directly to sleep, coma and death, an overdose of insulin causes a warning train of symptoms, beginning with nervousness and extreme hunger as the blood sugar drops below 0.07 per cent.; progressing to sweating and tremor, subconscious or evident, and ending with unconsciousness, as the blood sugar reaches 0.03 per cent.; and death is possible. Again, unlike the course in morphin poisoning, recovery follows the simplest of measures—the juice of an orange or from 1 to 3 teaspoonfuls of sugar—and takes place promptly within five or ten minutes. Recovery may be further expedited by 1 c.c. (15 minims) of a 1:1,000 solution of epinephrin subcutaneously administered, though this also is to be followed by the orange or sugar.

It is a mercy that at present insulin becomes inert when given by mouth, and that its use is restricted to a syringe. The medical profession cannot be too grateful to the Insulin Committee of Toronto for limiting the supply and the distribution for a few months. Consider for a moment what would happen if morphin was the drug discovered and then was at once sold over the counter. The useless pancreatic preparations of the past required no supervision; insulin does, because it is potent.

Insulin, nevertheless, should be and can be used by the general practitioner. This I have proved, because already 127 patients have been sent home from the hospital or boarding house across the street and are taking insulin under the supervision of their own

physicians. There is no reason why any physician should not treat other patients, provided he spends one hour learning the diabetic diet, or makes certain that the patient knows it. This knowledge of diabetic arithmetic is a pivotal point in order to balance diet with drug with enough accuracy to justify the trouble of the treatment. If the diet much overbalances the drug, there will be free glycosuria, and the expense and pains are practically wasted. If the drug overbalances the diet, there is likely to be a reaction, always fraught with alarm; and, finally, if the physician does not know the diet, he may lose the confidence of his patient.

For example: Five weeks of dietetic treatment failed to control the severe diabetes of Alice S., last summer. With insulin she improved, and when it was time to go home, not her parents, but her old, overworked, country physician traveled nearly 200 miles to get her, to see for himself how she and other patients were treated, to observe for himself what they ate, and to hear them recite their lessons on food and insulin and sugar tests. Alice learned the diet for the doctor, and Dr. B. learned about insulin for Alice. The partnership has already earned a 40 per cent. dividend in weight for the child, and I fancy far more than that in joy for that faithful practitioner.

Intelligent patients can be taught the use of the diet and insulin in a week, and in two weeks the average patient can become free of acid and sugar, learn what is requisite either in hospital or in boarding house, or with a diabetically trained nurse in his own home. Thus, with education they accomplish with 5 units what would otherwise require 10 units. Blood sugar tests are very desirable, but I doubt whether one in ten of my patients has such a test once a month in his own home. The cost of one such test would probably supply them with insulin for a week, and they prefer the insulin. Instead of blood sugar tests, they depend on frequent Benedict tests of each single specimen of urine, of which the cost of one test is 1 cent. By testing the urine before and after meals they learn whether the relation between carbohydrate and insulin should be changed. If glycosuria is present and yet the patient is receiving sufficient calories, carbohydrate is reduced, until all specimens throughout the day are sugar-free; or, if the carbohydrate is below 30 gm. in the diet, insulin may be increased. After a few weeks of preliminary treatment, "single specimen" days are only occasionally necessary, and the patient is safe with a test of all that portion of the twenty-four hour quantity of the urine that is voided at home.

The first diet given a diabetic patient showing glycosuria should approximate that which he has been taking, with these modifications: The calories should be reduced by a marked restriction in fat, and the protein limited to 1 gm. or less per kilogram of body weight; and it is desirable to begin with about 200 gm. of car-

bohydrate, or as much below that quantity as was in the patient's former diet, or, if that is unknown, with an equivalent of the grams of sugar in the urine. For use in the hospital, test and maintenance diets are useful; but advances in dietetic treatment and insulin force their constant modification, so that the one here shown must be regarded as tentative. It is a great advantage not to have invented a formula for computing diets, because one feels quite free to take the best of all systems. Having started the diet, one proceeds each day to the next diet in sequence until the urine is sugar-free. Fasting is practically never necessary for even one meal, since generally the patient becomes sugar-free on Test Diet 3 or 4. Then one skips to that maintenance diet which has about the same quantity of carbohydrate, and advances each day. If sugar returns, for instance, on the carbohydrate and protein and fat for the sixth day (C6 + PF6) and the patient is not receiving enough calories, one lowers the diet to C5 or C4 and advances the protein and fat (PF) to PF7 or PF8 or more as needed, or even adds extra fat in the form of cream or butter.

The place at which insulin is given is most frequently the arm, then the thigh, and lastly the buttock. The average dose of insulin daily for 127 of my patients is 11 units. No patient is now taking in twenty-four hours more than 45 units, but three are taking as many as 30 units, while a considerable number (eighteen) receive less than 5 units a day. The first of my patients chosen to receive insulin was selected because I knew of none more severe or more strictly faithful to every detail of treatment in the past:

Miss M., aged 42, who had had diabetes for five years, whose weight had fallen from 157 to 72 pounds (from 72 to 33 kg.); who could scarcely be kept sugar-free on any diet, and who had been down to the street but once in nine months, began insulin, Aug. 7, 1922. Since that date she has gained 20 pounds (9 kg.), has a normal blood sugar before and after breakfast, and is sugar-free while taking 10 units daily instead of the 35 units daily, which she at one time required. Her diet has been, carbohydrate, 25 gm.; protein, 43 gm.; fat, 105 gm., and I have now raised it to carbohydrate, 30 gm.; protein, 50 gm., and fat, 110 gm. I am content to have had the weight in my severest case of diabetes increase in eight months by 28 per cent., and to have reduced the dosage

TABLE 1.—Insulin Diabetic Diets

		Total Diet				Carbohydrate (C)						Protein and Fat (PF)						
Diet		Carbo- hy- drate	Pro- tein	Fat	Calo- ries	5% Vege- tables	Orange	Oat- meal	Shred- ded Wheat	Unce-da	Potato	Egg	Cream 20% Fat	Bacon	Butter	Meat	Net	
Test....	T. D. 1	181	46	44	1,304	300	300	..	3	4	240	3	120	..	..	...	1
	T. D. 2	101	35	43	931	300	300	..	.1	2	120	3	120	..	..	...	2
	T. D. 3	66	24	37	693	300	300	..	½	2	...	2	120	..	..	...	3
	T. D. 4	34	15	30	466	300	200	..	..	..	...	1	120	..	..	...	4
Maintenance	C1 + PF1	14	15	30	386	300	...	..	..	..	...	1	120	..	..	...	1
	C2 + PF2	22	19	37	497	300	100	..	..	..	...	2	60	..	15	...	2
	C3 + PF3	32	24	37	557	600	100	..	..	..	...	2	60	..	15	...	3
	C4 + PF4	42	29	52	752	600	200	..	..	..	...	2	60	30	15	...	4
	C5 + PF5	52	32	66	930	600	200	15	..	..	...	2	60	30	30	...	5
	C6 + PF6	64	44	83	1,179	600	200	30	..	..	...	2	120	30	30	30	6
	C7 + PF7	74	52	88	1,296	600	300	30	..	...	...	2	120	30	30	60	7
	C8 + PF8	84	61	94	1,426	600	300	30	..	2	...	2	120	30	30	90	8	
	C9 + PF9	98	65	106	1,606	600	300	30	½	2	...	2	180	30	30	90	9	
	C10 + PF10	109	66	119	1,771	600	300	30	1	2	...	2	180	30	45	90	10	
	C11 + PF11	135	80	135	2,075	600	300	30	1	2	120	2	240	30	45	120	11	
	C12 + PF12	159	84	135	2,187	600	300	30	1	2	240	2	240	30	45	120	12	

The first dose of insulin should be 1 unit. This is the amount necessary to lower the blood sugar of a 1 kilogram rabbit, fasting twenty hours, to 0.045 per cent. It is safer to begin with one unit, because I have known this to bring down the blood sugar of a diabetic patient with a tolerance for and while taking 91 gm. of carbohydrate to 0.03 per cent. Insulin is more often given than withheld at the hospital as soon as the diagnosis is definitely made, in order to meet the patient's wish to curtail hospital stay. Before the second meal, 2 units are given, 3 before the third, and so on up to 5 units, and then this quantity is given three times a day and increased or decreased as indicated. Sometimes the extract proves to be unnecessary after a couple of days. During this period the diet also is being changed. Once the patient is sugar-free, the attempt is made to get rid of the noon dose by shifting the carbohydrate as far as feasible to breakfast and supper, and decreasing the noon insulin by a unit each day. If unsparable, the omitted insulin is taken up again, but this time is divided between the doses before breakfast and supper.

The time at which insulin is given varies from one-quarter hour to one and one-half hours before meals, depending on the rapidity of absorption of carbohydrate from the stomach and insulin from the subcutaneous tissue, as estimated after observation of each individual patient.

of insulin from 35 units to 10 units. With the extra food allowed, she requires at least 5 units more of insulin. Her weight has again increased to 96 pounds (43.5 kg.). With the restricted diet, will she not again be able to reduce her insulin when her further gain in weight makes her once more underfed?

Patients omitting insulin through lack of supply must go to bed and restrict the diet one-third:

Thomas D., my faithful little patient, went home and, unfortunately, in the absence of his home physician, thought he could get along without insulin. After five days he became ill, an intercurrent respiratory infection occurred, coma developed, and he returned to the hospital to die in seven hours, Oct. 20, 1922. No other patient with coma has died at the New England Deaconess Hospital since Aug. 7, 1922.

The treatment of coma with insulin is spectacular, but coma is a diabetic accident, and, like all accidents, to be avoided. At the New England Deaconess Hospital, the lack of coma is to be attributed partly to the training given patients. They are taught, whenever ill from any cause to (1) go to bed; (2) keep warm; (3) take a glass of hot water, tea, broth, orange juice, or oatmeal water gruel every hour; (4) empty the bowels with an enema, and (5) call a physician, who, if he finds acidosis, probably will give them insulin, digitalis and caffein, and may wash out their stomachs. This freedom from coma is perhaps still more to be attributed to

the large general hospitals in Boston receiving such emergency cases. With the expansion of the Deaconess Hospital to 180 beds, more of these patients may enter. In coma, insulin, from published reports, is best given in 10 unit doses every hour for about two to four doses, and then every other hour for four doses more, if nec-

TABLE 2.—Foods Arranged According to Carbohydrate Content

5%				
1-3%	3-5%	10%*	15%	20%
VEGETABLES (Fresh or Canned)				
Lettuce	Tomatoes	String beans	Green peas	Potatoes
Cucumbers	Brussels sprouts	Pumpkin	Artichokes	Shell beans
Spinach	Water cress	Turnip	Parsnip	Baked beans
Asparagus	Sea kale	Kohlrabi	Canned lima beans	Green corn
Rhubarb	Okra	Squash		Boiled rice
Endive	Cauliflower	Beets		Boiled macaroni
Marrow	Egg plant	Carrots		
Sorrel	Cabbage	Onions		
Sauerkraut	Radishes	Green peas, canned		
Beet greens	Leeks			
Dandelion greens	String beans, canned			
Swiss chard	Broccoli			
Celery	Artichokes, canned			
Mushrooms				
FRUITS:				
Ripe olive (20% fat)	Watermelon	Raspberries	Plums	
Grape fruit	Strawberries	Currants	Bananas	
	Lemons	Apricots	Prunes	
	Cranberries	Pears		
	Peaches	Apples		
	Pineapple	Huckleberries		
	Blackberries	Blueberries		
	Gooseberries	Cherries		
	Oranges			

30 Gm., 1 Oz., Contain Approximately

	Carbo- hydrates, Gm.	Protein, Gm.	Fat, Gm.	Calo- ries
Oatmeal, dry weight.....	20	5	2	118
Shredded wheat.....	23	3	0	104
Unecda biscuits, two.....	10	1	1	53
Cream, 40%.....	1	1	12	116
Cream, 20%.....	1	1	6	62
Milk.....	1.5	1	1	19
Brazil nuts.....	2	5	20	208
Oysters, six.....	4	6	1	49
Meat (cooked, lean).....	0	8	5	77
Chicken (cooked, lean).....	0	8	3	59
Bacon.....	0	5	15	155
Cheese.....	0	2	11	131
Egg, one.....	0	6	6	78
Vegetables, 5% group.....	1	0.5	0	6
Vegetables, 10% group.....	2	0.5	0	10
Potato.....	6	1	0	28
Bread.....	18	3	0	84
Butter.....	0	0	25	225
Oil.....	0	0	30	270
Fish: cod, haddock (cooked).....	0	6	0	24
Broth.....	0	0.7	0	3

* Reekon average carbohydrate in 5 per cent. vegetables as 3 per cent.; of 10 per cent. vegetables as 6 per cent.

TABLE 3.—Results of Treatment

SUMMARY OF 127 PATIENTS WITH DIABETES TREATED WITH INSULIN AND DISCHARGED TO THEIR HOME PHYSICIANS

No. of Cases	Age at Onset, Years		Duration of Disease, Years		Treatment with Insulin		Gain in Weight	
	Aver.	Range	Aver.	Range	Dura- tion, Days	Cuns- Daily Aver.	Lbs.	%
127	29	1-65	4	0.3-20	107	11	4	5
INSULIN IN THE TREATMENT OF DIABETES IN CHILDREN 15 YEARS OF AGE OR UNDER								
31	7	1-15	2	0.3- 8	122	10	5	11
PATIENTS TAKING 6 OR LESS UNITS DAILY (CHILDREN UNDER 15)								
13	6	1-13	2	0.3- 4	89	4	3	8

ssary. One should be very cautious before giving more than 60 units in twelve hours. Few cases have required more than 100 units. The blood sugar percentage and the urine sugar, in addition to the clinical state of the patient, are the best guides in treatment. In some cases it may be safer to give 5 or 10 gm. of carbohydrate by

mouth to offset the insulin, and some of the most successfully treated patients have received a few grams, from 15 to 30, of sodium bicarbonate. Promptness in beginning treatment is everything.

Insulin can be discontinued in a small fraction of cases. Those patients may be able to omit it who receive it temporarily because of an exacerbation caused by complications, and some patients whose diabetes is of recent onset, though perhaps the latter should receive it intermittently as a prophylactic against increasing severity. Many such instances in children are under observation.

To the Insulin Committee of Toronto, and through its recommendation to the Eli Lilly Company as well, I have been indebted for the rare privilege of using insulin. For this I cannot be grateful enough. The contribution of Banting and Best to the treatment of diabetes is greater than I ever expected to witness.¹

81 Bay State Road.

SPECIFIC SERUM TREATMENT OF
EPIDEMIC (LETHARGIC)
ENCEPHALITIS

FURTHER RESULTS

EDWARD C. ROSENOW, M.D.

ROCHESTER, MINN.

By the use of special methods, a somewhat peculiar streptococcus has been isolated from infected tonsils, teeth and nasopharynx of patients suffering from various forms of encephalitis. With this streptococcus, typical symptoms and lesions of encephalitis have been reproduced in animals. The type of the disease induced experimentally often resembles that existing in the patient from whom the strain was isolated.¹ In the case of the strains from epidemic hiccup, a form of myoclonic encephalitis, it is possible to reproduce spasms of the diaphragm and other muscles not only with living cultures, but also with the filtrates of cultures and the dead bacteria.² The organism varies greatly in size and shape, depending on the method of cultivation. It has been cultivated from filtrates of nasopharyngeal washings, and from emulsions and filtrates of brain and medulla in fatal cases.³ Large and small forms of the organism, sometimes in the same chain, have been demonstrated in the lesions in undoubted cases of encephalitis, and proved absent in adjacent normal tissues, and in the brains of persons who have died from other causes.⁴

In view of these and other facts, may it not be possible that the organism with which I am working is the larger aerobic antigenic form of the smaller anaerobic, relatively nonantigenic form isolated by Loewe and

1. A summary of the work of the Toronto group on insulin appeared in the Journal of Metabolic Research 2: 125 (Aug.) 1922. An early article by Banting and Best appeared in the Journal of Laboratory and Clinical Medicine 7: 251, 1922. A more recent clinical article by Banting, Campbell and Fletcher appeared in the British Medical Journal 1: 8 (Jan. 6) 1923.
2. Rosenow, E. C.: The Production of Spasms of the Diaphragm in Animals with a Streptococcus from Epidemic Hiccup, J. Infect. Dis. 32: 41-71 (Jan.) 1923; Experimental Studies on the Etiology of Encephalitis: Report of Findings in One Case, J. A. M. A. 79: 443-448 (Aug. 5) 1922.
3. Rosenow, E. C.: Production of Spasms of the Diaphragm in Animals by Living Cultures, Filtrates, and the Dead Streptococcus from Epidemic Hiccup, J. Infect. Dis. 32: 72-94 (Jan.) 1923.
4. Rosenow, E. C. (Footnote 1, second reference).
5. Rosenow, E. C., and Jackson, G. H., Jr.: Microscopic Demonstration of Bacteria in the Lesions of Epidemic (Lethargic) Encephalitis, J. Infect. Dis. 32: 144-152 (Feb.) 1923.

Strauss,⁵ Thalhimer,⁶ and Maggiore and Sindoni,⁷ and considered by them as the causative agent in encephalitis? In a series of immunologic and other experiments, to be reported shortly, it has been found that, while the various strains are of low virulence, they nevertheless have decided antigenic power. With the dead bacteria, rabbits have been successfully immunized against encephalitis, following the injection of homologous and certain heterogeneous strains. Agglutination and agglutinin absorption tests with convalescent human and hyperimmune horse serum show that most of the strains isolated are immunologically identical, and closely related to the pleomorphic streptococcus which I have isolated in poliomyelitis.

On the basis of these findings, methods of treatment by active immunization are being tested in the hope that benefit may be derived in the more chronic forms of the disease, and that recurrences and late manifestations, the so-called sequelae, may be prevented. The serum from rabbits and horses immunized by repeated injections of increasing doses of this streptococcus has been found to protect rabbits and mice against properly gaged doses of homologous, and immunologically similar, heterologous strains.

The results from the use of one lot of immune horse serum in the treatment of a few cases of encephalitis were encouraging,⁸ but for some unknown reason, this serum became toxic and hence unsuited for use. Other lots of immune horse serum have been prepared since. The details of the method of immunization will be published elsewhere. Suffice to state here that the particular lot of serum used in the cases here reported was a mixture of the serum from two horses injected with four strains. One of these strains was isolated from the throat of a patient with lethargic encephalitis, one from the spinal fluid of a patient with encephalitis and marked involvement of the meninges, one from the throat of a patient having encephalitis with hiccup, and one from the medulla in a rapidly fatal case.

After it had been demonstrated that the serum contained antibodies, and that it had protective power in animals, its therapeutic effects were studied on patients in the neurologic service of the Mayo Clinic, and studies were made by physicians to whom the serum had been sent on request.

METHOD OF INJECTION

In determining the method of injection, I was guided by the results obtained in animals, and in the treatment of poliomyelitis with a similarly prepared serum, in which intravenous and intramuscular injections have given the best results. Owing to the somewhat toxic effect of horse serum when injected intraspinally, to the slight evidence of involvement of meninges in encephalitis, and to the fact that the streptococcus is rarely demonstrable in the spinal fluid in these cases, we used, at first, intravenous or intramuscular injections exclusively. Later, the results of intraspinal injections, after the withdrawal of at least an equivalent amount of spinal fluid, were also studied. The cell count in the spinal fluid the day after intraspinal injection of the serum was usually somewhat lower in cases in which the initial count was relatively high, and unchanged

or somewhat higher in cases in which the initial count was exceptionally low (Case 5). With few exceptions, the effect on the symptoms was not perceptibly better than that following intravenous or intramuscular injection of the same or larger doses.

After a study of my own results, and those of other physicians, the most effective dose and interval between injections are still uncertain. However, the following procedure is tentatively recommended: An intradermal sensitization test should be made in all cases. If the patient is hypersensitive, desensitization should be practiced by injecting subcutaneously several small, but increasing doses, beginning with 0.5 c.c., and repeating the injection two or three times in twenty-four hours. Unless the condition is critical, whether or not the patient is sensitive, the first therapeutic injection, from 10 to 20 c.c., should be given intramuscularly, and preferably soon after the withdrawal of spinal fluid. The subsequent injections are to be of from 20 to 40 c.c., intravenous, intraspinal or intramuscular, given at intervals of from twelve to twenty-four hours, provided no reaction develops following the first injection. It is believed best to give intraspinal injections to patients with relatively high cell counts. If apparently good effects are obtained, the injections may be continued for from five to eight days, at which time hypersensitiveness to horse serum may develop, making further injections impossible, or forcing a reduction in dosage. In general, if no good effects have been noted after three or four injections, the serum treatment should be discontinued. If good results have been obtained following a series of injections, and the patient has had a relapse, the injections should be resumed, but with caution. Increasing doses, repeated two or three times the first day, should be given subcutaneously, beginning with 0.5 c.c., and all therapeutic injections should be administered intramuscularly.

RESULTS

The effect on the temperature has been variable. There was usually no change in temperature if it was normal at the time of the injection. If the patients were febrile, there was often moderate rise in the temperature for from six to twelve hours, when it returned to the former level, if no other beneficial effects were noted. If good effects were noted in other respects, the temperature usually dropped to a lower level with each subsequent injection, and reached normal after from two to five daily injections. Usually slight fever, sometimes a sharp rise, occurred during the serum sickness, which nearly always developed in from six to twelve days after the first injection. Beneficial effects were manifested in various ways, depending on the type of the disease. Lethargic patients became more wakeful (Cases 3, 6, 7, 8, 9, 10 and 11); semicomatose patients became conscious (Case 1); highly excited, restless (Cases 2, 13 and 15), delirious (Case 16), and in a few instances maniacal patients became more quiet and rational (Case 19); choreiform movements (Cases 2, 14 and 15) and myoclonic contractions (Cases 2, 10, 11, 12 and 13) became less marked and less frequent. The tremors, rigidity and masked expression in certain parkinsonian cases diminished (Cases 20, 21 and 22). Weakness of muscles was slower to respond in cases in which there were other manifestations, and in those in which there were various cranial nerve palsies, unassociated with other symptoms (Cases 17 and 18).

5. Loewe, L., and Strauss, I.: Studies in Epidemic (Lethargic) Encephalitis: Cultural Studies, *J. Infect. Dis.* **27**: 250-269 (Sept.) 1920.

6. Thalhimer, W.: Epidemic (Lethargic) Encephalitis: Cultural and Experimental Studies: Second Communication, *Arch. Neurol. & Psychiat.* **8**: 286-298 (Sept.) 1922.

7. Maggiore, S., and Sindoni, M.: Etiologia dell'Encefalite Epidemica, *Pediatrics* **28**: 985-991, 1920.

8. Helmholtz, H. F., and Rosenow, E. C.: Three Cases of Acute Encephalitis Treated with Specific Serum, *J. A. M. A.* **79**: 2068-2071 (Dec. 16) 1922.

The effects in 130 patients have thus far been studied. These were divided into two groups, according to whether or not apparently beneficial effects were noted during, or soon after, the injections of the serum, irrespective of duration or type of the disease and the amount of serum given. Of these 130 patients, eighty-five (65 per cent.) improved; forty-three showed no appreciable change (Cases 4 and 5); while in two acute cases, it was the opinion of the attending physicians that the symptoms were aggravated following the injection of the serum.

In the group of patients who improved, three died after temporary benefit, a mortality of 3.6 per cent. One of these, a myoclonic, wildly delirious patient, died of respiratory paralysis six days after receiving 56 c.c. of serum. One other myoclonic and delirious patient died four days after the sixth intravenous injection, receiving altogether 109 c.c. of serum. One, an extremely delirious patient, died ten days after two injections of serum, 35 c.c. in all.

The duration of the disease at the time of serum treatment in the group of patients who derived apparent benefit could be determined in seventy-one cases; it ranged from two days to three years. In twenty-three cases, it was seven days or less; in twenty-one, it was between eight and fifteen days; in thirteen, between sixteen and thirty days; in two each, it was one, two, three, four and twenty-four months; in one each, it was six, ten, fourteen and thirty-six months, respectively. The predominating type of the disease was reported in eighty cases in this group. Of these, thirty-four were predominantly lethargic, nineteen myoclonic, six choreiform, five parkinsonian, and sixteen neuritic, paralytic, acute or bulbar in type. The ages of the patients ranged from 1 year to 65 years. Forty-seven were males, and thirty-five females. In three, the sex was not recorded. In five patients, the improvement was slight; in thirty-eight, moderate, and in forty-two, marked.

In the group of forty-five patients in whom no beneficial effects were noted, nineteen died. These, together with the three who died in the favorable group, make a mortality rate of 17 per cent. Most of the fatal cases were acute and very severe forms of the disease, and in many, inadequate amounts of the serum were given; thus, twelve patients received less than 30 c.c.; five received between 30 and 50 c.c., and only five received from 90 to 120 c.c. The duration of the disease in the nonfavorable group at the time of the first serum treatment was determined in all but four cases, and ranged from four days to three years; in eleven cases, it was a week or less; in nine, between eight and fifteen days; in eleven, between sixteen and thirty days; in one each it was one and one-half, twelve, and twenty-four months; in three, it was two months; and in three, it was three years. On analyzing the results according to whether or not an adequate amount of serum was given, it was found that of the 130 patients, only eighty-five received 50 c.c. or more of the serum, and of these, eight died, a mortality of 9.4 per cent. No apparent effects followed the use of the serum in five additional cases, which later proved to be tuberculous meningitis, and in two cases of brain tumor.

The time when improvement began varied considerably, depending on the duration and severity of the disease, and the amount of serum injected. As a rule, improvement occurred within twenty-four hours after each injection, but in some instances, especially in the chronic forms of the disease, it did not occur until after

recovery from the delayed serum reaction. In most cases in which improvement was apparently initiated by the serum treatment, it continued thereafter; in a considerable number, the gain was temporary, and the patient reverted to the former condition; in a few instances, a second series of injections (Cases 2 and 11), after desensitization, again produced beneficial effects. Improvement occurred in patients who had been in the same condition for weeks, and in some who were slowly growing worse; and, seemingly, recovery was hastened in some that were slowly improving. In some cases no good effects were noted, regardless of the duration or severity of the symptoms, and in no instance did the serum stay the process in fulminating bulbar types of the disease.

The reasons for lack of improvement in acute fulminating cases are obvious. The antibody content in the amount of material injected is necessarily small; in cases of long duration, anatomic changes may have taken place, precluding the possibility of benefit. In the milder forms of the disease, of relatively short duration, however, the reasons for the ineffectiveness of the serum are not so apparent. In several cases in my series, marked sepsis of the teeth and tonsils may have been responsible. In others, the explanation may be found in the fact that, as I have already pointed out, not all of the strains are immunologically identical. Indeed, it was found with one exception, a moribund patient, that in the cases in which benefit was derived, the organism isolated, with which encephalitis was produced in animals, was markedly agglutinated by the immune serum injected; and that in cases in which doubtful or no results were obtained, the organism isolated was agglutinated not at all, or only in low dilutions of the serum. In a number of cases in which improvement was noted, the agglutinating titer of the patient's serum against encephalitis strains showed, twenty-four hours after the serum was given, a sharper increase than could be accounted for by the amount of serum injected. It is possible, therefore, that some of the good effects are nonspecific in character.⁹

The beneficial effects obtained in certain chronic cases (Cases 21 and 22) are in keeping with the fact that the causative organism has been isolated from the nasopharynx and infected tonsils or teeth long after the onset of the disease.

Good effects have been noted in different types of the disease, in widely separated communities, and in cases that occurred during epidemic outbreaks of the disease, and in sporadic cases.

The results obtained thus far are encouraging and about what should be expected, in view of the results of protective and other experiments in animals, at the same time leaving much to be accomplished.

It is, of course, doubtful whether the serum treatment will prevent in all cases the late manifestations which are so common and so deplorable. The delayed serum reaction, which occurred in from four to twelve days after the first injection in most cases, makes the continued use of the serum impossible, and sometimes dangerous, even when the usual precautions are taken. My experimental studies indicate that the progressive and changing character of the disease, the exacerbations and the so-called sequelae, are due to an active infection by a streptococcus, which has peculiar neurotropic and other properties, and that invasion may be

9. Russell, C. K.: Epidemic Encephalitis: Influence of Horse Serum in Treatment: A Preliminary Note, *Canadian M. A. J.* 12:705-710 (Oct.) 1922.

avored by the presence of primary foci of infection, such as in sinuses, teeth and tonsils. Hence, besides the serum and other forms of treatment, a thorough search for, and when possible, removal of, foci of infection, combined perhaps with active immunization with a vaccine prepared from the streptococcus proved guilty by animal inoculation, should be practiced in the hope of arresting the progress and preventing recurrences in this disease.¹⁰

In order to make clear the results obtained with the serum in various forms of the disease, I shall cite the essential facts in a series of illustrative cases in which seemingly undoubted benefit was derived, and in which doubtful or no results were obtained.

REPORT OF CASES

CASE 1.—A farmer, aged 26, a patient of Dr. J. H. Stokes, six months prior to the attack of encephalitis, had received a series of six intravenous injections of arsphenamin for hereditary syphilis. He was free from symptoms, and the blood and spinal fluid Wassermann reactions were negative, but a second series of injections was thought advisable, and he returned to the clinic.

Feb. 6, 1923, four days after the fifth injection of arsphenamin, all without untoward symptoms, during an epidemic of respiratory infection resembling influenza, in which a number of cases of encephalitis developed, the patient complained of pain in the extremities, and developed symptoms of a moderately severe nasopharyngitis. He felt sick for three days, but the symptoms were attributed to the respiratory infection. The night of February 11, he was restless, tossed about a great deal, and was unable to sleep. The next day he felt worse, continued to be restless, but became listless, and experienced difficulty in walking and talking. On the morning of February 13, he was taken to the hospital in a semistuporous condition. He complained of headache and dizziness, moaned a great deal, was stuporous most of the time, but restless, and pulled almost constantly at the sheets. Examination revealed double vision, incoherent speech, slow and tremulous movements, marked rigidity of extremities, and incontinence of urine and feces. February 14, his condition was much the same. He was extremely rigid; there were ankle clonus, a positive Babinski, and marked increase in knee reflexes. During short intervals, he seemed oriented, but was stuporous most of the time. Twenty cubic centimeters of antiencephalitis serum was given intravenously at 10 p. m. The next morning the patient was remarkably improved. He was easily aroused and answered questions intelligently, although at intervals he lapsed into apparent unconsciousness. The extremities were less rigid, and the reflexes less exaggerated. From 40 to 50 c.c. of clear spinal fluid was withdrawn, and 20 c.c. of serum was given intraspinaly. Daily injections of 20 c.c. of the serum, alternating intravenously and intraspinaly, were given during the next five days. Improvement continued uninterruptedly, and apparently complete recovery followed.

CASE 2.—A boy, aged 9 years, a patient of Dr. G. T. Joyce, Rochester, Minn., March 7, without previous respiratory infection, became apathetic, complained of double vision and inability to sleep, and developed muscular twitchings and jerky movements, beginning in the left arm, and extending to the left leg, and then throughout most of the body. His temperature ranged from 100 to 101 F. until March 12. My examination, on the evening of March 12, revealed diplopia, slight drooping of the eyelids, restlessness, twitching of the muscles of the left eyelids and left side of the face, and peculiar jerky movements of all extremities, resembling those of chorea, exaggerated knee jerks, and a temperature of 101 F. The spinal fluid was under normal pressure; the cell count was 28; the globulin test was positive. An intradermal sensitization test was positive. Five-tenths cubic centimeter

of serum was given subcutaneously as a desensitizing dose. There was no change in the boy's condition the following day. Five cubic centimeters of serum was given intramuscularly in the morning, and 10 c.c. in the evening. The boy slept quietly most of the night, and the next day marked improvement was noted. The temperature was normal, and the twitchings and jerky movements of muscles were much less marked. Two injections of serum of 10 c.c. each were given that day, and one injection on each of the two succeeding days. Improvement continued, and on the fourth day after the serum treatment was begun, all symptoms had subsided, and the boy appeared well. One more injection was given, and in twenty-four hours serum rash appeared, and the injections were discontinued. There were no symptoms for eighteen days, when twitching of muscles of the left eyelids, diplopia in looking toward the left at objects at some distance, jerky movements of the left arm, and slight fever recurred. Desensitization was again carried out, and three daily intramuscular injections of serum were given, when they had to be discontinued on account of a severe attack of serum sickness. The twitchings and jerky movements again disappeared, and three weeks later recovery was complete, except for slight diplopia.

The streptococcus isolated from the nasopharynx produced a myoclonic type of encephalitis in rabbits, and was agglutinated specifically by the immune horse serum, by the patient's serum, and by the serum from several other cases of encephalitis.

In order to avert further recurrence and sequelae, a vaccine was prepared from the patient's own strain of the streptococcus, and is being administered once a week.

CASE 3.—A farmer, aged 30, seen with Dr. A. E. Lange of the Mayo Clinic, had a cold in the head, which was followed a few days later by buzzing in both ears, nausea and vomiting, and about ten days later, by blurred vision, nystagmus, diplopia and lethargy. A diagnosis of lethargic encephalitis was made. Serum treatment was begun three weeks after the onset of the illness. Five daily injections were given, 90 c.c. in all. The patient was decidedly more wakeful the day after the first injection, and was able to read. Following this; there were fluctuations from day to day in the degree of nystagmus, ability to read and lethargy, but gradual improvement occurred, and two months later recovery was apparently complete, except for slight strabismus and blurred vision.

CASE 4.—A man, aged 54, a section foreman, seen with Dr. A. E. Lange of the Mayo Clinic, had, four weeks before, developed aching pain in, and stiffness, hot feeling and sensitiveness of the right thigh, followed in four days by severe cramping and involuntary contractions of muscles on that side. Shortly afterward, he developed a similar condition of the left thigh, and became delirious and bewildered. The myoclonic movements extended to the lower abdominal muscles, and occurred in rhythmic alternation on both sides. These movements were still present on examination, but were not nearly so marked as during the first week or two. A diagnosis of myoclonic encephalitis was made. The temperature was normal; the leukocyte count was 15,400; the Kolmer test of the spinal fluid was negative, the Nonne, positive, and the sugar content slightly increased. Five daily intravenous injections of the serum, 101 c.c. in all, were given. Slight improvement occurred after the second dose, and during three weeks in which the patient was under observation, there was a gradual improvement in muscular movements and mental condition. However, it is doubtful whether the serum was of any benefit.

CASE 5.—A man, aged 23, a cook, seen with Dr. A. E. Lange of the Mayo Clinic, had had influenza four weeks previously, and was sick for two weeks. He had had fever, was in bed for several days, and then apparently recovered. Two weeks later he suddenly developed severe frontal headache, blurring of vision, and in twenty-four hours diplopia, nystagmus, staggering gait, fever, restlessness, extremely irregular sighing respirations, marked edema of the lips, and bulging of the eyeballs. The leukocyte count was 13,600. Spinal fluid findings were: 1 lymphocyte, a negative Kolmer test, a positive Nonne, and 0.15 per cent. (Folin) sugar. One

10. Since this paper was written, forty additional cases that were treated with the serum have been studied. Favorable results were obtained in twenty-five cases, in nearly all of which the serum was given in the early stages of the disease; doubtful, or no apparent effects were obtained in fifteen cases, chiefly chronic or fulminating types of the disease.

intraspinal and one intravenous injection of serum, 20 c.c. each, had no apparent effect. Twenty-four hours after the intraspinal injection of serum, there were 60 lymphocytes in the spinal fluid. The patient died of respiratory paralysis forty-eight hours after the onset of symptoms of encephalitis.

The streptococcus isolated from rabbits that developed the bulbar type of encephalitis following injection of the nasopharyngeal washings, from filtrates of the nasopharyngeal washings and emulsions of the medulla, and corresponding filtrates, was not agglutinated by immune horse serum, but was agglutinated by the patient's serum and by the serum from one other case of the bulbar type of the disease.

CASE 6.—A man, aged 27, had had pain over the right eye, diplopia, insomnia for two days, ringing in the ears, nausea, retention of urine, chills and sweats, abnormal but variable reflexes, palsy of the face and right quadriceps, and drowsiness. The leukocyte count was 10,000. The spinal fluid cell count was 18, and globulin was increased. The Wassermann reaction was negative. A diagnosis of lethargic encephalitis was made. Serum treatment was begun on the fifth day of illness; three daily intramuscular injections were given, 70 c.c. in all. The diplopia, drowsiness, and retention of urine disappeared within twenty-four hours after the first intramuscular injection of serum. Complete recovery followed, with the exception of a positive Babinski sign on the right.¹¹

CASE 7.—A woman, aged 32, had pain in the back of the head, and dizziness, diplopia, blurred vision, photophobia, restlessness, delirium, stupor, dysphagia and moderate intermittent fever. The spinal fluid was normal. A diagnosis of lethargic encephalitis was made. Serum treatment was begun on the seventh day of the illness; three daily intravenous injections were given, 67 c.c. in all. The restlessness, pain, and headache were greatly relieved, and gradual recovery followed.¹²

CASE 8.—A girl, aged 12 years, had headache, delirium, fever and inequality of pupils, followed by diplopia, apathy and somnolence. The spinal fluid cell count was 10. The Wassermann reaction was negative. Lethargic encephalitis was diagnosed. Serum treatment was begun on the fourteenth day of illness; five daily intramuscular injections were given, 47 c.c. in all. Improvement in the mental state began the day following the first injection, and was progressive. Complete recovery followed.¹³

CASE 9.—A man, aged 35, had recurring attacks of lethargic encephalitis three years, nine months and three weeks prior to the administration of serum. Lethargic encephalitis was diagnosed. On the twenty-first day of the last attack, serum treatment was begun; three daily intravenous injections, followed by three daily intraspinal injections, were given, totaling 60 c.c. The lethargy almost completely disappeared, but divergent strabismus persisted.¹⁴

CASE 10.—A girl, aged 18 years, had had high fever, headache, nystagmus, myoclonic twitchings of the face, neck, abdomen, arms and legs, and dysphagia, lethargy, muscular rigidity, ankle clonus, Babinski on the right side, and incontinence of urine. A diagnosis of lethargic and myoclonic encephalitis was made. Serum treatment was begun on the fifth day of illness; four daily intramuscular injections were given, totaling 90 c.c. The muscular rigidity and jerking diminished, the mental state greatly improved the day after the second injection, and improvement thereafter was gradual but steady. The patient recovered completely.¹⁵

CASE 11.—A boy, aged 12½ years, had had muscular pains in the shoulders, arms and legs, and a temperature of 100 to 101 F. for a week. He then developed hiccup every two to six minutes; drowsiness increased, and twitchings of the muscles of the legs were noted, with involuntary clonus of the left ankle, synchronous with spasms of the diaphragm, generalized clonic convulsions at intervals, and intermittent diplopia. The leukocyte count was 7,600. The blood and spinal fluid Wassermann reactions were negative. The urine was normal. The abdominal and cremasteric reflexes were

greatly increased. A diagnosis was made of lethargic and myoclonic encephalitis. Serum treatment was begun on the twelfth day of illness; four daily intravenous injections were given, totaling 40 c.c. The spasms of the diaphragm and other muscles, and lethargy disappeared completely during the serum treatment. Muscular twitchings of the left shoulder, which returned five days after the last injection, disappeared within twenty-four hours after an additional injection of 10 c.c. of serum. The patient recovered completely.¹⁶

CASE 12.—A woman, aged 22, had an initial attack of influenza. She had a moderate degree of fever, increasing slowness of speech, severe muscular pains the sixth day, increasing rigidity and lethargy, and unconsciousness on the eighth day, which continued until the eleventh day, when the first intramuscular injection of serum was given. Diagnosis of lethargic and myoclonic encephalitis was made. Seventy-one cubic centimeters was given in four daily doses. Decided but gradual decrease of all symptoms followed the second intramuscular injection of serum. The patient was troubled with insomnia during convalescence, but recovered completely.¹⁷

CASE 13.—A woman, aged 68, was sleepless and restless, and had painful clonic spasms of the abdominal muscles and the diaphragm on the right side. The spinal fluid cell count was 12; the Wassermann reaction was negative, and pressure greatly increased. A diagnosis of myoclonic encephalitis was made. Serum treatment was begun on the ninth day of illness; five injections were given, totaling 98 c.c. The symptoms diminished after each of five serum treatments, in which 10 c.c. was given intravenously, and 10 c.c. intraspinally from twenty-four to forty-eight hours apart. The patient recovered completely shortly after the last serum treatment.¹⁸

CASE 14.—A girl, aged 12½ years, developed uncontrollable movements of the feet and arms, and the muscles of the trunk, which increased to violent choreiform movements involving the whole body. She was aphasic, and semicomatose, with the eyes half opened. Her fever was high, and she was stuporous following an attack of cystitis and parotitis. Athetosis was marked; she made bizarre grimaces. The patellar reflexes disappeared. Loss of weight was marked. The blood and spinal fluid Wassermann reactions were negative. The cell count ranged from 2 to 40; the globulin was slightly increased. A diagnosis of the lethargic and choreiform type of encephalitis was made. Serum treatment was begun on the ninety-fifth day of illness; five daily intravenous injections were given, 50 c.c. in all. The fever gradually declined during the four days following the first injection; the mental status remained unchanged; the muscular spasms diminished slightly. The patient gradually improved thereafter, with ultimate complete recovery.¹⁹

CASE 15.—A man, aged 28, had had hiccup for three days, and a week later, severe pain around the left ear and left side of the face, with involuntary movements of the muscles of the face, arms and lower extremities. He had severe headache, insomnia, diplopia and fever, and was excited and talkative. The leukocyte count was 6,800. A diagnosis of the choreiform type of encephalitis was made. Serum treatment was begun on the sixteenth day of the illness; four intramuscular injections were given, 70 c.c. in all. Fever, diplopia, choreiform movements, insomnia and pains were markedly lessened during the period of serum injections. The patient recovered completely.²⁰

CASE 16.—A man, aged 38, had fever, pain in the head, neck and shoulders, vertigo, and twitchings of muscles, followed by choreiform movements of the hands and arms, hiccup, associated with short, quick respirations, tachycardia and delirium, and was stuporous. The spinal fluid was normal, but the pressure was increased. A diagnosis of the neuritic and myoclonic type of encephalitis was made. Serum treatment was begun on the thirtieth day of the illness; three daily intravenous injections were given, the total being 67 c.c.

11. Case reported by Dr. F. W. Heagey, Omaha.

12. Case reported by Dr. Kenelm Winslow, Seattle.

13. Case reported by Dr. Maurice H. Tallman, Boise, Idaho, and Dr. W. M. Mitchell, Parma, Idaho.

14. Case reported by Dr. W. L. Allison, Fort Worth, Texas.

15. Case reported by Dr. A. E. Westervelt, Bowdon, N. D.

16. Case reported by Dr. M. R. Hoon, Pittsburgh.

17. Case reported by Dr. D. W. Matthaei, Fessenden, N. D.

18. Case reported by Dr. D. L. Dawson, Rice Lake, Wis.

19. Case reported by Dr. F. J. Sladen, Henry Ford Hospital, Detroit.

20. Case reported by Dr. M. M. Banowitch, Beth Moses Hospital, Brooklyn.

There was marked improvement twenty-four hours after the first injection of serum. The patient recovered completely.²¹

CASE 17.—A woman, aged 35, had vertigo, prostrating weakness, and paralysis of the sixth and seventh cranial nerves on the left side, but no fever. The leukocyte count was 9,600. The blood Wassermann reaction and spinal fluid findings were negative. A diagnosis of neuritic encephalitis was made. Serum treatment was begun on the eleventh day of the illness; six daily injections were given, 80 c.c. in all. Two days after the sixth dose of serum, symptoms of paralysis of the cranial nerves had almost disappeared, only slight widening of the palpebral fissure remaining.²²

CASE 18.—Mrs. C., aged 28, had an attack of encephalitis in which she developed incomplete facial paralysis, and complete inability to cough, evidently from paralysis of the diaphragm. She was given three daily intravenous injections of 10 c.c. of the serum five weeks after the onset of the illness. Marked improvement was noted after the use of the serum, and after the serum reaction, which occurred the day following the third injection. Twelve days later, the facial palsy had disappeared; she was again able to cough, and had apparently recovered completely.²³

CASE 19.—A woman, aged 30, had moderate fever, headache and restlessness. An abnormal mental state was followed by acute mania. The patient refused food and medicine, and would alternately strike, bite and scratch the nurses, and sing. Urination and defecation were involuntary. The spinal fluid cell count was 1, and Fehling's test was positive. A diagnosis of encephalitis, with maniacal symptoms, was made. After withdrawal of spinal fluid, which was under pressure, the patient became quieter, but continued to be irrational, and refused food and medicine for a week. On the eleventh day of illness, 1 c.c. of serum was given subcutaneously, and a short time later, 10 c.c. intravenously. The following day there was marked improvement. After two more daily intravenous injections of 15 c.c. each, the patient was quite normal, asked for a daily paper, which she read, and wanted to go home. Three days later, she reverted to her former condition, refused to take nourishment, or to speak, and kept her head covered. Ten cubic centimeters of serum was given intravenously. The following morning she was normal again, and remained so.²⁴

CASE 20.—A man, aged 26, had diplopia, severe pain in both shoulders, lassitude, and fever for five days, followed by increasing lethargy and stupor, a staring, masked expression, and muttering speech. The spinal fluid was normal. A diagnosis of the lethargic and parkinsonian type of encephalitis was made. Serum treatment was begun on the fifteenth day of the illness; six daily injections were given, totaling 70 c.c. Lessening of fever, pain, stupor and the parkinsonian facies followed the first injection, and improvement continued after subsequent injections. Recovery was complete.²⁵

CASE 21.—A woman, aged 39, was weak, completely disabled, and mentally apathetic, and all movements were slow and difficult, with marked muscular resistance and tremor of the hands. She was unable to feed herself, and had marked drooling of saliva. The condition had developed gradually for three years, following an obscure infection considered to be walking typhoid. Blood Wassermann and spinal fluid reactions were negative, and the urine was normal. A diagnosis of postinfluenzal encephalitis, of the parkinsonian type, was made. Serum treatment was instituted, 10, 20 and 20 c.c., respectively, of serum being injected intravenously on alternate days. No effect was apparent until after the last injection, when rash, slight swelling of joints, and elevation of temperature developed, lasting forty-eight hours. When these symptoms subsided, gradual but well-marked improvement followed. The mental attitude improved; muscular resistance and drooling of saliva gradually decreased; the patient became much encouraged, was able to feed herself and walk about the hospital wards, and carried her grip as she left the hospital, apparently recovered.²⁶

CASE 22.—A man, aged 35, after an attack of influenza had had lethargic encephalitis, lasting several weeks, and had been unable to work the past year on account of weakness, stiffness and tremor of muscles, and mental depression. Examination revealed stiffness and weakness of all muscles, "pill-rolling" movements between thumb and index finger of the right hand, and a slow, laborious gait with stooping posture. The patient's condition remained unchanged for two months while he was in the hospital. The blood and spinal fluid Wassermann reactions were negative. A diagnosis of parkinsonian syndrome following lethargic encephalitis was made. Serum treatment was begun fourteen months after the onset of the disease, 10, 20 and 25 c.c. of serum being injected intravenously on alternate days. Severe serum reaction followed soon after the third injection, but marked improvement began simultaneously with recovery from the serum sickness. The weakness and stiffness of muscles, the tremor in the right hand, and the facial mask have practically disappeared, and improvement has been continuous for two months.²⁷

THE VALUE OF THE TOXIN (ANTIGEN) OF RHUS TOXICODENDRON AND RHUS VENENATA

IN THE TREATMENT AND DESENSITIZATION OF
PATIENTS WITH DERMATITIS VENENATA

ALBERT STRICKLER, M.D.

Dermatologist, Samaritan Hospital; Assistant Dermatologist,
Philadelphia General Hospital

PHILADELPHIA

In this contribution I present a statistical discussion of two problems. The first is a study of the relative value of the antigen method of treating dermatitis venenata due to poison ivy or poison oak, as compared with the older methods of local applications. The second phase of the discussion is whether or not this specific toxin (antigen) treatment is of value in the prevention of attacks of dermatitis venenata in those who are highly susceptible to it. The data represent the accumulated experiences, not only of myself, but of many other physicians throughout the country who have utilized this method of treatment.

TREATMENT OF THE ATTACK OF DERMATITIS VENENATA

The attack of dermatitis venenata represents a state of hypersensitivity on the part of the person affected to this particular form of irritant. The old method of local application utilized remedies, in the treatment of dermatitis venenata due to poison ivy or poison oak, which were either slightly astringent and itch relieving, or medicinal substances which were, in themselves, irritants. The first group of remedies, by their cooling and soothing influences, attempted in this fashion to quiet the inflammatory reaction of the skin, diminish its subjective and objective cutaneous manifestations, and thus limit the spread of this form of dermatitis. The second group of remedies, those applied in the nature of counterirritants, attempted to overcome this specific cutaneous inflammation by increasing the amount of defensive substances sent to the inflamed skin, and thus conquer the inflammation and control its spread. This method, owing to the possibilities for harm, has never enjoyed great popularity among the profession. The great weakness of this mode of treatment is the attempt to overcome a specific reactionary inflammation with nonspecific remedies. It has

21. Case reported by Dr. Kenelm Winslow, Seattle.

22. Case reported by Dr. C. S. Bluemel, Denver.

23. Case reported by Dr. William House, Portland, Ore.

24. Case reported by Dr. B. H. Champion, Vancouver, B. C.

25. Case reported by Dr. T. B. Kelly, Butte, Mont.

26. Case reported by Dr. G. W. Dishong, neurologic service, St. Joseph's Hospital, Omaha.

27. Case reported by Dr. G. W. Dishong, neurologic service, St. Joseph's Hospital, Omaha.

occurred to us that the employment of the active principles derived from the plants, capable of producing a dermatitis venenata in the susceptible subjects, represented the rational therapeutic method of procedure.

TABLE 1.—Patients Suffering from Dermatitis Venenata Due to Poison Ivy and Poison Oak Treated by the Toxin (Antigen) Method of Treatment

Physician	No. of Patients Treated	Successful Results	Doubtful Results	Unsuccessful Results	No. of Hours after First Injection Before Results Were Noted	No. of Injections to Complete Cure	Average No. of Injections Given to Each Patient
1. Dr. M.	7	7	..	..	24 to 48	2 to 3	2 to 3
2. Dr. F.	16	16	..	..	3 to 24	2 to 4	3
3. Dr. A.	2	2	..	..	48	3	3
4. Dr. B.	1	1	..	..	.....	3	3
5. Dr. E.	4	4	..	..	48	3	3
6. Dr. H.	8	7	1	..	24 to 36	2 to 3	3
7. Dr. H.	4	4	..	..	6 to 24	2 to 4	2 to 4
8. Dr. H.	4	4	..	..	48	3	3
9. Dr. L.	6	6	..	..	24 to 48	4	4
10. Dr. M.*	20	15	3	2	24	3 to 4	4
11. Dr. P.	2	1	1	..	24	2	2 to 3
12. Dr. R.	1	1	..	..	24	3	3
13. Dr. S.	2	2	..	..	24	3	3
14. Dr. S.	1	1	..	..	4	2	2
15. Dr. S.	1	1	..	..	24	2	2
16. Dr. S.	1	1	..	..	..	6	6
17. Dr. T.	1	1	..	..	48	3	3
18. Dr. T.	1	1	..	..	2	3	3
19. Dr. W.	9	9	..	..	24	2 to 3	2
20. Dr. J.	8	8	..	..	2	2 to 5	2 to 3
21. Dr. L.	2	2	..	..	..	1 to 3	1 to 3
22. Dr. S.	24	24	..	..	24	3 to 4	3
23. Dr. B.	2	2	..	..	12 to 24	3	3
24. Col. K.†	17	17	..	..	24 to 48	1 to 2	1
25. Dr. E.	6	3	3	..	.....	.....	.....
26. Dr. D.	4	..	..	4	No results	.....	.....
27. Dr. E.	1	1	..	..	.....	.....	.....
28. Dr. B.	1	..	1	..	.....	.....	.....
29. Dr. M.	2	2	..	..	48	2	2
30. Dr. Q.	6	6	..	..	48	2	2
31. Dr. R.	2	2	..	..	4th day	5	5
32. Dr. B.	6	6	..	..	24	1 to 2	2
33. Capt. P (Oak)	50	50	..	..	24 to 48	2 to 3	2
34. Dr. A. (Oak)	34	34	..	..	24 to 48	1 to 3	2
35. Dr. S. (Author)	100	96	..	4	24 to 48	2 to 4	3

* University of Wisconsin.
† West Point Military Academy.

The most authoritative work shows that the active principle of poison ivy or oak is a substance of glucosidal nature. This substance is nonvolatile even when mixed with acetic acid and alcohol. The method of isolating the substance has already been discussed.¹

The toxin (antigen) treatment of dematitis venenata, caused by poison ivy, which is the most common type in the eastern United States, consists in the intramuscular injection of a solution of this specific antigen. The author's technic consists in giving a series of from three to five injections, the number administered varying with the severity of the attack and the response on the part of the patient. The dose of the present preparation varies from 0.3 to 0.5 c.c., although doses up to 0.7 c.c. may be given.

The first two doses are given at a twenty-four hour interval, the remainder at intervals of from forty-eight to seventy-two hours, depending on the response of the patient. As a rule, to which there are few exceptions, the itching associated with this form of dermatitis disappears completely, or is greatly modified, within twenty-four hours after the first injection.

With the relief of the itching, the swelling and redness of the parts affected begin to disappear, and vesicles present begin to dry up and form crusts, which soon fall off. The skin is usually restored to normal in from four to five days after treatment is instituted,

except in those generalized and violent cases of dermatitis venenata in which the restoration of the skin to normal may be more delayed. These results are accomplished without the aid of any external remedies whatsoever.

Table 1 gives a detailed account of the results achieved in the treatment of more than 350 cases of dermatitis venenata due to poison ivy or oak treated with the toxin (antigen) method.

A study of the table shows that there are records of 356 patients suffering from dermatitis venenata due to either poison oak or poison ivy and treated with the toxin (antigen) method. Of this number, ten patients, or 2.8 per cent., received no benefit whatsoever and nine patients, or 2.5 per cent., received some, though doubtful, improvement. These results compare favorably and, indeed, are vastly superior to those obtained by any form of local application as yet devised for the treatment of this affection.

In some instances, improvement was noted as early as two hours after the institution of treatment; and when success was attained, improvement never occurred later than forty-eight hours after treatment was begun. In the vast majority of cases, improvement was noted twenty-four hours after the institution of this mode of treatment. In many instances, one or two injections were all that were required to cure, but in the larger number of instances, three or four injections were deemed necessary.

DESENSITIZATION

The desensitization that can probably be conferred by the antigen method of treatment against dermatitis venenata by poison ivy or poison oak is in all probability of short duration and one which has to be renewed from time to time. It also appears probable that this immunity is a tissue immunity similar to that of hay-fever. Various immunologic studies have failed to disclose any immune substances in the blood serum of susceptible patients. The technic for immunization varies slightly from that employed in

TABLE 2.—Results Obtained by the Use of the Toxin (Antigen) Method of Desensitization in Patients Suffering from Dermatitis Venenata Due to Poison Ivy

Physician	Number of Patients Desensitized	Results
1. Dr. B.	1	No return of poisoning since last acute attack (no dates given in report); result was apparently favorable
2. Dr. R.	1 (himself)	Highly favorable result; although exposed, had practically no outbreak
3. Dr. T.	1	Favorable result; patient, although exposed, had practically no outbreak
4. Dr. P.	1	Favorable result; patient, although exposed, had practically no outbreak
5. Dr. S. (author)	16	Favorable results in fourteen cases; in two cases the author failed to immunize the susceptible patient

the cure of the attack. The injections, numbering four, are given intramuscularly, three or four days apart. The dose varies from 0.3 to 0.5 c.c. After the course of intramuscular injections, the patient is advised to take the tincture of rhus toxicodendron or the tincture of rhus venenata, as the case may be, by mouth, for a period of one month. The dose of this mouth remedy varies from 5 to 10 drops of the tincture well diluted in water, after meals.

1. Strickler, Albert: The Toxin Treatment of Dermatitis Venenata, J. A. M. A. 77: 910 (Sept. 17) 1921.

In all, we have the record of twenty patients who have been immunized by this method and whom we have been able to follow. Table 2 summarizes the results obtained by various physicians, including the author, in their effort to desensitize highly susceptible patients.

The following are the records of some of the patients desensitized:

REPORT OF CASES

Dr. R. reports one case: "I have been a sufferer from ivy poisoning almost every year. I took the whole course of treatment as directed, the three injections and tincture by mouth. I paid no more attention to where I went on my fishing trips than if the weed were nowhere in sight. On one occasion, I had a small row of blisters on one hand which remained distinctly localized and did not spread at all."

Dr. T. reports one case: "This person spends her summers in the northern woods, and each summer suffers intensely from rhus poisoning. During the month of June last year, I gave her six injections of the antigen, following the last of which she departed immediately for the north. She then took the preparation by mouth, as outlined. On her return home in late September, she related that she had had no trouble during the months of July and August, although frequently exposed, but had had a very slight attack about two weeks before arriving home, and three weeks after the use of any drug by mouth. She felt sure that all credit was due to the use of the preparation."

Dr. P. reports one case: The treatment was administered in July, 1922, with four immunizing doses at weekly intervals. This patient has always been susceptible to rhus dermatitis, and the past summer was her most comfortable summer in years. While on her vacation in August, after exposure to rhus, she had about a dozen scattered blebs, on the arms and legs. She was given an injection of the toxin, and the blebs dried up within twenty-four hours. This patient could not take the rhus tincture internally, as it caused an inflammation of the buccal mucous membrane.

AUTHOR'S SERIES

H., a young boy, highly susceptible to poison ivy, was immunized in the early summer of 1921. Although frequently exposed, he passed through the summers of 1921 and 1922 without any attacks of dermatitis venenata. Early in 1923, the patient developed a mild attack of poison ivy.

Miss Q., aged 11 years, highly susceptible to poison ivy, was immunized in the summer of 1921, and since that time has been free from dermatitis venenata, although exposed.

Miss R., aged 9 years, also highly susceptible to dermatitis venenata, caused by poison ivy, was immunized in the summer of 1921. Although exposed since, she has been free from any attack.

Mrs. H. T. F. had been subject to dermatitis venenata every summer. It was so severe that she was confined to bed for a period of from four to six weeks. During the summer of 1921, she was given five intramuscular injections of rhus toxin, dose 0.5 c.c., every third day. After this course of treatment, she went out in the woods and even picked the ivy leaves without suffering any ill effects.

In this connection, I quote from an unpublished communication of H. E. Alderson, by courtesy of the author:

A young woman had acute dermatitis on her face and extremities, of two days' standing, caused by exposure to poison oak. The usual dose of 1 c.c. was injected intragluteally. The next day, her condition was somewhat improved. She was given another injection, 1 c.c. Within three days after the first dose, all her lesions had subsided to a great extent, and within two more days she was practically well. Locally, a zinc oxid starch was used.

To test her immunity, two months later, she deliberately rubbed some poison oak leaves into her skin. The results were most favorable. No dermatitis venenata resulted. Always, previous to this occasion, she was very susceptible

to the effects of poison oak. This test seems to prove that immunity had developed.

I could enumerate other instances in which such desensitization has been accomplished, but the cases enumerated constitute sufficient evidence of what can be accomplished by this therapeutic procedure.

COMMENT

In the treatment of dermatitis venenata due to poison ivy or poison oak, the toxin (antigen) method of treatment constitutes the best method of procedure. Counting the unsuccessful and doubtful results in this series of 356 cases, there were noted nineteen cases, or slightly more than 5 per cent., in which failure or only slight improvement resulted. I know of no method of treatment in which such a small percentage of failures has been encountered. It is to be emphasized that these results were obtained without the additional use of local applications. It is also to be remembered that relief is obtained usually within twenty-four hours after the institution of treatment, and only occasionally and in very severe and generalized cases does a forty-eight hour interval elapse before relief is obtained. Cure of this condition is obtained within from four to five days after the institution of this mode of treatment.

In the desensitization of highly susceptible patients, our results seem to be encouraging. With the small series at our command, one cannot be too dogmatic or overenthusiastic. All that can be said is that the use of this method is to be encouraged, as it is incapable of doing harm, is worthy of a trial, and the results thus far obtained by a number of different physicians, including myself, are very highly encouraging.

The method of desensitization is a rational one, and it is based on principles that have been successfully applied in the desensitization of other disease conditions. Considering that, in the past, no hope of prevention could be held out for these constant sufferers from poison ivy and realizing the great suffering and dread which these patients undergo, there is more than ample justification for the employment of this method of desensitization. The treatment is simple and can be carried out with ease, and if future results justify past experiences, this treatment should prove a great blessing to these highly susceptible persons. The method of procedure in desensitization is a combination of intramuscular and oral administration, exact technic of which has already been indicated.

As a result of the combined experiences here recorded, this form of therapy, both as a mode of treatment and as a method of desensitization, is offered to the profession as a great advance in obtaining relief for their patients suffering from poison ivy and poison oak.

327 South Sixteenth Street.

Hospital Is a Laboratory.—The value of the hospital as a laboratory cannot be too greatly emphasized. The congregation and variety of cases makes possible in a few months an experience that it would take otherwise years to obtain, but in this bedside experience should be included those diseases now prevalent, such as, mental, tuberculosis, and pediatrics. Furthermore, definite and comprehensive experience should be given in obstetrics and adequate experience as well as instruction in normal child life. The period of case experience should be of sufficient length and continuity to fix impressions and enable experimentation for the end result.—A. W. Goodrich, *Hospital Social Service* 7:172 (March) 1923.

ENCEPHALITIS FOLLOWING INTERFER-
ENCE WITH DEAD TEETH

REPORT OF TWO CASES *

ROBERT BURNS, JR., D.D.S.

SAN FRANCISCO

In 1921, Potts¹ reported a case of encephalitis developing rapidly after the extraction of a dead tooth. I have seen two similar cases. No attempt will be made here to discuss the etiology of encephalitis, but special attention may be directed in Case 2, to the entire absence of contact with an active case and the great improbability of contact with a carrier. The patient had not suffered from a prior attack of influenza and had not come in contact with any one so suffering.

REPORT OF CASES

CASE 1.—S. B. F., a married woman, aged 38, referred to me, Sept. 13, 1920, by Dr. William Banks, relative to the possibility of oral infection, had been in poor health for a number of years, had given evidence of hyperthyroidism, and had once been told that she had "incipient tuberculosis." Both these conditions were quiescent when she was sent to me, but she suffered a good deal from an anacid gastritis with incident colitis. To relieve pain, she took codein and, occasionally, heroin; she also was addicted to the use of barbitol. The patient was a writer, a clever woman, but plainly of the neurotic type. Her married life had not been happy, and about one year prior to the time when I saw her, she had suffered the shock of an automobile accident in which her son was killed.

Oral examination revealed a hopeless pyorrhea, with such a condition of malocclusion that masticatory efficiency was almost nil. Several teeth were absent, and pus exuded, on pressure, from the gums. In the upper jaw, nine of the remaining teeth were dead, infected or showed larger or smaller areas of rarefaction about the apexes. The right upper lateral incisor was absent, but there remained in situ the temporary lateral which had been devitalized for a porcelain crown supported by a pin. The root canal of this tooth had been perforated, and filling material protruded into the cancellous bone. On the gum over this tooth, also involving the permanent cuspid, was a tumor, irregular in outline and approximately 15 to 20 mm. in diameter—a papillary fibroma. In the lower jaw there were five dead teeth.

September 30, under ether, all the teeth were removed. The tumor, with the bone and the two teeth involved, was removed *en bloc*. No unusual circumstances occurred during the operation. The anesthetic was started at 9:05 and stopped at 10:20 a. m. At 3 p. m. the patient complained of headache, which persisted and required the administration of morphin. The following morning she was apathetic, and remarked, "Why, doctor, I see two of you." She had slight fever, the temperature being between 99 and 100 F., with a pulse rate of 100 to 112. She was restless and slept poorly, and, October 2, insisted on returning to her home.

October 4, she was dull, somnolent and apathetic; her faculties were not clear, and she answered dully when spoken to. It was said that she had taken barbitol; how much was not known. Twice during the night, she had also been given one-eighth grain of morphin, hypodermically. I warned against the use of these drugs, and advised Dr. Banks.

October 6, I removed the sutures in the mouth; the wounds were healing well, and that phase of the case was satisfactory, but I was worried about the drowsiness. I again cautioned about cutting down the morphin. The temperature at that time was 100. That evening, at about midnight, Dr. Banks was called hurriedly, and found the patient in coma. A partially empty bottle of tablets of barbitol (veronal) was found in

the bed. There was no positive knowledge that the patient had swallowed any of the tablets, but the usual emergency measures were taken. Dr. O. B. Jellinek was called in consultation, October 8, and lumbar puncture was done. Examination of the fluid was negative. At this time, the physicians made the diagnosis of epidemic (lethargic) encephalitis.

The patient remained in complete coma for at least three or four days, and then slowly began to recover consciousness. During the period of coma, the evening temperature was about 102; the morning temperature was lower. By October 12, the patient was much better, and eventually recovered completely. For two years she enjoyed better health than she had had for many years.

In October, 1922, she again began to fail in health, and for a period of about two months was confined in a private institution, the victim of manic-depressive insanity. At the height of this attack, she developed acute mastoiditis, and radical mastoidectomy was performed. She made a good recovery from this and the mental disorder, and is at the present time apparently well.

CASE 2.—T. E. B., aged 34, mother of two children, residing on a ranch in California, had always had good health, except that a little more than six years previously she had suffered a "nervous breakdown." She had entirely recovered, and was doing all the usual work of a ranch housewife. She had pyorrhea and six dead teeth, from which she suffered no local discomfort until January, 1922, when a dentist "killed the nerve" of two additional teeth by the application of arsenous oxid. One tooth gave no trouble; the other, in April, began to ache, the gum swelling slightly. The patient took acetylsalicylic acid.

May 10, the tooth ached badly, and was sore to the touch, and again the gum swelled.

May 11, the dentist drilled into the tooth. The patient said that blood and pus escaped, and relief was immediate.

May 16, she felt tired and dull. The next day she had dizzy spells and occasional diplopia.

May 20, diplopia was still present, and there was stiffness of the tongue and ringing in the ears.

The following day there was difficulty in swallowing and pronounced ptosis of the eyelids, with marked drowsiness, dryness of the mouth and inability to use the arms and shoulder muscles. The weakness of the arms continued, the right leg dragged, and vomiting occurred after a dose of calomel and also after taking salts. The patient reports that, May 25, she was at her worst, was helpless from the waist up, could not lift her head if it fell forward, and could scarcely swallow water.

She was examined by Dr. T. C. Edwards of Salinas, who reported to me that, when he first saw her, she had a slight elevation of temperature, with difficulty in deglutition and speaking, evidently on account of inability to use properly the muscles of the tongue and throat. In fact, all muscles, from those supplied by the brachial plexus upward, showed a decided loss of tone, though they were not paralyzed completely. Examination of the urine revealed: albumin; no sugar; no indican; many stratified epithelial cells; several granular casts and one fine granular cast.

The patient remained in Salinas under the care of Dr. Edwards until June 2, when I first saw her. She was placed in St. Francis Hospital, under observation by Drs. Thomas Kelly and Walter F. Schaller, who concluded that the patient was suffering from epidemic encephalitis. The oral findings were: general pyorrhea of advanced degree with deep pockets, with gums turgid and bleeding on slight pressure. Both upper central incisor teeth, the left upper bicuspid, right lower third molar and second bicuspid were dead, with rarefied areas in the apexes; the right lower central incisor had an area of rarefaction in the apical region, the root having been amputated several years before; the left lower first and second bicuspid and the first molar, which was the tooth which the dentist had probed, showed rarefied areas.

July 31, under a local anesthetic, I removed both left lower bicuspid and the first molar by turning back a flap and removing enough bone to uncover a large abscess cavity, into which the roots of the teeth projected. Healing was rapid and uneventful, and there was no systemic reaction.

* Read before the St. Francis Hospital Clinical Society, March 30, 1923.

1. Potts, H. A.: Report of Case of Cephalic Chancroid, and Case of Encephalitis Following Extraction of a Tooth that had Infection at the Apex, J. A. M. A. 77: 1885 (Dec. 10) 1921.

November 1, Dr. Edwards wrote me: "Her condition is markedly improved. The only thing she complains of now is the uncertainty of movement of the hands when they are elevated above the head, as in the efforts to fix the hair. There is some dryness of the mouth, under unusual excitement, and on exertion she gets a little dizzy and is short of breath. She weighs over 160 pounds [73 kg.] and looks exceedingly well." In January, 1923, when I did further dental work, all symptoms had disappeared except slight weakness in the deltoid muscles, under stress.

COMMENT

I would emphasize the improbability of contact with epidemic encephalitis in Case 2. The patient lives on an isolated ranch, 12 miles from a village of a few hundred inhabitants, where she consulted the dentist. The practice of this dentist is purely local, and he knows, personally, all his patients and their families. If any of his patients had ever had epidemic encephalitis, the dentist and the whole community would have known it. It is not impossible that the stirring up of the dental focus liberated into the blood stream an organism that lodged in the encephalon and produced the syndrome recorded.

135 Stockton Street.

INSULIN IN DIABETES COMPLICATED BY INFECTION

NECROPSY REPORT OF THREE FATAL CASES *

SOLOMON STROUSE, M.D.

AND

OSCAR T. SCHULTZ, M.D.

CHICAGO

Our own clinical experiences with insulin¹ have been uniformly favorable. It has reduced blood sugar, caused the disappearance of glycosuria, increased the patient's weight and working capacity, and in several instances has tided over patients in crises which without insulin probably would have ended in death. One of our first patients had an unusually severe type of disease complicated by fever of unknown etiology, and ending in death from pneumonia while under insulin therapy. Two other patients died while receiving insulin; in all three, immediate necropsies were obtained. It seemed to us that a careful clinical and pathologic investigation of these three cases would be of considerable importance in determining the value of the new remedy under unfavorable circumstances. All three cases were complicated. Infection played an important rôle in the death of all. Clinicians have always dreaded the onset of even a mild infection in patients with diabetes; this evaluation of insulin in infection should be of particular importance at the present time. In addition to the three fatal cases, we can add two cases of diabetes with severe infection in which insulin exerted a definitely potent and valuable effect.

CASE 1.—History.—W. D., a man, aged 38, white, admitted, April 13, 1922, had had diabetes three and one-half years, and had shown a steadily downward course. At the onset of the disease he weighed 150 pounds (68 kg.); in April, 1922, he weighed only 96 pounds (43.5 kg.).

He was 6 feet, ½ inch tall and looked like a skeleton. The eyes were deeply set and sunken into hollows. There was a systolic blow over the mitral area; there was no heart enlargement and no signs of decompensation. No other abnormalities were found on careful examination.

The urine on a test diet of 40 gm. of protein, 90 gm. of fat, and 50 gm. of carbohydrate, contained 30 gm. of sugar, 8.5 gm. of nitrogen, and gave marked positive acetone and ferrie chlorid reactions. The blood sugar was 0.28 per cent.; nonprotein nitrogen, 46.2; carbon dioxid, 51.3 per cent. by volume.

A rather difficult patient to handle dietetically, he was discharged from the hospital, June 14, 1922. His diet then was: protein, 40 gm.; fat, 125 gm.; carbohydrate, 30 gm.; calories, 1,405; weight, 106½ pounds (48.4 kg.). The blood sugar was 0.12 per cent.; the urine was normal, and in general he felt stronger.

He kept in good condition most of the summer, mainly sugar-free, but we were never able to increase his tolerance beyond 1,400 calories. Oct. 26, 1922, he again entered the hospital for the study of insulin treatment.

Clinical Course.—On admission, no change was noted in the physical examination, except a loss of weight to 101 pounds (45.8 kg.). On a diet of protein, 45 gm., fat, 130 gm., and carbohydrate, 25 gm., calories, 1,450, the daily sugar output was 13 gm.; nitrogen, 9 gm.; the acetone and ferrie chlorid reactions were negative. The blood sugar was 0.208 per cent.; carbon dioxid, 50.7 per cent. by volume.

October 31, 10 units of insulin was injected. The following day only a trace of sugar was excreted, and on the second day, the urine was sugar-free. From 10 to 12 units was given daily; the diet was increased very rapidly, so that by the end of the seventh day, it was protein, 65 gm.; fat, 160 gm.; carbohydrate, 95 gm. The urine remained sugar-free. His weight rose to 104 pounds (47.2 kg.), and he felt strong and "peppy." The blood sugar was 0.18 per cent. The amount of glucose burned had risen in one week from 38 to 133 gm.

A period of experimental study of the possibilities of giving insulin by inunction resulted in immediate glycosuria; but successful insulin therapy was noted from November 17 to December 4. On this date the diet consisted of protein, 65 gm.; fat, 150 gm.; carbohydrate, 65 gm.; calories, 1,870; the weight, however, was only 102 pounds (46.3 kg.), despite the absence of abnormal urinary constituents.

Beginning December 4, a definite change in the clinical picture was observed. At irregular intervals the patient's temperature rose, at times only as high as 99.4, again to 101.8 F. There was no regularity to the febrile recurrences, and the only manifestation of their occurrence was the apathy of the patient. Physical examinations were made by us as well as by other members of the hospital staff, but nothing was found to account for the fever. The systolic heart murmur noted at the first examination was constantly present; otherwise there were no physical signs of disease. This febrile course lasted until December 31. From this date until Jan. 27, 1923, the temperature showed weekly remissions. Several blood cultures were negative. The Wassermann test was negative.

During this time the patient gradually grew more apathetic and steadily lost weight (98 pounds [44.5 kg.] before death). January 27, he developed an acute lobar pneumonia of the left upper lobe, from which he died, January 31.

During all this time, insulin was pushed. During one period of about a week between December 16 and 21, work with other patients showed that the extract was not very potent, but this was quickly remedied by an extra supply. The dosage employed varied between 30 and 40 units. Sugar was almost constantly present in the urine in amounts from 3 to 30 gm. By January 1, the diet had been reduced to protein, 45 gm.; fat, 130 gm.; carbohydrate, 25 gm.; calories, 1,450. The blood sugar was 0.308 per cent.; acetone appeared in the urine during this period. There were no other signs of acid intoxication.

Necropsy.—This was done three hours after death. The brain was normal, and the hypophysis showed no change. The thyroid was decreased in size, each lobe measuring 4 by 2.5 by 0.8 cm. Dense fibrous adhesions almost completely obliterated each pleural cavity. The peribronchial lymph nodes were slightly enlarged, and one was fibrous and partly caseous. The upper lobe of the left lung was completely consolidated in a stage of gray hepatization. The pericardial

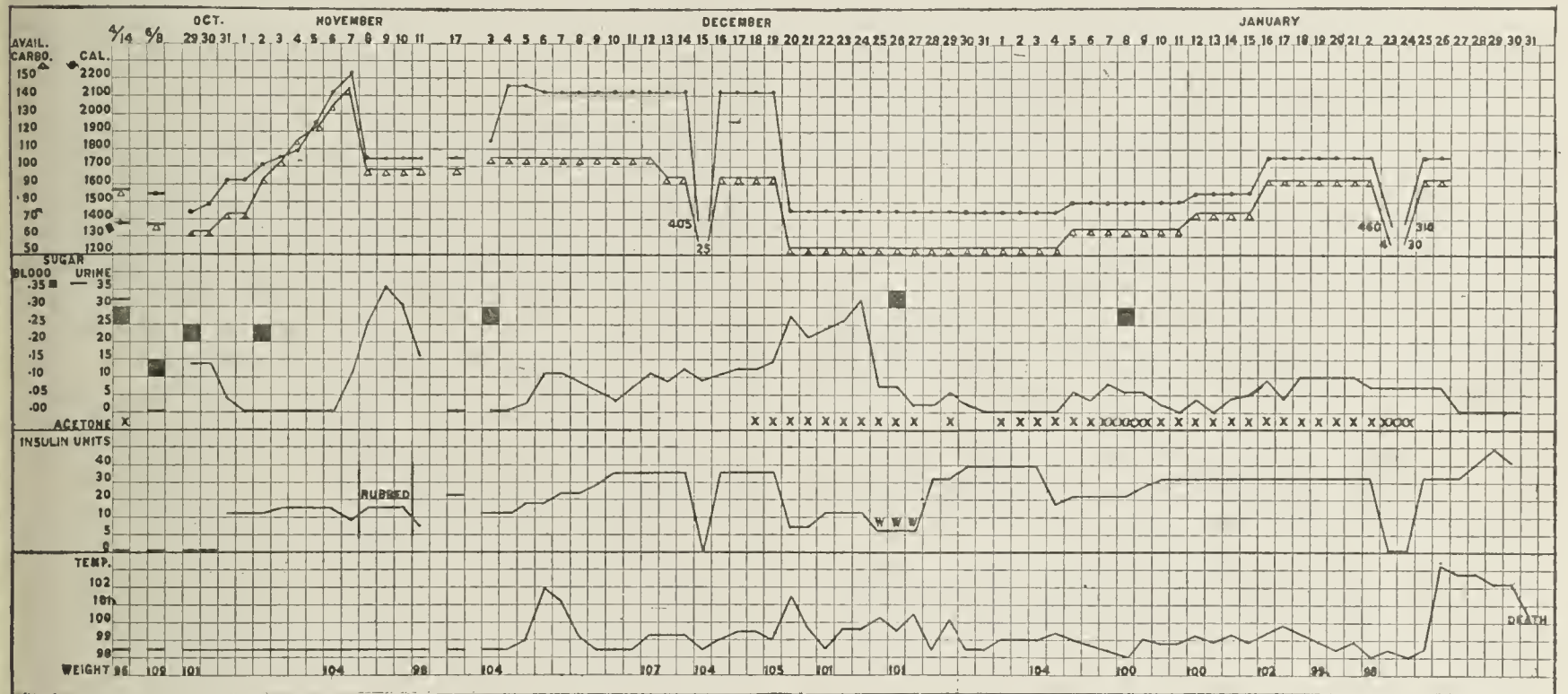
* From the Medical Service and the Nelson Morris Memorial Institute for Medical Research of the Michael Reese Hospital.
1. The insulin used in this study was insulin-Lilly.

cavity contained about 200 c.c. of clear fluid. Small, calcified nodules were scattered about in the visceral pleura of each lung. Beneath the capsule of the liver were about twenty whitish, firm nodules from 1 to 2 mm. in diameter. Similar nodules were present beneath the capsule and in the substance of the spleen. The pancreas measured 15 cm. in length, 6 cm. in greatest width and 0.8 cm. in thickness; it weighed 27 gm. It was finely lobulated, soft, and salmon pink.

Microscopic examination revealed marked acute degenerative changes in the myocardium. The cross striations of the muscle fibers were indistinct; the cytoplasm was swollen, cloudy and vacuolated. The aorta contained nodular areas of sclerosis with central degeneration. In the liver there was marked central congestion, with compression and partial atrophy of the cells of the central zone. Many of these cells contained granular brown pigment. In the rest of the liver lobule, the parenchyma cells were swollen and compressed the sinusoids. Their cytoplasm was homogeneous and glassy. Some of the portal vein branches of the interlobular tissue were surrounded by narrow zones of leukocytic infiltration. The nodules of the pleura, liver and spleen had a thick outer layer of very dense, hyaline, fibrous tissue poor in nuclei, and a center of granular, homogeneous, struc-

They were almost completely transformed into an eosin-stained, coarsely and finely vacuolated ground substance, in which the sinusoids could not be recognized. This material still contained a few cells, some with shrunken pycnotic nuclei, others with greatly enlarged hydropic nuclei poor in chromatin.

This was a severe case of diabetes in which the maximum glucose tolerance under dietotherapy alone was 30 gm., and which immediately reacted to insulin by a tremendous increase in tolerance. During the treatment a fever developed, the etiology of which was not disclosed even at necropsy. The old healed tubercles were completely encapsulated and showed no signs of activity; active tuberculosis can hardly have been the cause of the fever. At the onset of fever there was a large increase in sugar excretion, which was certainly due in part to a poor quality of insulin, as was proved by the immediate beneficial effect of some other insulin. After potent insulin was again used, the sugar excretion dropped, but despite diminished food intake and increased insulin dosage, the following febrile period was characterized by the constant excretion of small



Course in Case 1. Available carbohydrate (according to the formula $C. + 0.58 P.$) is recorded as total grams in twenty-four hours; urinary sugar, as total grams excreted in twenty-four hours. At the point marked "Rubbed" on the insulin curve, subcutaneous administration of insulin was replaced by injections of insulin in hydrous wool fat. From December 16 to 24, the insulin used was of low potency; on the days marked "W" on the insulin curve, it was replaced by insulin from another source; following this period the insulin was again highly potent.

tureless, often partly calcified material. The partly caseous peribronchial lymph node had a similar structure. All of these lesions appeared to be old, well healed tubercles with no evidence whatever of recent activity. The changes in the consolidated lung were those typical of lobar pneumonia in the gray hepatization stage.

In the pancreas, an acinous arrangement was indistinct, the entire pancreas being composed of small groups of cells and suggesting fetal pancreatic tissue in appearance. The lobules were small, but ducts were numerous and were more closely placed in the tissue than normal. The islets were decreased in size, but definitely recognizable. In general, their size was small, the average dimensions being 70 by 90 microns; a few were larger, and measured 130 by 160 microns. The islets were composed of anastomosing cords one or two cells wide, the cords being separated by broad sinusoids. The cells were of uniform size and morphology. Their nuclei were relatively large and vesicular. The cytoplasm formed a narrow rim about each nucleus, and was homogeneous, finely granular and rather deeply stained. In some of the cells it was vacuolated. In a small number of islets, marked degenerative changes were present. Such islets were decreased in size even below the average dimensions given above.

amounts of sugar daily. During this period the patient's general condition gradually deteriorated, he grew weak and apathetic, lost weight, and developed an acute lobar pneumonia from which he died.

The cause of the constant glycosuria is difficult to determine. The extra glucose derived from body protein should have been taken care of by the amount of insulin used. Whether this sugar existed in a form not influenced by insulin is a problem raised by the recent work of Winter and Smith.²

In attempting to interpret the results in this case, we believe we must be guided by a sense of mathematical proportions. Diabetes is a disease characterized by a mathematical derangement of metabolism, and insulin is a therapeutic agent with mathematically defined possibilities. From evidence so far collected, it is apparently true that the power of inducing sugar combustion in the patient with diabetes is not a constant factor in each case.

2. Winter, L. B., and Smith, W.: J. Physiol. 56:227 (May) 1922; 57:100 (Dec.) 1922.

In the present case the course can be divided into four stages: (1) The maximum improvement under dietary therapy, followed by a stationary period during which the patient barely held his own; (2) a period of marked improvement under insulin therapy; (3) the febrile period, during which the insulin effect was less powerful than before, and (4) the onset of acute lobar pneumonia in a man who for more than three years was steadily going down-hill from a severe diabetes. This must be considered the real reason for the failure of insulin to prevent death.

CASE 2.—History.—Mrs. K. K., aged 65, white, seen on the night of March 13, 1923, had been suffering for two weeks from an attack of upper respiratory infection which was epidemic in Chicago at the time. In the preceding twenty-four hours she had rapidly grown worse, and was becoming sleepy, and disoriented. The respirations were becoming increasingly rapid. She gave a history of untreated diabetes with constant glycosuria and much loss of weight for fourteen years.

Physical Examination.—The patient was much disoriented and very "dopey," but could be roused by strong stimuli. The ocular tension was low. The breathing was distinctly of the Kussmaul type; acetone was evident in the breath. The pharynx was injected; scattered râles were present in the bases of both lungs; the heart measured 11 cm. to the left in the fifth interspace, and 3.5 cm. to the right. A rough systolic blow was heard at the apex. The pulse was 120 and very small. The deep reflexes were not obtained. A plain specimen of urine contained much sugar, albumin, acetone and diacetic acid.

Treatment and Course.—Her condition was so extreme that she was rushed to the hospital, and without waiting for further laboratory study, insulin injections were immediately begun. At 10:30 p. m., 12:30 a. m., 3 a. m. and 7 a. m. she received 10 units. Digitalis was given in large doses; orange juice, milk, hot drinks and sodium bicarbonate were also given.

Early on March 14, it was evident that the threatened diabetic coma had been averted, but the general condition of the patient was bad. Her temperature was 102 F.; the pulse, 160 and irregular; respirations 40, but not of the Kussmaul type. She was still disoriented. The tongue was dry. A lobar pneumonia of the left lower lobe was found; the heart was dilated. The liver was palpable 5 cm. below the costal margin.

The urine contained decidedly less sugar and less acetone than the specimen voided the night before. The blood sugar was 0.41 per cent.; nonprotein nitrogen, 67.2; carbon dioxide, 40 per cent. by volume; Wassermann reaction, negative; hemoglobin, 60 per cent.; red blood count, 2,900,000; white blood count, 4,500.

The treatment was continued as outlined; insulin in 20 unit doses was given at 1:30 p. m. and at 3:30 p. m. The afternoon urine contained only a trace of acetone. Cardiac weakness became steadily more marked, and she died at 6:40 a. m., March 15.

Necropsy.—This was done at 9 a. m. The lower lobe of the left lung was almost completely consolidated, its cut surface being red and rather dry. The lower right lobe and the upper left lobe contained patchy areas of consolidation. The remaining lung tissue was edematous. The aorta appeared normal, but the coronary arteries of the heart were sclerotic. The myocardium was red, and contained an increased amount of connective tissue. The pancreas measured 15 by 3.5 by 0.8 cm. It was pink, and contained a slightly increased amount of fat. The remaining organs showed no gross changes of importance.

Microscopic examination disclosed that the process in the lungs appeared to be a confluent bronchopneumonia. The heart muscle fibers were swollen, and in some the striations were indistinct and the cytoplasm was vacuolated. Small, scarlike areas of connective tissue were present in the myocardium. Groups of liver cells contained large fat vacuoles. The nonvacuolated cells were swollen, and their cytoplasm

had a homogeneous, waxy appearance. Many of the nuclei were edematous. Parenchymatous changes were marked in the kidneys.

Small, round areas of fat were scattered about within the lobules of the pancreas, and interlobular adipose tissue was moderately increased in amount. The islets were few in number, and averaged about 90 microns in diameter. A few were larger, and had dimensions of 160 by 220 microns. The islet cells varied somewhat in size, and had a less definite cordlike arrangement than in the first case. The smaller cells had finely granular, solid, deeply stained cytoplasm. In the larger ones the cytoplasm was more faintly stained, and was finely to coarsely vacuolated. The nuclei varied considerably in size. Chromatolysis was evident in some of them. The acinous tissue appeared normal.

This was a neglected case of diabetes in an elderly woman who developed an upper respiratory infection terminating in bronchopneumonia. Severe diabetic acidosis was produced, with characteristic Kussmaul air hunger. Under insulin therapy there was a striking and rapid disappearance of the signs of diabetic acidosis, although the pneumonic intoxication and the cardiac decompensation increased in severity and caused death.

CASE 3.—A widow, aged 70, white, admitted, Feb. 2, 1923, complained of diabetes of five years' duration; steady itching around the genitalia; infection of the right foot for four weeks, and abdominal swelling for five years.

The diabetes was mild. For two years after the onset she had sugar, and then under moderate diet restriction she was free of sugar for three years. Three weeks before admission, sugar reappeared. The swelling of the abdomen was first noticed five years ago; it increased in size for three years, and has been quiescent for the last two years. Five years ago she was told she had a prolapse of the bladder. The infection around the right foot had steadily been growing worse, and was associated with much pain.

Examination.—The patient looked very old. The lungs were clear. The heart was enlarged. The systolic blood pressure was 136; the diastolic, 78. The peripheral arteries were thickened. No pulsation was felt in either popliteal space. There was an area of infected gangrene on the inner side of the right foot. Occupying a large part of the right side of the abdomen was a large tumor mass, which in parts was cystic and in other parts was firm and nodular (cystic tumor of ovary). The skin around the genitalia and thighs was red and inflamed.

The Wassermann reaction was +++ with cholesterinized antigen, and + with lipid and syphilitic antigens. The blood sugar on admission was 0.20 per cent. The urine contained sugar in varying but small amounts.

Although only a small amount of sugar was present in the urine, and the blood sugar was comparatively low, the gangrene and infection both spread rapidly. The temperature rose to 108.8; the pulse was 120. The consulting surgeon advised amputation, which was refused. With the marked arterial sclerosis present it was not believed that the glycosuria or low grade hyperglycemia were causative agents. Insulin, however, was used from February 16, at first in small dosage, and then 20 units daily. March 10, the patient became drowsy, and on March 11, at 9:30 a. m., she died. There was no acetoneuria; sugar was present only in traces. Unfortunately, we were not able to observe this patient for the last two weeks of her life, and no further blood chemical studies were done. However, the notes on the chart indicate that the patient did not die of diabetic coma but of the toxic effects of her infection.

Necropsy.—This was begun within an hour after death. In brief, the findings were a large cystadenoma of the right ovary; fibrous pleuritis; chronic bronchitis; pale, hypertrophied heart; coronary sclerosis; a mottled, fatty liver; chronic cholecystitis with stones; acute splenic tumor, with a large recent infarct; atrophic fatty pancreas; slight nephritis; uterine polyp; general extensive arteriosclerosis with marked calcification, and gangrene of the foot.

Microscopic examination revealed the same degenerated parenchymatous changes in the myocardium, liver and kidneys as were present in the other two cases. Arteriosclerosis, with obliteration of numerous smaller arteries, was marked. The interlobular tissue of the liver contained many areas of dense lymphocytic infiltration about the vessels.

The pancreatic tissue was extensively replaced by fat, the latter forming large areas in which one to a few lobules of pancreatic tissue were embedded. Smaller areas of fat were present within some of the lobules. The islets present were of normal size, averaging 180 by 260 microns in diameter. Their number per lobule appeared normal, but the total number in any given area of pancreas was decreased by the loss of pancreatic tissue through fatty replacement. The islet cells were large and polyhedral, and had large, vesicular, round nuclei. An occasional nucleus was undergoing chromatolysis. The cells formed solid masses of considerable size, these masses being separated from one another by sinusoids. The cytoplasm of a few cells was vacuolated; that of the nonvacuolated cells was finely granular and faintly stained. In some of the lobules which were completely surrounded by fat, interlobular and intralobular stroma was increased; but when islets were present in such lobules, they were not involved in the fibrotic process.

Review of this case forces the conclusion that diabetes played a minor and insignificant rôle in the condition as presented in the hospital. The arteriosclerosis was surely responsible for the foot gangrene and infection. The presence of chronic cholecystitis and stones may account for the low grade glycosuria. Whether the arteriosclerosis originated as a result of diabetes or was part of general senile sclerotic changes in which the pancreas took part is also open to doubt, although we are inclined to the latter view. At any rate, the comparatively low blood sugar in a case in which high grade hyperglycemia may be expected would greatly lower the probabilities of effective insulin therapy.

COMPARATIVE STUDY OF THE PANCREAS

The pathology of the pancreatic islets in diabetes has been the subject of numerous reports which it is unnecessary to review at this time. The changes may be so slight as apparently to be out of all proportion to the clinical severity of the disease; but it is the occurrence of such not very obvious changes, limited strictly to the islets, that furnishes the strongest evidence of the relation of islets to diabetes. Abnormal functioning of the islets, without definite morphologic changes detectable by ordinary methods, must be considered possible. Diffuse pancreatic fibrosis invading both acinous and islet tissue is seen in some cases of diabetes. This condition was not present in the pancreas of the cases reported above. Usually the pancreatic involvement is much less obvious, and consists of hyaline degeneration or fibrosis or both combined, limited sharply to the islandic tissues. To these qualitative changes must be added a quantitative one, a decrease in the number of islands. Allen has emphasized hydropic degeneration of the islet cells, manifested morphologically by vacuolization of the cytoplasm, as the most constant finding in experimental diabetes. This degenerative process may be succeeded by hyalinization and fibrosis of the involved islands, and is probably the precursor of these terminal changes sometimes encountered. Of greater importance is the fact, pointed out by Allen, that hydropic degeneration may lead to dissolution of the islet cells with complete disappearance of the islands, the acinous tissue filling in the small defect thus brought about. Such a process of degeneration and disappearance of islands without fibrosis explains the condition frequently seen in the diabetic human pan-

creas, namely, a simple decrease in the number of islands without obvious changes in those still remaining. In the human pancreas, the stage of hydropic degeneration is usually not seen, probably because of the time elapsing between death and removal of the organ. By the use of specific staining methods, two types of cells, alpha and beta, have been found to make up the pancreatic islet. According to Allen, hydropic degeneration occurs first in the alpha cells, and the latter are the first to disappear, indicating a specific relation to diabetes even without the islet itself.

A careful study of the islets of the pancreas from cases which have been under insulin therapy is of importance in order to determine the degree of repair possible in the damaged pancreas. The ideal to be hoped for from insulin therapy would be such recovery of the islets from degenerative changes as would permit permanent maintenance of the patient with diabetes on minimal doses of the extract, or even without continuous administration of the material. The latter is not to be expected if the number of islands has been reduced to such a degree as to be incompatible with normal metabolic function, since regeneration of islands which have disappeared completely is probably out of the question.

In the three cases reported above, the necropsy was begun within an hour after death in one case, and within three hours in the other two cases. In Case 3, generalized senile arteriosclerosis was the underlying factor, and the slight grade of glycosuria was apparently associated with atrophy of the pancreas rather than with any marked grade of specific alteration in the islets. The latter were of about normal size and structure, but cytoplasmic vacuolization was present in a few cells. In the other two cases, the most striking gross findings were the decreased size and the increased vascularity and pink color of the pancreas, especially marked in the first case, which had been subjected to prolonged insulin administration. The vascularity was like that of the pancreas of a dog at the height of digestion, and raised in our minds the question whether insulin may not have a specific organ stimulating effect on acinous tissue in addition to its action in sugar metabolism. In both of these cases, vacuolar degeneration of the islet cells was present without fibrosis, the islands were diminished in numbers, and the average diameter of those remaining was decreased. It seems proper to conclude that hydropic degeneration over a prolonged period had led to disappearance of islands, and that the cause of the degenerative process was still active, in that vacuolated cells were still present in considerable number. In Case 1, there were a few completely degenerated islands, the latter being transformed into small areas of granular, vacuolated ground substance in which were embedded a decreased number of nuclei, some pycnotic and some greatly swollen and edematous. In this case the indistinctly acinous character of the pancreatic tissue was also striking. This has been referred to above as suggestive of the fetal pancreas. This condition and the small size of the acinous cells may have been the result of decreased functional activity due to the very low total metabolism of the patient over a prolonged period.

Sections from the different portions of the pancreas from the three patients were studied by specific granule methods. On our material, as is usually the case with that of human origin, the stains have not been so satisfactory as they are with animal material removed immediately after death. The zymogen-containing acinous

cells took on a deep violet color, but granules were indistinct. In the islets of the third patient, whose pancreas showed chiefly fatty replacement with normal appearing islets, a few larger cells with staining reactions like those of alpha cells could be recognized. Most of the cells had a diffuse, finely or indistinctly granular violet tone, lighter in color than zymogen-containing acinous cells. In the islets of the other two cases, only cells of the latter type were present, and no cells of the alpha type could be recognized. The absence of alpha cells is suggestive, but because of the uncertainty of the methods when applied to human material, undue importance is not attached to this phenomenon.

CASE 4.—History.—C. W. S., a man, aged 49, white, seen, March 7, 1923, had diabetes of ten years' standing, "more or less" under control. Most of the time he was not under a strict diet, but in the preceding year had been moderate in his consumption of carbohydrates. He had lost weight and grown considerably weaker. Ten days before, the small toe of the right foot was sore and inflamed; this had steadily grown worse.

Examination.—The patient appeared pale and sallow. There was general thickening of the peripheral arteries; there was no pulsation in the dorsalis pedis of either foot. The right small toe was covered with a purulent exudate which came from the base of the toe, between the toes, and from under a mask of dead skin covering the toe. After cleansing, two large gangrenous areas were seen—at the base of the toe and on the sole adjoining. A small gangrenous area was seen on the inner aspect of the toe. The tissue at the base of the toe was denuded almost to the bone. On the outer aspect of the great toe on the same foot was a large callus, around which a small gangrenous area was present.

The urine contained large amounts of sugar and some acetone.

Treatment and Course.—The patient was given a low caloric diet, low in carbohydrate, and was kept at absolute rest; the toe was cleansed and then kept dry. After five days the process had extended. He then entered the hospital for insulin treatment.

In the hospital on a balanced diet of protein, 35 gm., fat, 75 gm., carbohydrate, 37 gm., calories, 955, the sugar excretion was 13 gm.; acetone, negative. Insulin was given in 30 or 40 unit doses daily, and the diet was increased to 1,300 calories without producing glycosuria. The toe was kept clean and dry. Two surgeons were consulted; one advised immediate amputation of the toe; the other did not consider surgical amputation necessary, as the toe was bound to amputate itself.

April 15, the fasting blood sugar was 0.15 per cent.; the urine was normal; the tissue around the toe showed some signs of health. The small area of gangrene about the callus on the great toe had extended, and was now $1\frac{1}{4}$ inches long by $\frac{1}{2}$ inch wide. April 28, the gangrenous areas around both toes were easily detached, and, when removed, the underlying tissue was found perfectly healthy.

We doubt whether such results would be possible without insulin.

CASE 5.—History.—Mrs. P., aged 54, white, entered the hospital, May 5, with a history of severe diabetes of at least six years' standing. While under treatment a year before, she developed severe acidosis. Eight days before admission, she became aware of a painful red swelling on the inner side of her right thigh gradually increasing in size.

Examination.—The breath was heavy with acetone. The patient looked flushed and ill. The temperature was 98.4. The general examination was negative. A large infiltrated abscess about 3 inches in diameter on the upper inner aspect of the right thigh was present. A plain specimen of urine voided at 4 p. m. on admission contained 3 per cent. sugar; acetone, +++; ferric chlorid, ++. The laboratory was closed, and the severe acidosis in the presence of an abscess did not warrant further delay in treatment. Hot applications were applied to the infected area. Dietary restrictions were

ordered. At 5 p. m., 10 units of insulin was injected, and at 7 p. m., 10 more. The urine voided the next morning was sugar-free, and contained only a trace of acetone. The patient looked and felt quite different; acetone was absent from the breath. The abscess was incised, and much pus evacuated.

On the second morning the laboratory reported blood sugar, 0.19; nonprotein nitrogen, 36.4; plasma bicarbonate, 51.7.

The diet was carefully increased, and insulin was given in doses of 20 units daily. The infiltrated area around the abscess rapidly softened, and all pain disappeared. May 9, the patient was walking around the room.

The history of this patient indicated that she had a severe diabetes. No one who has seen the rapidity with which diabetic patients are thrown into severe acidosis and come by infections such as this abscess can doubt the importance of the result in this case. Although she was already on the verge of coma, the condition was completely and rapidly changed after two insulin injections.

SUMMARY

Insulin was given a severe trial in five cases of diabetes complicated by infection. Three of these patients died and came to necropsy, two having died of acute pneumonia and one of intoxication from a severe infected gangrene of the foot. The pathologic findings in these three cases were so extensive that it would be beyond reason to expect insulin to accomplish any more than it did. In two other cases the effect of insulin was truly remarkable.

In one case, in which the patient was dying of pneumonia and entered the hospital only twenty-four hours before death in a state of extreme acidosis, there was marked and rapid relief of the acidotic symptoms under insulin therapy, but the symptoms of intoxication due to the infection persisted.

In two of the fatal cases, the islets of Langerhans were decreased in number, and vacuolar degeneration was present in the islet cells, having gone on to complete degeneration of a few of the islands in one case. In the third, primarily one of senile arteriosclerosis in which glycosuria was a minor and late manifestation, the pancreas was largely replaced by adipose tissue, leading to a decrease in the number of islands, in some of which hydropic degeneration of a few cells had occurred.

In diabetes complicated by infection, insulin is a powerful therapeutic agent which may rapidly overcome the symptomatic effects due to diabetes, thus increasing the chances for a successful fight against the infection. Insulin alone, however, cannot overcome the latter, nor can it be expected to restore to normal, tissues which have undergone degenerative changes as the result of acute or long continued intoxication.

During the course of infection in diabetes there may occur a low grade of glycosuria which does not yield to increasing doses of insulin, although the extract may have kept the patient's urine free of sugar before the development of the infection. This may be due to the decreased sugar tolerance, which has long been known to be one of the effects of infection in diabetes.

Study of the islets of Langerhans in our fatal cases suggests that hydropic degeneration of the islet cells may persist, and perhaps progress, even when insulin is being administered.

Besetting Fears.—Fear is necessary to self-preservation. In itself it therefore is not morbid. It is morbid only when inappropriate to the situation which provokes it.—Williams: Dreads and Besetting Fears, Boston, Little, Brown & Co., 1923.

THE TREATMENT OF DIABETES MELLITUS WITH INSULIN*

RALPH H. MAJOR, M.D.

KANSAS CITY, KAN.

The recent isolation by Banting and his co-workers of an active glycolytic, nontoxic, pancreatic extract opens up a new era in the treatment of diabetes mellitus. Ever since the classical experiment of Mering and Minkowsky proved the existence of pancreatic diabetes, frequent attempts at specific pancreatic therapy have been made. These attempts in the past have been uniformly unsuccessful and now possess little but historical interest.

The isolation of insulin, which is described as the active hormone of the islands of Langerhans, has excited unusual interest among both physiologists and clinicians. Allen¹ has written an excellent summary of all articles published on this subject up to August, 1922, and enables one to trace step by step the various phases in the development of this important discovery.



Fig. 1.—Boy with severe juvenile diabetes, Dec. 7, 1922.

A more recent article by Banting, Campbell and Fletcher² describes the results obtained from the use of this preparation, in patients suffering from diabetes. They state that glycosuria is abolished, that ketones

disappear from the blood and urine, and that the blood sugar is lowered and maintained at a normal level. They found also that the alkali reserve returns to normal and that the cardinal symptoms are relieved. Perhaps the most interesting statement that they make is that insulin is a specific in the treatment of diabetic coma.



Fig. 2.—Appearance of patient, Feb. 26, 1923.

The preparation of insulin (insulin-Lilly) which is made in the United States has been used extensively in this country during the last few months. We thought it might prove of interest to record the results obtained in this clinic with the use of this preparation. We have used it in the treatment of thirty cases, and the results obtained have confirmed the therapeutic value described by Banting, Campbell and Fletcher. This group consisted mainly of moderately severe cases, but also included four cases of severe juvenile diabetes, four patients on the verge of coma who could be aroused only with great difficulty, and three patients in complete coma. Since a detailed description of the cases is not attempted in this report, a few typical results are shown in the accompanying illustrations and charts.

The boy shown in Figure 1 is an example of severe juvenile diabetes. At the time the picture was taken, Dec. 7, 1922, he had had diabetes for two years, and it had been impossible to render him aglycosuric except on a diet of 5 per cent. vegetables, with days of complete starvation. His weight at this time was 15 pounds (6.8 kg.). Treatment was begun at the St. Louis Children's Hospital under the direction of Dr. W. McKim Marriott, to whom I am indebted for this picture and

* From the Department of Internal Medicine, University of Kansas School of Medicine.

1. Allen, F. M.: Summary of Publications on Insulin to Date, *J. Metabol. Res.* 2:125, 1922.

2. Banting, F. G.; Campbell, W. R., and Fletcher, A. A.: Further Clinical Experience with Insulin, *Brit. M. J.* 1:8 (Jan. 6) 1923.

for the earlier data in his case. Figure 2 shows the same boy, Feb. 26, 1923. At this time he weighed 30 pounds (13.6 kg.) and was on a diet of 55 gm. of carbohydrate, 85 gm. of protein and 100 gm. of fat. April 15, 1923, he was in excellent condition, weighed 32 pounds (14.5 kg.), and was on a diet of 60 gm. of



Fig. 3.—Disappearance of glycosuria in four days and fall of blood sugar from 400 to 100 mg. per hundred cubic centimeters in eight days. The dosage of insulin in units is given at the top. Acetone disappeared in two days, and diacetic acid in one day.

carbohydrate, 80 gm. of protein and 70 gm. of fat. During a period of three months his daily dosage of insulin has been reduced from 75 units to 15 units, which we feel is indication of an increasing carbohydrate tolerance.

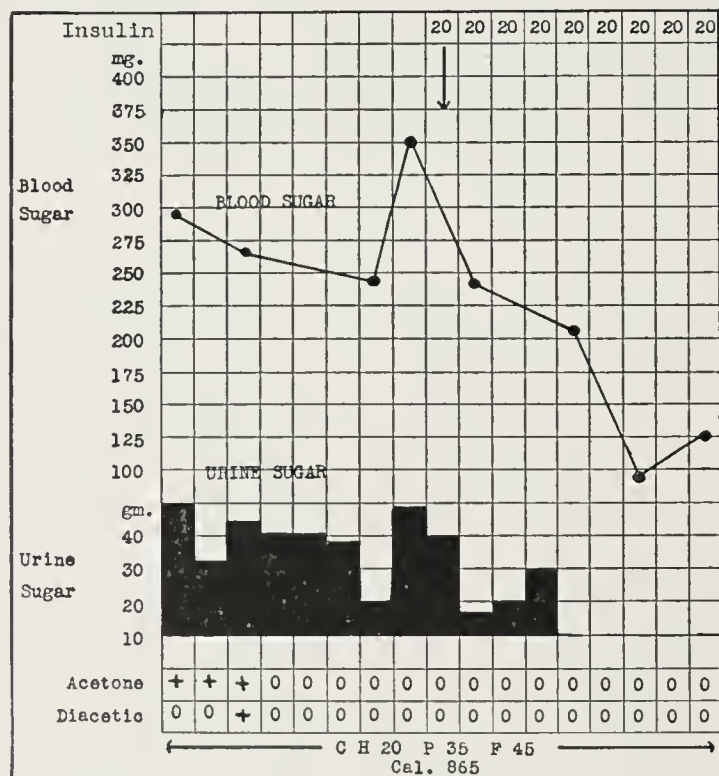


Fig. 4.—Effect of injections of insulin on a patient maintained on a constant diet throughout: disappearance of hyperglycemia and glycosuria.

Figure 3 illustrates the specific blood sugar lowering effect of the preparation.

A man, aged 35, who had had diabetes for two and one-half years, was admitted to the Bell Memorial Hospital on the verge of diabetic coma with a very severe nasal infection, which had led to gangrene of the soft palate. For six months

before admission he had never been sugar free except by complete starvation. His condition was regarded as hopeless, and it was felt that this treatment offered his only chance of recovery. The patient was placed at once on a diet of 36 gm. of carbohydrate, 70 gm. of protein and 68 gm. of fat, and given insulin in doses of from 30 to 40 units a day. He became sugar free in four days, and diacetic acid and acetone disappeared from the urine promptly. The blood sugar fell to normal in eight days. Improvement in his general condition was striking. The soft palate healed, all symptoms of acidosis disappeared, and his gain in weight and strength has been rapid and constant. Following an increase in diet the patient again had an elevation of blood sugar, which, however, rapidly returned to normal. He continues aglycosuric with a normal blood sugar, and has resumed the practice of his profession.

A man, aged 35, whose case is charted in Figure 4, had suffered from diabetes for one year. He was placed on a diet of carbohydrate, 20 gm., protein, 35 gm., fat, 45 gm., with a total caloric value of 865, and was kept on this diet throughout. On this diet the patient had a continued hyperglycemia and glycosuria. Following the injection of 20 units of insulin daily, in two doses, the patient's glycosuria disappeared in four days and the blood sugar became normal in

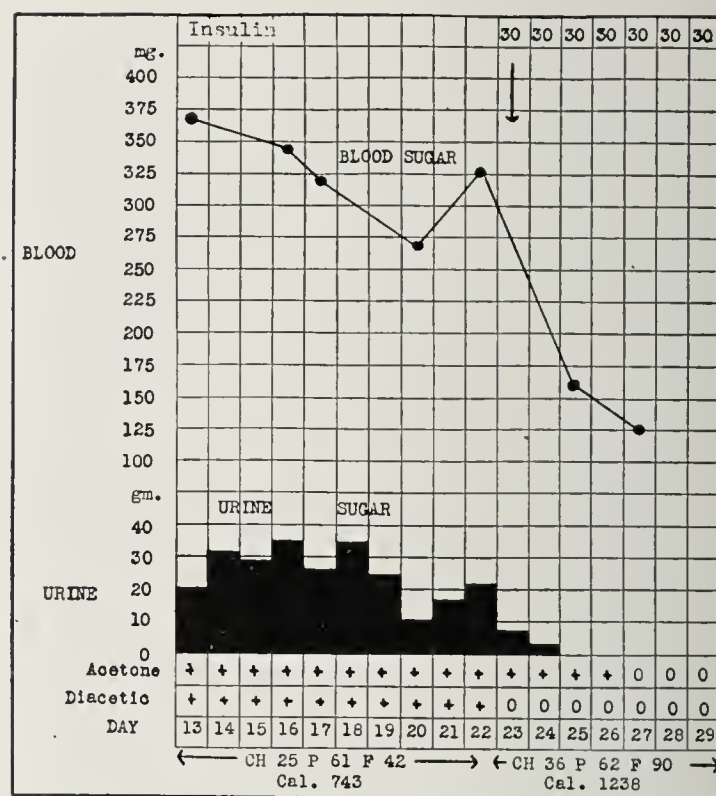


Fig. 5.—Disappearance of glycosuria and hyperglycemia under treatment with insulin, in spite of the marked increase in diet. The insulin figures are given in units.

seven days. This patient is under observation at the present time and has not shown any return of hyperglycemia or glycosuria.

In Figure 5 the undoubted effect of this preparation is shown in a very striking way.

A woman, aged 40, whose illness had a duration of two years, when admitted to the hospital was placed on a diet of 25 gm. of carbohydrate, 61 gm. of protein and 41 gm. of fat with a total caloric value of 743. Hyperglycemia and glycosuria were present on this diet. After remaining on the diet for ten days, the patient was given 36 gm. of carbohydrate, 62 gm. of protein and 90 gm. of fat, the total caloric value being 1,238. Coincident with the increase, the patient was given 30 units of insulin daily in two doses. The patient's glycosuria disappeared in two days, and in five days the blood sugar was normal. This patient is still under observation, and continues to show a normal urine and also a normal blood sugar.

We are also able to confirm the statement of Banting, Campbell and Fletcher that insulin is of great value in the treatment of diabetic coma. We have used it in three cases of coma.

The first of these patients died after admission to the hospital, but was moribund when the first injection was given, and was pulseless when first seen.

The second patient was a boy, aged 3, who had been in coma twenty hours, when the first injection was given, and who died five hours later. His blood sugar on admission to the hospital was 344 mg. per hundred cubic centimeters, and his carbon dioxid tension 10 per cent. by volume (Van Slyke). Just before death, following the injection of 35 units of insulin in two doses, the patient's blood sugar had fallen from 344 mg. to 244 mg. per hundred cubic centimeters, and the carbon dioxid tension had risen slightly to 11.5 per cent. by volume.

The third patient was a man, aged 26, who went into coma at 7 a. m., Feb. 21, 1923. He had shown symptoms of diabetes for only two weeks, and the positive diagnosis was made two days before the onset of coma. He was seen on the afternoon of the same day at 4 o'clock, and had been unconscious. His pulse was 140; the blood pressure, 75 systolic and 55 diastolic. His blood sugar was 667 mg. per hundred cubic centimeters. He was given 25 units of insulin at 4 p. m., at 8 p. m., at midnight and the following morning at 4 o'clock. At 8 a. m., February 22, he seemed partially conscious, and his blood sugar had dropped from 667 to 294 mg. per hundred cubic centimeters. He was given 10 units at 8 a. m., 11 a. m. and 1 p. m., twenty-four hours after the first dose, the patient, having received 130 units, was conscious and rational, talked with his family, and his blood sugar had fallen from 667 to 170 mg. per hundred cubic centimeters. Improvement has been constant since that time, and he has been free from sugar. This patient had a small area of gangrene on the right toe which cleared up completely in ten days, and a larger area on the sole of the left foot which healed in three weeks. This patient received no alkali, and in addition to receiving 130 units of insulin, was given 3,000 c.c. of physiologic sodium chlorid solution by hyperdermoclysis.

Two patients presenting a high degree of lipemia were studied. Figure 7, illustrates the marked fall of

persistent marked lipemia and disturbed carbohydrate metabolism.

Our studies to date indicate that 1 unit of insulin takes care of approximately 2 gm. of carbohydrate in the diet. The study of the urinary output has shown that a polyuria of from 3,500 to 5,500 c.c. in twenty-

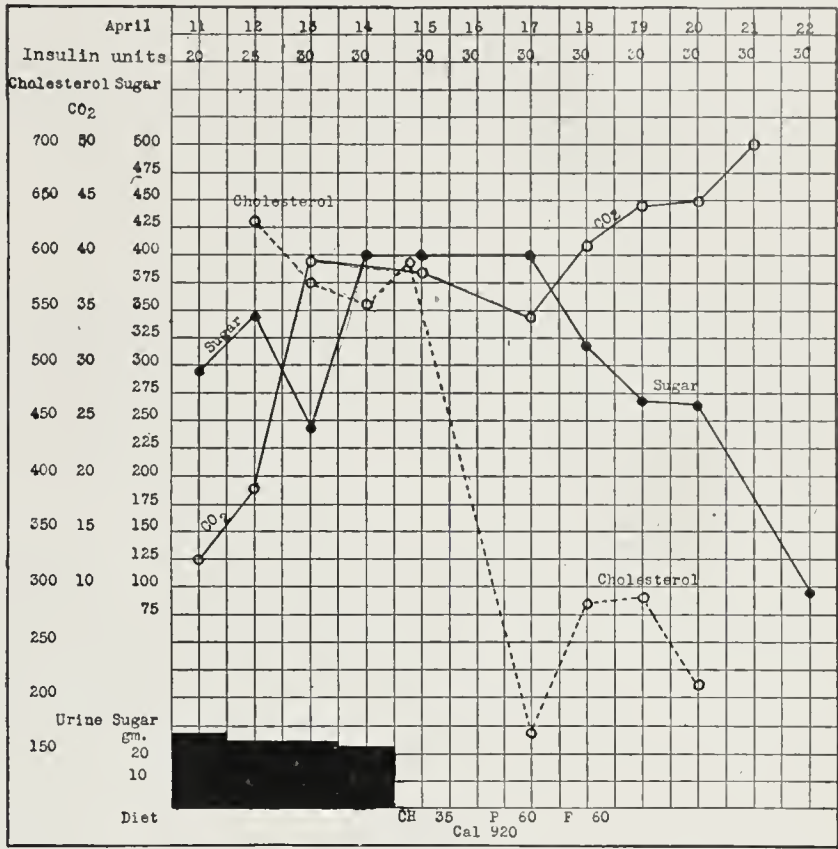


Fig. 7.—Fall in blood cholesterol in a patient showing a marked lipemia: rapid rise in carbon dioxid tension, patient semiconscious when admitted, and kept on a constant diet.

four hours is commonly present with an absence of glycosuria. Such large amounts of urine, however, were coincident with high values for blood sugar, although the ratio between the two was not constant. In only one patient in this series was sodium bicarbonate used. It had no apparent effect on the acidosis.

In two patients we have seen symptoms of collapse, accompanied by profuse sweating and a sense of great oppression and fear, three hours after the injection of 15 units of insulin. One of these patients was given 20 gm. of glucose by mouth, and recovered promptly. The second patient recovered quite suddenly from his collapse, without treatment. This attack occurred during the night, and the blood sugar the following morning at 8 o'clock was 50 mg. per hundred cubic centimeters. Both of these patients had a hypoglycemia when studied soon after these symptoms, and it is probable that the blood sugar was markedly depressed during the attacks. Our experience with these two patients emphasizes that caution must be exercised in the use of this preparation. This danger has been emphasized by Banting and his co-workers.

The blood sugar determinations referred to in this paper were carried out according to the method of Folin and Wu, the carbon dioxid tension in the blood by the method of Van Slyke, and the blood cholesterol by the method of Myers and Wardell.

SUMMARY

1. Insulin has a specific effect in abolishing glycosuria, hyperglycemia and ketonuria, and in relieving the cardinal symptoms of diabetes mellitus.
2. Patients treated with insulin have shown a prompt rise in carbon dioxid tension.

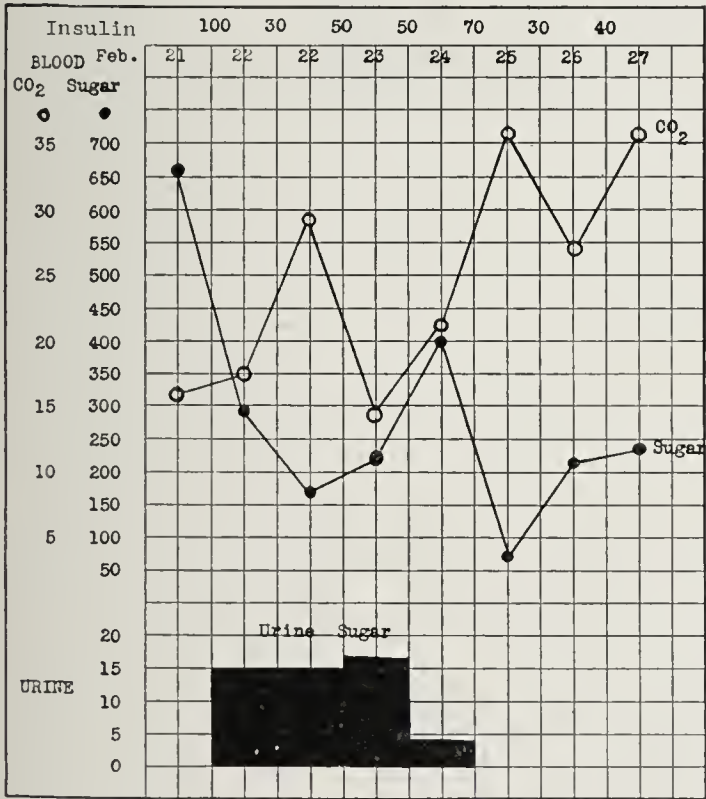


Fig. 6.—Reduction in blood sugar, with increase in carbon dioxid tension and disappearance of glycosuria in a patient suffering from diabetic coma. Recovery.

the blood cholesterol in a patient following treatment. In the two patients with marked lipemia, the milky appearance of the serum disappeared in four days, and in five patients, a cloudy serum became clear in the same length of time. These observations are of especial interest as emphasizing the close relationship between

3. The marked lipemia often present in diabetes disappeared rapidly under treatment.

4. In one case of diabetic coma this treatment had a specific action, promptly restored the patient to consciousness, and abolished glycosuria and hyperglycemia.

5. The necessity of extreme caution in the use of this preparation must be emphasized.

CICATRICAL STENOSIS OF THE ESOPHAGUS CAUSED BY COMMERCIAL LYE PREPARATIONS*

LOUIS H. CLERF, M.D.

PHILADELPHIA

Sad cases of esophageal burns from swallowing caustic alkalis continue to be seen at the Bronchoscopic Clinic, in various degrees of food and water starvation from esophageal stenosis. During the last sixteen months, twenty cases were admitted, a brief synopsis of which will be given.

REPORT OF CASES

CASE 1.—A boy, aged 3½ years, sent to the clinic by Dr. Lawrence Lee, Aug. 26, 1921, was very ill, markedly emaciated, and could swallow neither food nor water; even saliva was regurgitated. He coughed almost continuously because of the overflow of saliva into the larynx. His weight was 16 pounds, 14 ounces (about 7.7 kg.). Almost eight months before admission, the child drank of a solution of "Sterling Lye," found among other articles in a smokehouse. There was immediate dysphagia, which increased, and emaciation became extreme. Gastrostomy was done two months after the accident. On admission, Dr. F. F. Borzell, by roentgen-ray examination, found a complete atresia of the middle third of the esophagus. Esophagoscopy showed absolute atresia of the esophagus. Communication was eventually established by perforation by combined peroral and retrograde esophagoscopy. A string was carried through, and retrograde dilation performed, using the Tucker bougie. Unfortunately, the child contracted measles, complicated by a severe bronchopneumonia, which terminated fatally.

CASE 2.—A man, aged 39, was sent to the clinic because of dysphagia for solid foods. At the age of 18 months he drank from a pitcher containing a lye solution used in making soft soap. This lye was put up in a tin container; the brand was not remembered. He was very ill for about two weeks. For the last thirty-seven years he had been able to eat only soft foods and liquids. On roentgen-ray examination, Dr. W. F. Manges found three definite strictures of the esophagus. Esophagoscopy revealed the uppermost stricture. Esophagoscopic bouginage was instituted.

CASE 3.—A boy, aged 6 years, was referred, Sept. 7, 1921, by Dr. Martin J. Farrell, because of inability to swal-

low solid foods, and dysphagia for liquids. Five weeks before admission, the child drank from a pitcher standing on a window-sill. The pitcher contained a solution of "Red Seal Lye," which was being used to wash clothes. Roentgen-ray examination by Dr. H. K. Pancoast showed marked constriction of the esophagus. Esophagoscopy revealed active ulceration of the esophagus, beginning below the cricopharyngeus. Retrograde dilation was carried out.

CASE 4.—A youth, aged 18, was referred, Sept. 7, 1921, by Dr. J. C. DaCosta, because of aphagia of six days' duration. Ten years ago the patient swallowed some "Red Seal Lye." When admitted, he was in a serious state of water hunger. Gastrostomy was done by Dr. T. A. Shallow under local anesthesia. Roentgen-ray examination by Dr. W. F. Manges showed a complete obstruction of the esophagus. On esophagoscopy, a mucosal web stenosis of the esophagus was found. This was ruptured by the tube, and subsequent roentgen-ray study showed a practically normal esophagus. The patient was discharged well.

CASE 5.—A girl, aged 4 years, was referred, Jan. 5, 1922, by Drs. Walter Lathrop and Ira Freyman, because of difficulty in swallowing. About three months before, the child drank from a glass which contained a solution of "Red Seal Lye." Severe burning of the mouth and pharynx

resulted, and she was unable to swallow any food for many days. Later, liquids could be taken only in small quantities, and these were often regurgitated. On admission, the patient showed considerable weight loss. Dr. W. F. Manges, by roentgen-ray examination, found a marked narrowing of the esophagus, which was verified by esophagoscopy. Gastrostomy was performed by Dr. T. A. Shallow, and later a string was swallowed and retrograde dilation begun.

CASE 6.—A man, aged 53, came to the clinic, March 3, 1922, because of difficulty in swallowing. About thirty-one years before, he had

drunk of a bottle containing a solution of home-made lye, mistaking it for a cough mixture. There was severe burning of the mouth and throat, and difficulty in swallowing solid foods was noticed. For thirty years he had eaten only liquid and semisolid foods. Roentgen-ray study by Dr. W. F. Manges revealed an irregular lumen of the esophagus, the narrowest point being in the lower third, where there was considerable constriction. Esophagoscopy verified these findings. Esophagoscopic bouginage was instituted.

CASE 7.—A girl, aged 10 years, was referred, March 9, 1922, by Drs. Ayer and Buff, because of aphagia. About twenty-two months before admission, the patient drank of a solution of "Red Seal Lye." Severe burns of the mouth and throat, with dysphagia, resulted. During October, 1921, aphagia resulted, and gastrostomy was performed. On admission, the patient was fairly well nourished, underdeveloped and unable to swallow any food. On roentgen-ray examination, Dr. W. F. Manges found practically complete obstruction of the esophagus. Esophagoscopy revealed a stenosis of the upper part of the thoracic esophagus. Following esophagoscopic bouginage, retrograde dilation was started.

CASE 8.—A boy, aged 5 years, was referred, March 27, 1922, by Dr. J. J. Reilly, because of inability to swallow solids and frequent regurgitation of liquids. About four



Fig. 1.—Six of the twenty children admitted to the Bronchoscopic Clinic during the last sixteen months suffering with stricture of the esophagus from swallowing caustic alkalis put up in packages for household use. In order, from left to right, the preparations accidentally swallowed were: Red Seal Lye, Red Devil Lye, Kleanall, Sterling Lye, Babbitt's Lye and Red Seal Lye. The photograph was taken some months after admission, when the children were much improved by treatment. Most of them were in a pitiable state of emaciation when admitted.

* From the Bronchoscopic Clinic, Jefferson Hospital.

weeks before admission, the child swallowed some liquid which produced severe burns of lips, mouth and throat. The mother stated that there was some lye in the house, but is not certain whether this was swallowed by the patient. Difficulty in swallowing resulted and became slowly worse, so that only liquids could be swallowed. There was progressive weight loss. Roentgen-ray examination by Dr. W. F. Manges showed almost complete obstruction of the upper esophagus. On esophagoscopy, a stenosis of the esophagus was found, ending in a blind fistula. Because of the emaciation and the continued failing of nutrition, gastrostomy was advised. This was done by Dr. T. A. Shallow. The patient did not react well, and subsequently died. A necropsy was not permitted.

CASE 9.—A man, aged 27, was referred, March 28, 1922, by Dr. J. A. Bertolet, because of aphagia of two days' duration. When the patient was 18 months old, he swallowed a solution of "Banner Lye." Dysphagia developed, and he was treated at the Presbyterian Hospital with marked improvement so that he could swallow liquids and soft foods. Three days before admission, some corn lodged, producing aphagia, which persisted until shortly after admission to the clinic, after which it passed spontaneously. By roentgen-ray examination, Dr. W. F. Manges found complete obstruction of the esophagus in the middle third. Its appearance indicated a foreign body. Following the spontaneous removal of the foreign body, he again studied the case and found a stenosis of the esophagus in the lower portion of the middle third. On esophagoscopy, a cicatricial stenosis of the esophagus with esophagitis was found. Esophagoscopy bouginage was instituted, with favorable results.

CASE 10.—A girl, aged 2 years, was referred by Dr. John B. Murphy, April 26, 1922, because of inability to swallow any solid foods. Successful attempts were made to treat the stricture of the esophagus, which had been diagnosed by roentgen-ray examination. The general nutrition was good. Six weeks before admission, she put some "Red Devil Lye" powder in her mouth. The lye powder had been left lying on the lid of the container. Vinegar was given immediately afterward. Slight burns of the mouth resulted. Inability to swallow solids came on immediately, and has persisted. Esophagoscopy showed ulceration of the esophagus, which was swollen apparently shut. Gastrostomy was done by Dr. T. A. Shallow, and the esophagus was put at rest for a time. Retrograde dilation was then instituted, and is still being carried out.

CASE 11.—A boy, aged 2 years, was seen at the clinic in consultation with Dr. Richmond McKinney, April 14, 1922, because of inability to swallow any food, either solid or liquid. About eight months before admission, the child had swallowed some concentrated lye, the brand unknown. Difficulty in swallowing, with the usual progressive emaciation, developed. A gastrostomy was done, as the esophagus completely closed in a short while. The roentgenologist reported

a stricture at about the middle of the esophagus, which completely closed its lumen. Bouginage had been done at various times, but the lumen of the stricture could not be located. On admission, the patient was in good general condition. There was complete aphagia. On esophagoscopy, a tight stenosis was found 23 cm. from the upper teeth. No opening was found, either by inspection or by esophagoscopy bouginage. Esophagoscopy search was repeated at intervals for weeks by Dr. McKinney, who reports that eventually an opening through the atresia was established.

CASE 12.—A girl, aged 19, was sent to the clinic, May 16, 1922, by Drs. Hays and Burnett, because of dysphagia for solids. When about 4½ years of age she drank from a cup which had been used with some "Red Seal Lye." For about three years following the accident, she was unable to swallow anything but liquid foods. Then swallowing



No Soaking Beware of Imitations No Rubbing

DIRECTIONS.

For washing white clothes, flannels and colored clothes of fast colors fill boiler one-half full of cold water; dissolve one-third of an ordinary size bar of soap and put into it, add one teaspoonful of THE FLUID. Then put clothes in boiler and if they absorb sufficient water so that it does not cover them add more water. All the clothes should be submerged in water when boiler is placed on the stove. After water begins to boil allow it to boil 20 minutes, stirring clothes occasionally during the boiling process, then remove the clothes and rinse in two waters to take out all the soap. Examine the fabrics and they will be found clean and snow white, and ready to hang on the line to dry. In extreme cases, such as the neck and wristbands of shirts it may sometimes be found necessary to rub these parts slightly between the hands, but for all ordinary articles no rubbing whatever is necessary, and no WASHBOARD is required. It will do no harm to put clothes in soak over night in clear water, but even this is unnecessary unless extremely soiled.

THE FLUID is free from lime or acids and cannot possibly injure the finest fabrics. It makes the hands soft and smooth. For the second boiler of clothes use the same water without adding more FLUID or soap, but before putting the clothes into it dip them into cold water. Dry clothes should never be put into boiling water, as it is liable to set any stains which may be on them. For house cleaning, washing floors, greasy dishes, paint, etc., pour a small quantity in water, and add a little soap. For washing windows and glass, use no soap. Use strictly according to directions and THE FLUID will do the work perfectly and save much hard labor.

THE FLUID is far superior to Ammonia and much cheaper.

CONTENTS OF THIS PACKAGE MAKES
TWO GALLONS OF WASHING FLUID

KLEANALL

Softens the water and has a most wonderful Cleansing and Bleaching Power, removes all Grease and Dirt and DOES NOT INJURE the finest fabric or the most Delicate Skin, if used according to directions.

PREPARED BY
KLEANALL MANUFACTURING COMPANY
HAVERHILL, MASS.
Net weight not less than 16 ounces

DIRECTIONS—Dissolve the contents of this Package in two gallons of water; shake well until it is dissolved and then follow directions on the other side of label. Keep the Fluid in a stone jug or crock.

Fig. 2.—This child swallowed a teaspoonful of Kleanall Lye, which had been left in a saucer. It was not known that this lye was poisonous, for nowhere on the label was there anything to show that it was a poison.

gradually improved, but recently she has been able to take only liquids. Dr. W. F. Manges, by roentgen-ray examination, found a marked narrowing of the lumen of the esophagus in the lower third. Esophagoscopy showed a web-stenosis of the esophagus about 3 cm. below the crossing of the left bronchus. The web was stretched and ruptured with the tube mouth. Subsequent roentgen-ray examination did not show any obstruction, and the patient was able to swallow normally.

CASE 13.—A boy, aged 3 years, was sent to the clinic by Dr. B. Bigger Best, May 25, 1922, on account of dysphagia for solid foods and beginning difficulty with liquids. Three weeks before admission, the child's mother, while using some lye (name unknown) for cleaning purposes, was called to answer the telephone. During this brief interval the child either ate some of the lye powder or drank of the lye solution. His lips and mouth were severely burned. Since the accident, he had been unable to swallow solid foods, and liquids were taken with difficulty. There had been a gradual

loss in weight, and on admission the child was very pale, undernourished and quite ill. Roentgen-ray examination by Dr. W. F. Manges showed marked narrowing of the esophageal lumen. To provide sufficient nourishment, a gastrostomy was done by Dr. T. A. Shallow. Esophagoscopy done later revealed a strictured cicatricial lumen. Retrograde dilation was instituted.

CASE 14.—A girl, aged 2 years, was referred by Dr. J. F. Baldwin, June 8, 1922, because of inability to swallow solid foods. About twelve weeks before, the child's mother was using "Banner Lye" to make soap, pouring the solution into cups. The child drank from one of the cups which, previously emptied, still contained a few drops of the solution. Severe burning of the mouth and throat resulted. Dysphagia for solids was noted immediately afterward, and a progressive difficulty in taking liquids ensued. Nutrition being seriously impaired, Dr. Baldwin did a gastrostomy. On admission, the child was in good condition generally. On roentgen-ray examination, Dr. H. K. Pancoast found a tight stricture of the upper esophagus, which was verified by esophagoscopy. After considerable perseverance, a string was passed through and retrograde dilation started.

CASE 15.—A man, aged 58, was sent to the clinic, July 15, 1922, by Dr. J. James Condran. About four weeks before admission, the patient had drunk from an unlabeled bottle in an icebox where drinking water was kept. The bottle contained a solution of caustic soda. He was profoundly shocked, and complained of intense pain in the mouth, throat and abdomen. Marked dysphagia resulted. On admission, he presented the picture of inanition and acute water starvation. No roentgen-ray examination or esophagoscopy was made. Dr. C. F. Nassau saw the patient and advised against gastrostomy, as the patient was moribund and an operation would simply hasten the end. The patient died within forty-eight hours after admission. A necropsy was not obtained.

CASE 16.—A girl, aged 22 months, referred by Dr. C. Heard, Aug. 14, 1922, was unable to swallow anything but liquid foods, and these only in small quantities. There was moderate loss of weight and a mild degree of anemia. Nine weeks before admission, while playing in the yard, the child found a can of "Babbitt's Lye" and put some of it in her mouth. There were severe burns about the mouth and lips. Progressive dysphagia ensued. A gastrostomy was done by Dr. T. A. Shallow because of aphagia. Roentgen-ray examination by Dr. M. A. Almy showed a partial stenosis of the esophagus. Esophagoscopy revealed a tight stricture about 4 cm. below the cricopharyngeus. Retrograde dilation is being carried out.

CASE 17.—A girl, aged 2½ years, was referred by the pediatric outpatient department, Sept. 6, 1922. About one year before admission, the child drank of a solution of "Red Devil Lye," and sustained severe burns of the mouth and throat. Difficulty in swallowing began two weeks afterward, and became progressively worse. On admission, the child weighed 13¼ pounds (6 kg.), could swallow no solid food, and liquids were taken with great difficulty. There was marked emaciation, with beginning water starvation. Gastrostomy was performed immediately by Dr. G. P. Mueller. Roentgen-ray examination by Dr. H. K. Pancoast showed extensive stenosis of the esophagus. Esophagoscopy revealed extensive ulceration of the upper esophagus. Retrograde dilation is being done with marked improvement, the child now weighing 28 pounds (11.8 kg.).

CASE 18.—A boy, aged 2 years, was referred, Sept. 27, 1922, by Dr. L. B. Overlock, because of inability to swallow any food, or even saliva. Three months before admission, the child drank from a cup which contained some concentrated "Babbitt's Lye." The lips, mouth and throat were severely burned. He was able to swallow liquids for about one month, after which time aphagia supervened, and gastrostomy was immediately done by Dr. Overlock. On admission, the child was in a fair state of nutrition. There was complete aphagia, saliva being regurgitated. Dr. Solis-Cohen found on roentgen-ray examination that there was complete closure of the esophagus. Esophagoscopy verified these find-

ings. The lumen being eventually restored, retrograde dilation was started.

CASE 19.—A boy, aged 9 years, was referred by Dr. W. A. Burke, Oct. 26, 1922, because of marked loss of weight and inability to swallow anything but liquids. He was underdeveloped and poorly nourished, weighing but 36¾ pounds (16.7 kg.). There was marked anemia. When 4 years of age, he accidentally took some "Red Seal Lye" in coffee, mistaking it for sugar. He had received no treatment of any kind since the accident, and his condition was brought to the attention of the American Red Cross during the medical examination of school children in the rural schools. Dr. W. F. Manges, by roentgen-ray examination, found almost complete obstruction of the esophagus. This was verified by esophagoscopy. On account of the emaciation of the patient and his inability to swallow sufficient food to maintain his nutrition, gastrostomy was done by Dr. T. A. Shallow. Retrograde dilation will soon be instituted.

CASE 20.—A girl, aged 2 years, was sent to the clinic Nov. 4, 1922, by Dr. Charles H. Hunt, because of dysphagia for all but liquid foods. Four months before admission, she drank of a solution of "Kleanall," which had been left in a cup. Together with burns of the mouth there was dysphagia, which slowly increased, with marked loss of weight. About three months after the accident, the patient was unable to swallow even liquids; so a gastrostomy was performed immediately by Dr. Hunt. The general condition on admission was good. Roentgen-ray examination by Dr. W. F. Manges showed a marked obstruction of the upper esophagus. On esophagoscopy, marked narrowing of the esophageal lumen was found. Retrograde dilation is being done.

The treatment carried out in these cases is dilation, either by esophagoscopic bouginage in the cases without gastrostomy, or by retrograde dilation in the gastrostomized cases, using the special bougie devised by Dr. Gabriel Tucker.

COMMENT

In these cases, as in practically all cases of esophageal stenosis resulting from lye preparations, an analysis of the circumstances attending the ingestion of the alkali reveals several points of interest.

The swallowing is practically always accidental, the lye, in powder or solution, being left within reach of the child, or put on the kitchen shelf with other containers and mistaken for one of these. Sometimes it is a residue adhering to a cup which has been used to measure lye. This apparent carelessness is due to a lack of knowledge of the highly poisonous nature of all lye preparations. Since lye may be purchased anywhere, and since the labels on the containers either have no poison or warning notice, or, if present, it is usually inconspicuous, it is readily seen that education as to the poisonous nature of lye is only by bitter experience.

Viewing the matter purely in the abstract, it is difficult to understand why necessary legislation has not been provided to prevent these pathetic occurrences by adequate "scare labels," especially when, on every hand, efforts are being made to protect against disease, to safeguard against injury, and to prolong life.

Poisoning, due to the accidental swallowing of poison sold by druggists, is relatively uncommon, and this is due in great part to the profound respect inspired by the "skull and cross-bones" and "poison scare labels" which are required by legal regulations to be placed on these containers.

Similar precaution could be taken with lye preparations to warn the public of the highly poisonous nature of these substances. It would then be very properly stored in a safe place beyond the reach of these poor, innocent children. A careful presentation of this question to legislators and manufacturers from the humane side, as well as a consideration of its economic aspects,

should convince them of the necessity of remedial measures.

This is a review of a pathetic condition which is the cause of much suffering and distress to these innocent patients, who are in this state because it was not known that lye was a poison. That this disease is preventable is obvious. The essential point is that parents do not fully realize that these preparations are poisons.

THE RATIONAL TREATMENT OF FRACTURES OF THE UPPER END OF THE HUMERUS

REPORT OF END-RESULTS

JAMES WARREN SEVER, M.D.

BOSTON

In following a series of cases of fractures of the upper end of the humerus, I have been impressed by two things: (1) The fact that no textbook emphasizes the absolute necessity of the abduction treatment of this type of fracture, so far as a result expressed in terms of good function goes, and (2) the generally poor results obtained in these fractures as a result of the usual routine methods of treatment as determined by subsequent function. In this paper, I wish to impress on all those who are called on to treat these fractures that better results will be obtained in less time

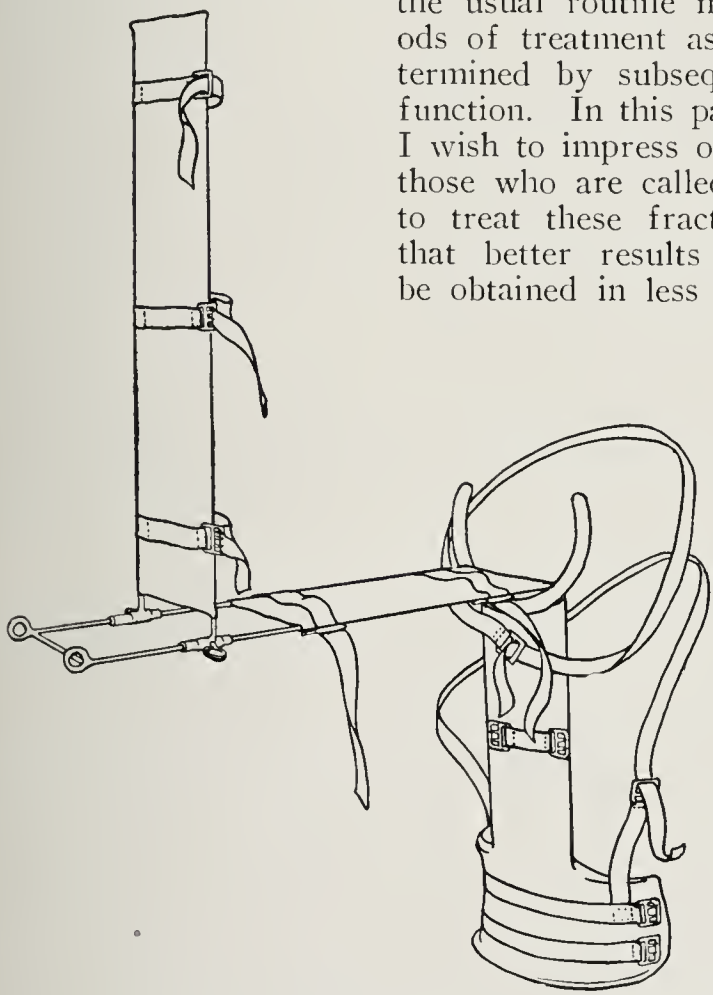


Fig. 1.—Abduction splint: There is a sliding upright for the forearm, with cross bar at end of horizontal arm for attachment of traction. The split ring at the axillary end is for fixation of the shoulder. The vertical body portion should extend from the axilla to well below the crest of the ilium, almost to the trochanter, just long enough to allow for a comfortable sitting position. It should be no wider than the width of the arm.

if traction, following reduction of the fragments, is used in the abducted and outwardly rotated and elevated position, rather than using the older and usual method which employs the shoulder cap, sling and Velpeau bandage. By the latter method, one not only insures future disability as far as good function of the shoulder goes, but primarily establishes, through bony union, false anatomic relations of the united parts. The first method of treatment is applied generally to all

unimpacted cases. The cases of impacted fracture of the upper end of the humerus in old persons may be left alone or treated by the usual methods, but even better results will be obtained in the average case of impaction if the abducted, elevated and outwardly rotated position with gentle traction for at least a week is insisted on. There are certain cases in which exception may be made to this procedure, and the fracture may be treated only by a sling for the arm, with massage, baking and passive and active exercises started as early as the tenth to the fourteenth day. By this method, most patients, by the end of the fourth



Fig. 2.—Splint applied: There is traction on the arm; the figure of eight strap round the left shoulder prevents arm and splint from riding forward.

week, can use the arm and hand well, go without a sling, even elevate the arm above the shoulder level, and put the hand behind the head. This abduction method also prevents the subsequent condition of shoulder joint subluxation occasionally seen after fracture of the upper end of the humerus and apparently due to capsular and muscle relaxation resulting from injury and atrophy as well as gravity pull of the distal fragment, plus the occasional use of traction in the vertical direction. These subluxations and partial dislocations may clear up as the arm recovers, but may persist as a cause of considerable future functional disability.

In the study of the literature, there is little in the textbooks that calls attention to the necessity of the abducted position in the treatment of these types of fractures. A certain amount of abduction, possibly 45 degrees, is spoken of occasionally, but almost invariably in connection with inward rotation of the humerus. This, of course, is exactly what is not wanted. There are a good many arm splints, such as the Middeldorp triangle, which is in the form of three narrow wooden splints made together as a frame and having its apex in the axilla. This, of course, is the ancestor of the Penhallow-Osgood splint, but does not hold the arm either in sufficient abduction or outward rotation. The so-called Red Cross basic splint, an abduction arm splint, is crude; and while it might be used to advantage temporarily in an emergency in war work, it is not an efficient splint for ordinary civil practice. Nor does it hold the arm in outward rotation. Judet¹ has used abduction with plaster casts, but only to 45 degrees; and Schuller² has used the angle wire bandage reinforced with sodium silicate, both holding the arm in inward rotation.

Most of the authors apparently think a wedge-shaped pad in the axilla and a shoulder cap of plaster of Paris will answer every purpose. This, of course,

1. Judet: *Presse méd.*, Jan. 6, 1907.

2. Schuller: *Arch. Orthop.* 2: 58, 1904.

is not a satisfactory method either in view of the results we have been getting or in regard to proper anatomic relation. Royster³ believes that the old and accepted type of treatment is satisfactory and that in the case of dislocation with fracture, an immediate operation is necessary to replace the fragments; but he lays no emphasis on the essential position of abduction and outward rotation, following reduction.

Buchanan⁴ reports a number of cases of fracture of the humerus and dislocation of the head, discusses mechanics, and thinks excision of the head the operation of choice.

Whitman⁵ describes methods of reducing fractures about the shoulder joint, particularly epiphyseal displacements, and believes full abduction essential in restoring anatomic relations. After replacement of the fractured surfaces, the arm is dressed in abduction, but carried forward in inward rotation and

great difficulty in retaining the corrected position when he brought the arm down to the side of the thorax for fixation. He also states that, in 1902, Beck, and Whitman previously quoted, described successful results from fixing the arm in a position of lateral abduction. If lateral abduction, such as Albee and Whitman describe, is that shown by the illustrations, it certainly is not anatomically correct from the point of view of later function.

Jorge⁷ felt that the arm should be immobilized in slight inward rotation in a plaster cast after reduction. He believes that lack of proper correction is certain to entail serious consequences. Massage, however, with passive exercises, he thinks should be begun as early as the second week. In this I agree with him.

Robert Jones⁸ feels that the abducted position is the best position when it has become necessary to correct extreme deformity by operation. He does not feel, however, that passive motion should be begun before the fourth week.

Henderson⁹ states that, as a result of a study of a number of cases of injury to the shoulder joint, he finds that the motion most often complained of by the patient is that of upward and outward rotation and elevation; also that failure to obtain this motion is due to the fact that not only arthritic changes occur in the joint but also callous production resulting from fracture tends to obstruct these two motions.

Van Hook¹⁰ states that it is his belief that in cases in which there has been a fracture dislocation of the head of the humerus, it is better to use the Murphy fat and fascia transplant to insure later motion, and believes that removal of the fragments of the humeral head after simple fracture with dislocation of the head gives an excellent result after operation, provided muscular attachments are reestablished. He quotes Hennequin and Loewy,¹¹ who state that intracapsular as well as extracapsular fractures at the shoulder heal in comparison with similar fractures of the hip joint, but full recovery cannot take place in those fractures occurring in persons beyond middle age in less than six months or a year, or at all unless reduction of the fracture is absolutely complete.

Helfrich¹² says nothing about abduction methods of treatment of this type of fracture.

MECHANICS OF THE FRACTURES

These fractures are generally caused by a fall, the patient's arm being held in a position of abduction,

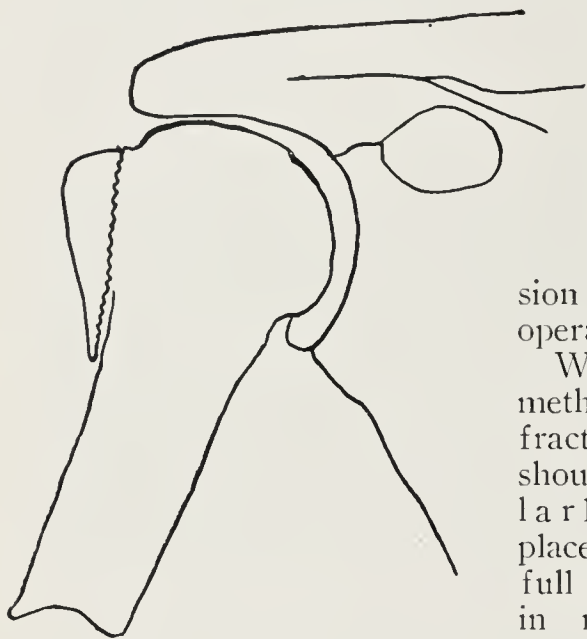


Fig. 3 (Class 1).—Fracture of greater tuberosity of humerus: Patient was not treated by abduction and outward rotation, but by shoulder cap and sling; accident happened in August, 1922, and patient still has considerable disability.

held in a shoulder spica. This is to my mind satisfactory only so far as it goes, and is much better than the old method of keeping the arm strapped to the side.

Albee⁶ has described a new postural treatment, emphasizing the necessity of restoring the fractured surfaces by means of traction temporarily, but the arm, after the surfaces are apparently in approximation, is dressed in a plaster spica holding the arm markedly inwardly rotated and carried forward so that the humerus is almost parallel to the sagittal plane.

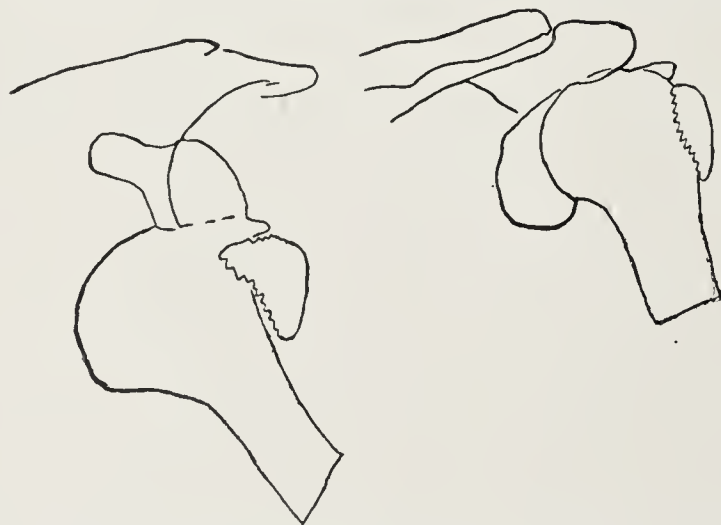


Fig. 4 (Class 1 A).—Fracture dislocation of shoulder before and after reduction. Fracture of greater tuberosity of humerus.

He states that the first mention that he was able to find of reduction of this type of fracture was by E. M. Moore of Rochester, N. Y., in 1874. He states that Moore, after restoring the fractured surfaces, found



Fig. 5 (Class 2).—The patient fell on the left shoulder July 20, 1920. Fracture resulted, with splitting off of the greater tuberosity. Oct. 1, 1920, there was good union, and good motion except in elevation. In March, 1922, shoulder motions were all normal.

3. Royster, H. A.: The Management of Dislocation at the Shoulder Joint Complicated by Fracture of the Neck of the Humerus, J. A. M. A. 49: (Aug. 10) 1907.

4. Buchanan, J. B.: Ann. Surg., May, 1908.

5. Whitman, Royal: Ann. Surg., May, 1908.

6. Albee, F. H.: Juxta-Epiphyseal Fracture of the Upper End of the Humerus, M. Rec., May 4, 1912.

7. Jorge, J. M.: Semana Med., July 18, 1912.

8. Jones, Robert: Brit. M. J., Dec. 7, 1912.

9. Henderson, F. F.: Dislocations of the Shoulder, with a Few Complications, Boston M. & S. J. 177: 550 (Oct. 18) 1917.

10. Van Hook, Weller: Fracture Dislocations of the Humeral Head, Boston M. & S. J. 187: 960 (Dec. 28) 1922.

11. Hennequin and Loewy: Les fractures des os longs, 1904.

12. Helfrich: Atlas of Fractures and Dislocations, Munich, 1910.

hand pronated and humerus inwardly rotated. As a result of this position, the tuberosity of the humerus comes forcibly into contact with the tip of the acromion. It follows, then, that (1) the tuberosity is broken off; (2) a fracture of the neck of the humerus occurs; (3) a dislocation of the humerus occurs, or (4) a combination of the various preceding conditions results.

In fractures alone of the greater tuberosity, there are two main types: One in which there is merely a crack running through the base of the tuberosity, and one in which the tuberosity as a whole is pulled forcibly off and rotated backward and outward. The latter condition is due to the pull of the supraspinatus, infraspinatus and teres minor muscles. Any attempt to reduce this fracture in any position other than outward rotation, elevation and abduction of the humerus will, of course, fail. Not infrequently, this type of fracture may be complicated by a fracture of the surgical neck, an impaction of the head and shaft, or a dislocation.

In fractures of the neck of the humerus in young people before the epiphysis has united, it is not uncommon to see the entire epiphysis displaced. This displacement may be partial or complete. The entire head of the shaft is not infrequently rotated upward and backward, but often it is in a position of sub-

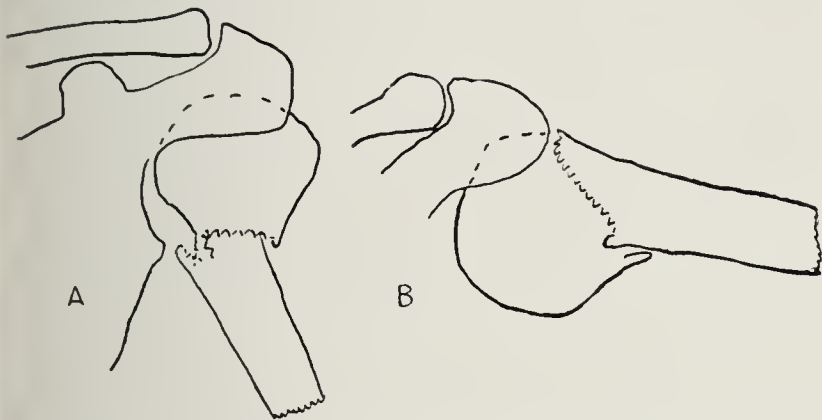


Fig. 6 (Class 2 A).—A, Fracture of surgical neck of humerus in position assumed after ordinary Velpeau dressing and shoulder cap; B, position after abduction and outward rotation: almost perfect anatomic restoration of fragments.

coracoid dislocation and upside down. The mechanics of the injury is the same in these cases as in the fractures of the greater tuberosity, but has had the added force of the body weight applied to the shaft through the acromion acting as the fulcrum with the arm abducted. In the latter cases the parts may occasionally be manipulated into position, but more often operation has to be performed and the fragments replaced, or, in adults, the articular head of bone removed. Frequent manipulative attempts should not be encouraged for fear of damage to the axillary vessels and nerves. Associated with this type of fracture is always the inward rotation of the distal fragment consisting of the shaft of the humerus. This inward rotation is due to the unopposed pull of the pectoralis major, latissimus and teres major. There may also be some upward displacement of the lower fragment, due to the unopposed pull of the triceps, biceps and coracobrachialis. All these perverted muscle pulls have to be taken into consideration and corrected before any adequate anatomic reposition may be accomplished.

The severer types of these fractures are associated with capsular tears and exudates into the joint, and so add to the subsequent disability greatly. Early motion after reduction is as much an essential to a satisfactory result as a primarily correct anatomic reposition, in spite of the fact that Sir Robert Jones states that no

passive motion should be attempted before the fourth week. The results one sees in these cases treated by routine methods are bad. That is, motions are always limited in abduction, outward rotation and elevation, with little or no ability to put the hand behind the head for a long time—eight to ten months, if ever. Early traction in abduction and outward rotation, with right angle elevation, would give the patient a base from which to start these motions and would ultimately lead to a vast improvement in our results.

One principal difficulty later in effecting outward rotation and abduction and elevation after this type of injury and following the old method of treatment is that new bone or exuberant callus blocks the sliding of the greater tuberosity under the acromion. With the arm in the primary position of outward rotation, abduction and elevation no such blocking callus can form, and the principal difficulty to later function is at once prevented.

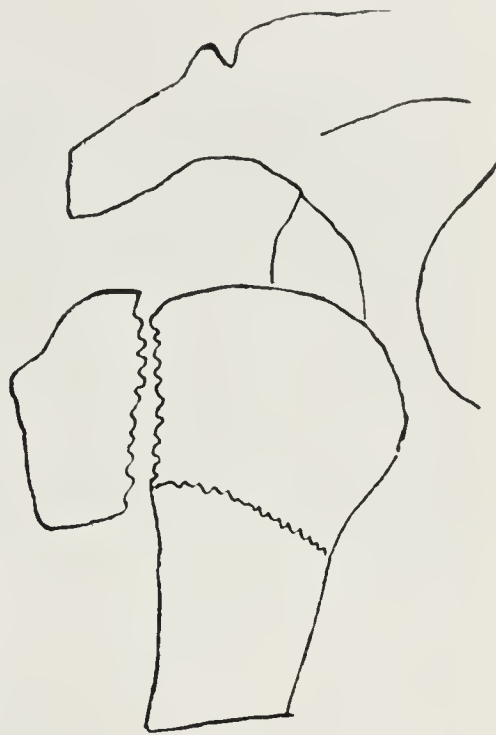


Fig. 7 (Class 2 B).—Fracture of greater tuberosity, surgical neck and dislocation of the humerus from the glenoid. Seven years after the accident, this woman still has considerable disability in elevation and outward rotation of arm. She was treated by the usual routine method.

METHODS OF APPLYING TRACTION

There are several methods of applying traction to the humerus following manipulative or operative reduction of the fracture. All of the ambulatory splints on the market at present are inefficient, not so much from the point of view of traction, but from the fact that the humerus is always held in inward rotation and generally in a plane forward of the shoulder joint. Inward rotation of the humerus is just what is not wanted, and so they fail to furnish a

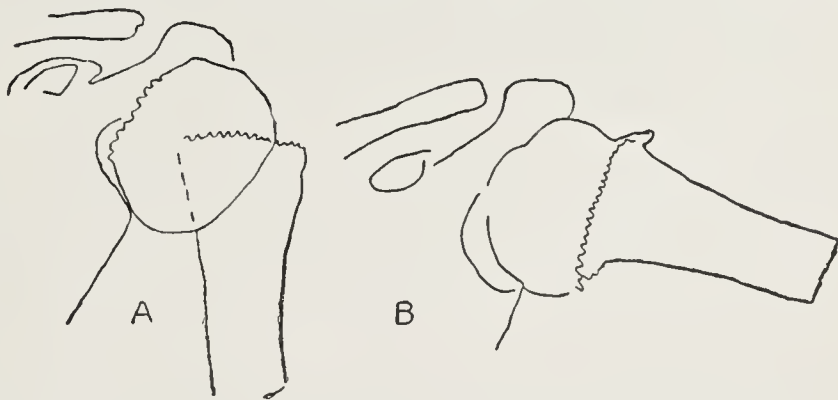


Fig. 8 (Class 2 A).—A, fracture of surgical neck, with complete rotation of head; B, replacement of fracture as result of manipulation followed by external rotation, abduction and traction, which was continued for about three weeks; after the omission of traction, the patient was massaged for about four months, and two years later she had perfectly normal motion and no shortening.

satisfactory supporting or anatomic position. Following a fracture of the upper end of the humerus which has been reduced by manipulation under ether, the traction may be applied to the arm in the usual manner, that is, two long side pieces of surgeon's plaster parallel to the long axis of the arm and the figure of eight

spiral pieces. If the patient is to stay in bed, an ordinary arm Thomas splint may be used and so fastened to the head of the bed with a bandage as to prevent dropping of the arm below the shoulder level. Its outer end may be supported on a bedside table or slung from an overhead support.

Care should be taken in these cases not to extend the sticking plaster below the elbow, as too much or too

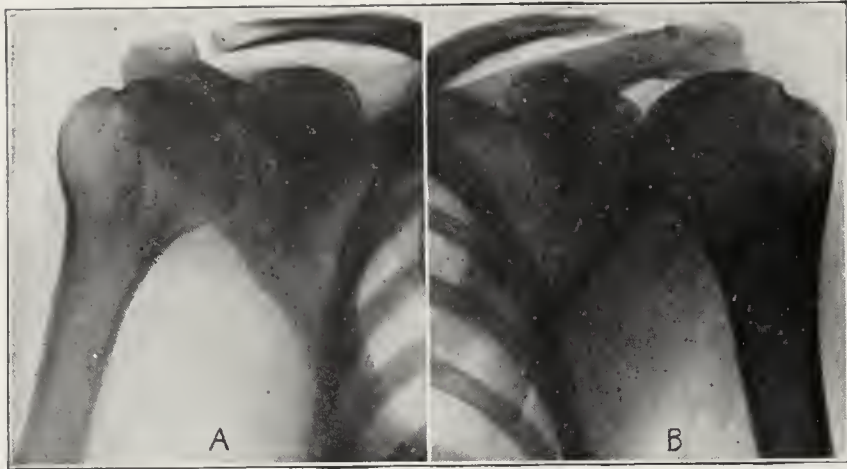


Fig. 9 (Class 2 A).—A, condition of fractured left shoulder in the case illustrated in Figure 9, two years after the accident; virtually no difference from normal right shoulder, B.

long continued traction, or even sufficient traction to hold the fracture in adequate position and overcome muscle pull, may be enough to start up an arthritis or peri arthritis of the elbow which will prove very troublesome for a long period of time. It is better to have the elbow flexed and the hand supinated with all the pull coming on the upper arm. If the lower arm is incorporated in a plaster cast with the elbow bent, the cast going a few inches above the elbow, traction can be made on the cast in the bend of the elbow without danger and with excellent control of the traction and rotation. Care should also be exercised to prevent overtension on the nerves of the arm, which may lead to temporary paralysis of the hand or lower arm.

From ten days to two weeks is a sufficiently long time to insure enough union so that the patient may be allowed up and about with an ambulatory splint which maintains the corrected primary position. This splint can be applied in all simple cases of impaction

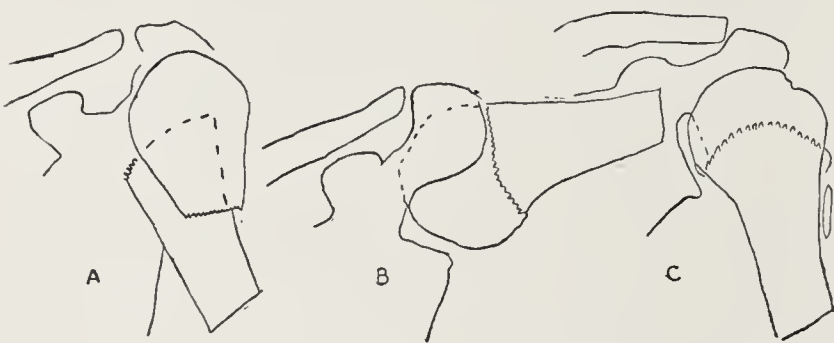


Fig. 10 (Class 2 A).—A, fractured surgical neck, with considerable overriding of fragments; B, replacement of fragment, with arm abducted and outwardly rotated about a week after injury; C, condition of arm after abducted and outwardly rotated position had been given up two months later. This man, however, had to have the arm operated on in order to replace the fragments, and a cast was applied in the abducted and outwardly rotated position. This cast he wore for a month or six weeks. He enlisted in the navy and was drowned in New York Harbor, Oct. 6, 1921. The arm up to that time seemed normal, four years after the fracture.

from the first, but the patient is more comfortable and safer in bed in the more severe types of fractures the first week or two, especially those which have required manipulative or operative reduction.

CONSTRUCTION OF SPLINT

This splint is modified somewhat from one which has been used extensively in a more simple form for the treatment of cases of obstetric paralysis. With the addition of extra room at the elbow for traction and a split ring at the shoulder for security, it offers a very

Classification of Fractures of Upper End of Humerus

- Class 1.—Simple fracture of greater tuberosity without displacement; A, with upward and outward rotation of fragment, may be associated with dislocation of shoulder.
- Class 2.—Simple fracture of surgical or anatomic neck without displacement, or with impaction of fragment; A, with displacement of fragment, but without dislocation of head; B, with displacement of fragments and complete dislocation of head, generally subcoracoid.
- Class 3.—Fracture of neck of humerus, generally comminuted, with fracture of shaft, without dislocation of head.

adequate apparatus for the ambulatory treatment of these fractures. It is made of copper washed iron wire of one-fourth inch gage and can be readily adjusted to fit any individual case by any one (Fig. 1).

EXAMPLES OF DIFFERENT CLASSES OF FRACTURES

CLASS 1.—*Simple fracture of the greater tuberosity without displacement.* This injury consists of a line of fracture running parallel to the long axis of the

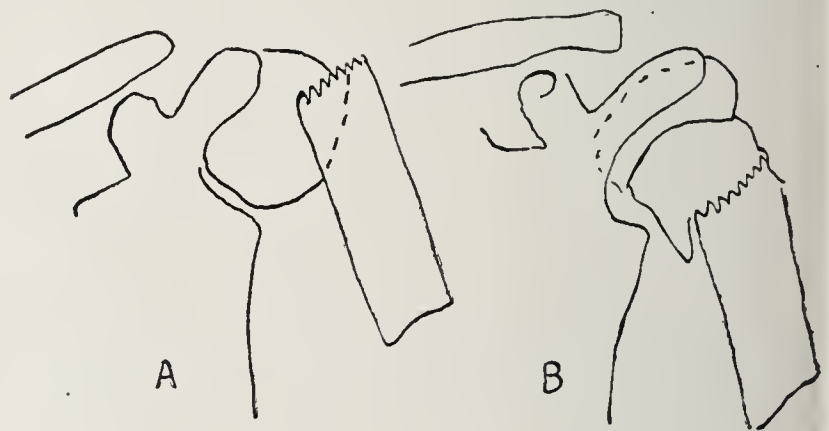


Fig. 11 (Class 2 A).—Left arm: A, fracture of surgical neck or epiphyseal separation, Dec. 27, 1915; rotation of head, with overriding of distal fragment; B, replacement following manipulation; traction was applied with arm abducted, and was continued for a month; then a sling was used, and massage and baking were employed for several weeks. This case is further illustrated in Figure 12.

humerus, and simply separating wholly or in part a portion of the greater tuberosity from the head. It is a very common injury and should be treated by the advocated method of external rotation, traction and abduction. Treatment in this position for a few days or a week can then be followed by a sling and passive and active motion (Fig. 3).

CLASS 1 A.—*More extensive injury, in which the greater tuberosity is split off and rotated upward, backward and outward.* By outward rotation, elevation and abduction, the fractured surfaces can generally be approximated. Operation is rarely indicated, not for removal of fragment, but to restore the fractured surfaces to their normal relations. Plating or bone pegging for this condition should be discouraged in all but the exceptional case.

Dislocation of the shoulder may also be present with this class of injury, and, following the reduction of the dislocation, the treatment may be carried out in the usual way, with the caution that baking, massage and passive and active motion be started not later than the end of the first week (Fig. 4).

CLASS 2.—Simple fracture of surgical or anatomic neck without displacement, or with an impaction of fragments, and with or without a fracture of the greater tuberosity (Fig. 5). This case represented a fracture which had been treated as a contusion for three weeks before being roentgenographed, and followed a fall on the shoulder. Massage and exercises were started at once following the roentgen-ray exami-



Fig. 12 (Class 2 A).—The patient whose injury was illustrated in Figure 11 reported for observation seven years later, at which time she had absolutely perfect motion. The left arm (A), which was fractured, and the right arm (B), which was normal, are very nearly identical.

nation, but it was several months before even good function was restored. There was no opportunity in this case to use any other than the conventional sling method of treatment. The roentgenogram shows a fracture of the greater tuberosity as well as a fracture of the surgical neck with displacement and overriding of the fragments, and really represents Class 2 A of our classification. The functional result was eventually perfect. Figure 6 A also illustrates a case of Class 2 A, which had been dressed with a shoulder cap and Velpeau bandage. Twenty-four hours later, under gas, manipulation, followed by traction, abduction, and outward rotation, the result illustrated in Figure 6 B was obtained. A good result was obtained anatomically and functionally.

Class 2 B is shown in Figure 7, representing a fracture of the greater tuberosity, with a subcoracoid dislocation of the head and a fracture of the surgical neck. This was in a woman, aged 60, who, following reduction of the dislocation, had fixation for several weeks, and then massage for six months. She wrote

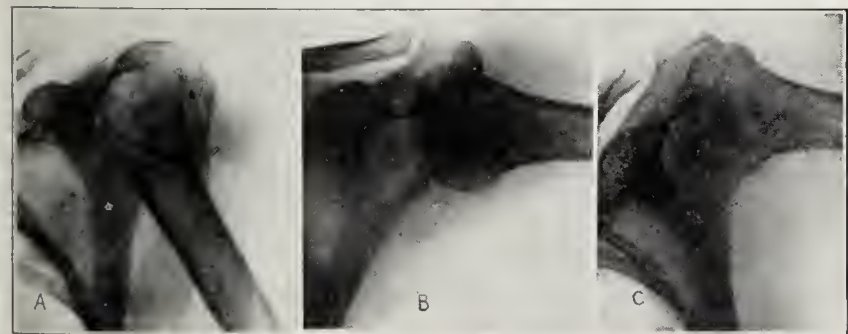


Fig. 13 (Class 2 A).—A, left shoulder before reduction: fracture of surgical neck, with overriding and rotation of articular surface; B, after manipulative reduction; traction with Thomas splint, abduction and outward rotation; C, three weeks after reduction; anatomic restoration of fractured surfaces, with good joint motion. In January, 1923, there was a moderate amount of limitation of outward rotation and abduction, with some limitation of elevation of arm at shoulder. This is probably due to the fact that this case was complicated by considerable arthritis of the elbow joint as a result of traction, and also by the fact that motion was not instituted early enough. Anatomically, the arm is perfect. Functionally, it is not yet satisfactory.

in February, 1922, that she had very good use of the arm, but still had some trouble in getting her hand to her head to comb her hair. I venture to state that with traction, elevation and outward rotation, her

anatomic and functional result would have been better and the time saved considerable.

Other roentgenograms in Class 2 A are as follows: Figures 8 and 9 represent a case of epiphyseal separation in a girl, aged 17 years. The fracture was the result of a fall on the ice in January, 1919. Figure 8 shows the condition before and after manipulative reduction. Figure 9 shows for comparison the left shoulder, which had been fractured, and the normal right shoulder two years later. At that time there was no disability, atrophy or shortening. The case was treated by traction in abduction and outward rotation, following reduction, for a period of about three weeks.

The other roentgenograms of Class 2 carry their own legends and tell their own story.

Figure 18 represents the more severe type of fracture dislocation, about which certain individuals differ

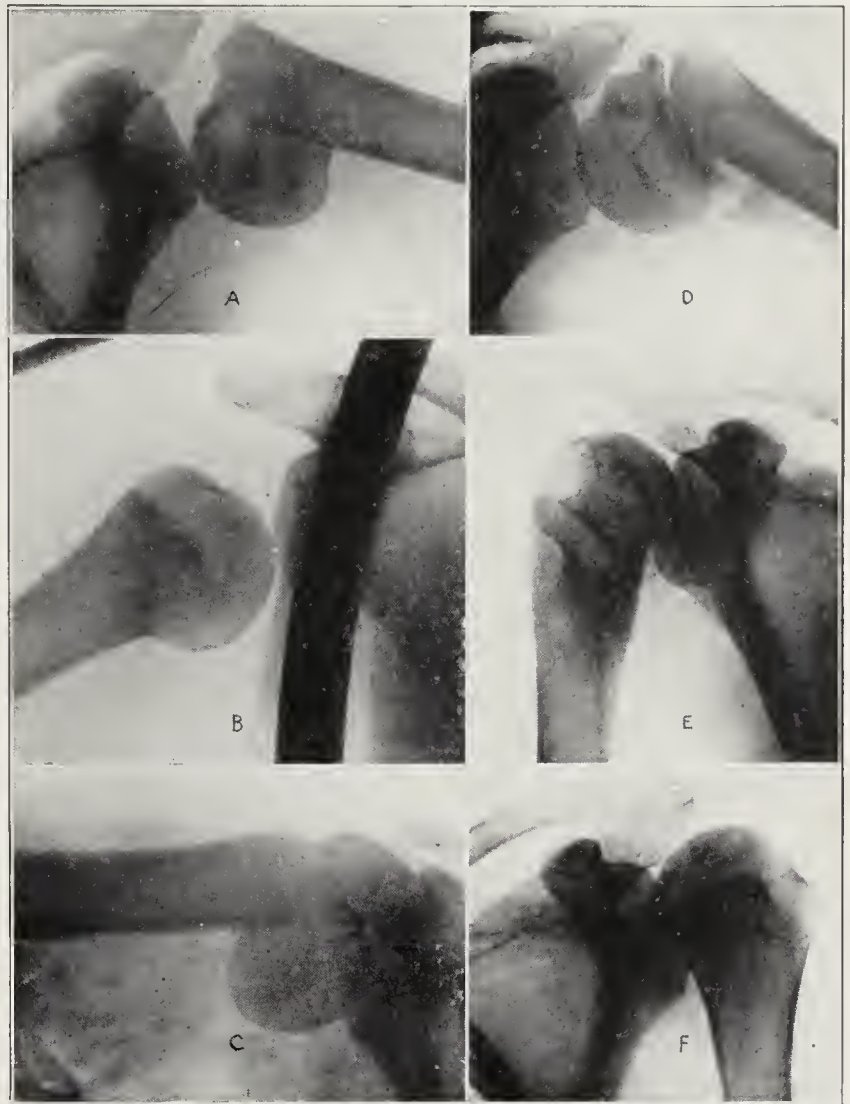


Fig. 14 (Class 2 A).—A, fracture of surgical neck, with overriding of fragments but with no complete dislocation of head; B, traction applied with Thomas splint; still slight overriding, but marked improvement in position; C, fragments have slipped as a result of traction having given way, with increased deformity and increased rotation of head of humerus; D, three months later, after operative attempt to restore position of fragments; E, right arm a year after injury. There has been complete restoration of normal motion and strength, and while there is some anatomic change in shape, there is no impairment of function; F, normal left shoulder.

in their advised procedures. Some advocate removal of the head at once (Buchanan); others advise replacement of the head to its normal position (Royster), with suture if necessary, and still others advise not only removal of the head, but covering the ends of the distal fragment with a muscle flap to improve later function. Obviously, when the head has been displaced for any appreciable time, it should be removed. Also, when there has been much comminution of the upper end of the distal fragment, it should be removed. In certain cases, in which the patient is operated on at once, under favorable conditions it might be replaced

with a fair chance of good function. Too long a delay would probably lead to death of the articular head, sequestration, and later secondary removal. Function after removal of the head is always impaired, but the usefulness of the arm is never as bad as one might suppose. In this case, with the extensive comminution of the distal fragment, it was obviously impossible to replace the articular head, and it was removed. The arm was put up in a Thomas splint, with a cast about the elbow, in abduction, outward rotation, elevation and supination. Traction on the cast was continued for two weeks, and then a sling was applied and active and passive motion started. Five months later, fair function was present even without any very active after-treatment.

CLASS 3.—*Fracture of the head of the humerus, generally comminuted, with fracture of the shaft, without dislocation of head.* This class of fracture is not as common as the two previous classes and usually is the



Figure 15

Figure 16

Fig. 15 (Class 2 A).—Fracture of left surgical neck of humerus, with splitting of shaft and overriding of fragments; also fracture of tip of acromion. Accident occurred in February, 1918. Treated by abduction, outward rotation and traction, and patient reported in May, 1922, that his left arm was in as good condition, so far as he was aware, as it ever was. He could move it in any direction without discomfort.

Fig. 16 (Class 2 A).—Fracture and separation of epiphysis, with complete tipping upside down of head of humerus with considerable overriding of the fragments. Operation was performed in November, 1919; the lower fragment was found in front of the head of the humerus; the head was replaced and fastened with kangaroo tendon; traction abduction and outward rotation were applied for several weeks. The patient was discharged from the hospital, Dec. 11, 1919. Feb. 1, 1922, motion was perfect in all directions; there was some atrophy of the left deltoid, with no shortening of the arm. This case is further illustrated in Figure 17.

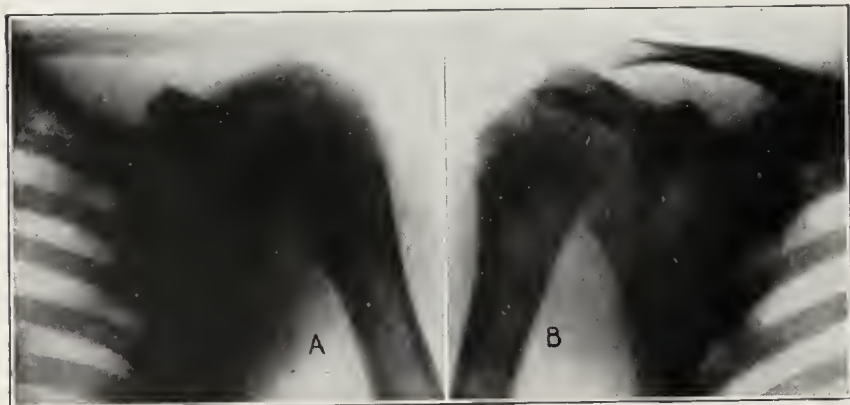


Fig. 17 (Class 2 A).—A, appearance of left shoulder in February, 1922; practically no anatomic difference from right shoulder (B), twenty-six months after fracture.

result of more forcible trauma. Coaptation splints must be used on the shaft of the humerus, and traction in abduction and outward rotation may be employed if it is found that the opposing pull of the pectoralis major does not distort the fragments of the shaft. The treatment otherwise is to be carried out as in the two previous classes, with passive motion, however, started later, about the third week.

CONCLUSIONS

These points are essential in the treatment of fractures of the upper end of the humerus:

1. Anatomic restoration of fragments is best obtained by abduction, outward rotation and elevation of the humerus.

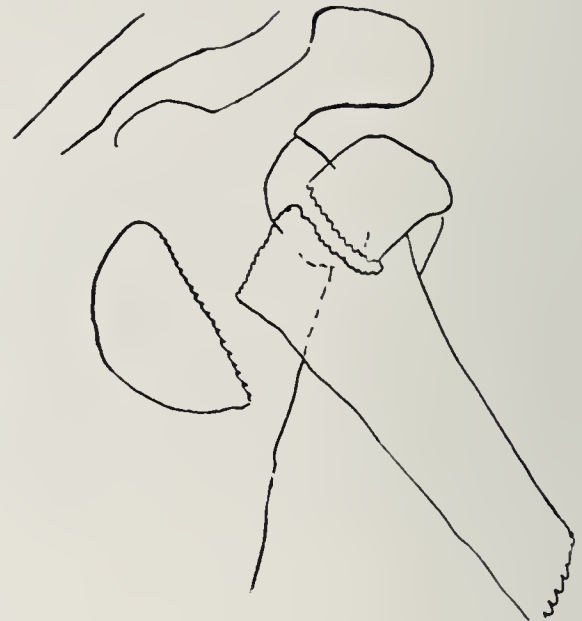


Fig. 18 (Class 2 B).—Fracture, with dislocation and displacement of left humeral head; fracture through shaft of humerus and splitting off of greater tuberosity. Humeral head removed, and arm put up in abduction, outward rotation and traction for two weeks; end-result not yet known; no muscle flap used in joint.

2. Traction in this position is essential for from four or five days to two or three weeks.

3. A satisfactory ambulatory splint may be employed rather than bed treatment.

4. Better and more quickly obtained functional results may be secured by this method than by any other.

5. Operation, except in certain cases of fracture dislocations, is generally unnecessary to restore fractured surfaces.

321 Dartmouth Street.

A MILK-BORNE EPIDEMIC OF SEPTIC SORE THROAT IN PORTLAND, OREGON *

R. L. BENSON, M.D.

AND

H. J. SEARS, Ph.D.

PORTLAND, ORE.

The epidemic here reported, which includes 487 cases of septic sore throat, with twenty-two deaths, occurred almost exclusively among the customers of a single raw-milk dairy. All but one of the patients who died had drunk this milk. Prompt detection of the cause of the epidemic and equally prompt control of the milk supply by heating were made possible by complete cooperation between the clinicians, the city health bureau and the dairy management, and resulted in checking further extension of the epidemic within twenty-four hours after the suspicion of a milk-borne epidemic was first brought to the attention of the health bureau, March 27, 1922.

HISTORY OF THE OUTBREAK

A child, aged 2 years, died, March 25, 1922, with the clinical picture of sore throat and acute encephalitis. Other cases occurred in various parts of the west side

* From the departments of pathology and bacteriology, University of Oregon Medical School, and the City Health Bureau, Portland, Ore.

of Portland on this day and the next two days, all evidently referable to the milk of a single dairy. Several cases appeared in a forty-bed hospital and many in a home for girls, but it was asserted that the latter institution obtained its milk from a different source—a certain pasteurizing dairy. The city health bureau authorized us to undertake an investigation, and on the morning of March 28, it was easily determined that the girls' home, the hospital referred to above and a predominance of the cases in homes owed their infection to a single raw-milk dairy. On our recommendation, the health bureau at once ordered heating of all the milk of this dairy by whatever method would be feasible, and placed two employes of the bureau in charge of operations at the dairy. Within twenty-four hours after this plan was put in operation, the incidence of new cases of septic sore throat declined to such an extent that the very few which appeared could be ascribed to contact infection. A more detailed study of the epidemic brought out the facts which follow.

CONDITIONS AT THE DAIRY

We found fifty-one milking cows of various breeds, well housed in a wooden structure with concrete floors and with proper facilities for flushing floors and handling excreta. The system of cooling milk appeared efficient. We learned that cows having diseased udders were kept in their regular stalls along with healthy cows, and in some instances only the diseased quarter was excluded from the milking. This condition, together with the fact that milkers did not always handle the same shift of cows, but sometimes exchanged shifts, would make it possible for a milker to include milk which should be discarded. Except for the points mentioned, we found the sanitary conditions generally good, and the city milk inspection had always given this dairy one of the best ratings in the city as regarded bacterial count and general quality of the milk.

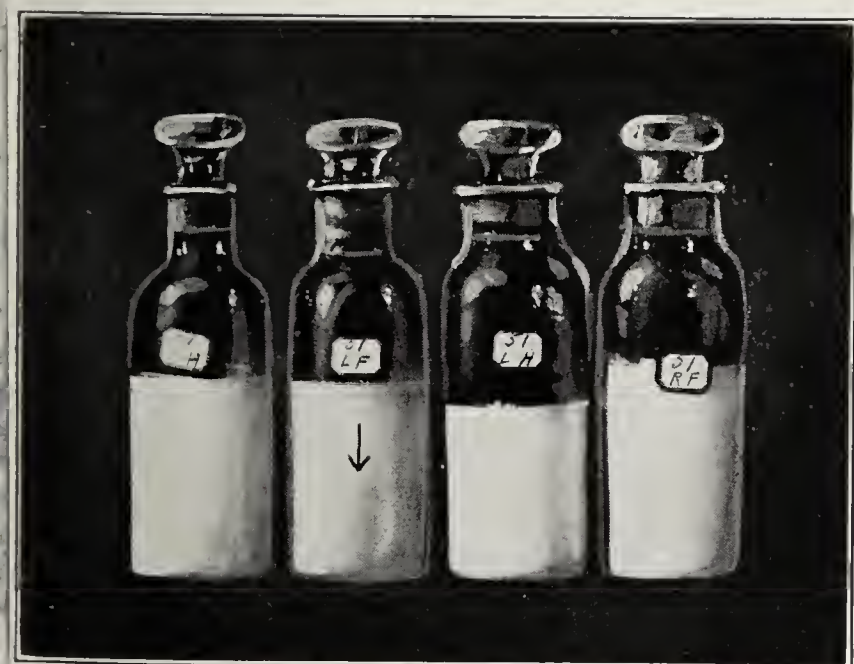


Fig. 1.—Milk samples from each quarter of Cow 51 after standing twenty-four hours. The arrow indicates the upper line of pus, which has settled out in the sample from the consolidated quarter.

CULTURES OF MILK SAMPLES

Cultures of the whole milk of the herd were taken, March 28, and gave a very few hemolytic streptococcus colonies. At this time, however, the whole milk did not include the milk of cows which were known to have diseased udders.

More instructive are the results of culture of the individual milk of each cow, and it is best to consider some of these separately.

Cow 1 had a large abscess on one hind leg, but its milk had been included with that of the herd. Cultures revealed *Streptococcus viridans* in the abscess pus and no unusual flora in the milk; nevertheless, we excluded this animal from the herd.

Cow 51 had a consolidation of the left front quarter of the udder. The dairyman insisted that the milk of this animal had not been included in the whole milk for two weeks. Examination of the milks from separate quarters showed all of normal gross appearance except that from the left front quarter, which sample appeared grayish and mucinous. On standing twenty-four hours this milk settled out differently from that of the other quarters (Fig. 1). The lower half of the milk column consisted of yellowish, creamy pus, containing numerous pus cells and many streptococci in chains. Cultures revealed 10,000,000 hemolytic streptococci per cubic centimeter in the milk from this quarter, a few in the left rear quarter, and none in the other two quarters. It will be shown farther on that this cow, whose milk gave a pure growth of hemolytic streptococcus of human origin, was the probable source of the epidemic, perhaps from being milked into the herd milk unknown to the operator of the dairy. We learned afterward that this cow, which had a markedly increased temperature, had been kept in the same row of stalls as other cows which were furnishing milk. We shot her, April 9, and performed necropsy. The only noteworthy change was an almost complete purulent consolidation of the left front quarter of the udder, and slight infiltration in the left hind quarter (Fig. 2).



Fig. 2.—Udder of Cow 51, left front quarter, which yielded hemolytic streptococcus of human type: M, massive consolidation. Reduced to one-fourth natural size from drawing.)

Cow 21 had had no increase of temperature reported, and had been milked in with the herd previous to the onset of the epidemic. Culture of her milk gave an abundant growth of hemolytic streptococci, which, as shown below, was of the bovine type. It was considered advisable to kill this cow also. Necropsy showed a purulent infiltration of the udder (Fig. 3).

The milk samples from four other cows yielded hemolytic streptococci in small numbers. A comparative study of the hemolytic streptococcus cultures isolated from these six cows is given in Table 1.

About three weeks after the whole herd was examined, eight cows which either had diseased udders or had gone dry in one or more quarters were examined, but no hemolytic streptococci were found.

From the data of Table 1 it will be seen that the culture from the diseased quarter of Cow 51 is the only culture isolated from the entire herd which seems to resemble in essential qualities the organism found in

the human cases of septic sore throat. All other cow strains differ markedly from the human strains in cultural characteristics and, following the method of Avery and Cullen,¹ their high limiting H ion concentrations in glucose broth identify them definitely as of bovine origin. Culture 51 L F from Cow 51 is, on the other hand, in this respect a human strain. The virulence of this culture for rabbits and white mice was also similar in every way to that of the human strain.

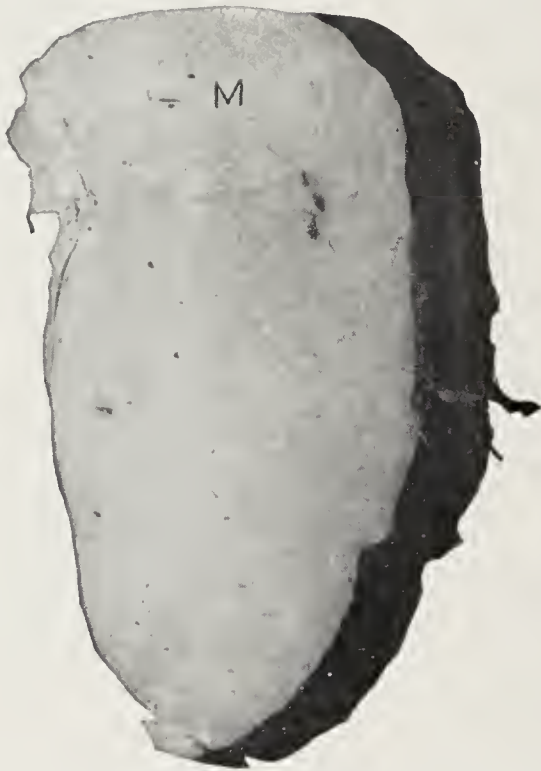


Fig. 3.—Portion of udder of Cow 21, which yielded hemolytic streptococcus of bovine type: M, consolidated area, very similar to that in Cow 51. (Reduced to one-fourth natural size.)

CULTURES FROM THE DAIRY EMPLOYEES

The one hemolytic streptococcus culture isolated from the dairy employees was from the throat of a milker who had large, red, inflamed tonsils, and who had complained of a mild sore throat. This culture could not be distinguished in any way from those isolated from the patients with sore throat and from the diseased quarter of Cow 51. It had a p_H value of 5.3, and a serum prepared against it definitely agglutinated strain 51 L F, though, on account of a propensity to spontaneous agglutination which could not be overcome, this serum could not be shown to agglutinate its own specific strain.

CULTURES FROM THE DAIRY EMPLOYEES

The hemolytic streptococcus isolated from patients was similar in all respects to the organism commonly described as the incitant of this disease. On horse blood agar plates, well isolated colonies were from 0.5 to 1 mm. in diameter, were of a whitish, watery appearance, and were surrounded by a perfectly transparent zone of hemolysis having a diameter from two to four times that of the colony. The characteristics of the colony placed the organism definitely in the beta group of Smith and Brown.² Growth in infusion broth was generally of the flaky type, and accumulated on the sides and bottom of the tube, leaving the medium quite clear. All cultures fermented lactose, salicin and maltose, and failed to attack mannite and inulin. The majority of cultures were incapable of attacking saccharose, but there were a few exceptions. Litmus milk was acidified slowly, as a rule, and was not coagu-

lated in any case in seven days. No tendency to a reduction of the litmus was observed in any milk culture. The limiting H ion concentration in glucose broth fell within the limits of p_H 5.4 and p_H 5.2.

The virulence of the cultures for rabbits was low, several animals failing to die from intravenous injections of as high as 1 c.c. of a twenty-four hour broth culture. Frequently the organisms could be isolated from the blood of the animal after several days, but would subsequently disappear from the blood stream, and necropsy would reveal either kidney and liver abscesses, or joint infections or both. White mice regularly succumbed to intraperitoneal injections in about two days, with a generalized bacteremia.

CONCLUSIONS FROM EXAMINATION OF VARIOUS CULTURES

It has been stated that all hemolytic streptococcus cultures from the throats of patients with septic sore throat in this epidemic had (in glucose broth) a limiting H ion concentration between the limits of p_H 5.4 and p_H 5.2. Of the various samples of cow's milk examined, only one, that from the left front quarter of Cow 51, gave a hemolytic streptococcus culture whose limiting H ion concentration fell within the same limits; viz., p_H 5.2. The p_H for all other milk samples, including even that from the left hind quarter of Cow 51, fell within the limits of from 4.5 to 4.3, indicating a bovine origin for the organisms. We have shown that one milker had a tonsillitis of marked degree, which yielded a hemolytic streptococcus having a p_H value of 5.3, and agreeing in all respects with cultures from patients with sore throat and from the left front quarter of Cow 51. The presumption, therefore, is that the milker in question was responsible for the infection of this cow's udder; that she developed a mastitis of human streptococcic origin in one quarter, and that her milk, which was proved to contain 10 million hemolytic streptococci per cubic centimeter, was at some time included by mistake in the whole milk of the herd. Such a massed infection of the dairy milk supply accounts logically for the sudden outbreak of a highly virulent epidemic like the one here described. By a comparison of the dates at which several patients in a hospital drank the milk, it was concluded that the herd milk must have become infected on one particular day, March 22, or

TABLE 1.—Comparison of Six Hemolytic Streptococcus Cultures from Cows

Culture	Lac-tose	Man-nite	Salicin	Mal-tose	Saccha-rose	Litmus Milk*	p_H
51 L F †	+	—	+	+	—	A	5.2
51 L H	+	—	+	+	+	ACR	4.3
21	+	—	+	+	+	ACR	4.5
3	+	+	+	+	+	ACR	4.5
17‡	+	+	+	+	+		
23‡	+	+	+	+	+		

* A, acid; C, coagulation; R, reduction of litmus.

† L F and L H refer to the left front and left hind quarters, respectively.

‡ These cultures were lost; therefore the data in regard to them are incomplete.

perhaps on two successive days. This agrees well with the time of onset of the majority of cases, as gathered by the survey of the dairy route.

STATISTICS OF THE EPIDEMIC

In order to obtain as thorough and accurate information as possible concerning the extent and character of the epidemic, one of us made a complete canvass of the dairy route in the company of the regular driver

1. Avery, O. T., and Cullen, G. E.: J. Exper. Med. **29**: 215 (Feb.) 1919.

2. Smith and Brown: J. M. Res. **31**: 455, 1915.

of the milk wagon. The accompanying map (Fig. 4) gives an idea of the distribution of the customers, and hence of the cases.

The dairy supplied 300 families, including 1,200 individuals; one hospital containing thirty-five patients and thirty-four attendants and help, a total of sixty-nine; a girls' home containing 104 adults, and a small grocery depot which kept no milk book, but which

TABLE 2.—Deaths from Septic Sore Throat

Case	Sex*	Age, Years	Date of Death	Date of Onset	Contributing Causes of Death
1	♂	2	3/25/22	3/24/22	Acute encephalitis
2	♀	1	3/27/22	3/25/22	Peritonitis
3	♀	86	3/29/22	3/24/22	Myocarditis
4	♀	66	3/30/22	3/24/22	Myocarditis; double pneumonia
5†	♂	59	3/30/22	3/26/22	Cardiorenal disease; decompensation
6	♀	79	3/31/22	3/24/22	Erysipelas
7	♀	8	3/31/22	3/25/22	Septicemia
8	♀	18 mo.	3/31/22	3/25/22	Peritonitis; septicemia
9	♀	11 mo.	3/31/22	3/25/22	Peritonitis; erysipelas, slight; bronchopneumonia; encephalitis; septicemia
10†	♂	34	3/31/22	3/24/22	Hemolytic streptococcus septicemia; laryngitis
11	♀	10 mo.	4/ 1/22	3/25/22	Peritonitis; septicemia
12	♀	8	4/ 1/22	3/26/22	Tonsillitis; appendicitis
13	♀	52	4/ 1/22	.....	Septic myocarditis; septic cholecystitis
14	♀	27	4/ 2/22	3/27/22	Myocarditis
15†	♀	66	4/ 2/22	.....	Encephalitis; septicemia; endocarditis
16	♀	40	4/ 5/22	.....	Erysipelas
17	♀	35	4/ 5/22	3/27/22	Pleurisy; erysipelas; pneumonia
18	♀	2	4/ 8/22	3/24/22	Peritonitis
19	♀	72	4/ 8/22	.....	Septicemia; multiple arthritis; bronchopneumonia
20†	♀	47	4/12/22	3/29/22	Central pneumonia
21	♀	1	4/12/22	3/26/22	Pneumonia; erysipelas
22	♀	52	4/24/22	3/26/22	Streptococcus septicemia; toxic goiter; erysipelas; goiter heart; acute nephritis

* In this column, ♂ indicates male; ♀ female.
† Necropsy.
‡ This is the only septic sore throat death in a nonuser of milk from the dairy mentioned in this report.

supplied an indefinite small number of customers. At least 1,400 persons were using the milk and cream.

The total number of cases of septic sore throat arising on this milk route during the week from March 24 to March 31 is computed at 487. Of these, 166 were severe, i. e., either had serious complications or gave trouble from protracted sepsis; 321 were listed as moderate or mild cases. Twenty-three cases, with three deaths, occurred among sixty-nine users of the milk in the hospital; forty-five cases, without fatalities, among 104 users in the girls' home. The remainder of the cases were in private homes. Four known cases arose among those who obtained this milk through the small grocery agency. Several persons who were not customers of the dairy became infected by drinking the milk in the homes of regular customers, and two deaths are included in this category.

There were twenty-two deaths in the epidemic, twenty-one of these among users of milk from the dairy in question. This gives a mortality rate of 41½ per cent. of those affected. Three of the fatalities were in patients who were already ill in the hospital with some preexisting condition when the epidemic started. Several others were in senile individuals. Table 2 gives the main facts concerning deaths in this series.

Necropsies were performed in three of the fatal cases, and the anatomic diagnoses were as follows:

CASE 5.—Acute pharyngitis, laryngitis, and cervical lymphadenitis; acute tracheitis and bronchitis, with early confluent bronchopneumonia of right lung; moderate bilateral pleural

effusion; serofibrinous peritonitis with moderate ascites; slight serofibrinous pericarditis; marked hypertrophy and dilatation of both sides of the heart in the presence of marked arteriosclerotic narrowing of the left coronary artery; marked arteriosclerosis of the aorta and the kidneys; chronic passive hyperemia of the liver; large, fresh infarction of the spleen; cholelithiasis; encapsulated pulmonary tuberculosis.

CASE 10.—Acute purulent peritonitis, laryngitis, and cervical and mediastinal lymphadenitis; acute tracheitis and bronchitis, with early bronchopneumonia; edema of the glottis; marked hyperemia and moderate edema of the meninges; streptococcus septicemia; red splenic tumor; slight aortic atheroma.

CASE 15.—Moderate inflammation of the upper respiratory tract, with enlargement of the cervical lymph nodes; streptococcus septicemia and encephalitis; chronic and acute vegetative endocarditis of the aortic valve; cloudy swelling of the parenchymatous organs; diffuse scarring of pia-arachnoid.

The survey of 487 cases of septic sore throat elicited that the frequency of the main complications occurred thus: erysipelas, 20; otitis media, 14; arthritis, 12; septicemia, 12; peritonitis, 10; vomiting, diarrhea, 10; skin eruptions, 6; myocarditis, 5; endocarditis, 1; appendicitis, 2; encephalitis, 2; laryngitis, 3; sinus infection, 3; neuritis, 1; nephritis, 2; subcutaneous hemorrhage, 1.

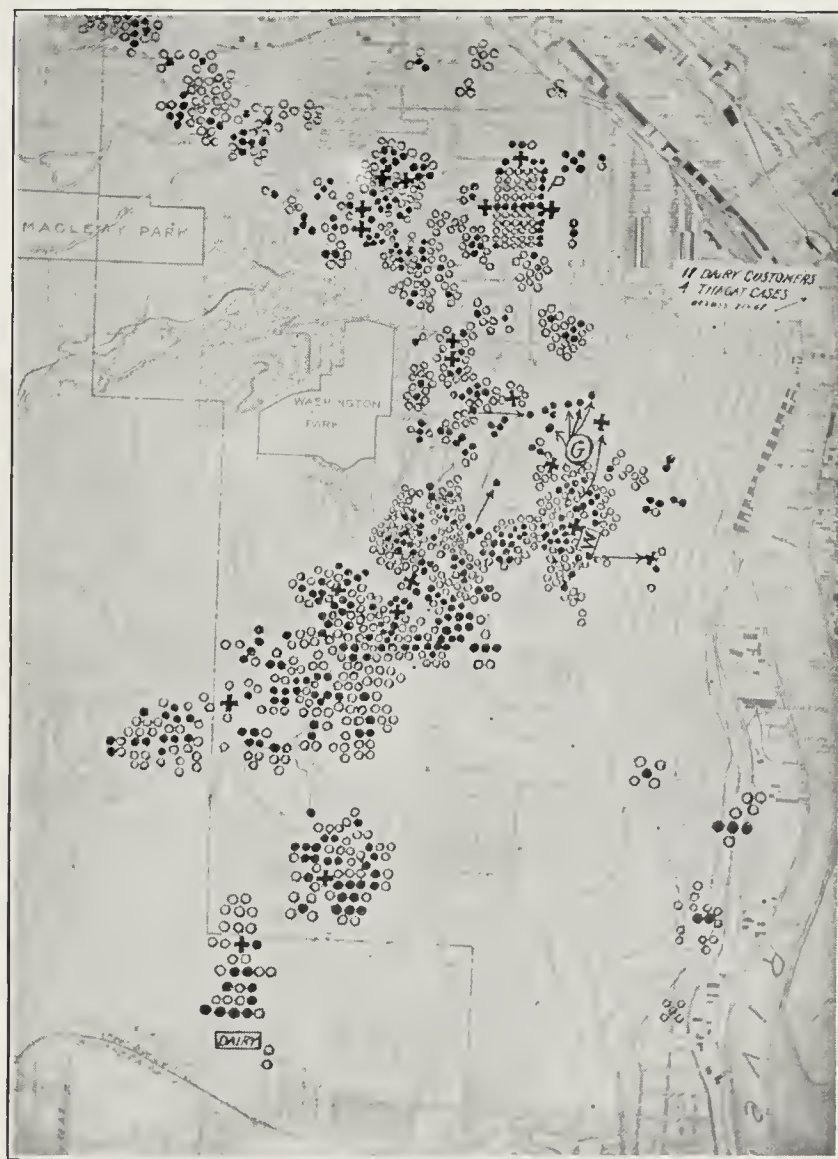


Fig. 4.—Map of west side of Portland, showing results of survey of dairy route: Rings designate unaffected users of milk in question; solid circles, users of milk acquiring septic sore throat; crosses, deaths among users; arrows indicate infection by drinking this milk obtained through another person; P, cases in hospital; W, girls' home (104 users, not indicated by dots); G, grocery store and milk depot, giving rise to at least four cases.

Cervical lymphadenitis occurred in nearly all cases, often requiring paracentesis. Erysipelas came sometimes from the ruptured middle ear, sometimes from the nares, and in one instance from the eye.

Contact infections were quite the exception. We found evidence of less than a dozen such cases on our house-to-house survey. In the hospital, one physician became infected in this way, and in the same institution three nurses became infected, presumably from one particular patient whom they attended. There were a very few contact infections also in the girls' home.

SUMMARY

It is evident from the data obtained that this epidemic, with 487 cases and twenty-two deaths, was caused by the drinking of raw milk from one dairy, which had been rated as one of the best in the city.

Similar strains of hemolytic streptococcus were obtained in almost pure culture from the inflamed udder of a cow of the herd, from one milker's throat, and from the throats of numerous septic sore throat patients and contacts. All these strains were shown to be of the human type.

It is probable that the milker in question infected the udder of the cow, producing purulent mastitis; that, on one or more occasions, this cow was milked in with the herd, and that the massed infection thus produced resulted in the epidemic.

This cow's udder had both human and bovine strains of hemolytic streptococci. One quarter, containing a human strain, had a massive mastitis indistinguishable grossly from garget; another quarter, having a bovine strain, was only slightly consolidated.

PARAVERTEBRAL ANESTHESIA IN ACUTE SUPPURATIVE PLEURISY *

ISADORE SEFF, M.D.

NEW YORK

Paravertebral nerve block anesthesia lends itself for the induction of regional analgesia. It has been sufficiently developed to be employed almost as a routine in a certain group of cases. The good results reported by Kroenig and Siegel in 1916, with paravertebral conductive anesthesia in a large series of abdominal and gynecologic operations, prompted me to utilize this method in patients with empyema of the chest.

It is conceded that it is somewhat hazardous to subject a patient, already in a state of lowered resistance from a suppurative pleurisy, to the risks of a general anesthetic. Some of the dangers encountered with general anesthesia are the induction of a new pathologic lesion or an extension of an existent process in the lungs. For these and many other reasons, local anesthesia is advisable in this group of cases.

Paravertebral anesthesia was first conceived by Sellheim in 1905. The object of the paravertebral injection is to block the spinal nerves at their exit from the intervertebral foramina, where the anterior and posterior branches have already joined. This includes the communicating branches to the sympathetic system, which is derived from the anterior root of the spinal nerves.

A knowledge of the location and distribution of the spinal nerves with special reference to the vertebrae is an essential preliminary requirement for the accomplishment of the desired results.

TECHNIC

Three quarters of an hour prior to operation, the patient is given a hypodermic injection of a quarter of a grain of morphin sulphate and $\frac{1}{150}$ grain of atropin sulphate. A freshly prepared solution of procain is employed in 0.5 per cent. strength. Ten drops of a 1:1,000 epinephrin chlorid solution is added to each 30 c.c. of the anesthetic solution.

The patient is placed on the normal side, the head slightly flexed on the chest. The thighs are semiflexed on the abdomen, which increases the posterior convexity of the vertebral column, thereby creating an increased distance between the spinous processes, and also between the ribs posteriorly. With the patient in this position, the approach to the spinal nerves coming through the intervertebral foramina is accomplished with greater ease. It has been my practice to block the three spinal nerves above and the two below the rib chosen for the resection. With an empyema located in the right chest, a section of bone from the eighth rib, usually just in front of the angle, is removed. On the left side, the ninth rib is selected.

In patients with a right suppurative pleurisy, a point $1\frac{1}{4}$ inches (32 mm.), or two finger breadths, external to the tip of the fifth dorsal spinous process is selected, at which an intradermal wheal is first made. A long, thin needle is then directed perpendicularly and somewhat upward until the upper edge of the sixth rib is felt. The needle is then directed upward and a little inward, thereby reaching the intervertebral foramen through which the fifth dorsal spinal nerve emerges. In this region the needle is first passed for a distance of 2.5 cm., and then for about 3 cm. after going over the edge of the rib. From 15 to 20 c.c. of the solution is injected, only a small quantity being infiltrated on insertion and removal of the needle. This procedure is repeated opposite the sixth, seventh, eighth and ninth dorsal spinous processes.

It is very important to bear in mind, as the needle passes over the rib or approaches bony structure, that manipulation must be gentle because of the sensitive periosteum. One must also wait at least fifteen minutes after the last injection, in order to secure complete analgesia of the operative field.

To obtain complete analgesia when the incision is extended to the inner side of the mammary line, it is necessary to infiltrate over the sternum above and below the chondrosternal articulation of the rib to be resected, and for the same distance as posteriorly. This is done to block the intercommunicating branches of the nerves coming from the opposite side.

When local anesthesia by infiltration over the operative field is used for rib resection, pain is experienced by the patient because analgesia of the sensitive periosteum is never complete. As the pleura is incised, respiration becomes labored and more rapid, and is accompanied by an expulsive cough. When general anesthesia is administered there is marked cyanosis, and the breathing becomes irregular and stertorous. Often it is necessary to discontinue the administration of the anesthetic on account of the continuous cough. The dangers incident to general anesthesia must always be borne in mind.

This picture should be contrasted with that experienced in a series of twenty-seven cases in which operation was performed for acute suppurative pleurisy, the paravertebral method of regional anesthesia being employed. The general appearance of the patient remains unchanged. There is freedom of pain through-

* From the Surgical Service, Beth Israel Hospital.

out the entire period of operation. This is especially striking when the periosteum is separated from the rib, and when the latter is cut through or removed by the rongeur. Within the entire area of analgesia, the chest wall is seen to be rigid. The rate and character of the pulse and respiration are not disturbed. The usual expulsive cough following the opening of the pleural cavity is absent. The exposed lung can be manipulated without producing any evidence of irritation. The pus and fibrin can then be removed. The pus is removed by gentle suction, or the patient can be tilted to the desired position so that the contents of the pleural cavity can be evacuated just as water is poured from a pitcher, without causing any undue change in the condition of the patient. The fibrin is removed from the pleural cavity and the surface of the lung by dressing forceps or a ring clamp, without any irritation.

RESULTS

The paravertebral method of conductive anesthesia was employed in seven cases up to August, 1917. At that time the work was discontinued on account of my entering the U. S. Army service. In 1920, the method was again used in two cases. Since September, 1922, the work has been resumed, and is used in all cases of acute suppurative pleurisy that come under my care.

To emphasize the advantages of the paravertebral method of conductive anesthesia, a detailed report of two of the cases of this series of acute suppurative pleurisy will be instructive.

CASE 1.—W. G., a man, aged 25, admitted to the medical service, Aug. 3, 1916, complained of pain in the left chest, an irritable cough, chills and fever of four days' duration. The temperature on admission was 105.2 F.; pulse, 114, and respiration, 40. A left lobar pneumonia was diagnosed. The clinical picture remained unchanged for the following twelve days. The left pleural cavity was then aspirated, and pus was obtained. Operation was performed, August 16. Ninety cubic centimeters of 0.5 per cent. solution of procain, with 10 minims of a 1:1,000 solution of epinephrin chlorid to each 30 c.c., was injected into the region of the sixth, seventh, eighth, ninth and tenth dorsal spinal nerves of the left side. About fifteen minutes after the last injection, the skin, subcutaneous tissue and muscle were incised over the ninth rib just in front of its angle. There was an entire absence of pain. Then the periosteum was incised and separated from the rib, and the latter was resected. After the pleura was incised, a thick, greenish-yellow, purulent fluid was evacuated. The patient did not show any evidences of shock. His general appearance improved, and the pulse and respiration rates became slower. Analgesia persisted for two hours after the completion of the operation. The temperature gradually came down to normal in three days. The patient then made an uneventful recovery, and was discharged from the hospital thirteen days after the operation, with the wound completely healed.

CASE 2.—P. G., a married woman, aged 41, admitted to the surgical service, Oct. 19, 1920, had been operated on at another institution, fifteen months before, for an acute suppurative cholecystitis. There remained a persistent biliary sinus discharging a bile-stained mucopurulent fluid. October 23, a cholecystectomy and a choledochotomy were performed. During convalescence, she contracted a left lobar pneumonia. November 25, a roentgen-ray examination showed clouding of the lower half of the left pulmonary field. With the patient in the upright position, fluoroscopy demonstrated a fluid line at about the level of the angle of the scapula. Pus was aspirated from the pleural cavity in the eighth space, midscapular line. Culture showed the presence of *Staphylococcus pyogenes-albus*. On the following day, operation for empyema was performed with paravertebral anesthesia. The ninth rib for a distance of 3 inches in front of its angle was resected. A large quantity of thick, greenish pus was evacuated. The clinical picture, however, remained

unchanged. The abdominal wound was almost healed. The chest wound continued to discharge a small quantity of pus. Dec. 20, 1920, aspiration of the same side of the chest in the sixth intercostal space revealed pus. With the same method of anesthesia, a portion of the seventh rib posteriorly was resected. There was found an encapsulated empyema, which was separated from the lower cavity by a dense band of adhesions running from the interlobar fissure to the chest wall. This was evidently the result of a pleurisy which she had had some years previous to her first gallbladder operation. The patient then made an uneventful recovery. She was discharged from the hospital, Jan. 8, 1921, with all wounds completely healed. A year and a half later the patient showed a gain in weight of 40 pounds (18 kg.); and was in good physical condition.

MORTALITY

Of the total number of twenty-seven cases ranging from 14 months to 64 years, only two terminated fatally:

CASE 3.—The first fatality occurred in M. T., a man, aged 52, who was admitted to the medical service, Sept. 13, 1922, with a complaint of precordial oppression, dyspnea and cough. Eight months prior to admission, he was discharged from the hospital, with a diagnosis of a right serofibrinous pleurisy. For the following two months he was much improved, complaining of an infrequent cough with foul smelling sputum. Four months before admission, he became progressively worse, there being rusty sputum, pain in the right chest and interscapular region, and an afternoon rise of temperature. The temperature on admission was 102.2 F.; pulse, 110, and respiration, 40. A diagnosis of acute suppurative pleurisy was made, which was confirmed by aspiration and roentgen ray. September 20, thoracotomy and resection of a portion of the eighth rib was done under paravertebral anesthesia. Improvement was progressive to September 26, at which time a complicating right saphenous phlebitis occurred. The patient then had a septic temperature. Blood culture showed *Streptococcus hemolyticus*. The patient died, October 1.

CASE 4.—The second mortality occurred in S. S., a boy, aged 3 years, who was admitted to the medical service, March 3, 1923, complaining of fever, pain in right chest and cough of one week's duration. Examination of the chest showed a bronchopneumonia of the upper half of the right chest; aspiration of the chest in the sixth space posteriorly revealed the presence of an empyema. The temperature on admission was 102.6 F.; pulse, 130, and respiration, 60. The patient was operated on the same day, with paravertebral anesthesia, a thoracotomy and rib resection being done. The child did not improve, and died eleven days after operation from a general sepsis.

No definite conclusions concerning the mortality rate in so small a series can be attempted. However, it must be borne in mind that many of the patients in this series had severe protracted empyemas, and the results are, indeed, encouraging.

COMMENT

The postoperative comfort of the patient is striking. This is probably due to the almost entire elimination of shock.

The period of convalescence was decidedly shortened. Complete healing of the wounds ranged from a period of from twelve to sixty days.

The ability to palpate the pleural cavity, and to remove the fibrin and break up fresh adhesions without causing any irritative symptoms, demonstrates the effectiveness of the analgesia obtained by the paravertebral method.

With perhaps few exceptions, I employ paravertebral anesthesia now as a routine in acute suppurative pleurisy, and I consider it the method of choice.

252 West Eighty-Fifth Street.

DIMINISHED GLYCOLYSIS IN THE
BLOOD IN DIABETES
PRELIMINARY REPORT, AND A TENTATIVE THEORY
OF THE DISEASE*

WILLIAM THALHIMER, M.D.
AND
MARGARET C. PERRY, A.B., A.M.
MILWAUKEE

It is well known that when blood is removed aseptically from the body and kept at body temperature, the blood sugar steadily diminishes and may entirely disappear in twenty-four hours. This process is called glycolysis, and is thought to be caused by a ferment known as the glycolytic ferment. It is important to emphasize that this action occurs in vitro.

Very little is known about this ferment, even less than the little we know of the fundamental nature of most of the other ferments. It has been demonstrated¹ that the glycolytic ferment is present only in the cellular elements of the blood, and not in the plasma; also there is evidence that the leukocytes contain considerably more than do the red blood cells.

A ferment similar to, and in all probability identical with, the glycolytic ferment of blood is present in other tissues, perhaps in varying amounts in all tissues. Pieces of kidney, obtained aseptically, will cause a marked lowering of the copper-reducing power of a solution of glucose; Levene and Meyer² have shown that lactic acid is formed.

Our interest in this ferment has been stimulated by the remarkable work of Banting, Best, Macleod, and their collaborators on insulin. The clinical work that we have undertaken with insulin³ has caused us to study a number of phases of carbohydrate metabolism, but in this preliminary report only the studies of blood glycolysis will be presented. Other investigations are in progress and will be reported later.

BLOOD GLYCOLYSIS

We have been able to find in the literature only two important investigations of blood glycolysis. Lepine⁴ states that the glycolytic ferment is markedly diminished in diabetic blood. Careful search of his publications reveals that all his observations, with the exception of one, were made on the blood of depancreatized dogs with experimental diabetes. The one exception was the blood of a patient with severe diabetes, in which the blood glycolysis was very much diminished. His observations will be of inestimable value when more is known about carbohydrate metabolism and the mechanism of the action of insulin.

Macleod,⁵ as a result of his experiments, states that blood glycolysis is not changed in "diabetes." He places "diabetes" in quotation marks, referring to hyperglycemia produced in dogs and not to true diabetes. This hyperglycemia was caused by stimulation of the splanchnic nerves, by asphyxia (with curare) or by injections of epinephrin. All of the animals were anesthetized with ether. His experiments show that under these conditions there is no change in

blood glycolysis. There is no evidence to prove that the cause of the hyperglycemia produced by these methods is the same as the cause of hyperglycemia in diabetes. Since all of the animals were anesthetized with ether, this may have had some effect on the blood glycolysis. Macleod found that the presence of oxalate in the blood, to prevent coagulation, reduces the amount of glycolysis. He has shown that the glycolytic ferment utilizes, equally well, either commercial glucose or glucose made from glycogen, when these are added to the blood.

Eadie⁶ has recently demonstrated that the addition of insulin to sterile defibrinated blood, to oxalated blood or to mixtures of this blood and expressed muscle juice has no influence on the rate of glycolysis.

We have determined the amount of glycolysis occurring in twenty-four hours at 37 C.⁷ in defibrinated blood from a series of normal persons and from a series of patients with diabetes. The blood (from 30 to 60 c.c.) was drawn from an arm vein with a sterile

Loss of Blood Sugar by Glycolysis in Defibrinated Blood
of Diabetic and Normal Persons*

Diabetic Patients	Blood Sugar	Blood Sugar after 24 Hrs.	Total Loss	Severity of Diabetes
Bm.....	294.3	100.5	193.6	Mild
Be.....	268.5	230.0	38.5	Severe
Cn.....	268.5	66.7	201.8	Mild
Gy.....	254.8	106.9	147.9	Moderate
Sr.....	392.2	229.9	62.3	Severe
Ps.....	307.8	136.5	171.3	Moderate
Nu.....	296.3	104.2	192.1	Moderate
Rl.....	579.8†	526.3	53.5	Severe
Fh.....	320.1	138.8	181.3	Moderate

Normal Subjects	Blood Sugar	Blood + Dextrose	Blood Sugar after 24 Hrs.	Total Loss
Sr.....	105.8	434.6	210.5	219.6
Ls.....	115.6	454.5	72.5	382.0
Hr.....	89.2	519.5	233.9	285.6
Hi.....	93.0	449.5	235.3	214.2
Hi.....	91.3	512.8	210.5	302.3
Ny.....	85.2	869.5	563.4	306.1

Patient	Time	Blood Sugar	Blood + Dextrose	Blood Sugar after 24 Hrs.	Total Loss
Gy.....	8 a. m.‡	178.2	500.0	449.5	50.5
	10 a. m.§	183.5	506.3	400.0	106.3
	1 p. m.#	123.8	625.0	335.8	289.2

* All of the figures for blood sugar and dextrose are given in milligrams per hundred cubic centimeters of blood.
† Blood fortified with dextrose.
‡ 8 a. m., before breakfast, last injection of insulin eighteen hours before.
§ 8:15 a. m., 10 units of insulin and breakfast.
12 noon, 10 units of insulin.

syringe. It was transferred immediately to sterile flasks containing glass beads, and in every instance it was defibrinated by shaking for one-half hour. A few cubic centimeters of the original blood was placed in a tube containing oxalate for a routine blood sugar determination. Every experiment was controlled bacteriologically, and only those results are reported in which the blood was sterile at the end of twenty-four hours.

BLOOD SUGAR UNDER INSULIN TREATMENT

We found, early in the investigation, that the sugar present in the blood of normal persons and in that of some patients with diabetes in which a low blood sugar was due to insulin treatment disappeared in twenty-four hours. To estimate the amount of glucose susceptible of being destroyed by the glycolytic ferment,

6. Eadie, quoted by McCormick, Macleod, Noble and O'Brien: J. Physiol. 57: 247, 1923.
7. The twenty-four hour period was decided on as yielding more information than a shorter period.

* From the Laboratories of Columbia Hospital.
1. Rona and Döblin: Biochem. Ztschr. 32: 489, 1911. Von Noorden: Ibid. 45: 94, 1912.
2. Levene and Meyer: J. Biol. Chem. 11: 361, 1912.
3. The Preparation used was insulin-Lilly.
4. Lepine: Le diabète sucre, Paris, 1909; Le sucre du sang, Paris, 1921.
5. Macleod: J. Biol. Chem. 15: 497, 1913.

all of the normal and these diabetic bloods were fortified with chemically pure dextrose.

The Folin-Wu⁸ method was used for determining the blood sugar, and the readings were made with a Bausch and Lomb Duboscq type colorimeter. The original blood sugar determinations were made immediately after the half hour of defibrination, and a second determination was made on the defibrinated blood which had been incubated at 37 C. for twenty-four hours.

The results of these experiments are given in the table. The blood sugar figures and the loss by glycolysis in twenty-four hours are recorded in milligrams per hundred cubic centimeters of blood. It has been borne in mind that the number of leukocytes in the blood may influence the rate and amount of glycolysis. Leukocyte counts have been made on all samples of oxalated blood, but are not presented, as no significant correlation is evident at this time.

The accompanying table shows that glycolysis was definitely less in blood from patients with diabetes than from normal persons. The averages of our results show that normal blood, incubated at 37 C. for twenty-four hours, lost 289 mg. of glucose per hundred cubic centimeters, and that blood from patients with diabetes lost only 138 mg. of glucose. The amount of glycolysis in blood from diabetic patients was inversely proportional to the severity of the diabetes. We observed that the same amount of glycolysis occurred in defibrinated diabetic blood as in the same blood fortified with glucose. We have been unable to perform this experiment with normal blood, as in every instance the glycolytic ferment has been more than sufficient to use up all the normal amount of glucose (blood sugar) present. One experiment with a mixture of one part of normal defibrinated blood set up in duplicate with two parts of diabetic defibrinated blood and with two parts of the same blood fortified with glucose showed less glycolysis than the calculated amount. Experiments such as these must be repeated many times, but, in the meantime, one must bear in mind the possibility of the presence of an antiglycolytic ferment in diabetic blood. The difference in the average amount of glycolysis which occurred in normal and in the diabetic bloods studied is about the same as the difference in the average amount of blood sugar that was present.

We found that lactic acid is present in the blood after glycolysis in sufficient quantities to give a distinct yellow color with ferric chlorid (equal amounts of dilute ferric chlorid solution and the protein-free filtrate from the blood were used). Similar filtrates of blood before glycolysis did not yield a yellow color under these conditions.⁹

We have been able to study satisfactorily the variation in blood glycolysis in one case of diabetes treated with insulin. Results given at the bottom of the table indicate that the amount of glycolysis varied directly with the administration of insulin. In one other case, we were able to make only two observations on blood obtained before and after the injection of insulin, and here the variation in glycolysis, while not so marked, was in the same direction. Since Eadie has demonstrated that insulin does not increase the glycolytic power of blood when added to it *in vitro*, it seems probable that the increase in glycolytic action observed

in these two cases was caused by an indirect action of insulin on some ferment mechanism within the body.

The significance of the results reported must await accurate interpretation until more is known of carbohydrate metabolism. Macleod⁵ has pointed out that the amount of glucose used up by glycolysis within twenty-four hours, even when calculated for the total amount of circulating blood, is small compared with the amount of glucose utilized by the entire body.

The relationship of the lactic acid formed by tissue or blood glycolysis to carbohydrate metabolism is a problem of the future. This may be of significance, since Hill and Lupton¹⁰ and others have shown that the glycogen in the muscle is converted into lactic acid with explosive rapidity when the muscle is stimulated to contract. Repeated contractions, to the stage of exhaustion, cause all the glycogen to be converted into lactic acid. With recuperation of the muscle, about five sixths of the lactic acid is slowly reconverted into glycogen, but one sixth of it disappears. This suggests that lactic acid may be an early intermediary product in glucose metabolism.

The end-products of glucose metabolism are carbon dioxide and water. Therefore this must be accomplished by a process of oxidation or of dehydrogenation. The early intermediary products in this metabolism are probably glyceric aldehyd, methyl glyoxal and lactic acid. Nothing further of importance is known, but suggestive investigations have been reported recently.

It occurred to us that if this process is one of oxidation, oxidizing ferments may be its cause. This speculation is strengthened by the knowledge that insulin increases the respiratory quotient in diabetic patients, therefore increasing the oxidation processes in these persons.

Oxidizing ferments are known to be present in all, or practically all, animal and vegetable tissues. These include the oxidases and peroxidases, but very little is known about them.

We tested insulin for these ferments with alphanaphthol and with paraphenyldiamin, but our results were negative. Eadie⁶ has found that insulin added to blood *in vitro* does not increase the loss of glucose that normally occurs (glycolysis). Therefore, since insulin causes increased glucose combustion in the animal organism, it must act indirectly by stimulating, or activating, an oxidizing ferment or ferments. Our results indicate that less glycolytic ferment is present in the blood of diabetic than in that of normal persons, and that administration of insulin increases the amount of glycolytic power in the blood of diabetic patients. Blood glycolysis, as well as tissue glycolysis, converts glucose into lactic acid. This is not an oxidation process, but occurs by a transformation of one molecule of glucose into two molecules of lactic acid. Nevertheless, it seems probable that the formation of lactic acid is a preliminary step in the oxidation of glucose in the body.

This consideration led us to test the ability of raw potato, which contains both oxidases and peroxidases, to lower the blood sugar of animals, and to reduce the amount of glucose in a glucose solution.

In one experiment, 5 c.c. of juice expressed from a raw potato, injected intravenously into a 1,500 gram rabbit, was followed by reduction of the blood sugar

8. Folin, O., and Wu, H.: *J. Biol. Chem.* **41**: 367 (March) 1920.

9. Quantitative determination of the amount of lactic acid formed is being undertaken.

10. Hill, A. V., and Lupton, H.: *Quart. J. Med.* **16**: 135 (Jan.) 1923.

in one hour from 0.17 to 0.13 per cent. This result is comparable to the early results obtained by Banting and Best with their original unconcentrated preparations of insulin. We have also found that sterile pieces of potato, and juice expressed from these, introduced into a glucose solution, after incubation for twenty-four hours at 37 C., caused this to lose from 26 to 36 mg. of glucose per hundred cubic centimeters.

Since the performance of these experiments, Winter and Smith¹¹ have published their findings, namely, that a solution of a substance prepared from yeast causes lowering of blood sugar after intravenous injection into rabbits in a way comparable to that caused by insulin. This substance they found to have other properties similar to those of insulin.

CAUSATION OF DIABETES

While continuing our experimental investigation on the properties of vegetable extracts (oxidases), we wish to suggest, tentatively, a new theory of diabetes.

There have been so many theories of diabetes proposed that we feel we must apologize for adding another. This theory has the advantage that it can be submitted completely to experimental test.

The correlation of two recent investigations with our theoretical considerations has also been borne in mind, and whereas there is no incompatibility, the significance is not clear at present. These studies are those of Winter and Smith¹² on alpha, beta and gamma glucose, and those of Hopkins¹³ on the oxidizing and reducing power of a substance, glutathion, which he has found in the body.

We suggest that carbohydrate metabolism is performed by oxidizing ferments, of which oxidases are examples; and that one of the first steps in this process is the conversion of glucose into lactic acid. An example of this is blood glycolysis, wherein the glycolysis is effected mainly by the leukocytes, which are known to contain oxidases.

Vegetable substances caused in some experiments lowering of blood sugar and loss of glucose from a solution of glucose. Insulin does not cause a loss of glucose when added to blood in vitro, nor does it contain oxidases. Injection of insulin into animals does cause lowering of blood sugar and increase in the respiratory quotient. Our results also indicate that blood glycolysis, which is low in the blood from patients with diabetes, is increased in this blood when insulin is injected subcutaneously.

We, therefore, suggest that diabetes is caused by a deficiency in the power, or amount, of oxidizing ferments in all the tissues of the body, and that the index of this is found in the glycolytic power of the blood. These oxidizing ferments are mainly controlled by a pancreatic hormone, and insulin acts indirectly on all the tissues by stimulating or activating the oxidizing ferments.

CONCLUSIONS

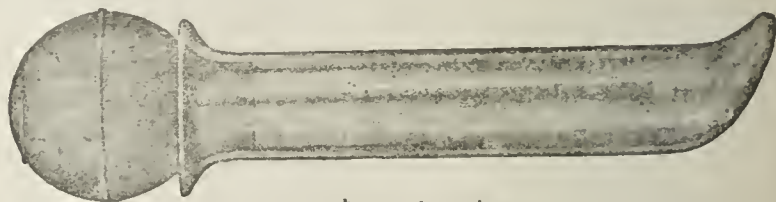
We do not believe that blood glycolysis measures the total amount of glucose utilized in the body, but we do suggest, tentatively, that it represents an index of the ability of the tissues to utilize glucose. This index may have somewhat the same significance and value, as regards carbohydrate metabolism, as have quantitative blood sugar determinations.

Clinical Notes, Suggestions, and New Instruments

A NEW EAR AND NASAL SYRINGE

W. B. MASON, M.D., WASHINGTON, D. C.

In the treatment of the nose and ear, the necessity for a good syringe is generally recognized. My experience with the piston syringe has been unsatisfactory, and the fountain syringe or irrigating can are impractical. I have had Becton, Dickinson & Co. modify their Asepto syringe to make it more suitable for our purposes, and find it most satisfactory. This modification consists of a curved, blunt nozzle which enables the physician to hold the syringe in a perpendicular position, thereby increasing its efficiency.



Ear and nasal syringe.

The advantages of this syringe are: It is inexpensive, simple in construction, and easy to sterilize; it is manipulated with one hand; it is self-filling; it gives an even, steady stream instead of squirting the solution into the nose or ear in jerks, as in the case of a piston syringe which is not in perfect order; there is no odor of lubricating oil or leather washers, and it is not formidable in appearance to a child or nervous patient.

1738 M Street.

CONGENITAL ABSENCE OF UTERUS AND VAGINA: REPORT OF A CASE

G. J. FERREIRA, B.S., M.D., BIWABIK, MINN.

History.—Mrs. B., a woman, aged 20, of Finnish parentage, married nine months, came to my office, Dec. 23, 1922, complaining that she had never menstruated. In the spring of 1922, shortly before her marriage, she consulted a physician in a nearby town for the same complaint. After examination, she was told that there was nothing to worry about, and that she would probably menstruate within another year. Thus encouraged, she married.

Examination.—The patient was well developed, well proportioned, and of pleasing personality. The head and neck were normal, the thyroid normal, the heart and lungs negative. Axillary hair was present in normal quantity. The mammae were well developed, the abdomen was normal.

The pelvis was well formed, and of the female type. Pubic hair was abundant and of characteristic distribution. On superficial inspection, the vulva appeared normal. The labia majora and minora and the clitoris were well developed. The introitus appeared normal, and there were small folds of mucous membrane which resembled a hymen. Examination, however, revealed a complete absence of the vaginal inlet. Rectal examination revealed a total absence of the uterus and probably of the vagina. Two small ovaries and two small tubes could be made out, the tubes being fused centrally into a small, hardened body.

March 14, 1923, the patient was examined by my chief, Dr. C. W. Bray, and my associate, Dr. W. G. Vande Steeg, and the same findings were registered.

The patient admitted quite marked libido.

Diagnostic Value of Reflex Dyspepsias.—The reflex dyspepsias, whether secondary to gallbladder, appendicular or other abdominal disease, comprise an important group, and it is essential that we should collect information as to the way in which their symptoms are produced.—J. A. Ryle, *Clin. J.* 52:141 (March 21) 1923.

11. Winter, L. B., and Smith, W.: *J. Physiol.* 57: 40 (Nos. 3 and 4) 1922.

12. Winter, L. B., and Smith, W.: *J. Physiol.* 57: 100 (Dec.) 1922.

13. Hopkins, F. G., and Dixon, M.: *J. Biol. Chem.* 54: 527-563 (Nov.) 1922.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

INSULIN.—An aqueous solution of an active principle from pancreas which affects sugar metabolism. The strength of insulin is expressed in "units," one unit being one-third of the amount required to lower the blood sugar below 0.045 per cent. and cause convulsions in a rabbit weighing 2 kg. which has been previously starved for 24 hours.

Actions and Uses.—Insulin lowers the blood sugar in normal rabbits causing characteristic symptoms when a low level is reached, which symptoms are overcome by the administration of glucose. It prevents the hyperglycemia due to piqure, asphyxia and epinephrin. It increases the sugar consumption of the isolated mammalian heart. It causes glycogen to be deposited in the liver of diabetic animals fed with carbohydrates, and raises the respiratory quotient of such animals. It effects the metabolism of fat in diabetic animals and causes the acetone bodies to disappear from the urine. It has been demonstrated that the administration of insulin to diabetic dogs and to man in severe cases of diabetes mellitus restores to the body the lost ability to oxidize carbohydrate, and that glycogen is again stored in the liver. If insulin is administered at suitable intervals to a person suffering from diabetes mellitus, the blood sugar is maintained at a normal level and the urine remains free of sugar; fat is also burned and as a result, ketone bodies do not appear in the urine and diabetic acidosis and coma are prevented.

The administration of insulin is indicated in cases of diabetes mellitus which cannot be controlled at a satisfactory level by dietetic treatment. In such cases, with proper regulation of the diet, insulin should be administered in such amounts as to prevent glycosuria and a too great hyperglycemia. In some cases the dosage of insulin may be gradually decreased as the body power of utilizing carbohydrate returns toward normal.

Overdosage of insulin is followed by the development of serious symptoms which demand immediate treatment. The patient complains of weakness and fatigue and a feeling of nervousness or tremulousness. This is followed by profuse sweating, which is the most characteristic sign of overdosage. There is sometimes pallor or flushing. In the more severe forms there is acute distress with mental disturbances and even unconsciousness. These symptoms are relieved by the administration of some form of available carbohydrate by mouth or stomach tube, or, if the patient is comatose, by the intravenous injection of from five to twenty grams of pure glucose in a five to fifty per cent. sterile solution. (The intravenous injection of glucose may at times be obviated by the subcutaneous injection of 0.3 Cc. to 0.6 Cc. of a 1:1,000 solution of epinephrin chlorid, but this must always be followed by carbohydrates by mouth.)

Dosage.—Insulin is administered subcutaneously in the arm, thigh or buttock, one, two or three times a day, 15 to 60 minutes before a meal, depending upon the rapidity of absorption of carbohydrate from the stomach and insulin from the subcutaneous tissue, as estimated after observation of each individual patient. The dosage of insulin which is required to reduce the blood sugar to approximately the normal level should be determined for each patient by estimations of blood sugar before and after administration of insulin. If insulin must be administered without adequate control of blood sugar, it is safer to have a blood sugar somewhat above normal with a transient glycosuria, than to have the urine sugar free and the blood sugar at or below normal. The average dosage depends on the diet and severity of the disease. Small doses of a few units should be used in the beginning and this increased as may be necessary. When sugar is no longer found in the urine, the dose of insulin is decreased; the attempt being made to get rid of the noon dose by shifting the carbohydrate as far as feasible

to breakfast and supper, and decreasing the noon insulin by a unit each day.

In cases of coma or severe acidosis, an initial dose of 15 or 20 units of insulin may be given, followed subsequently at 3 to 4 hours intervals by doses of 10 units with the simultaneous administration in each case of 10 to 20 grams of glucose. More than 60 units in twelve hours are rarely indicated.

In a small number of cases of diabetes mellitus, insulin can be discontinued, particularly with patients who receive it because of an exacerbation caused by complications, and where diabetes is of recent onset (though perhaps the latter should receive it intermittently as a prophylactic against increasing severity).

Insulin-Toronto.—A brand of insulin.

Manufactured by the Connaught Antitoxin Laboratories, University of Toronto, Toronto, Canada, under license from the Insulin Committee of the University of Toronto.

Insulin-Toronto 5 Cc. vials, 5 units in each cubic centimeter.

Insulin-Toronto 5 Cc. vials, 10 units in each cubic centimeter.

Fresh pancreatic beef glands from which the fat and connective tissue has been removed are minced and treated with equal weight of 80 per cent. alcohol containing 0.3 per cent. absolute sulphuric acid and the mixture constantly agitated during three hours. The mixture is then transferred to plaited filters contained in glass funnels and the filtrate is collected. The residue is then re-extracted for three hours with 60 per cent. alcohol. The mixture is then transferred to plaited filters and the filtrate added to the first filtrate. The united filtrates are neutralized, using litmus as indicator, and chilled to 0 C. The turbid liquid is filtered and the filtrate concentrated to about one-fifteenth of its original volume in a vacuum still at a temperature below 30 C. The concentrate is transferred to a separator, acidified to 1 per cent. absolute sulphuric acid and ammonium sulphate is added to half saturation (37 gm. per 100 Cc. of concentrate). After one hour the clear liquid is drawn off from the protein material, which has separated and risen to the top and in part adheres to the walls of the separator. The protein matter in the separator (which contains the insulin) is treated with sufficient 95 per cent. alcohol so that the concentration of the alcohol is between 70 to 80 per cent. The mixture is filtered and the alcoholic filtrate (containing the insulin) is precipitated by the addition to the filtrate of an equal volume of anhydrous ether. After six hours the ether-alcohol solution is decanted from the precipitate. The precipitate is dried in vacuo and washed well in acidified water (pH 4.7 to 5.0) containing 0.3 per cent. cresol and allowed to stand over night. The supernatant liquid is then poured off and the precipitate is dried by centrifuging. This residue is taken up in acidified water containing 0.3 per cent. cresol, adjusted to pH 3.7 and filtered. The filtrate (containing the insulin) is purified by a so-called isoelectric precipitation, that is, by adjusting the acidity to a pH 4.7 and allowing the solution to stand in an ice chest for from ten to twenty-four hours. The mixture is filtered; the precipitate taken up in acidified water (pH 2.5) filtered and diluted with acidified water to the desired potency.

The method for determining the potency of insulin is that described in the *American Journal of Physiology*, Vol. 62, p. 162. The insulin solution is then diluted, if necessary, with sterile distilled water of a correct pH concentration (usually 2.5) to the desired strength and 0.1 per cent. cresol is added. The solution is then passed through a sterile Mandler filter and the potency of the filtered solution is determined by the accepted method. The liquid is then filled into vials. A number of vials of each lot is set aside and the sterility of these is determined before the remainder is released.

QUININE ETHYL CARBONATE.—*Quininae Aethylcarbonas.*— $C_2H_5O.CO.O.C_{20}H_{28}N_2O$.—The quinine ester of ethyl carbonic acid. First introduced as euquinine.

Actions and Uses.—Quinine ethyl carbonate is used in place of quinine sulphate and similar soluble quinine salts when a practically tasteless quinine compound is preferred (see quinine derivatives New and Nonofficial Remedies, 1923, p. 254).

Dosage.—The same as that of quinine sulphate.

Quinine ethyl carbonate occurs as a light, fleecy conglomeration of delicate white needles, which are practically tasteless. It is sparingly soluble in water, but freely soluble in alcohol, ether and chloroform. It is soluble in petroleum benzin. Quinine ethyl carbonate possesses basic properties; it forms well crystallizable, bitter salts with acids. Quinine ethyl carbonate melts at from 89 to 91 C.

Dissolve about 0.2 Gm. of quinine ethyl carbonate in 5 Cc. of diluted sulphuric acid and dilute to 50 Cc. The solution exhibits a strong blue fluorescence, and responds to the general tests for alkaloids. Add 2 or 3 drops of bromine test solution to a 1 cubic centimeter portion of the solution followed by 1 Cc. of ammonia water; the liquid acquires an emerald green color due to the formation of thalleoquin. Dissolve 0.2 Gm. of quinine ethyl carbonate in 5 Cc. of nitric acid and dilute to 25 Cc. To a 5 cubic centimeter portion, add 1 Cc. of silver nitrate solution. No precipitate is formed (*chloride*). To another 5 cubic centimeter portion, add 1 Cc. of barium chloride solution. No precipitate is formed (*sulphate*). Add 5 Cc. of iodine solution to about 0.2 Gm. of quinine ethyl carbonate, decolorize with sodium hydroxide solution and warm. The odor of iodoform is manifested (*ethyl group*). Incinerate about 0.5 Gm., accurately weighed. Not more than 0.1 per cent. of residue remains.

Quinine Ethyl Carbonate-M. C. W.—A brand of Quinine ethyl carbonate-N. N. R.

Mallinckrodt Chemical Works, St. Louis, distributors. No U. S. patent or trademark.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JUNE 2, 1923

RECENT PHYSIOLOGIC FINDINGS REGARDING INSULIN

As could be expected, the almost dramatic clinical results that have attended the introduction of insulin into the therapy of diabetes have focused attention in many places on the nature of this uniquely potent product. The search for the substance to which the therapeutically active products owe their efficacy ought to be, and assuredly will be, pursued assiduously by scientific talent until some reward is secured in the discovery of the actual hormone. Thus, the history of research which led to the isolation of epinephrin and thyroxin is likely to repeat itself, whereupon the organic chemist will find a stimulus to further labors in the direction of artificial synthesis. It would, indeed, be a fortunate and happy circumstance if the approaching centennial of the first artificial synthesis of a substance, urea, earlier assumed to owe its origin to the inimitable "vital" activity of living tissues, could be made to encompass the synthetic production of a number of the recognized physiologically potent hormones which have baffled the chemical investigator.

Meanwhile, the enthusiasm for helpful clinical therapy must not be allowed to overshadow entirely the pressing need of further fundamental investigations on the genesis of diabetes, the origin of insulin, the variations in its production in the body, and the mode of its action. Insulin therapy, as shown by the clinical articles appearing in this issue, is essentially a palliative. The underlying defect in the organism that fails to burn its sugar probably remains to be discovered. The patient prosecution of the problem of diabetic pathogenesis must not be obscured by the remedial blessing.

Attention may well be called, in this connection, to the researches of Murlin and his collaborators¹ at the

university at Rochester, N. Y. These show that, through perfusion of the surviving pancreas, solutions can be obtained which promptly raise the respiratory quotient of diabetic animals. As this is clear evidence of actual combustion of sugar in the body, it becomes an excellent criterion of relief from the diabetic condition.

Insulin-containing extracts have already been secured from a considerable variety of sources, including various vegetable products; at any rate, the extracts have been found to affect the level of the blood sugar after they are introduced into the living body. The Rochester experiments duplicate, in a sense, the process by which the blood may normally acquire its supply of insulin from the pancreas. According to them, insulin is extracted by perfusion of the pancreas with acidulated Ringer's solution more readily than with the same fluid made slightly alkaline. Another feature with respect to the behavior of insulin has recently been elucidated by E. C. Noble and J. J. R. MacLeod.² It has become well known to all who have worked with the hormone that overdosage leads to serious symptoms associated with the consequent hypoglycemia. The symptoms give the impression that some substance having a highly irritative influence on the central nervous system has become developed. As Noble and MacLeod remark, it can scarcely be the case that this stimulus is afforded by a lowered percentage of glucose in the blood per se. It is more likely either that the hypoglycemia is related to the setting free of some toxic metabolic product which in the normal animal is directly or indirectly antidoted by a certain concentration of glucose, or that it causes some change in the chemical or physicochemical equilibrium within the cells, which results in a disturbance of their normal functions. One of the ways by which light can be thrown on this question is to see whether sugars other than glucose have the power to remove the symptoms. If a given sugar fails to have this effect, evidence is afforded not only that it cannot itself act like glucose, but also that it is not converted, to any considerable extent at least, into glucose in the animal body. The latest studies from Toronto show that the only sugar which can definitely antidote the symptoms that accompany the hypoglycemia due to insulin is glucose. Levulose, galactose and maltose may be followed by temporary slight improvement in the symptoms, and they cause a marked increase in the blood sugar. Arabinose, xylose, sucrose and lactose have no apparent effect on the symptoms, although there may be an increase in the reducing power of the blood. Glycerol and alkalis have no effect on the symptoms. Rational insulin therapy must now be placed on the safe basis of profound physiologic studies in which every detail of the reactions of the hormone

1. Murlin, J. R.; Clough, H. D., and Stokes, A. M.: Extraction of the Antidiabetic Substance (Insulin) by Perfusion of the Pancreas, I, The Influence of Neutral or Alkaline Perfusates on the Respiratory Metabolism of Depancreatized Animals, *Am. J. Physiol.* **44**: 330 (April) 1923. Murlin, J. R.; Clough, H. D.; Gibbs, C. B. F., and Stone, N. C.: Extraction of the Antidiabetic Substance (Insulin) by Perfusion of the Pancreas, II, Influence of Acid Perfusates upon the Blood Sugar, D: N Ratio and Respiratory Metabolism of Depancreatized Dogs, *ibid.* p. 348.

2. Noble, E. C., and MacLeod, J. J. R.: The Influence of Sugars and Other Substances on the Toxic Effects of Insulin, *Am. J. Physiol.* **44**: 547 (May) 1923.

has been carefully considered. Then, indeed, it will not be too much to expect even greater advances in the therapy of the abnormal metabolism of the carbohydrates.

CALCIUM THERAPY IN TUBERCULOSIS

The resistance to tuberculosis of those who work in lime dust is traditional. Whether lime salts taken into the lungs in these cases are deposited in the tubercles, or stimulate fibrosis by mere mechanical action, or whether they exert any beneficial influence at all, is not known. Nevertheless, the therapeutic administration of calcium in tuberculosis has gained favor and has been endorsed by many clinicians. Wersen administered calcium lactate by mouth to twenty children with tuberculous peribronchial lymph nodes, and studied them, with an equal number of controls, by the fluoroscope. He believed that the treated patients showed more calcification of the nodes and a greater improvement in health than did those who had not received calcium. Clinical reports of favorable results from the use of calcium are numerous, but in a recent review of the literature, Maver and Wells¹ state that they have been unable to find the reports of any clinical study that has been adequately controlled. They also conclude there is no experimental proof that the administration of calcium, either by mouth or otherwise, increases the amount of calcium deposited in tubercles or other necrotic areas, unless Wersen's observation is considered experimental.

An appreciable increase in the amount of calcium deposited in tuberculous tissues by increasing the calcium intake is not to be expected, except when the blood calcium is already below normal. The normal amount of blood calcium represents about the maximum that the blood can carry. A greater amount than normal is promptly precipitated out of the blood in those tissues that are most alkaline. It does not appear that any deficiency in blood calcium exists in tuberculous patients. At least, there are no figures obtained by modern methods which indicate such a deficiency. Steinitz and Weigert² analyzed the entire body of a one year old child who died of tuberculosis. They found a normal total ash figure and no abnormal distribution of the inorganic elements of the ash. Jacobowitz was not able to increase the blood calcium by oral administration either in normal children or in those with tetany. It has been shown, furthermore, that the subcutaneous injection in cats of nearly lethal doses of calcium chlorid produces a rise in blood calcium, which reaches its maximum in from thirty to ninety minutes, and which falls again to normal within five or six hours. The intravenous injection of large quantities may drive the blood calcium far beyond its normal

amount, but the original figure is restored in about two hours.

In view of the supposed clinical benefits of calcium in tuberculosis, and of Wersen's observation especially, an experimental study of the influence of calcium feeding on the deposition of calcium in tuberculous and nontuberculous tissues was made by Maver and Wells. Their first analyses were of normal laboratory animals to establish controls. A dose of calcium lactate equivalent to from 25 to 30 gm. for an adult person was administered daily for periods varying from fifteen to 288 days. Various tissues were then examined. It was found that the administration of calcium had not generally appreciably increased the calcium content of the tissues, and no recognizable difference was found between animals that had received calcium for long or for short periods. A series of animals injected with human tubercle bacilli of low virulence, which were fed calcium after the lymph nodes became palpable, and another series injected with a virulent strain of human tubercle bacilli, were similarly examined. To determine the effect of calcium on the course of tuberculosis, twenty-four other normal guinea-pigs were at the same time inoculated subcutaneously with 0.005 mg. of a culture. Twelve of this series received calcium from the day of inoculation, and twelve received no calcium. Eighteen of these animals, evenly divided between calcium fed and controls, died within 135 days. Analysis of the two separate lots of tissues showed that the administration of calcium to these animals did not reduce the spread of the tuberculous lesions, or lead to a greater amount of fibroplastic tissue reaction. The average length of life of the calcium-fed animals in this series was 92.5 days, and of the animals receiving no calcium, 74.4 days. Maver and Wells say that nothing is less constant than the length of life of tuberculous guinea-pigs, even under identical conditions of dosage and environment, and the slight difference indicated here is of no significance whatever.

These experiments show, among other things, that the addition of calcium lactate to the diet of normal guinea-pigs does not increase the amount of calcium to be recovered from most of the tissues. The kidneys may contain a little more, presumably because they are excreting any excess absorbed, and the lymph nodes usually show an increased amount, presumably from the inhalation of dust. A marked tendency of calcium to accumulate in the tuberculous lesions was noted, but the amount of calcium in tuberculous tissue was not appreciably modified by feeding calcium lactate in addition to the usual diet. Tuberculous lungs showed a much less tendency to accumulate calcium than tuberculous spleens, livers or lymph nodes.

This study failed, therefore, to furnish evidence that the administration of calcium exerts a favorable influence on the course of tuberculosis. It involved numerous observations and repeated analyses of many small

1. Maver, Mary E., and Wells, H. G.: The Alimentary Absorption of Calcium and Its Deposition in the Tissues in Experimental Tuberculosis, *Am. Rev. Tuberc.* 7:1 (March) 1923.

2. Steinitz and Weigert: *Deutsch. med. Wchnschr.* 30: 838, 1904.

animals, a mass of scientific detail carefully controlled, and a considerable period of time. It is convincing. In the face of a large amount of empiric belief of the beneficial effect of calcium, it would appear desirable to conduct clinical experiments of an equally scientific nature if the use of the calcium compounds is to be continued. Certainly there appears to be no scientific basis for their continued utilization.

THE BEHAVIOR OF STRONTIUM IN THE BODY

In the fundamental structures of the body, comparatively few elements are normally concerned. Despite the close relationship of various elements from the standpoint of chemical criteria, it by no means follows that their physiologic rôles are equally comparable. One need merely contrast the difference between the alkali metals sodium and potassium in this respect. In the case of the familiar alkali earth metals calcium, magnesium, barium and strontium, it is well known that the last two are decidedly detrimental to physiologic well-being, in contrast to calcium, for example, which is present in the properly developed adult to the extent of several pounds.

There has long been a debate in physiologic literature as to whether strontium can be substituted to any extent for calcium and magnesium, particularly in the skeletal system, in which the use of calcium salts seems to be primarily structural rather than functional. The results of the earlier feeding experiments with strontium have not given a clear answer to the problem. Strontium resembles barium in some of its actions. However, it is asserted to stand far behind the latter in toxicity, being even less toxic than calcium, according to Sollmann.

In a new series of investigations in the Department of Chemical Hygiene at the Johns Hopkins University, it has been demonstrated beyond question that strontium can actually be deposited in the bones. The deposition may go on quite rapidly under permissible conditions of diet.¹ As the amount of strontium in the skeletal structures increases, the content of calcium decreases. The available data seem strongly to indicate that strontium behaves independently of calcium as a constituent of the bone and does not replace it physiologically as a bone-building element. Strontium can be excreted into the milk so that the young can secure it in this way. The element may also be transmitted through the placenta into the body of the developing fetus.

Although strontium behaves like calcium so far as its susceptibility of being deposited in the bones and in the milk is concerned, the similarity ends there. When strontium does enter the body through either

the placenta or the alimentary canal, its presence in the new bones may lead to conspicuously pathologic manifestations. A form of "strontium rickets" arises which, in contrast to ordinary rickets, cannot be combated with cod liver oil.² So long as strontium salts retain a place in the list of officially recognized medicinal agents, it is well to bear in mind the possibilities of its abnormal physiologic behavior. Although such compounds have been used to a limited extent in medicine, pharmacologists are in general agreed that strontium possesses no therapeutic indications. Taken in connection with the unfavorable action on bone development, this in itself is sufficient ground for abandoning entirely the use of strontium in therapy.

Current Comment

TRYPARSAMID AND ITS PENETRATION INTO THE SPINAL FLUID

Last week THE JOURNAL published the report of the University of Wisconsin investigators³ on the use of tryparsamid in neurosyphilis. Of forty-four patients who were in an advanced stage of general paralysis, twenty-one had been discharged from the hospital and were earning a living. Of twelve other much agitated patients in an acute stage of the disease, seven recovered normal mentality and were earning a living. The remaining five mentally were in condition to work, but had not been discharged on account of the serologic findings. Workers of the United States Public Health Service have now made available the results of an experimental investigation⁴ of the penetration into the cerebrospinal fluid of tryparsamid and other arsenicals, which is enlightening as to the mechanism by which the reported effects are brought about. A heavy suspension of *Trypanosoma equiperdum* was injected into the cranial subarachnoid space of rabbits. No essential difference in behavior toward arsenicals has been discovered between *T. equiperdum*, *T. gambiense* and *Spirochaeta pallida*. Preliminary investigation demonstrated that trypanosomes thus injected could be recovered in considerable numbers. Tryparsamid and other arsenicals were then injected into the ear vein of the infected animals. After twenty-four hours a careful search was made in at least six different specimens of cerebrospinal fluid taken from the various subarachnoid spaces of the brain and medulla. The absence of trypanosomes in these specimens was considered evidence of permeability of the meninges by the arsenical injected or of some trypanocidal derivative. Under these experimental conditions, tryparsamid proved more effective than any other arsenical used. An amount which was only 4 per cent.

1. Kinney, E. M., and McCollum, E. V.: A Study of the Rate of Deposition and Paths of Absorption on Strontium in the Rat, J. Pharmacol. & Exper. Therap. **21**: 165 (April) 1923.

2. Shipley, P. G.; Park, E. A.; McCollum, E. V.; Simmonds, Nina, and Kinney, E. M.: Strontium and Growing Bones, Bull. Johns Hopkins Hosp. **33**: 216, 1922.

3. Lorenz, W. F.; Loevenhart, A. S.; Bleckwenn, W. J., and Hodges, F. J.: The Therapeutic Use of Tryparsamid in Neurosyphilis, J. A. M. A. **81**: 1497 (May 26) 1923.

4. Voegtlin, Carl; Smith, M. I.; Dyer, Helen, and Thompson, J. W.: Penetration of Arsenic into the Cerebrospinal Fluid, with Particular Reference to the Treatment of Protozoal Infections of the Central Nervous System, Pub. Health Rep. **38**: 1003 (May 11) 1923.

of the minimal lethal dose was 87 per cent. efficient. With 16 per cent. of its minimal lethal dose, sulpharsphenamin was 82 per cent. efficient. In a list of ten arsenicals in order of efficiency, those already noted were first and second; atoxyl was fifth; neoarsphenamin, sixth; arsphenamin, seventh; silver arsphenamin, eighth, and "arsenoxid," ninth. Thus, clinical and experimental evidence indicates that tryparsamid, injected intravenously, penetrates into the cerebrospinal fluid more effectively than other available remedies.

THE OCTOCENTENARY OF "OLD BART'S"

Age with honor has ever commanded respect; when it is combined with healthy growth and vigor, young in all that spells progress and vitality, it is worthy of admiration. St. Bartholomew's Hospital in London this year celebrates the eight hundredth anniversary of its foundation: For eight hundred years it has rendered distinguished service to humanity and medical science. Founded as a monastic institution in 1123, it has since been in practically continuous operation on its present site, though not one of the original buildings is now standing. Rebuilding and reconstruction have been progressively carried out since 1729. Today the hospital has six hundred beds and all the laboratory and teaching facilities required to make modern in every respect the great medical school that is a part of it. The monastic control passed away in 1536, and the hospital was surrendered to the mayor and citizens of London by King Henry VIII by a charter that was signed, Jan. 13, 1547. At that time there was inaugurated a system of government by an elected board of governors, similar in many respects to that which obtains today in many hospitals in this country. The ideals that have directed the management of the hospital continuously are admirably and quaintly expressed in the charge that was given to the matron and her assistants at that time: "Ye shall also faithfully and charitably serve and helpe the poore in al their grieues and diseases, aswel by kepyng them swete and cleane as in gyueng thim their meates and drinks after the most honest maner. Also ye shall use unto them good and honest talk suche as may comforte and amend them." The value of hospitals as centers for medical teaching as well as for treatment and research is well exemplified by the history of this hospital, which has ever stood in the forefront of English medicine. Though the medical school was not formally organized until 1843, lectures and demonstrations were certainly given as early as 1750. Training of nurses was started in 1650, though the organized training school was not established until 1877. The list of celebrated physicians and surgeons who have practiced and taught in the hospital includes such names as William Harvey, Percival Pott, John Abernethy and Sir James Paget. The commemorative exercises to be held June 5 and on subsequent days will depict various stages in the growth of the hospital by means of pageants, and there will be a revival of the Fair of St. Bartholomew. Details of the program were outlined by our London correspondent in *THE JOURNAL*, May 19. The event is

not only of historic interest, but also an inspiring stimulus to that far-sighted, unselfish devotion that has ever been the ideal of the medical profession.

Association News

RESOLUTIONS OF OHIO STATE MEDICAL ASSOCIATION

The following resolutions were officially transmitted through the Secretary of the Ohio State Medical Association for publication in *THE JOURNAL*, after adoption by the House of Delegates of that association at its meeting in Dayton, May 2, 1923:

WHEREAS, The activity of certain individual members of the Ohio State Medical Association and certain few component county societies has carried to many members of the medical profession throughout the United States the impression that the sentiments expressed and the actions demanded by the late "Medical Advisory Committee" and the "American Medical Press" are approved and are supported by the Ohio State Medical Association, therefore, be it

Resolved, That the opinions and the propaganda of the "Medical Advisory Committee" and the "American Medical Press" do not represent the opinions of, and are not approved by the Ohio State Medical Association; and further, be it

Resolved, That a copy of this resolution be sent to *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* for publication.

ANNUAL MEETING OF THE IDAHO STATE MEDICAL ASSOCIATION

The annual meeting of the Idaho State Medical Association will be held at Idaho Falls, June 13 and 14, 1923. Arrangements have been made for taking the guests of the Association on a trip through Yellowstone Park. Fellows of the American Medical Association en route to San Francisco are cordially invited to attend the annual meeting of the Idaho State Medical Association at Idaho Falls.

THE SAN FRANCISCO SESSION

Invitation from Colorado Springs

The physicians and sanatoriums at Colorado Springs invite the members of the American Medical Association to stop over there as they go or as they return from the annual session in San Francisco. Colorado Springs is noted for the treatment of tuberculosis as well as for its wonderful scenery. Visiting physicians will be given an opportunity to observe the methods in use in the sanatoriums, among which are those maintained by the Modern Woodmen of America, the International Typographical Union and the Union Printers' Home. In addition to these are the Cragmor Sanatorium, the Glockner Sanatorium, St. Francis Hospital, Sunnystre, Idlewild, Montcalm Sanatorium, Nob Hill Lodge, Star Ranch-in-the-Pines, and Crestone Heights Sanatorium. Stopovers will be allowed at Colorado Springs without extra cost.

Alpha Kappa Kappa Dinner

The Alpha Kappa Kappa dinner will be held at the Family Club Farm, Woodside, Calif., Thursday, June 28. San Francisco members of the fraternity will provide automobiles for carrying visiting members to the Family Farm. Those who desire to do so may remain overnight and return to San Francisco at 8 o'clock in the morning of Friday. Dr. Lloyd Bryan, Butler Building, San Francisco, is the secretary of the Alpha Kappa Kappa of California.

Omega Upsilon Phi Fraternity Banquet

The Omega Upsilon Phi fraternity will have a banquet in the University Club, San Francisco, Thursday evening, June 28. Dr. William O. French, Jr., Stanford University Medical School, Sacramento and Webster streets, San Francisco, is the scribe of Iota Chapter of Omega Upsilon Phi, and is anxious to have the names of all members of the fraternity who will attend the annual session in San Francisco.

Phi Chi Medical Fraternity Banquet

The Phi Chi Medical Fraternity will have a banquet at the Hotel Whitcomb at 6:30 p. m., Wednesday, June 27, the Stanford and University of California chapters acting as hosts. The dinner will be over in time for those present to attend the President's reception. Those who expect to attend this banquet will please notify Dr. K. O. Haldeman, 2525 Durant Avenue, Berkeley, Calif.

Special Train to San Francisco

The Chicago, Rock Island and Pacific Railway offers special accommodations on its trains leaving Chicago, June 20 and June 21, for those who wish to go to San Francisco to attend the annual session. These trains will leave Chicago at 10 p. m., central standard time, and will arrive at Colorado Springs at 7:30 a. m. the second day. Leaving Colorado Springs at 10:58 a. m. the same day, Salt Lake City will be reached at noon the third day and San Francisco at 5:45 p. m. the fourth day. From Salt Lake City, the route will be by way of the Feather River Canyon.

Utah State Medical Association

The twenty-ninth annual meeting of the Utah State Medical Association will be held at Salt Lake City, June 20-22. A splendid program has been arranged, with contributors from all parts of the country, each of whom is eminent in his own special field of practice. Physicians en route to the annual session at San Francisco are invited to stop off at Salt Lake and visit the Utah State Medical Association.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Dr. Dinsmore's Successor Named.—Dr. John C. Bragg, Albany, president of the Morgan County Medical Society, has been elected to the board of health to fill the vacancy caused by the death of Dr. William M. Dinsmore.

ARKANSAS

Hospital News.—The last session of the Arkansas Legislature appropriated \$75,000 to establish a tuberculosis sanatorium for negroes. There was also an appropriation of \$75,000 for additional buildings at the State Tuberculosis Sanatorium at Booneville. This will increase the present capacity, which is 184, to 260 beds. The Masonic order of the state has plans for a \$50,000 fire-proof building at the State Sanatorium for Tuberculous Children. When these buildings are completed, the capacity of the sanatorium will be 300.

CALIFORNIA

Faculty Changes at Stanford University.—The following promotions and appointments in the clinical staff of Stanford University School of Medicine, San Francisco, have recently been announced: Dr. Sylvan L. Haas, assistant clinical professor of surgery, assigned to orthopedics; Dr. Harvey S. Hunsberger, clinical instructor in medicine; Dr. J. Walter Jones, clinical instructor in surgery; Dr. John J. Kingston, clinical instructor in medicine, assigned to pediatrics; Dr. Mary H. Layman, assistant clinical professor of medicine, assigned to pediatrics; Dr. Mary J. Mentzer, clinical instructor in medicine; Dr. Philip Hale Pierson, assistant clinical professor in medicine, assigned to tuberculosis; Dr. Merton James Price, clinical instructor in surgery, assigned to otology, rhinology and laryngology; Dr. Joseph A. Sampson, clinical instructor in medicine, assigned to pediatrics; Dr. William E. Stevens, associate clinical professor in obstetrics and gynecology, and Dr. Wilber F. Swett, clinical instructor in surgery assigned to ophthalmology. Promotions on the academic staff: Dr. Frank Ellsworth Blaisdell, professor of surgery; Dr. William E. Chamberlain, associate professor of medicine, assigned to radiology; Dr. John F. Cowan, pro-

fessor of surgery; Dr. Ernest C. Dickson, professor of medicine; Dr. Leonard W. Ely, professor of surgery, assigned to orthopedics; Dr. Ludwig A. Emge, associate professor of obstetrics and gynecology; Dr. Harold K. Faber, professor of medicine, assigned to pediatrics; Dr. Henry G. Mehrtens, associate professor of medicine, assigned to neurology; Dr. Robert Ried Newell, assistant professor of medicine, assigned to radiology, and Dr. Albert Victor Pettit, instructor in obstetrics and gynecology. Dr. Charles Haskell Danforth has been appointed associate professor of anatomy.

COLORADO

Ophthalmologic and Otolaryngologic Congress.—The Colorado Congress of Ophthalmology and Otolaryngology will be held in Denver, July 30-31. Plans are being perfected for a graduate teaching course which will be given for a period of two weeks prior to the congress.

DELAWARE

Personal.—Dr. L. August H. Bishop has been reelected president of the board of health of Dover.—Dr. Luther S. Conwell, who has been secretary of the state board of health, will resume private practice at Camden.—Dr. William C. Behen, Dover, was recently honored by Poland with the Cross of the Valiant for services in that country with the American Red Cross Hospital Train No. 1, during the Bolshevik drive on Warsaw in 1920.

DISTRICT OF COLUMBIA

Roentgenologist Loses Hand.—Dr. Thomas A. Groover, Washington, associate professor of roentgenology at George Washington University Medical School, recently suffered the amputation of his left hand and two fingers on his right hand, from extended exposure to roentgen rays.

Medical and Surgical Meeting.—The twenty-fifth annual banquet of the Washington Medical and Surgical Society was given at the Wardman Park Hotel, May 10. Dr. Edward John Beardsley, Philadelphia, was the guest of honor. Officers of the society are: president, Dr. Caryl Burbank; vice president, Dr. Coursen B. Conklin; secretary, Dr. Augustus C. Gray, and treasurer, Dr. Frank E. Gibson.

State Health Officers' Conference.—Following the conference of State and Provincial Health Authorities of North America, which was held in the auditorium of the District of Columbia Medical Association, May 14-15, the twenty-first annual conference of state and territorial health officers with the U. S. Public Health Service was held in Washington, May 16-17. Representatives from thirty-five states attended the conference. Vital statistics, systematization of health laws, malaria and venereal disease control, maternity and infant hygiene, and rural health work were among the subjects discussed.

GEORGIA

"Ductless Gland" Clinic.—There has been opened in Atlanta a clinic to be known as the Good Samaritan Clinic, devoted exclusively to disorders of the ductless glands. It is to be operated on a strictly charity and nonsectarian basis. It is supported by a group of prominent capitalists who form its board of trustees. Twenty physicians and one orthodontist compose its medical staff. Clinics will be conducted daily.

ILLINOIS

Personal.—The Morgan County Tuberculosis Board has announced that Dr. Francis M. Roberts, Chapin, has been appointed superintendent of Oak Lawn Sanatorium, Jacksonville.—Dr. James B. Hundley has been appointed city health officer of Danville, to succeed Dr. William C. Dixon, who resigned, May 14.—Dr. Robert J. Burns has been appointed health commissioner of Freeport.

Society News.—Druggists, dentists and physicians of Henry, Stark, Knox and Bureau counties gave a dinner in Kewanee, May 11, in order to discuss proposed legislation to restore former methods of state supervision through the various professional boards. Dr. Charles Humiston, formerly president of the Chicago Medical Society and the state medical society; Samuel L. Antanow, president of the Illinois Pharmaceutical Association, and G. Walter Dittmar, D.D.S., former president of the Illinois State Dental Society, gave addresses.—A meeting of the Iowa and Illinois Central District Medical Society was held, May 24, in Moline. This

meeting, which is one of the four held every year, was presided over by Dr. Frederick H. Lamb, Davenport, Iowa. Dr. James B. Herrick, professor of medicine, Rush Medical College, Chicago, and Dr. Albert H. Byfield, professor of pediatrics, State University of Iowa College of Medicine, Iowa City, gave addresses.

Chicago

Fine for Physician.—According to reports, Dr. James H. Lyon was fined \$1,500, May 18, following conviction of violation of the Harrison Narcotic Law. It was stated at the trial that Dr. Lyon had issued, during a period of fourteen days, nearly 2,500 prescriptions, calling for 71,636 grains of morphin.

Personal.—Dr. Fuad Bey, member of the Turkish nationalist assembly from Angora, former minister of health and public works of Turkey, arrived in Chicago, May 24. He is touring the United States to study social conditions, particularly with reference to children.—Dr. Julius A. Toren, Chicago, gave an address on the "Diagnosis of Oral Infection by Blood Examination" before the Mercer County Medical Society and the county dental society at Trenton, N. J., May 10.

Opinion on Quarantine in Venereal Disease.—The city law department has been asked for an opinion by Chief of Police Collins and Health Commissioner Bundesen as to whether the health department has the authority to hold in quarantine persons arrested in disorderly houses until they can be examined for evidence of contagious disease. The chief of police states that this might amount to a refusal of bail and would thus be illegal. The health commissioner holds that such action is necessary to reduce venereal disease in the city.

Annual Report of United Charities.—According to the sixty-sixth annual report of the United Charities, issued May 22, the sum of \$663,877 was paid out between Oct. 1, 1921, and Sept. 30, 1922. The organization aided 12,076 families, at a cost of \$344,755. Of this amount \$105,884 was spent for the employment of superintendents, social workers, interpreters, visiting housekeepers and clerical help; \$23,068 for the maintenance of ten district offices, and \$46,036 for general administration and the maintenance of general offices.

Hospital News.—A new woman's home and hospital will be erected in Chicago by the Salvation Army at a cost of \$250,000.—It was announced, May 22, that St. Luke's Hospital will launch a drive, June 11-16, to collect \$2,500,000 for the erection of a nineteen-story addition to the hospital buildings. The institution now has accommodation for 400 patients.—Ground was broken at Riverside, May 22, for the new \$70,000 home for British aged to be erected under the auspices of the Daughters of the British Empire of the United States. Samuel Insull presented the organization with the eight acre plot.

Society News.—The Chicago Tuberculosis Society held its last meeting of the season, May 10, at which the following officers were elected: president, Dr. Clarence L. Wheaton; vice president, Dr. Alfred E. Owens, and secretary-treasurer, Dr. Hermann J. Achard (reelected).—At the annual meeting of the Chicago Neurological Society, May 14, Dr. Julius Grinker was elected president; Dr. Ralph C. Hamill, vice president, and Dr. Lewis J. Pollock, secretary-treasurer.—Dr. Lydia M. DeWitt was elected president of the Chicago Pathological Society at the annual meeting, May 19. Dr. William F. Petersen was elected vice president, and Dr. George H. Weaver, secretary.

INDIANA

School Closed for Smallpox.—The Central High School, Fort Wayne, was closed, May 10, by the city board of health following the discovery that a student had smallpox. There are twenty-three cases of smallpox in the city at the present time. Seven of the patients are at the isolation hospital.

KENTUCKY

Physician Vindicated.—Dr. John P. Huff, Olive Hill, whose narcotic license was recently revoked and his supply of blanks and morphin confiscated by a revenue officer, demanded an investigation of the charges. This resulted in restoring his loss.

Society News.—At the fifty-third annual meeting of the Southwestern Kentucky Medical Association in Paducah, May 9, Dr. Herbert H. Hunt, Mayfield, was elected president; Dr. Vernon Blythe, Paducah, secretary, and Dr. James T. Reddick, Paducah, treasurer.

LOUISIANA

Personal.—Dr. George E. Beyer, entomologist of the state board of health, New Orleans, formerly adjunct professor in biology at Tulane University School of Medicine, has been requested to aid in stamping out malaria in San Domingo. Dr. Oscar Dowling, president of the state board of health, has granted Dr. Beyer a leave of absence.—Dr. John F. McHugh, Mansfield, has resigned as health officer of De Soto Parish.

MAINE

New Hospital for Caribou.—Bids closed, May 5, for the erection of a \$50,000 hospital building in Caribou.

Personal.—Dr. Cyrus C. Sturgis, Boston, gave an address before the Androscoggin County Medical Society at Lewiston, May 8, on "Relationships of Goiter."—Dr. Stephen E. Vosburgh, superintendent of the Maine School for the Feeble-minded, West Pownal, delivered an address before the York County Medical Society at Biddeford, April 5.

MARYLAND

Personal.—Dr. Howard A. Kelly presented a Della Robbia Bambino to the Babies' and Children's Clinic at the University of Maryland on May 29.

Instruction in Social Service Study at Johns Hopkins University.—Opportunity for extensive training in the study of diseases, surgical and psychiatric problems and medical social problems was announced, May 5, by Johns Hopkins University in connection with its study program planned for instruction in social service for the academic year, beginning October 2. Fifteen new courses of training will be available to social economics students, embracing social law, child welfare, social service organization, delinquency and probation, social statistics, immigrant peoples and the history and development of social work. The new courses will lead to the degree of master of arts, but special students will be admitted without reference to attaining a degree. The following staff of instructors was announced: Dr. Richard A. Bolt, general director of the American Child Hygiene Association; Francis Lee Dunham, psychiatrist of the Maryland Child Labor Commission of the state industrial schools; Courtney Dinwiddie, executive secretary of the National Child Health Council; John W. Lewis, director of Americanization of the Baltimore School Board; Elmer V. McCullon, Ph.D., professor of biochemistry, Johns Hopkins School of Hygiene and Public Health; Dr. Adolf Meyer, professor of psychiatry, Johns Hopkins Medical School; Dr. Esther L. Richards, associate professor of psychiatry at Johns Hopkins Medical School; William O. Weyforth, Ph.D., and Broadus Mitchell, Ph.D., of the Johns Hopkins University, department of political economy.

MASSACHUSETTS

Physician Wins Suit.—In the suit for \$20,000 damages brought by Peter Kos against Dr. Robert R. Brault, New Bedford, alleging negligence in treating an infant child of the plaintiff, the jury brought in a verdict for the defendant.

Mental Hygiene Unit Organized.—A New Bedford unit of the Massachusetts Society for Mental Hygiene was organized, May 9. Dr. Frank M. Howes, secretary of the medical staff of St. Luke's Hospital, was elected president. A mental hygiene clinic was opened six weeks ago in New Bedford, in charge of Dr. Samuel Tartakoff.

New Chemistry Building at Harvard.—Edward Mallinckrodt, St. Louis, president of the chemical works of that name, has donated \$500,000 toward the construction of new chemical laboratories for Harvard University, Boston. The building, which will be erected between the new lecture hall and the university museum, will be known as the Mallinckrodt Laboratory.

Personal.—Dr. Oscar M. Schloss has resigned from the Children's Hospital, Boston, to occupy the position of professor of pediatrics in the Cornell University Medical School, and to take charge of the New York Nursery and Child's Hospital, New York.—Dr. Edward Waldo Emerson, Concord, son of Ralph Waldo Emerson, unveiled a marble bust of his father in the Hall of Fame of New York University, May 22.

Public Health Conference.—At the public health conference held in Springfield, April 26-28 (THE JOURNAL, April 14, p. 1081) the following officers were elected: president, Dr. Edward O. Otis, Boston; vice president, Dr. Parker M. Cort,

Springfield; honorary presidents, Major-Gen. Clarence R. Edwards, Westwood, Dr. Eugene R. Kelley, Boston, and Cardinal O'Connell, Boston, and Robert V. Spencer, Newton. Sixteen organizations interested in public health participated in the conference.

History of Medical Society to Be Published.—A 400 page, illustrated book, entitled "History of the Massachusetts Medical Society, 1781-1922," compiled by the secretary, Dr. Walter L. Burrage, Boston, will be published in October. Brief biographies of the founders and of those who have been chiefly concerned in promoting the interests of the organization during its 142 years are some of the important features. The illustrations include some of these men, the chief meeting places, and reproductions of old documents.

James Marsh Jackson League.—The Tide Over League with headquarters in Boston will hereafter be known as the James Marsh Jackson League, Inc., in honor of the late Dr. J. M. Jackson. The organization cares for convalescents who, upon leaving the hospital, are not physically able to resume at once their former occupation. It gives convalescents light work in their homes. A school of applied arts is maintained, where individual instruction is given to students in the various handicrafts; the league also cares for convalescents from chronic disease who need both money and occupation for longer periods.

MICHIGAN

Sanatorium Destroyed by Fire.—The Otter Lake Sanatorium, Otter Lake, which was about to be taken over by the American Legion to be used as an orphanage, was destroyed by fire, recently, the loss approximating \$80,000.

Chiropractor Fined.—It is reported that Ward F. Miller, chiropractor, of Shepherd, was recently found guilty of violation of the state medical registration law and was sentenced to forty-five days in the county jail and fined \$150.

Veteran Physicians Honored.—The Lapeer County Medical Society tendered a dinner at Imlay City in May to Drs. George W. Jones of Imlay City, and William Blake of Lapeer, in recognition of their long years of practice in the county. Both physicians are Canadians. Dr. Jones is more than 85 years of age and has served as village postmaster for several term. Dr. Blake located in Lapeer County about forty-five years ago and served as mayor of Lapeer.

MISSOURI

Hospital Dedicated.—The new Lloyd Building, one of the three additions to the Missouri State Sanatorium, Mount Vernon, was dedicated, May 12.

"Doctor" Arrested.—The health department of St. Louis caused the arrest, May 4, of C. Edward Barnett on a charge of practicing medicine without a license. Barnett styled himself a doctor of naprapathy.

Personal.—Dr. James H. Parker of the East Louisiana Hospital for the Insane, Jackson, La., has been appointed superintendent of Hospital No. 4 at Farmington, to succeed Dr. Ethan E. Brunner, recently appointed superintendent of the Colony for Feeble-minded, Marshall.—Dr. Francis E. Cullen, senior physician at the City Hospital, St. Louis, has been appointed superintendent of the Isolation Hospital, to succeed Dr. Eugene A. Scharff, who was recently appointed superintendent of the City Hospital.—Dr. Robert M. Wilson, superintendent of the Kwangju Leper Hospital, Korea, gave an address at the Washington University School of Medicine, St. Louis, May 9.

NEBRASKA

State Medical Meetings.—The annual meeting of the Nebraska State Medical Association was held in Lincoln May 15-17. The following officers were elected to serve from next January 1, as is the custom of the association: president, Dr. Morris Neilsen, Blair; vice presidents, Drs. Frank Tornholm, Wahoo, and William J. Douglas, Atkinson, and secretary, Dr. Roy B. Adams, Lincoln (reelected). The next convention will be held in Omaha.—Dr. Emelia H. Brandt and Dr. Reisa G. Wohl, both of Omaha, were elected president and secretary-treasurer, respectively, of the Nebraska Women's Medical Association, at the annual meeting in Lincoln.

NEW YORK

State Medical Meeting.—At the one hundred and seventeenth annual meeting of the Medical Society of the State of New York in New York City, May 22-24, Dr. Orrin S. Wight-

man, New York City, was elected president for the ensuing year. Dr. Edward Livingston Hunt was reelected secretary.

Hospital News.—St. Christopher's Hospital for Babies has been absorbed by the Brooklyn Hospital, and its resources have become the St. Christopher's Foundation for Babies at the latter institution.

Society News.—At the annual dinner of the Flatbush Medical Society in Brooklyn, May 16, Dr. George A. Merrill was elected president; Dr. Samuel L. Fisher, vice president, and Dr. William F. C. Steinbugler, secretary.—At the annual meeting of the New York Surgical Society, April 29, Dr. Eugene H. Pool was elected president, and Dr. Fordyce Barker, St. John, secretary, for the ensuing year.—Owing to the conflict of dates with the meeting of the house of delegates of the state medical society at the New York Academy of Medicine, the regular May meeting of the Medical Association of the Greater City of New York will be omitted, and a special meeting will be held jointly with the Queens County Medical Society, June 5, at Flushing, L. I.—The section of laryngology and rhinology of the New York Academy of Medicine advanced its meeting date to May 22 for the same reason, when it entertained the members of the nose and throat section of the state society.—At the annual meeting of the Women's Medical Society of New York, in New York City, May 21, Dr. Mary E. Dunning Rose, New York, was elected president; Drs. Julia K. Qua, Amsterdam, Grace A. B. Carter, Rochester, and Julia G. McNutt, Albany, vice presidents; Dr. Anna H. Voorhis, Yonkers, secretary, and Dr. Florence A. Sherman, Albany, treasurer.

New York City

Deaths from Tuberculosis.—The New York Tuberculosis Association stated that since January 1 there have been 1,613 deaths from tuberculosis in various forms in the city, as against 1,590 for the corresponding period in 1922.

James Buchanan Brady Foundation.—Several hundred patrons of the Society of the New York Hospital were guests, May 12, of the urological department of the New York Hospital, which occupies one floor in the private patients' building. This department was founded by the late James Buchanan Brady, who left in his will about \$800,000 for that purpose.

Physician Charged with Homicide.—Dr. Henry Russell was held in \$10,000 bail in the homicide court, May 10, on the charge of having performed an illegal operation. The charge had previously been dismissed by Magistrate Oberweger in the West Side Court. The complaint, entered by the Presbyterian Hospital authorities, claims that Dr. Russell performed the operation at his office, and that the condition of the patient became such that she was taken to the hospital, where a second operation was required.

Personal.—Dr. William V. P. Garretson has resigned as attending neurologist to the Reconstruction Hospital, New York.—Dr. Fred H. Albee sailed for Europe, May 16, to attend a congress of surgeons meeting in Amsterdam.—Dr. S. Josephine Baker has resigned as director of the bureau of child hygiene, after twenty years' service in the health department, on account of ill health.—Dr. Fred Wise and Dr. Isadore Rosen have been appointed assistant professors of dermatology and syphilology at the College of Physicians and Surgeons, Columbia University.

Hospital News.—Work will start in the near future on a building for the new Samaritan Hospital on the present site. The new structure will cost about \$250,000, and accommodate 250 patients. The building will be six stories in height, will contain four operating rooms, a maternity department and sun parlors. The committee plans to maintain an ambulance service equal to that of the larger institutions in Manhattan.—The new neurologic wards of Mount Sinai Hospital (forty beds), endowed by Messrs. Samuel and Harry Sachs, were opened, May 1.—Beth Israel Hospital held its annual meeting on May 15. In addition to the presentation of the annual report and the election of officers, Dr. Lewellys F. Barker delivered an address.

OREGON

Personal.—Dr. Richard B. Dillehunt, dean of the University of Oregon Medical School, has been elected surgeon-in-chief of the Portland unit of the Shriners' hospitals for crippled children.

Junior League Aids Clinic.—The Portland Junior League has raised \$11,000 for the support of the children's orthopedic clinic at the University of Oregon School of Medicine, Port-

land. The clinic is held in the patient department of the medical school at the Portland free dispensary. The Junior League purchased all the necessary equipment for the clinic.

PENNSYLVANIA

Personal.—Dr. Franklin E. Sass, Boswell, has been appointed medical director of Somerset County, to succeed Dr. Charles P. Large.—Drs. Jacob P. Frantz, John H. Woolridge, George E. Mauk and Harry A. Woodside were injured in an automobile accident while returning to their homes in Clearfield from a medical meeting, May 10.—Dr. J. S. Fraser, Edinburgh, Scotland, addressed the section on otology and laryngology of the College of Physicians of Philadelphia, May 18, on "The Route of Infection in Cases of Meningitis Associated with Middle Ear Suppuration in Which Neither Labyrinthine Suppuration nor Extradural Abscesses are Present."—The Camden County Medical Society tendered a testimonial dinner to Dr. Daniel Strock, Camden, May 9, at Delair, on his retirement as secretary of the society, following twenty-five years of service.—Dr. W. P. Nolan, Jeannette, has resigned as chief of the State Tuberculosis Clinic at Greensburg.

Philadelphia

Smallpox Quarantine Extend.—A police quarantine of the section bounded by Ontario, Venango, Broad and Sixteenth streets was established as a result of two more cases of smallpox therein reported to the department of public health.—Extension of the quarantine following discovery of a number of smallpox cases in a tenement near Ninth and Vine streets was ordered for a time, May 21, while physicians, working under Dr. A. A. Cairns, chief medical inspector of the bureau of health, vaccinated more than 700 persons in the district bounded by Tenth, Twelfth, Vine and Callowhill streets.

Changes at Woman's Medical College.—Additional appointments to the faculty of the Woman's Medical College of Pennsylvania (THE JOURNAL, May 19, p. 1463) have recently been announced: Dr. Alice E. Johnson, clinical professor of psychiatry; Drs. Mabel H. Pearson and Miriam Bell, instructors in pediatrics; Dr. Catherine Barnaby, instructor in clinical neurology. Dr. Martha Tracy has been reappointed dean of the medical school. It was decided to reduce the major faculty from twenty to sixteen members. The incorporators, instead of the faculty, will appoint the dean. A joint committee of faculty and incorporators on promotion and tenure of office has been established.

TENNESSEE

Society News.—At the annual meeting of the Middle Tennessee Medical Association in Lebanon, Dr. Dave R. Pickens, Nashville, was elected president; Dr. Byrd S. Rhea, Lebanon, vice president, and Dr. H. H. Shoulders, Nashville, reelected secretary-treasurer.

Personal.—Dr. Herbert Acuff, Knoxville, was recently elected president of the Tennessee Antituberculosis Association.—Dr. Fenton L. Husbands, Memphis, has been appointed superintendent of the Blytheville Hospital, Blytheville, Ark., which will open this month.—Dr. J. B. Bond, Martin, formerly superintendent of the West Tennessee Asylum for the Insane, Bolivar, has been appointed superintendent of the bureau of vital statistics of the state board of public health.

VIRGINIA

Memorial to Physician.—A drinking fountain will be erected in Winchester as a memorial to the late Dr. Godfred L. Miller. The fountain will be erected in front of the courthouse. The cost will be about \$2,000, of which \$1,400 has already been raised.

Improvements at Tuberculosis Sanatorium.—Extensive improvements are being made at Pine Camp, the municipal tuberculosis sanatorium for the city of Richmond. An appropriation of \$125,000 from the city and a gift of \$15,000 are available. There will be accommodations for ninety-two patients instead of thirty-six, as at present.

Personal.—Dr. John W. Dunn, Richmond, has tendered his resignation as professor of otology, rhinology and laryngology at the Medical College of Virginia, to become effective at the end of this session. He has been made professor emeritus of this branch. Dr. Joseph A. White, now professor of ophthalmology, will have charge of the combined chairs

of ophthalmology, otology, rhinology and laryngology, it is announced.—Dr. Louis L. Williams, Jr., Richmond, engaged in malaria control work with the state department of health, has been appointed to represent the United States on the epidemic committee of the League of Nations. Dr. Williams sailed, May 1, for Italy, where he will spend four months studying malarial problems.—Dr. Warren T. Vaughan has resigned as attending physician to St. Elizabeth's Hospital, Richmond. Dr. Vaughan will assume the editorship of the *Journal of Laboratory and Clinical Medicine*.—Dr. William H. Higgins has been appointed head of the medical department, St. Elizabeth's Hospital, Richmond.—Dr. Hack U. Stephenson, Toano, has resigned as a member of the board of governors of state hospitals.—Dr. Samuel E. Weymouth has resigned as president of the Callao State Bank.

WEST VIRGINIA

Personal.—Dr. Almon P. Goff, of the U. S. Public Health Service, arrived in Logan recently to take charge of the Logan County Health Bureau, succeeding Dr. Duvall, who resigned.—Dr. C. W. Kidder, Grafton, has been appointed county health officer of Taylor County.

WISCONSIN

Physicians' Licenses Revoked.—The state board of medical examiners reports that the licenses of Dr. William G. Wheeler and Dr. Frank L. Fancher of Racine have been revoked, both having been convicted of criminal abortion.

Hospital News.—The new 200 bed addition to St. Elizabeth's Hospital, Appleton, will be ready for occupancy this month.—St. Mary's Hospital, Milwaukee, commemorated the seventy-fifth anniversary of its founding, May 15. This hospital was originally established as St. John's Institute and Infirmary, but the name was later changed to St. Mary's.

CANADA

Tuberculosis Resort Burned.—Seventy residences were destroyed, \$250,000 damage done, and 400 people made homeless, May 26, by a fire at St. Agatha, a tuberculosis resort in the Laurentian Mountains.

Radium Institute Opened.—The premier of the province of Quebec formally opened the new radium laboratory at the University of Montreal, recently. A demonstration was held in the amphitheater of the university. The institute was made possible by a grant of \$100,000 by the government.

Public Health News.—The board of control, Toronto, Ont., recently voted an appropriation of \$5,000 to the Ontario division of the Canadian Red Cross Society, to be used in relief work among typhoid fever sufferers in the town of Cochrane, Ont.—The Ontario division of the Red Cross Society recently shipped a carload of provisions to Cochrane for the relief of seventy-five families rendered homeless by the recent fire and in many cases by the death of the head of the family.

Personal.—Dr. Bruce W. Cannon has been appointed health officer for Coquitlam, B. C.—A banquet was tendered Dr. Francis J. Shepherd, April 14, on the occasion of his fiftieth year of practice, by his former demonstrators of anatomy of McGill University, and his house surgeons in Montreal General Hospital. Dr. Frederick G. Finley, Dr. Shepherd's first house surgeon, presided.—Sir Henry M. W. Gray, surgeon to the Aberdeen Royal Infirmary, Aberdeen, Scotland, has accepted the appointment of chief of the surgical staff of the Royal Victoria Hospital, Montreal.

Hospital News.—The War Memorial Hospital for Sick Children, London, Ont., which is to be operated in conjunction with Victoria Hospital, was informally opened recently, when numerous boys and girls who have been patients at the General Hospital were transferred to the new building. The hospital was financed to a substantial degree with funds raised by the Daughters of the Empire in various parts of western Canada.—The Montreal Hospital for Incurables was destroyed by fire, March 14. There were 350 patients at the time, and all were removed in safety.

University News.—Dr. J. C. Connell, for twenty years dean of Queens Medical College, at Kingston Ont., in his report to the board of trustees of the university, is reported as saying that with the present medical curriculum the study of medicine is practically impossible for financial reasons, for many students who would be otherwise attracted to the profession. He claims the period of training is too long. He believes that medical education in Canada has suffered for lack of cooperation between the medical schools. There has

been no opportunity for conference, and no attempt made to secure a reasonable degree of uniformity in the alteration of requirements. It is now proposed to establish a medical society of the university conference, to meet once a year.

Insulin Instruction in Canada.—Under the auspices of the Alberta Medical Association, the University of Alberta Medical School gave a three day clinic, May 21-23, at Edmonton, to assist physicians in the selection of cases for insulin treatment and in methods of administration, and to familiarize them with effects of overdosage and their treatment. Two lectures and one demonstration were given daily, and all clinics were free of charge. Prof. James B. Collip, professor of biochemistry at the university, codiscoverer of insulin and discoverer of glukokinian, has received an additional \$2,000 from the College of Physicians of Alberta to enable him to continue this work. The college previously gave Professor Collip \$5,000 for this purpose.—In order to provide additional facilities for the short courses of instruction in the administration of insulin, the University of Toronto Faculty of Medicine is remodeling the old university Y. W. C. A. building, which will be used as a plant for the manufacture of insulin. The courses will be given in the Toronto General Hospital. Only forty physicians can attend each course. About 600 physicians have made applications for the course so far, it is announced.

GENERAL

Narcotic Registration Expires June 30.—Registrations of physicians under the Harrison Narcotic Act expire June 30. Physicians must reregister with the collectors of internal revenue in their respective districts on or before July 1. Members of the Association who are going to the San Francisco meeting will do well to register before leaving home.

Meeting of Subsidiary Examining Boards.—A meeting of the National Board of Medical Examiners will be held, June 26, at 4 p. m. at the Civic Auditorium, San Francisco, for all those who are members of the Subsidiary Board of Examiners in attendance at the session of the American Medical Association, for the purpose of discussing matters with which the subsidiary boards are concerned.

American Gynecological Society's Election.—At the forty-eighth annual meeting of the society in Hot Springs, Va., May 21-23, the following officers were elected for the ensuing year: president, Dr. Barton C. Hirst, Philadelphia; vice presidents, Drs. John O. Polak, Brooklyn, and Herbert M. Little, Montreal; secretary (reelected), Dr. Arthur H. Curtis, Chicago, and treasurer (reelected), Dr. Charles C. Norris, Philadelphia.

Mammalogists Favor Vivisection.—The American Society of Mammalogists, at its fifth annual meeting, May 15, in Philadelphia, unanimously adopted the following resolutions:

"WHEREAS, It is a fact known to all thinking people that most of the great advances in medicine and surgery have been made as a result of experiments on living animals, especially mammals, and

"WHEREAS, It is the belief of our eminent physicians, surgeons and veterinarians and all others having great responsibility for the health of human beings and of animals, that future advances in these fields will be made chiefly as the result of similar experiments, and

"WHEREAS, It is known that these experiments almost invariably are conducted humanely and with a minimum of discomfort to the animals used, and

"WHEREAS, there is an organized movement being carried on by certain misinformed and misguided individuals who seek to prevent or seriously interfere with such experiments, be it

Resolved, That we, members of The American Society of Mammalogists, in annual convention assembled in the City of Philadelphia, on the 16th day of May, 1923, are of opinion that, in the best of interests of real humanity, animal experimentation, including vivisection, as practiced in our laboratories today, should continue unhampered."

Commissioner Haynes Warns Against "Moonshine."—A warning to the public regarding the dangerous character of moonshine whisky has been issued by Prohibition Commissioner Haynes. It is based on a statement by chief chemist H. M. Lampert of the department of Wisconsin. The commissioner said:

"The most practical distiller cannot make drinkable whiskey in small amounts, for it is impossible. Even the expertly-made whiskey is at first colorless, nauseating and deleterious. If whiskey made from only the choicest of materials under the most sanitary conditions is raw, crude, harsh in taste and flavor and distinctly unpalatable, what can be expected of whiskey made over night in filthy, unsanitary surroundings, which are especially favorable to wide fermentation and the formation of organic acids, acetone and butyl alcohol, known to be deadly poisons? A small amount of present day moonshine whiskey poured on a varnished surface will work wonders, and it does not take much imagination to picture what it will do to the lining of the human stomach. The moonshiner's primary object is to make and sell his illicit product in the shortest possible time, desiring quantity rather than quality, and he is not interested in the welfare of the consumer, who, if he could see some of the stuff made, would never touch a drop of it."

International Opium Commission Delegates Disagree.—The second meeting since January of the International Opium Advisory Commission of the League of Nations opened in Geneva, Switzerland, May 25. Congressman Stephen Porter, Dr. Rupert Blue, Mr. Neville and Bishop Brent represented the United States. China, France, Great Britain, Portugal and Germany accepted the proposal of Mr. Porter that all drug-producing countries reduce their production to strictly medicinal needs, or to one tenth of their present output, but India, Japan and Holland rejected this proposal. The representative of the India office stated that his government would not consider a reduction of its opium production. He asserted that it was impossible to wipe out the opium eating and smoking habit in India, and that the Indian revenue from opium amounted only to \$20,000,000 yearly and only 28,000 chests were exported annually. Dr. Blue and his associates will not participate in the work of the league committee unless it accepts the American suggestions, but they will sit several days more in the hope that an agreement will be reached.

LATIN AMERICA

New Hospital in Colombia.—The Hospital Bennett, with twenty beds, was recently opened at Cartagena. Its superintendent and director is Dr. R. Bennett Córdova.

Colombia Surgeon Returns Home.—Dr. J. E. Cavelier, former consul of his country in Chicago, has returned to Colombia after visiting a number of American clinics, and taking postgraduate courses in roentgenology and surgery.

Personal.—Dr. Sanchez Mosquera of Montevideo has left for a visit to his former home in Spain.—Drs. E. Saldaña, J. S. Belaval and R. Soto Rivera have returned to Porto Rico from long stays in the United States.—Dr. P. Gutiérrez Igaravidez of Porto Rico has left for the United States, and likewise Dr. Jacinto Avilés, treasurer of the Porto Rico Medical Association, which is a constituent branch of the American Medical Association.—Dr. P. Palma, professor of surgery at Buenos Aires, has resigned his chair, on account of his health, after seventeen years of incumbency.—The Academia de Ciencias Médicas of Havana has elected Dr. J. A. Presno president, to succeed the late Dr. Santos Fernández. Dr. Presno is professor of surgery in the university and is the founder and director of the *Revista de Medicina y Cirugía*, now in its twenty-eighth year.—The *Brazil-Medico* relates that the government has appointed, as official delegates to the international congresses at Paris and Strasbourg in May and June, Drs. Carlos Chagas, E. Rabello, G. Riedel, E. Borges da Costa, E. Villela and Gastão Cruis.

FOREIGN

Medical Relief in Russia.—The central medical warehouses of the American Medical Relief Administration in Moscow were closed, May 19, after having distributed \$7,600,000 worth of medical supplies.

Fund for Gynecologic Research Work.—A fund has been opened in commemoration of the Dutch gynecologist, Hector Threub, to support investigations in gynecology and obstetrics. Subscriptions should be sent to the president of the fund, Dr. C. C. Delprat, 98, Jan Luykenstraat, Amsterdam.

Drug Firm's Licenses Revoked.—Investigation of illicit traffic in dangerous drugs lead the home secretary of Great Britain to cancel the licenses held by Whiffen and Sons, Limited (also trading under the name of J. A. Wink and Company). They will not in the future be allowed to buy, manufacture, sell, or have any dealing in the drugs to which the Dangerous Drugs Act, 1920, applies.

Women's Medical School for India.—The foundation stones were laid, March 26, for a group of four buildings to be erected on vacant ground beside the Queen Mary's College for Women, Madras, India. One of the buildings will be a medical school for women and one a children's hospital. The present Victoria Caste and Gosha Hospital will be replaced by a new hospital, which will be erected alongside the new medical school.

British Otolaryngologists in Sweden.—The section of Otolaryngology of the Swedish Society of Physicians invited several representatives of Great Britain to deliver lectures in Stockholm in May. Arthur Cheatle, London, Sir St. Clair Thomson, London, Logan Turner, Edinburgh, and Brown Kelly, Glasgow, attended the session, accepting an invitation from the Dutch Oto-Laryngological Society to attend their meeting at The Hague, May 12-13, on their way to Sweden.

Anthrax Bacilli on Boxes of Oranges.—The medical officers of health for Cardiff, Wales, recently reported that, for the second time, anthrax bacilli have been found in hides bound round orange boxes reaching that city from Spain. The Spanish authorities had previously been requested to stop binding orange boxes with hides. The hides had been forwarded to Spain from India. The Indian government promised that, if the old procedure was not interfered with, the hides would be rendered sanitary, and with that understanding hides were again used.

The Memorial Book of Honor.—At a meeting of the British Medical Association in London, April 18, the committee in charge of the Memorial Book of Honor to members killed in the World War announced that quotations had been selected for the book. Before the list of names it was proposed, by Sir Jenner Verrall, to insert these lines from *Samson agonistes*:

"Nothing is here for tears, nothing to wail
Or knock the breast; no weakness, no contempt,
Dispraise or blame; nothing but well and fair,
And what may quiet us in a death so noble."

New British Medical Periodicals.—*Ambulance*, a new quarterly magazine intended as a link between people at home and abroad who are interested in first aid, hygiene and public health, has recently been published by the College of Ambulance, London. The first number contains an article on the origin of ambulance work, by Sir James Cantlie, and one on the use and abuse of tourniquets, by Dr. W. Salisbury Sharpe. The first number of the *Journal of Helminthology*, edited by Prof. R. T. Leiper, has recently been received. This journal is published by the helminthology department of the London School of Tropical Medicine, and will appear bi-monthly.

Neighbors Complain of Roentgen-Ray Clinic.—Persons living near roentgen-ray clinics in Paris complained that their health is impaired by the far-reaching effect of the rays. An investigation is being conducted under the auspices of the ministry of hygiene by Dr. Bécère of the Paris Academy of Medicine, Dr. Vaillant, Dr. Becquerel, Madame Curie and others as to how far roentgen rays extend, and whether the powerful light beams continue indefinitely, injuring persons in their path at a considerable distance away. Suits were recently started against a physician conducting a roentgen-ray clinic by neighbors who declared that the rays had given them cancer.

League of Nations Health Committee Meets.—The fifth annual session of the hygiene committee of the League of Nations opened in Paris, May 26. The United States is unofficially represented by Surg.-Gen. R. H. Cumming, chief of the U. S. Public Health Service. The principal business of the committee will be to hear reports on tuberculosis, opium, and general health conditions in all countries. The International Health Board of the Rockefeller Foundation is giving the hygiene committee \$60,000 a year for a period of three years, and an additional \$30,000 a year for five years, for the development of an international office for distributing information regarding epidemics.

Australian University News.—Two bequests, one of £30,000 and one of £20,000 (approximately \$140,000 and \$95,000, respectively), have been donated to the University of Melbourne Medical School. The council of the university has not yet decided whether the money will be used for research, or the foundation of additional chairs, or for medical units. Sir Joseph Verco, Melbourne, represented the University of Melbourne at the octocentenary of St. Bartholomew's Hospital, London. The Listerian ovation was delivered by Dr. Rothwell Adam, emeritus lecturer on obstetrics and gynecology at the University of Melbourne, before the Australian Branch of the British Medical Association, recently.

Personal.—Dr. Henry H. Dale, London, delivered the Oliver-Sharpey lectures at the Royal College of Physicians of London, May 1 and 3 on the "Activity of the Capillary Blood Vessels and Its Relation to Certain Forms of Toxemia." Dr. Thomas J. Mackie, Cape Town, South Africa, was awarded the Straits Settlements gold medal for thesis for M.D. on tropical medicine. Dr. P. A. Maplestone, lecturer of protozoology at the Liverpool School of Tropical Medicine, has been appointed assistant director of the research laboratory at Sierra Leone. Professor Bakule of Prague, Czechoslovakia, has arrived in America with a group of handicapped children, whom he has trained to become adept at some gainful occupation. He is giving lectures and demonstrations throughout the country. Under the auspices of the St. Louis School of Occupational Therapy he lectured at

Washington University School of Medicine, May 1. The fifteen Spanish professors who spent four days in Paris recently delivered a number of addresses at the medical school and at society meetings. Among others, Recasens spoke at the Faculté de médecine on the "New Radiotherapy in Gynecology"; Aguilar on "General Infection of Dental Origin"; Goyanes on "Surgery of Vessels," and Hernando on "Action of Drugs on Gastric Secretion." A number of receptions and entertainments were crowded into the busy days before the party left for Bordeaux. Dr. C. da Costa, professor of histology at the University of Lisbon, recently delivered an address at the Bordeaux Faculté de médecine, his theme being, "The Rôle of Histology in Our Knowledge of the Internal Secretions." Prof. Fernando Magalhães of Rio de Janeiro, president of the Sociedade de Medicina e Cirurgia, has been decorated by the French government as officer of the Legion of Honor.

Government Services

The Navy Needs Physicians

Unusual opportunities in the form of salary and intern experience are offered to graduate students from Class A medical colleges in the Medical Corps of the Navy. Medical colleges and recent medical graduates are not taking full advantage of opportunities in the Navy Medical Corps. The Navy Department has, for some time, had difficulty in filling the Medical Corps. Under the existing policy of the department, graduates from Class A medical colleges may enter the corps, on passing an examination confined entirely to medical subjects, and immediately be commissioned and receive an annual salary of approximately \$3,000 as interns at any of the large base hospitals of the Navy. Interns are not sent on sea duty the first year. They have the advantage of unusual hospital experience and an immediate income greater probably than that which most young physicians just out of college have. At this time of year when students are graduating from medical colleges, the opportunity in the Navy should have its strongest appeal. Information in detail on this subject can be had on application to the Surgeon General of the Navy, Washington, D. C.

Army Medical School Graduation

The Surgeon General announces that the closing exercises of the Army Medical School and the Army Dental School session of 1923 will be held in the auditorium of the New National Museum, Washington, D. C., June 8.

Hospital Authorized

Pursuant to instruction of the Secretary of War, the organization of a hospital, organized reserves, to be known as General Hospital No. 28 (Christian Church Hospital Unit, Kansas City, Mo.) has been authorized.

Veterans' Bureau Course in Tuberculosis Completed

The U. S. Veterans' Bureau Post-Graduate School of Tuberculosis at Hospital No. 41, New Haven, Conn., has completed its first session which began in March of this year. The course was attended by a selected group of physicians of the regular staff of the Veterans' Bureau from different parts of the country. The lectures were delivered by specialists in tuberculosis. The school was established to increase the clinical knowledge of tuberculosis among physicians treating ex-service men. Its administration was in charge of Dr. Stanley M. Rinehart, clinical director of tuberculosis in the bureau. The plan of the school and the intensive course which has been given has been generally approved. Dr. Eugene L. Opie of St. Louis comments:

After a week spent at the Post-Graduate School of Pulmonary Tuberculosis at New Haven, I have come home with the conviction that the plan of the school is excellent and that it has been carried out with success. I do not know of any plan that would offer better promise of giving men qualified for general practice an accurate knowledge of a complex special subject such as tuberculosis. The intensive course which was given furnished both a fundamental scientific insight into the subject and a practical understanding of the methods of handling the disease. I do not believe that one without the other would have been successful.

Foreign Letters

PARIS

(From Our Regular Correspondent)

May 4, 1923.

A Visit of Spanish Physicians to France

A party of Spanish physicians visited recently the medical schools of the universities of Paris and Bordeaux. The delegation, which was conducted by Professor Recasens, dean of the Faculty of Medicine of Madrid, was composed of Professors T. Hernando, F. Aguilar, L. de la Peña and Márquez of Madrid; Dr. Goyanes, director of the Cancer Institute of Madrid; Dr. José Madinaveitia, chief editor of *Los Progresos de la Clínica*, Dr. Coca, director of the *Medicina Ibero*, and others. The party was welcomed, on arriving in Paris, by Professor Roger, dean of the Faculty of Medicine, together with Professors Bar and Hartmann, and Dr. Cheinisse, of the staff of the *Presse médicale*. The Spanish physicians were later received by the Association générale des médecins de France, where they were greeted by Dr. Chapron, vice president of the association.

During their four days' sojourn in Paris, a number of the Spanish professors delivered addresses, among which those of Professor Recasens and Professor Goyanes attracted particular attention. Recasens spoke at the Faculty of Medicine on the new applications of roentgenotherapy in gynecology, and said in conclusion that, just as, thirty years ago, one could no longer represent himself to be a gynecologist if he was not a surgeon, so today, for a gynecologist to be in the forefront of his specialty, he must understand the physiologic and therapeutic properties of roentgen rays. After his address, Recasens projected on the screen a series of interesting roentgenograms of pregnant women, showing that the positions of the fetus in the uterus are entirely different from what they are represented to be in classic treatises. Professor Goyanes gave a lecture on vascular surgery before the Société de chirurgie of Paris.

Typhoid Fever in Paris

Every year, from July to October, a recrudescence of typhoid is noted in Paris. In explanation of this recrudescence, it is not necessary to assume a seasonal contamination of the drinking water of Paris. The cases, for the most part, develop in Parisians who spend their vacations in rural communities where the drinking water may be badly polluted. But, in addition to the imported cases, there are some that originate in Paris, and thus point to the existence of a permanent source of contagion. We may doubtless assume the presence of germ carriers and also the use of vegetables coming from sewage land.

When the city of Paris decided to purify the contents of its sewers on an area of land outside the city, it was assumed that the land thus fertilized would be used for pastures or orchards, in order to avoid the contamination of edible products growing on the top of the soil. But the proximity of a large city, easy irrigation, and the brilliant results secured by the Chinese method of employing liquid fertilizers, caused the sewage land to be used for market gardening. Now it is quite evident that sewage water containing typhoid bacilli cannot without danger be applied to vegetables that are to be eaten, without previous cooking, by persons susceptible to this virus. Clauditz found germs, after several days, on green herbs thus treated which a thorough washing could not remove. The Conseil supérieur d'hygiène also commissioned Dr. E. Marchoux to make an inquiry into the modes of fertilization employed on the sewage land near the city of Paris. This inquiry showed that, while the larger part of

the sewage land was planted to peas, beans, potatoes, artichokes, leek, celery, cauliflower, carrots, turnips, sorrel and spinach, all of which are cooked before they are eaten, there was a portion of the land where grew certain vegetables and culinary plants that are frequently eaten raw, such as lettuce, dandelions, endive, onions, parsley and radishes. Marchoux recommended that the kinds of herbs and vegetables that may be grown on sewage land be established by law.

Consequences of the Acquittal of a Charlatan

I referred in previous letters to the career of the "healer" Béziat, who was brought before the court for the illegal practice of medicine and who was acquitted by the correctional tribunal of Villefranche-en-Rouergue and by the Court of Appeals of Toulouse (*THE JOURNAL*, April 15, 1922, p. 1141, and April 21, 1923, p. 1160). The healer, of course, lost no time in letting the public know of these decisions, concerning which he expressed himself thus:

It is, in fact, the equivalent of a diploma, with this important difference, that, in order to secure these decisions, actual proofs of efficiency had to be furnished, for it is certainly true that, if numerous and unmistakable cures had not been effected, the correctional tribunal and Court of Appeals would not have acquitted me. The judgment of a tribunal, the opinion of judges who put their conscience above everything, is worth as much as the decision of a medical faculty, it would seem to me. For a court decision it is proofs that count. To secure the approval of a medical faculty, often all that is required is to have spent five years in residence at a medical school while pursuing a life of pleasure.

Fortunately, the Court of Cassation, by reversing the decision of the court of Toulouse, put an end to the insolent triumph of the healer.

An Error in Diagnosis

A few months ago, the correctional tribunal of Evreux acquitted Dr. Vallet of Vernon, who was summoned to appear in court for an error in diagnosis committed in operating on a woman for fibroma when, in reality, the manifestations were due to pregnancy (*THE JOURNAL*, Dec. 16, 1922, p. 2099). The decision of the court was to the effect that Dr. Vallet was guilty of the crime covered by Article 319 of the Penal Code (homicide through imprudence). A fine of 2,000 francs, payable to the father of the woman operated on, and a further fine of 9,500 francs, payable to the three children of the deceased, were imposed.

Statistics on Public Assistance

From the bureau of the minister of labor has just appeared a pamphlet containing a statistical report on public assistance covering the period from 1914 to 1919. Dec. 31, 1919, the list of those receiving public assistance bore the names of 267,816 aged persons who were either infirm or incurable, 88,022 children and 42,118 mentally defective persons. During the year 1919, public assistance was given also to 616,523 patients, 203,502 puerperants, and 236,207 large families. The bureaus of public charity in forty-one departments gave aid to 254,319 persons. The total amount of gifts and bequests to public institutions and to public welfare was, in round numbers, 17,269,000 francs, from a total of fifty departments.

LONDON

(From Our Regular Correspondent)

May 8, 1923.

The Control of Infectious Diseases in New South Wales

The government of New South Wales has issued a new and elaborate series of regulations for the control of infectious diseases. Every "contact" or carrier must submit to medical examination at such time and place as a health officer, or a physician authorized in that behalf, directs. He may be placed under medical surveillance, or may be isolated and detained in isolation in his own home or in any place, if the health officer deems this necessary to prevent the spread of infection. Any person who has been informed in writing

by the health officer that he is a carrier shall not take part in or be employed in any business connected with the manufacture, preparation, storage, handling or delivery of food or drugs for human consumption, or handle any vessel, receptacle, package, utensil, instrument or thing used in connection with food. The body of a person who has died of an infectious disease shall be enveloped in a wrapper wet with a 1:20 solution of phenol (carbolic acid) or other approved disinfectant. The body shall be placed in a coffin, and the lid of the coffin fastened down within twenty-four hours after death. The joints of the lower part of the coffin must be water-tight. The body must not be conveyed in any other public conveyance than a hearse without previous notification to the owner that the person has died from an infectious disease, and the owner must have the conveyance disinfected after use. The body shall not remain unburied elsewhere than in a mortuary approved by the board of health, longer than thirty-six hours in a municipal district, or longer than forty-eight hours in another district.

Cocain Substitutes Committee

The ministry of health has under consideration the possibility of using substances that might serve the same therapeutic purpose as cocain, but be free from its deleterious properties. It has appointed a committee consisting of anesthesiologists, surgeons, dentists and pharmacologists to investigate the comparative value of various substitutes for the therapeutic purposes for which cocain is used, and the evidence as to the risk, if any, of such substitutes becoming drugs of addiction.

The Need for Vaccination

The danger that has arisen from the relaxation of the vaccination laws out of consideration for the antivaccinators has been pointed out before. Though we have not suffered from an epidemic of smallpox, local outbreaks are of constant occurrence. Dr. Parkinson, health officer to the Basford Rural District (Nottinghamshire), from which as many as fifty-six cases have recently been admitted to hospital, reports that the disease shows no sign of abatement, and that he does not think that it will for some time, unless more stringent methods of control are taken. The disease is gradually picking out the unvaccinated part of the population. Everything possible is being done to stop its spread, but unless vaccination is made compulsory and the government issues a quarantine order for "contacts," nothing can stamp it out. In certain of the northern and midland counties, outbreaks which began last autumn have not yet abated, and it is exactly in these places that the greatest prejudice against vaccination exists.

No Signs of a Race of Supermen

Lecturing at the Royal Institution, Sir Arthur Keith discussed the question whether mankind was still evolving. He held that changes were taking place more rapidly now than at any former period. The evolution of man could fairly be compared with the evolution of automobiles. In the early days, local makers conformed to local needs, but after a certain period, special standardized types ousted local types. So, too, with man. Certain local types spread across continents and suppressed others, which might have been excellent from an engineering or esthetic point of view, but, through the working of natural selection, they disappeared because they did not meet the needs of the place and time. Twenty years ago, Metchnikoff accused Nature of bungling in her workmanship as regards modern man. He protested against thirty-two teeth as being too many. He resented the existence of the appendix, the cecum and the colon. From his standpoint, these charges could be extended. Every industrial nation had a large "C 3" population. In 20 per

cent. of adults, the teeth were so bad as to be useless for mastication. More than 5 per cent. required spectacles, and the same number had chronically diseased ears. Metchnikoff's charge to many sounded justified, but it was only necessary to consider the time required to teach the young, untrained dog that the home was not run to satisfy its particular needs, to realize that the discords of modern life might not be due to Nature's blunderings but to man's stupidity. Five thousand years ago there was not a patch of corn grown in Great Britain; today the poorest child is better fed and sheltered than the best-off child then. We give our digestive tract no rest, either whipping it up with patent sauces or seeking to treat its rebellion with patent pills. It is not Nature that has gone too slow, but man too fast. There is definite evidence that changes are taking place in the human body. Remains in the Museum of the Royal College of Surgeons show that there have been modifications in the formation of the human jaw, of the placing of the front teeth, and of the character of the nose, with the result that the tendency is toward the production of a long, narrow face. As to whether the brain is or is not increasing, no definite answer can be given, because sufficient skulls are not available. The fact is that today not one person in fifty uses his brain to half its capacity, most people having more brains than they know what to do with. There is no sign of a race of supermen appearing in this or any other country, and such evolutionary changes as are taking place are only in matters of detail. It is possible, however, that evolutionary changes are silently at work in the brain, favoring the men and women who have the power to replace the wild inheritance of the jungle by the well-ordered instincts essential to the welfare of modern communities.

VIENNA

(From Our Regular Correspondent)

April 24, 1923.

The Congress of the German Society for Internal Medicine, Vienna, April, 1923

The German Society for Internal Medicine, which meets every two years in Wiesbaden, has arranged to hold its meeting every alternate year in another large German town, and Vienna was chosen for this year. Professor Wennekebach organized the convention. More than 1,400 physicians took part in the proceedings, including visitors from northern Europe, Asia, Italy and the New World, so that this meeting was really international, the first of its kind in Vienna since 1913. The proceedings were grouped under three heads: (1) epidemic (lethargic) encephalitis; (2) hypertension and (3) internal secretion. Two eminent men were asked to give an introductory report on each of these subjects, one dealing chiefly with the anatomic or physiologic, the other with the clinical side of the problem.

In connection with the congress, an exhibition of the latest achievements of chemistry, electrotherapeutics and medical technic was opened, in which the changes brought about by these factors in the medical armamentarium were well illustrated. The blood pressure apparatus, the microscope, the fluoroscope, the roentgenogram and the metabolimeter are now indispensable, and ready made pills and hypodermics are always at hand.

The scientific program was carried out in magnificent surroundings in the reception hall of the former emperors of Austria, which was selected and adapted for the purpose. The municipality of Vienna and the president of the republic gave receptions in honor of the guests; and social gatherings and excursions to neighboring watering places and health resorts in the Alps served to relieve the sober work of the convention. The scientific proceedings lasted from April 9 to 12, with Professor Wennekebach in the chair. As a large

number of papers and reports were presented, with the exception of the introductory papers, ten minutes was allowed for each paper, and discussion was limited to four minutes.

NEED FOR CHANGES IN MEDICAL TEACHING

The proceedings were opened by the president, who, after welcoming the guests, discussed the need for changes in medical teaching. Students, like children, at first are likely to see the characteristic traits of an object and to draw them, but later they lose this ability, because their faculty for observing is hampered by cramming. The medical student must obtain the utmost of knowledge in the shortest possible time, and thus ceases to "observe" without becoming able to form a judgment of his own. He is taught for the examination and not for the purpose of forming his own opinion. Wenckebach therefore emphasizes the necessity for increasing the study of the chief subjects in a more intensive way, with less attention to the manifold specialties. The basis of teaching should be sought in exact observation of the human individual.

EPIDEMIC ENCEPHALITIS

The validity of these remarks was brought home to the audience by the next paper, which showed how careful observation enabled Professor Economo (Vienna) to throw light on a dark problem. He presented a report on epidemic encephalitis, giving the history of previous epidemics (1872 in Germany and 1890 in Italy); he then explained how, after the epidemic of influenza in 1916-1917, he saw about fifty cases of a drowsiness that lasted for weeks and months, which he at once recognized as a separate entity; squint was marked in all cases. One third of the patients recovered, one third died, and the remaining patients drifted into chronic invalidism. Anatomic investigations revealed inflammation of the brain of infective type. Levaditi in Paris, and Doerr in Vienna, discovered simultaneously that the virus is filterable; it can be transmitted to the cornea of a rabbit, where it produces lesions identical with those of herpes febrilis. It must be assumed that the causative agent is the same in the two diseases, but that, for some unknown reason, the virus at times becomes more active and produces encephalitis. Contagiousness is not marked; only in 4 per cent. was contact demonstrated. The contagion seems to be chiefly airborne, and the portal of entry is probably the nasopharynx. Since the first systematic observation, seven years ago, similar reports have been received from all over the world, and it may be stated that the disease is closely associated with grip. Intravenous injections of iodine in large doses control the disease in the acute stage; but against chronic cases we have no remedy. The latter cases show a tendency to sleep, to choreiform movement, to tics or to cataleptic conditions.

Especially interest has been aroused by the last, in which there are disturbances of voluntary innervation or of "will" and "intention" movements (parkinsonian type). These conditions have thrown new light on the function of sleep and intentional movement. We have learned that sleep (and wakefulness) is controlled by a center situated between the optic thalamus and the hypothalamus; lesions there cause a change in the type of sleep: day sleep, protracted sleep or fits of sleeping. Cataleptic conditions, previously associated only with severe mental disease, also have been traced to encephalitic lesions in the ganglions of the diencephalon. Some persons may show symptoms of a neurosis, previously explained as suppressed or repressed thoughts or desires; these symptoms, however, have an organic basis. It means that "will" is quite outside our psychic processes.

The clinical report on this subject was presented by Professor Nonne (Hamburg). He stated that, in a large number

of the 262 chronic cases observed in his clinic, there intervened a stage of comparative normality between the acute and the chronic manifestations, which at times lasted months or even years. Prognosis must therefore always be guarded. Slight attacks of acute encephalitis are also mild in their chronic stage, mostly progressing very slowly. The serious acute cases are more rapid in their later manifestations. Nonne attributes the various symptoms to the presence of a special toxin that affects the nervous centers very much like the metasyphilitic toxin; he also suggests the possibility that all metabolic disturbances are due to toxic lesions of a special center controlling the function of the liver. He divides the chronic cases into three groups: those with a predominance of psychic disturbances; those with changes in the mechanism of movements, and those with metabolic disturbances. A change in character or sentiments is often noted early, and may remain the only symptom. Nonne said that our conception of will has received a severe shock as the result of studies of the lesions in the chronic form of epidemic encephalitis. All that we subsume under the term tonus of muscles, which is paramount in the execution of movements and the assumption of attitudes, takes place in the ganglions of the brain stem, and is beyond the control of consciousness. Tics, spasms, contractures and cataleptic conditions are caused by encephalitic lesions, and are now open to study by pathologists. The parkinsonian complex is explained by these lesions, and we have learned much of the functions of the deep ganglions. Cooperation of muscle groups is necessary for intentional movements, which are impossible if the brain coordination is interfered with. Trophic disturbances, so common after epidemic encephalitis, are due to lesions in the centers for the regulation of metabolism. We observe sudden obesity combined with nervous disorders, and marked emaciation without serious disease; diabetes insipidus, as well as mellitus, are produced by encephalitic lesions in the vicinity of the third ventricle. An animated discussion ensued, in which nearly all speakers agreed with the ideas brought forth in the two reports.

HYPERTENSION

The report on hypertension was delivered by Durig (Vienna) and Vollhard (Halle). The former discussed the problem chiefly from the physiologic side. Normal blood pressure varies with: sex, age, condition of work or rest, psychic factors and numerous other influences; it may be as low as 90 mm. of mercury in sleep, or as high as 160 or even 180 mm. during work. Only permanently high readings of pressure constitute hypertension; routine measurements give only a means of comparison and not absolute figures; we are not in a position to diagnose hypertension simply from a few pressure readings with variable figures. Durig calls hypertension a condition in which the blood pressure is essentially above the normal; it is caused by a disproportion between the blood volume ejected into the circulation and the volume of the outflowing blood, if the capacity of the heart and its muscular force is sufficient. It is not the heart's force that produces high pressure, but the conditions prevailing in the blood vessels, chiefly in the arterioles and capillaries where the fall in pressure principally occurs. If the elasticity of these vessels or their lumen is seriously disturbed, loss of efficiency takes place, for these two factors are chiefly responsible for the normal circulation in the blood vessels. Loss of elasticity means more work for the heart against higher resistance, i. e., more pressure is required. The changes of the lumen are due chiefly to arteriosclerotic processes, functional narrowing or occlusion. In normal cases, the capillary network acts like a suction pump, causing the blood pressure to remain normal. But there exists a hereditary disposition to functional high pressure. Thus far,

however, we cannot say what conclusions should be drawn from high arterial pressure. We cannot give a definite opinion as to the actual conditions prevailing in the total circulation or in the heart.

Vollhard expressed the opinion that blood pressure regulation is intimately connected with the contraction of the blood vessels, and that arterial hypertension is due to spasmodic conditions in the circulatory system. We see two types of patients with high pressure; one is pale, the other, ruddy. This difference cannot be explained by a difference of the force of the heart beat. Vollhard says that in pale patients there is a general spasm of the blood vessels which is absent in the "red" patients. Practically speaking, only renal disease is associated with high blood pressure; but, in a high percentage, the kidney trouble is the cause and not the consequence of high blood pressure. For, in these cases, spasm-producing substances are present in the blood (epinephrin) and only in patients with high pressure and pale face; injection of blood serum from patients with nephritis into the circulation of a guinea-pig causes increased epinephrin action; and we know that nephritic blood contains peptones. Acute nephritis is characterized by spasm of the kidney vessels, which can be cured by adequate treatment. Vollhard quoted the experiment of Dr. Bornstein of Hamburg on himself. He caused a small dose of epinephrin to be injected into his arterial system; syncope followed, artificial breathing had to be maintained for over an hour, albumin appeared in the urine, and the pressure went up to more than 220. Months elapsed before all consequences of this experiment passed away. Chronic nephritis is due mostly to age and perhaps to psychic conditions. In advanced age, the blood vessels lose in elasticity, but increase in capacity. The diminishing force of the heart cooperates with these factors to regulate the blood pressure and keep it at the normal level. If, therefore, the heart continues to work with its former force while the blood vessels lose elasticity, high pressure occurs.

An interesting contribution was the paper by Professor Pal, proving that the chief region for the regulation of blood pressure in the capillaries is the intestinal circulation. Spasmodic conditions there tend to produce acute hyperemia in other parts, especially in the brain. In advanced arteriosclerosis, such a sudden strain thrown on this delicate system of blood vessels may easily produce a hemorrhage. High pressure is often observed in patients suffering from constipation, mental worry or as an hereditary trait. Careful attention to digestion is one of the chief factors in prophylaxis.

ENDOCRINE DISTURBANCES

Disturbances of endocrine glands commanded special attention. An afternoon was set apart for demonstrating interesting cases, and patients from all clinics were placed at the disposal of those interested. Of the large number of papers dealing with this subject, the following may be mentioned: Professor Singer on scleroderma (with demonstration of cases); the experience of gynecologists and pathologists seems to prove that a disturbance in the function of the ovary and the thyroid combine to bring about this clinical entity. Treatment by internal exhibition of thyroid and ovarian substance, with later subcutaneous injections, brought about a most satisfactory result in a case of Singer's (diffuse scleroderma in a woman, aged 29). The patient is not cured, but her skin is now mobile, she can eat and has gained 10 pounds (4.5 kg.); Dr. Liechtenstern reported a series of twenty-eight transplantations of sexual glands (ovaries and testes). In six cases treated after complete castration, the result was very good even after from three to eight years. The abdominal skin is a good place for testing such grafts.

Remarkable cases of pathologic growth were demonstrated by Dr. Baucr: a case of gigantism after encephalitis; a dwarf, aged 23, who stopped growing after the removal of a tumor at the base of the tongue, when myxedema set in; a few other dwarfs with unknown histories, all of the type of hypothyroidism; a case of a man, aged 53, with arthritis deformans that started at the age of 7 and stopped further growth; a woman with spondylitis, and a woman who within three months lost 30 kg., or 50 per cent. of her weight and all her hair. Abnormalities of the distribution and growth of hair were discussed by Professors Redlich and Falta; a few cases of pathologic loss of hair were shown, in which hypofunction of thyroid, pineal and pituitary glands was present. Treatment with extracts of these glands was satisfactory in some cases. In acromegaly, roentgenotherapy had proved useful. The trophoneurotic disturbances after epidemic encephalitis were discussed by Wagner Jauregg, who also demonstrated a case of adiposity belonging to that group. Eppinger and Pineles read a paper on increase of blood pressure in tuberculosis of the suprarenals and other affections. A series of women suffering from pathologic conditions due to disturbances of menstruation were demonstrated by Dr. Aschner. He differentiates types of endocrine change in women into: chlorotic anemia, plethora, infantilism, adiposity, and masculine habit with abnormalities of hair growth; he strongly recommends the use of ovarian substance, with thyroid extract. Professor Pirquet showed children with trophoneurotic and endocrine disturbances; among them a boy, aged 3½, with fully developed secondary sexual characters; and a girl born with a weight of 790 gm., who is now 10 years old and perfect in every respect.

MISCELLANEOUS TOPICS

Among other papers presented to the congress, Dr. Stern showed how patients with total laryngectomy are taught to speak by using the stomach as a reservoir for air. The air is easily swallowed and the voice, produced after the fashion of ventriloquists, is sufficient for ordinary conversation. Drs. Molnar and Friedrich (Budapest) demonstrated their investigations of the motility of the stomach in connection with mastication. Roentgenograms were shown to prove that the contents of the stomach are emptied into the duodenum according to their chemical composition, the rapidity being increased by lessened consistency; fats remain longer than other substances, and carbohydrates are emptied most rapidly. Gaseous osmosis and gas metabolism, the output of urea and psychic influence on digestion, were commented on by physicians from Belgrade and Prague.

A sensation was caused by a preliminary report by Wenckebach on the treatment of angina pectoris by dividing the nervus depressor cordis branch of the vagus that supplies the aorta with sensory fibers. Acting on a theory of Eppinger, Dr. Hofer performed this operation in six cases, with excellent results. As the depressor nerve has several roots, the operation is difficult, but the division causes the disappearance of the pains; it is not yet clear whether the favorable result is due to the fall in blood pressure, or the loss of sensibility of the aorta.

A large number of papers dealt with the problems of tuberculosis. While many experienced physicians advocated artificial pneumothorax, Jötze (Frankfort) and many surgeons resort to phrenicotomy; the operation is simple, and its results are permanent. A combination of the two methods was advocated by Kraus. The latest method of applying tuberculin by inunction (percutaneous) encountered strong opposition from the majority of those discussing the problem. Thoracoplasty and other surgical methods of treatment are still much in favor, especially in pleuritic complications, while the use of fillings is now out of date.

The Vienna school presented a series of papers on pathology of the heart and *materia medica*. Dr. Pick discussed the rôle of the liver as a preliminary organ for the kidney, and Edelmann explained the clinical symptoms and pathology of aortitis and aortic pain. Torrey proposed the injection of cardiac remedies directly into the aorta, instead of into the heart, in cases of syncope, and Spiegel discussed the problem of conduction of pain sense, chiefly of vascular pain. Pick discussed heredity in disease and constitution. He studied the problem especially in twins (one-egg twins preferably), and showed that it is important to obtain the family history in cases of goiter, asthma and diabetes to permit an estimate of the possibility of changing the dominant symptoms. Pedigrees from numerous families are required to settle the question; a central board for this important factor of national and racial development might be instituted with the cooperation of family physicians.

The papers and demonstrations mentioned form only a part of the extremely large number presented to the congress, the transactions of which will not be published before July.

BERLIN

(From Our Regular Correspondent)

April 21, 1923.

Hereditary Transmission of Talent for Music

Up to the present time, very little statistical evidence has been collected bearing on the question of hereditary transmission of talent for music. To be sure, a survey of the family history of famous musicians sometimes permits the recognition of general hereditary principles, but the extensive statistical material which is needed for the solution of the problem, owing to the fact that experimentation is impossible, is entirely lacking. In view of this fact, a new book by the Halle Professors Haecker and Ziehen must be regarded as especially significant. Haecker is an instructor in the field of mechanics, and Ziehen is a psychologist. The new work deals in a scientific, statistical manner with the hereditary transmission and the development of talent for music. By means of ample questionnaires, they investigated the family histories of several thousand persons, gleaning all the data possible pertaining to talent for music. They do not claim that their data are absolutely reliable in all respects, but they give the results of their investigations for what they may be worth.

In marriages in which one of the parents is musical and the other is not, marked musical talent is found more frequently in the male offspring than in the female; this is especially true if it is the mother, rather than the father, who is musical. In such mixed or discordant marriages the positive load seems more effective than the negative. They found that the transmission of talent for music follows the mendelian laws of heredity. In so-called concordant marriages; that is, in which both parents are musical, about 40 per cent. of the offspring have marked talent for music, and almost a further 40 per cent. are musical. But there are also offspring (which finding agrees with common practical experience) that have little talent for music and some that have virtually no talent at all. This finding is not at all surprising when we examine into long lines of inheritance. Two main deductions may be drawn from the statistics. Male offspring are, in general, somewhat more susceptible to an hereditary bent than are female offspring, and an hereditary bent derived from the mother's side is, in general, somewhat stronger than on the father's side. The development of talent for music shows two peaks. In persons with marked talent for music, their special gift often shows itself before the end of the second year; especially is this true if the talent is inherited. Musical talent in children is usually dis-

covered more readily and earlier in case the parents are musical than is otherwise the case. In an environment given to music, musical talent is more readily discovered. The statement was frequently made that talent for music in the form of correct singing appeared in a child before it began to talk. Shortly before puberty, talent for music often comes out more strongly and is more likely to attract attention. It is remarkable to note that of forty-six composers, whose statements may be relied on, thirteen, or 28 per cent., had no opportunity to hear music in their younger days, which shows that talent for musical composition may develop independent of musical stimulation in childhood.

Haecker and Ziehen were unable to demonstrate with the statistical material at their disposal that there is any definite correlation between talent for music and talent for mathematics. The percentage of males who, lacking in talent for music, have a talent for mathematics is surprisingly high, so that one is almost tempted to assume that the presence of the one talent compensates for the absence of the other. Further evidence for this assumption is found in the fact that, among males with marked talent for music, only a small percentage have talent for mathematics. In males, according to the material on which the research was made, there seemed to be a correlation between talent for music and talent for drawing, and an even greater correlation between talent for music and poetic talent. In females these correlations are not well marked, but receptive talent for drawing appears to predominate over poetic talent.

Birth and Mortality Statistics in the Large Cities of Germany in 1922

The year 1922 was marked by a very low ebb in the birth rate. The average birth rate in forty-six German cities classified as having over 100,000 population was, in 1921, 20.1 per thousand inhabitants, whereas in 1922 it dropped to 17.3 per thousand, a decrease of 13.9 per cent., or 2.8 per thousand. It would appear that the influence of the present-day factors that tend to lower the birth rate (as the most important of which I may mention the uncertainty of the economic conditions, which, with the depreciation of the mark, is becoming progressively worse, and the bad housing conditions) was so great that the usual seasonal variations in the birth rate were compensated and eliminated by these factors; for the fall in the birth rate, with the exception of a short period of a few weeks, has proceeded uninterruptedly. The maximal increase in the number of marriages entered into in the period immediately following the war does not seem to have exerted any noticeable influence on the birth rate. However, the death rate of the large cities for 1922 (13.4, or, if the foreign population is included, 12.6, per thousand inhabitants) cannot be regarded as unfavorable. The higher death rate of the first six months, which must be ascribed to the influenza epidemic, at the beginning of the year, and to the harmful effects of the severe winter, was almost counterbalanced by the marked decrease in the death rate in the third and fourth quarters, during which the death rate registered 10.9 and 12.7, respectively, the lowest mortality rates so far recorded for this season of the year. It thus happens that the annual death rate for 1922 (13.4) was only 0.8 higher than that of 1921, which showed the lowest death rate recorded. The infant mortality rate for 1922 (13.8 deaths for each thousand living births) was very little higher than the rate for 1921 (12.2). A peculiar fact in 1922 was the absence of the summer peak and the appearance of a winter peak in the infant mortality curve. The tuberculosis mortality rate increased again somewhat in 1922. However, this increase was confined mainly to the second quarter, and may be regarded, therefore, as chiefly due to the long, severe winter. The bad weather conditions last year exerted an

unfavorable influence also on the pneumonia mortality rate during the first nine months of the year, especially at the time of the coal famine resulting from an industrial strike. On the other hand, the mortality from scarlet fever, measles, diphtheria, typhoid, dysentery and catarrh of the gastrointestinal tract reached a previously unknown low level, which finding is in direct accord with the marked decrease in the number of cases of these diseases, reported in 1922, and may be due to the cold, wet summer. The mortality from puerperal fever, which, during the war period, increased considerably and constantly up until 1919, appears now to have reached its height and to be on the decrease; for, in 1922, there were only 3.9 deaths, from such a cause, per thousand new-born, as compared with 4.3 deaths the previous year.

Conflict Between the University of Jena and the Ministry of Public Instruction

For the newly created chair of psychology in the University of Jena, the university authorities proposed to the Thuringian ministry of public instruction the names of three men for the selection of one. The ministry of public instruction, however, without consulting the university further in the matter, appointed Professor Peters of the *Handelshochschule* at Mannheim, whose name had not been proposed by the university, to the chair. The University of Jena has sent a vigorous protest to the ministry of public instruction for its action in completely ignoring the names proposed by the university. Also the Deutsche Hochschulverband (national association of German universities) and the authorities of the individual universities condemn most sharply the action of the ministry and will take the necessary steps to see that their protests are heeded.

PRAGUE

(From Our Regular Correspondent)

May 4, 1923.

Health Demonstration in Kladno

A health demonstration was opened at Kladno, April 28, under the auspices of the national council of social hygiene for the Czechoslovak Republic. It was considered a prime function of the council to make clear the mutual relationship of the different organizations associated in the council. This could not be done in the central headquarters of the organizations, and it was necessary to go into the field where a cooperative plan could be developed. At the meeting of the delegates of the National Council of Social Hygiene, February 7, it was decided to select for this purpose the district of Kladno. According to the census of 1921, this district has a population of 81,034 inhabitants. In the district are the cities of Kladno and Krocchlavy, which are among the largest centers of the coal and iron industry. There are even towns in the district, with a population that lives mostly under rural conditions, while the 29,476 inhabitants of the cities live under urban conditions. The district was selected because of its mixed urban and rural character, and because the interest of the local authorities in social and public health questions is very deep. Kladno is operating one of the best health centers in the country, and many other local activities put the city in the front rank of communities interested in social and public health questions. Originally it was intended to conduct the demonstration entirely with private resources, but, in the course of negotiations, the ministry of health offered the cooperation of its division for study and reform of health activities. The cooperative plan, which was worked out between the ministry of health and the committee of the national council of social hygiene that is in charge of the demonstration, will guarantee the advantage of experience gained by the ministry of health in conducting a demonstration in the community of Kvasice. The demonstration at

Kladno was officially inaugurated in the presence of delegates from national organizations as well as of central and local authorities. Dr. Alice G. Masaryk, daughter of the president of the republic, emphasized in her address the importance of the demonstration for training all kinds of public health workers, who will thus have an opportunity to acquire practical experience. The demonstration will be carried out locally by a committee consisting of representatives of local private social and health agencies and all city and town health officers. This local committee will cooperate with the national committee in Prague.

Health Campaign Finances

An interesting analysis of the financing of the health campaign in the Czechoslovak Republic was recently published in the local medical press. The budget of the ministry of health for 1922 contains 149,172,097 Czechoslovak crowns (approximately \$4,387,000). In addition, other ministries contribute large sums of money to health purposes. The ministry of national defense has a sum of 42,041,360 crowns (\$1,236,500) in its budget for health purposes; the ministry of railroads, 2,000,000 crowns (\$58,800), and the ministry of posts and telegraphs, 2,220,000 crowns (\$65,000). To these sums should be added the health appropriations in the budget of the provincial governments which amount in Bohemia to 205,564,196 crowns (\$6,000,000), in Moravia to 77,266,320 crowns (\$2,272,000) and in Silesia to 21,116,099 crowns (\$621,000). The money paid by the provincial governments is largely for fees in hospitals for patients who cannot pay for themselves. The total of these appropriations, which do not include the appropriations of towns and cities, amounts to 497,380,072 Czechoslovak crowns (\$14,630,000) which is about 37 Czechoslovak crowns (\$1.10) per capita annually.

Specialization in Medical Practice

The question of specialization in medical practice is being discussed in the medical press of the country. Up to date, the chambers of physicians have regulated the right to use the title of specialist in a certain group of diseases. The members of the chambers of physicians are elected by the practicing physicians. Such chambers exist in Bohemia, Moravia and Silesia, but there were none in Slovakia or Carpathian Russia. These chambers adopted certain standards for specialists, and the physician was not supposed to use the title specialist unless he had been granted that right by the chamber of physicians, after his special qualification had been examined. The standards of the different chambers were not uniform. The Bohemian chamber granted the right to use the title to those who prove that they have spent at least two years practicing in a special department of a medical faculty or of a general hospital. In Moravia, the chamber granted the title only to those who have spent at least two years as assistant or first intern in a special department of a medical faculty or a general hospital. Silesia used similar standards. The title of specialist gives the physician the right to ask higher minimal fees from his patient than the general practitioner; and the same is true of the fees paid to physicians by insurance companies. In spite of these regulations, a considerable number of physicians have assumed all the rights of specialists, although they have not been approved by the chamber of physicians. Therefore, it seems necessary to revise the whole question of specialization of medical practice, to make the standards uniform throughout the republic and to enforce the regulation more strictly than has hitherto been done. This will probably be effected through a special medical practice act which is now being prepared and which will regulate not only the question of specialization, but also advertising practical postgraduate experience and kindred problems.

Marriages

LAWRENCE M. RIORDAN, St. Louis, to Miss Caroline Robinson Hardy of Waterloo, Ill., May 10.

ROBERT STANLEY KEMP, Boston, to Miss Kathryn B. Youse of Sandusky, Ohio, May 24.

ALBERT WOLDERT, Tyler, Texas, to Miss Elva Buford of Henderson, May 6.

CARSON K. GABRIEL, Payson, Ill., to Miss Mabel Miller, of Chicago, April 28.

Deaths

David Webster, New York; Bellevue Hospital Medical College, New York, 1868; died, May 26, following a long illness. Born in Cambridge, Nova Scotia, Canada, July 16, 1842, Dr. Webster served as professor of ophthalmology at the New York Polyclinic Medical School; Dartmouth Medical College, Hanover, N. H.; as clinical assistant in ophthalmology and otology at the Columbia University College of Physicians and Surgeons, New York, and on the staffs of the Manhattan Eye, Ear and Throat Hospital, Hospital for Ruptured and Crippled, New York Skin and Cancer Hospital, New York, Brooklyn Eye and Ear Hospital, Brooklyn, and the Hackensack Hospital, Hackensack, N. J. He was a member of the American Academy of Ophthalmology and Oto-Laryngology, the New York Ophthalmological Society, the international societies of ophthalmology and otology, and was formerly president of the Medical Society of the County of New York.

James Wallace Van Dusen ♂ Lieutenant-Colonel, U. S. Army, Fort Benning, Ga.; University of Michigan Medical School, Ann Arbor, Mich., 1896; died, May 2, at the Walter Reed General Hospital, Washington, D. C., of ileus paralyticus. Dr. Van Dusen was born in Ohio in 1871. He entered the regular army as assistant surgeon, July 15, 1901, and was commissioned lieutenant-colonel, May 15, 1917. During the World War he held the temporary rank of colonel.

Lamme Steele Givens ♂ Cynthiana, Ky.; Medical College of Ohio, Cincinnati, 1887; member of the American Academy of Ophthalmology and Oto-Laryngology; formerly president of the Harrison County Medical Society; at one time county coroner; aged 57; died, May 5, of cerebral hemorrhage.

Wallace E. Newark, Charlotte, Mich.; Toledo Medical College, Toledo, Ohio, 1888; member of the Michigan State Medical Society, and the Radiological Society of North America; formerly proprietor of the Charlotte Sanatorium; aged 62; died, May 5, following a long illness.

Henry Clay Kerrick, Brocton, Ill.; Louisville Medical College, Louisville, Ky., 1887; Rush Medical College, Chicago, 1891; member of the Illinois State Medical Society; aged 62; died, May 11, at the Paris Hospital, Paris, of a stab wound in his chest, self-inflicted.

James H. Taulbee, Lexington, Ky.; Louisville Medical College, Louisville, 1894; member of the Kentucky State Medical Association; served in the M. C., U. S. Army, during the World War; aged 51; died, May 3, of pneumonia, at West Point, N. Y.

Benjamin I. Poland, Danville, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; Atlanta (Ga.) Medical College, 1895; member of the Illinois State Medical Society; on the staff of St. Elizabeth's Hospital, where he died, May 12.

Thomas Edward Bruce, Clinton, Ind.; Vanderbilt University Medical Department, Nashville, Tenn., 1893; aged 60; died, May 15, at Augustana Hospital, Chicago, following an operation for carcinoma of the kidney.

Amanda Helen Miller, Cleveland; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1892; member of the Ohio State Medical Association; aged 61; died, April 28.

Richard Hazlewood Moss, Hodgenville, Ky.; University of Louisville Medical Department, Louisville, 1874; member of the Kentucky State Medical Association; aged 74; died, March 15, of cerebral hemorrhage.

Charles Adam Leathers, Lawrenceburg, Ky.; University of Louisville Medical Department, Louisville, 1882; formerly president of the Ohio State Pharmaceutical Association; aged 63; died, May 7, of tuberculosis.

Charles Andrew Mackey, Truro, Iowa; Barnes Medical College, St. Louis, 1902; member of the Iowa State Medical Society; served in the M. C., U. S. Army, during the World War; aged 55; died, April 28.

Charles Ross Lightfoot, Cloverport, Ky.; St. Louis College of Physicians and Surgeons, St. Louis, 1902; member of the Kentucky State Medical Association; aged 48; died suddenly, May 10, of heart disease.

Royal Hart Gerard, Crawfordsville, Ind.; Medical College of Indiana, Indianapolis, 1899; aged 48; died, May 12, at St. Anthony's Hospital, Terre Haute, of injuries sustained in an elevator accident.

William S. Ogle, Knoxville, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1900; formerly professor of hygiene and orthopedic surgery at his alma mater; aged 59; died, May 8.

William Holland Heron, Washington, D. C.; Howard University School of Medicine, Washington, 1887; Hahnemann Medical College and Hospital of Philadelphia, 1888; aged 56; died, May 12.

Jacob R. Lehman ♂ Mountville, Pa.; Jefferson Medical College of Philadelphia, 1882; formerly president of the Lancaster County Medical Society; aged 68; died, May 9, of heart disease.

Edgar Henry Knittle, Waterloo, Iowa; State University of Iowa College of Medicine, Iowa City, 1897; member of the Iowa State Medical Society; aged 49; died, May 17, of heart disease.

Andrew Jackson Bostater, Montpelier, Ohio; University of Michigan Medical School, Ann Arbor, Mich., 1869; Civil War veteran; formerly a druggist; aged 88; died, April 21, of senility.

Benjamin H. Rogers, San Diego, Calif.; Jefferson Medical College, Philadelphia, 1888; member of the Medical Society of New Jersey; aged 61; died, May 2, following a long illness.

Thomas Sargent Roberts, Chicago; Jefferson Medical College, Philadelphia, 1887; aged 67; died, May 12, at the Cook County Hospital, of heart failure due to an overdose of drugs.

Thomas Anderson Drake, Prairieton, Ind.; Rush Medical College, Chicago, 1890; aged 55; was drowned, May 15, when the automobile in which he was riding plunged into a creek.

Robert Lee Combs, Cooper, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1890; member of the State Medical Association of Texas; aged 58; died, May 6.

James Sylvester Collins, Carlinville, Ill.; Rush Medical College, Chicago, 1880; member of the Illinois State Medical Society; formerly mayor of Carlinville; aged 66; died, May 7.

Andrew Jackson Robinson, Denver; Rush Medical College, Chicago, 1878; formerly on the staff of the Citizens' Hospital, Aspen; aged 76; died, May 10, of paralysis.

Edgar S. Thompson, Wisner, Neb.; Creighton Medical College, Medical Department of the Creighton University, Omaha, 1911; aged 41; died suddenly, April 27.

Salathiel Watts Williams, Gallipolis, Ohio; Miami Medical College, Cincinnati, 1881; member of the Ohio State Medical Association; aged 67; died, May 11.

Paul Charles Rietz ♂ Evansville, Ind.; Rush Medical College, Chicago, 1898; on the staff of the Deaconess Hospital; aged 48; died, May 10, of chronic nephritis.

Frederick Edmister, Detroit; Bellevue Hospital Medical College, New York, 1883; member of the Michigan State Medical Society; aged 61; died, May 12.

William Walter Glenn ♂ Hillsboro, Ohio; Starling Medical College, Columbus, 1879; aged 69; died, May 5, of peritonitis, following an appendectomy.

♂ Indicates "Fellow" of the American Medical Association.

William Le Grand Suggett, Flora, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1884; aged 71; died, April 28, of cerebral hemorrhage.

William H. Wilson, Lenoir, N. C.; Louisville Medical College, Louisville, Ky., 1885; aged 60; died, April 15, at Morgantown, of cerebral hemorrhage.

M. Hubbard Ferguson ⊕ Biddeford, Me.; Dartmouth Medical School, Hanover, N. H., 1880; aged 68; was killed in an automobile accident, in May.

Joseph Benjamin Blouin, St. Francois Montmagny, Que., Canada; Laval University Faculty of Medicine, Quebec, 1872; aged 77; died in March.

Marshall Ney Smith, St. Louis; Bennett College of Eclectic Medicine and Surgery, Chicago, 1881; aged 63; died, May 14, of cerebral hemorrhage.

George W. Graham, Charlotte, N. C.; New York University Medical College, New York, 1870; aged 75; died, May 9, of cerebral hemorrhage.

Silas W. Arrowood, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1888; aged 64; died, April 22, at a local sanatorium.

William L. B. McKelvy, Drumright, Okla.; Memphis Hospital Medical College, Memphis, Tenn., 1889; aged 61; died, May 11, of pneumonia.

Edgar D. Kerr ⊕ Westervelt, Ill.; College of Physicians and Surgeons, Chicago, 1894; aged 57; died suddenly, May 10, of heart disease.

William D. Alford, Murfreesboro, Ark.; American Medical College, St. Louis, 1878; aged 87; died suddenly, May 12, of heart disease.

John Storer Chiles, St. Louis; St. Louis University School of Medicine, St. Louis, 1907; aged 46; died, March 6, of heart disease.

Edward Yarnall Rich ⊕ Hershey, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1901; aged 45; died, May 6.

Charles R. Snell ⊕ Tecumseh, Neb.; John A. Creighton Medical College, Omaha, 1907; aged 49; died, May 7, of pneumonia.

Laura M. Fairchild Plantz, Columbus, Ohio; Penn Medical University, Philadelphia, 1860; aged 94; died, May 24, of senility.

Charles S. Cope, Tacoma, Wash.; Cincinnati College of Medicine and Surgery, Cincinnati, 1875; aged 73; died, April 23.

Thaddeus H. Woodward, Lincoln, Neb.; University of Tennessee College of Medicine, Memphis, 1883; aged 76; died, May 10.

William Kirnan Van Kirk, McKeesport, Pa.; Jefferson Medical College of Philadelphia, 1873; aged 74; died, May 9.

George Langtry Crockett, Rockland, Me.; Boston University School of Medicine, Boston, 1893; aged 53; died, May 20.

Alfred Schirmer, Chicago; University of Erlangen, Germany, 1876; aged 71; died, May 21, of cerebral hemorrhage.

Alvin Francis Story, Natick, Mass.; Boston University School of Medicine, Boston, 1882; aged 61; died, May 4.

Axel Kristmus Olsen ⊕ Ettrick, Wis.; Rush Medical College, Chicago, 1897; aged 57; died, April 8, of influenza.

J. C. Wood, Bardstown, Ky.; Kentucky School of Medicine, Louisville, 1866; aged 88; died, March 6, of senility.

Fred A. Shute, Boulder, Colo.; Texas Medical College and Hospital, Galveston, 1869; aged 79; died, April 20.

R. S. Byers, Trafalgar, Ind.; Medical College of Indiana, Indianapolis, 1880; aged 71; died, April 6.

James Duffield Toy, De Ridder, La.; Rush Medical College, Chicago, 1905; aged 46; died, May 2.

Israel W. Cunkle, Madison, Kan.; Rush Medical College, Chicago, 1869; aged 75; died, April 17.

Elias Wells Kellogg ⊕ Milwaukee; Rush Medical College, Chicago, 1889; aged 64; died, May 20.

Edward J. Hoag, Ridott, Ill.; Rush Medical College, Chicago, 1884; aged 63; died, May 3.

Washington L. Lee, Petal, Miss. (licensed, Mississippi, 1882); aged 71; died, May 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

PROGRESS AND CONSERVATISM IN THERAPEUTICS

A Report of the Committee on Therapeutics of the Council on Pharmacy and Chemistry

The Committee on Therapeutics of the Council on Pharmacy and Chemistry of the American Medical Association prepared the communication which appears below for the purpose of calling to the attention of physicians two books, published by the Council, which are of great value to all who are actively engaged in the practice of medicine.

W. A. PUCKNER, Secretary.

We, the undersigned, constituting the Committee on Therapeutics of the Council on Pharmacy and Chemistry of the American Medical Association desire to call to the attention of physicians the two books "New and Nonofficial Remedies" and "Useful Drugs." For eighteen years the Council has done its utmost to bring before the medical profession the truth concerning the new proprietary medicinal preparations which are being offered to the profession.

In addition to its permanent secretary and the editor of THE JOURNAL of the American Medical Association, the Council consists of a group of clinicians, pharmacologists and chemists appointed by the Board of Trustees of the American Medical Association, because of their individual fitness to investigate the problems of drug therapy. The purpose of the Council is to disseminate the truth in matters pertaining to the use of drugs and thereby improve drug therapy. In this connection it has been operating a chemical laboratory in charge of the permanent secretary and manned by a personnel especially trained in the field of drug analysis. In addition, through its committee on therapeutic research, it has fostered and financed many investigations in the fields of pharmacology and therapy.

While, as stated above, the Council was organized primarily to put a stop to the exploitation of proprietary medicines under false claims and to the use of secret preparations, its activities have broadened until its work may now be characterized as "a propaganda for the rational use of drugs." Evidence of this broader policy is seen in the publication of these two books.

NEW AND NONOFFICIAL REMEDIES

In New and Nonofficial Remedies are listed and described such new preparations as, in the opinion of the Council, give promise of being of more or less value in the practice of medicine and are ethically presented to the medical profession. While many of the preparations described in the book are on trial, and no doubt will ultimately be discontinued or replaced by better products, a considerable proportion of the preparations are of unquestionable value and in the course of time will be found to be permanent and necessary acquisitions to our therapeutic resources.

The acceptance of a preparation for New and Nonofficial Remedies is governed by a set of rules formulated by the Council. The rules require in effect that the quantitative composition of the product be declared; that no undue or grossly exaggerated therapeutic claim be made for it; that the method of exploitation shall not be contrary to the best interests of the public and the medical profession, and that it should possess or give promise of having therapeutic value. Acceptance by the Council carries with it admission to the advertising columns of the Association's Journals, while rejection debars the product from such privileges.

New and Nonofficial Remedies constitutes a ready reference book in which can be found the description of new preparations of an ethical character, their composition, indications and uses and the dosage to be employed. Opinions of the

Council also appear, expressed in the discussion of the various classes of remedies. This opinion should be worthy of consideration since it is based on a thorough study of the drug in question and is expressed with frankness. In cases in which physicians should be put more than usually on guard in the use of a given new article reference is made to any question that impresses itself on the Council in connection with the history or probable outlook for any preparation.

The Council is so constituted that cooperation enables it to investigate the literature as no individual could possibly do. The secretary with the cooperation of the editorial staff of THE JOURNAL assists the individual members by securing the necessary literature, and by references to reports which have been made on proprietary articles in the past. This is important, for these proprietary preparations go through stages of development, and thus a clear estimate of the value of drugs may be found in the book. The book is revised yearly. Those products which fail to live up to expectation or to the claims of the proprietors are omitted, while new ethical preparations meeting the requirements of the Council are added. Therefore the book represents the current opinion of the Council. It is the ambition of the Council that New and Nonofficial Remedies shall become the accepted guide for physicians in the recognition of new remedies.

USEFUL DRUGS

In order to improve the instruction in medical schools in pharmacology and materia medica and to aid the practicing physician in the choice of remedial agents, the Council has selected a list of drugs which is the basis of the book "Useful Drugs," which is now the guide for the selection of drugs for instruction in many medical schools. Many state licensing boards confine their questions in pharmacology, materia medica and therapeutics to the drugs therein listed.

This book, also, undergoes frequent revision, taking into account the recent important advances in pharmacology and therapeutics. The needs of the practicing physician are kept in mind and the book should prove of special value both in the practice of medicine and in the teaching of pharmacology and therapeutics.

"Useful Drugs" and "New and Nonofficial Remedies"¹ together furnish information concerning all drugs, old and new, which are at present essential to, or give promise of value in, the practice of medicine. They have been compiled with a special object in view, namely, to meet the needs of the student and practitioner of today.

Respectfully submitted,

C. W. EDMUNDS, M.D.,
Professor of Materia Medica and
Therapeutics, University of Mich-
igan, Ann Arbor.

JOHN HOWLAND, M.D.,
Professor of Pediatrics, Johns
Hopkins University, Department
of Medicine, Baltimore, Md.

ERNEST E. IRONS, M.D., PH.D.,
Associate Professor of Medicine,
Rush Medical College, Chicago.

W. T. LONGCOPE, A.B., M.D.,
Professor of Medicine, Johns
Hopkins University, Department
of Medicine, Baltimore, Md.

G. W. MCCOY, M.D.,
Director Hygienic Laboratory,
U. S. Public Health Service,
Washington, D. C.

W. W. PALMER, B.S., M.D.,
Bard Professor of Medicine, Col-
lege of Physicians and Surgeons,
Columbia University, New York.

FRANCIS W. PEABODY, M.D.,
Professor of Medicine, Medical
School of Harvard University,
Boston, Mass.

L. G. ROWNTREE, M.D., Sc.D.,
Professor of Medicine, Mayo
Foundation, Rochester.

1. "Useful Drugs" sells for 60 cents; "New and Nonofficial Remedies" for \$1.50. The two books may be had for \$2.00 from the American Medical Association, 535 North Dearborn Street, Chicago.

Value of Reflex Signs in the Neurotic.—In neurotic individuals, and especially in the postoperative neurasthenic, little or no reliance can be placed on the reflex signs. Here, as always in medicine an estimation of the general physical and mental "make-up" of the patient is essential before the utility of symptoms and indirect signs can be assessed, and the psychologic effects of long continued pain or ill health must always be taken into account. Universal hyperesthesia and rigidity are commonly present in these unfortunates, though the rigidity is usually of that intermittent type which can be differentiated readily from the true reflex hypertonus of peritoneal or visceral inflammation.—J. A. Ryle, *Clin. J.* 52:142 (March 21) 1923.

Correspondence

CHAULMOOGRA OIL IN LEPROSY

To the Editor:—So much has been written of the results of the ethyl esters of chaulmoogra oil that I feel that I should report on our experience with the oil itself. We used our first chaulmoogra oil here about fourteen years ago by mouth, but about 1911 we began to use it by intramuscular injections, and have continued to do so since. Several preparations and combinations were used until finally we used the oil with 1 per cent. camphor intramuscularly.

This month (July, 1922) we are discharging ten cases as arrested or probable cures with instructions that the patients return every six months for examination. From all appearance and as far as we can tell they are cured, though time only will tell us whether they are permanently cured.

The method of administration is as follows: Every Saturday afternoon each leper in the Kwangju Leper Home gets an injection of from 3 to 8 c.c. of hot chaulmoogra oil with 1 per cent. camphor. We start on 3 c.c., and in three months reach to from 5 to 8 c.c., according to the size and strength of the patient, or giving them about all they can well bear, the patient himself being the judge. The injection is made into the buttocks and not very deep. We found that occasionally a deep injection becomes infected, and a deep abscess is far worse than a shallow one. Since the lepers have learned to be more careful, we rarely ever get an abscess these days, though in their early days of doing this work they were not so careful and had some trouble. There is no excuse for an abscess.

The oil is heated on a water bath; then enough camphor is added to make 1 per cent. camphor. The camphor should first be macerated, and then added. In cold weather this solidifies, and must be heated and melted before injecting. Just after the injection, the lepers must bathe, and then they are to rest until Monday morning. Usually Monday they are ready to take up their various duties again and suffer no inconvenience. No other treatment is given except as some other condition requires.

The response to treatment is more prompt in the young and in early cases; and, vice versa, elderly persons and very advanced cases are much slower to respond. A boy came with bloated face, maculae, tubercles, and swollen hands and feet, presenting in all a most distressing appearance. In four months under treatment he looked like another person.

We now have seventy-five patients on the ethyl ester with 2 per cent. iodine as a trial, and as this began only six months ago I am not yet able to report results. However, this is the preparation that has given such marked results in Hawaii and made it possible to discharge more than 100 patients on parole.

Some cases that we get are quite advanced; and while these patients improve and have generally good health, they do not seem to be able to throw off the condition entirely as do others. About two thirds of our 500 patients are able soon to take an active part in the daily work about the institution, and this regular work is a great thing in bringing about a cure. To sit and be idle is not good in most diseases, and less good in leprosy. Every leper is given a small patch of garden and required to prepare some of his vegetables. Even though a limb has been lost, he can hobble out and scratch in the dirt, and this is very beneficial.

We find that after a leper has been on treatment a year or so, he can then take the oil in capsules three times a day with very good results. Our men such as masons, brick makers and those doing harder labor, prefer this. I believe that by giving large doses of the chaulmoogra oil we can

get as good results as that with the ethyl esters, though my tests have not been in progress long enough to make a comparison. I am quite sure of this, though, that when we inject 8 c.c. of the plain chaulmoogra oil we get into the body the equivalent of the ethyl esters and every other product there is in the drug. In the making of the esters there is quite a loss, about four fifths being lost; and in this portion there are very likely other things that are of benefit to the leper.

Our experiment for the coming year will be to keep a close record and compare the results of the seventy-five on the ester and the rest of the colony on the other preparation—the oil and camphor.

R. M. WILSON, M.D., Kwangju, Korea.

"MEDICAL EDUCATION; PAST AND PRESENT"

To the Editor:—While agreeing with most of the views expressed by Dr. Witherspoon (*THE JOURNAL*, April 28, p. 1191), I think some comment should be made in regard to his third objection to the employment of full-time teachers:

There is no place in the actual practice of medicine for sustained medical research. It is condemned by law, and, according to all moral standards, is a reprehensible practice. No man employs a physician to advance science at his expense and risk. No man would knowingly tolerate it. If a student is taught to do research work on his patients in the university hospital and is complimented on something great or small in connection with it, he might become convinced that that was a proper or permissible course—convinced, in a word, that the patient is only a sort of advanced laboratory animal. Could he then reasonably be expected to disgorge his mind of all these impressions and become an honest servant of his patrons on graduation? Would he not feel justified in trying out his new ideas on them?

I doubt whether Dr. Witherspoon meant it quite so strongly as that, especially as he goes on to argue that, to be a good teacher of medicine, a man must learn something from years of private practice which he cannot get from books. Unfortunately, as the statement stands, it sounds like a severe indictment of the medical profession; and it must come as a shock and a discouragement to those who are doing valuable research work in the clinic and in the office.

We will all agree that no one should experiment on any human being without his consent or to his detriment; and I do not believe that there are many men in the profession so callous, or so unmindful of the legal consequences, as to do such a thing. We can, however, think of many types of research work which a thoughtful practitioner can do in the clinic, the hospital or the office without causing the slightest inconvenience or injustice to his patients.

It is really unfortunate that so many men leave college with the idea that medical research can be done only in laboratories with microscopes, test tubes and guinea-pigs. That is not true. Every man who has been born with a curiosity about things, and who will carry it with him into old age, past all those explanations that do not really explain; every man who will study disease as it appears in his patients and not only in his books; every man who will keep records of histories, findings and the after-results of treatment, and who will later analyze those data critically and open-mindedly, can do research of incalculable value to humanity. As classical examples of such work I may mention that of Sir James Mackenzie in the field of heart disease, or that of Beaumont on the physiology of the stomach. Peering into the future, I venture to say that as we recover somewhat from our present preoccupation over bacteria and their effects, we shall begin to study also the individual and familial peculiarities of the soil in which they grow. We shall learn more about the diseases that are due to the contractor's having put in poor materials; we shall study the course of the disease in individuals from childhood till death, and shall compare the manifestations of a "diathesis" in different members of the same family. Such work will be done best by the family physician in small communities where people do not

scatter. Other physicians will greatly advance our knowledge by the use of modern statistical methods; others will be trying out new drugs, such as insulin and the new modifications of arsphenamin. But why elaborate? I think my point is made.

WALTER C. ALVAREZ, M.D., San Francisco.

SUCCESSFUL RESULTS OF INTRACARDIAC EPINEPHRIN INJECTION

To the Editor:—At a confinement in the Sacred Heart Hospital to which I was called in consultation by Dr. J. M. Casey, May 13, I delivered the patient of twins. The first infant fared normally, but the other did not breathe, and after ten minutes of futile effort on our part, was believed dead by a sister, who baptized it. Thereupon I injected 2 minims of $\frac{1}{4000}$ epinephrin solution into the heart. Within fifteen seconds the infant began to breathe, and in five minutes was lying beside its brother, both twins crying lustily. When I saw them next day, they were in perfect condition.

D. L. NEWTON, M.D., Fort Madison, Iowa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF IVY POISONING WITH RHUS TOXICODENDRON AND RHUS VENENATA

To the Editor:—What is the accepted teaching about the use of the tincture of rhus toxicodendron or rhus venenata in the treatment of ivy poisoning? What is the dosage? Where can these drugs be obtained?

H. M.

ANSWER.—Schamberg reported in *THE JOURNAL* (Oct. 18, 1919, p. 1213) that the administration internally of tincture of rhus toxicodendron in small but increasing doses will confer temporary immunity to the poison of poison ivy, and that such doses are useful in the treatment of rhus dermatitis. His paper was discussed in *THE JOURNAL*, Nov. 1, 1919, p. 1382. The tincture of rhus toxicodendron may be obtained from homeopathic pharmacies, such as that of Boericke and Tafel of Philadelphia, and from manufacturers of eclectic pharmaceuticals, such as Lloyd Brothers of Cincinnati. The dosage should begin with a few minims and gradually be increased to 60 minims (3.75 c.c.) a day. The treatment is discussed by Strickler in *THE JOURNAL*, this issue, p. 1588.

SPINAL PUNCTURE TECHNIC

To the Editor:—It is said that spinal puncture should never be done with the patient in a sitting posture. Under Queries and Minor Notes, will you kindly tell why not? Please omit name.

—, M.D., Calif.

ANSWER.—The principal reason for the recommendation against making a lumbar puncture with the patient in a sitting position is the increased danger of sudden movements of the patient, that may result in breaking the needle. When the patient lies on the side, he is more readily controlled by assistants and has not the same leverage for straightening his back that he has when seated. Fainting or dizziness will have little effect on the person lying on his side, but will cause swaying and possible alteration in the curve of the back if he is seated.

DOSAGE OF SEROBACTERIN

To the Editor:—Should a fourth dose of serobacterin be given if, in administering the three dose prophylactic typhoid treatment, the second dose is partially lost because of back leakage in the syringe, the resultant reaction from the second dose being no greater than the first, if as great, or will immunity be fairly probable as it is? Treatment is given not against present but possible future exposure.

ELLA MARX, M.D., Toledo, Ohio.

ANSWER.—It is quite probable that immunity would be produced by the three doses, even if a part of the second dose was lost.

Medical Education, Registration and
Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chrm., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, July 3. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, July 9-12. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.

COLORADO: Denver, July 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 10. Sec. Eclectic Board, Dr. James E. Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT: Hartford, July 10-11. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford.

DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.

DISTRICT OF COLUMBIA: Washington, July 10-12. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.

FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.

GEORGIA: Atlanta, June 6-8. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.

INDIANA: Indianapolis, July 10. Sec., Dr. Wm. T. Gott, Crawfordsville.

KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.

KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.

LOUISIANA: New Orleans, June 7-9. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MAINE: Augusta, July 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MARYLAND: Baltimore, June 19-22. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

MARYLAND: Baltimore, June 12-13. Sec. Homeo. Bd., Dr. E. H. Wilsey, Chesapeake City.

MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, June 5-7. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.

MISSISSIPPI: Jackson, June 13-14. Sec., Dr. W. S. Leathers, University.

MISSOURI: St. Louis, June 6-8. Sec., Dr. Cortez F. Enloe, Jefferson City.

NEBRASKA: Lincoln, June 6-8. Sec., Mr. H. H. Antles, State House, Lincoln.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, June 18. Sec., Dr. R. E. McBride, Las Cruces.

NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.

NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OHIO: Columbus, June 5-8. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

OKLAHOMA: Oklahoma City, July 10-11. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, July 3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Preliminary Examiner, Mr. C. D. Koch, 422 Perry Bldg., Philadelphia.

RHODE ISLAND: Providence, July 5-6. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Memphis, Nashville and Knoxville, June 15-16. Sec., Dr. Alfred B. DeLoach, 1230 Exchange Bldg., Memphis.

TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg.

UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.

VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.

WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.

WEST VIRGINIA: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

Ohio January Report

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports that 16 candidates were licensed by reciprocity at the meeting held at Columbus, Jan. 2, 1923. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University	(1921)		Illinois
Rush Medical College	(1918)		Illinois
University of Illinois	(1918)		Illinois
Hospital College of Medicine, Louisville	(1897)		Kentucky
College of Physicians and Surgeons, Baltimore	(1899)		Maryland
(1906) Pennsylvania			
University of Minnesota Medical School	(1916)		Minnesota
Meharry Medical College	(1894)		Missouri
(1917) Mississippi, (1921) Louisiana			

St. Louis University	(1911)	Illinois
Eclectic Medical Institute, Cincinnati	(1895)	Minnesota
Jefferson Medical College of Philadelphia	(1902)	Penna.
Temple University	(1917)	W. Virginia
University of Pennsylvania	(1916)	Minnesota
Medical College of Virginia	(1908)	Virginia

Oklahoma January Examination

Dr. James M. Byrum, secretary, Oklahoma Board of Medical Examiners, reports the written examination held at Oklahoma City, Jan. 9-10, 1923. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. Eight candidates were licensed by reciprocity, 1 candidate was granted a reregistration license, and 3 received duplicate licenses. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Barnes Medical College	(1900)		1
University of Nashville	(1907)		1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College	(1912)		Texas
Atlanta College of Physicians and Surgeons	(1910)		Georgia
Eclectic Medical University of Kansas	(1908)		Kansas
Tulane University	(1915)		Louisiana
George Washington University	(1908)		Sask'wan
John A. Creighton Medical College	(1911)		Washington
Memphis Hospital Medical College	(1883), (1912)		Arkansas

New Mexico January Report

Dr. R. E. McBride, secretary, New Mexico State Board of Medical Examiners, reports that 9 candidates were licensed on diploma and 1 candidate received a license by reciprocity at the meeting held at Santa Fe, Jan. 8-9, 1923. The following colleges were represented:

College	LICENSED ON DIPLOMA	Year Grad.	Number Licensed
College of Medical Evangelists	(1920)		1
Georgetown University	(1903)		1
George Washington University	(1920)		1
University of Georgia	(1919)		1
Tufts College Medical School	(1918)		1
John A. Creighton Medical College	(1917)		1
Jefferson Medical College of Philadelphia	(1899)		1
Starling Medical College	(1890)		1
University of Vermont	(1897)		1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Louisville	(1893)		Oklahoma

Michigan Reciprocity Report

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration in Medicine, reports that fourteen candidates were licensed by reciprocity from Jan. 2 to March 5, 1923. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1912)		Illinois
Northwestern University	(1920), (1921)		Illinois
University of Illinois	(1915)		Illinois
University of Louisville	(1905)		Vermont, (1911) Kentucky
Johns Hopkins University	(1901)		Missouri, (1911) Maryland
Columbia University	(1916)		Wisconsin
Long Island College of Medicine	(1906)		New York
Ohio State University College of Medicine	(1915)		Ohio
University of Nashville	(1899)		Tennessee
Medical College of Virginia	(1921)		Virginia
Marquette University	(1922)		Wisconsin

Iowa January Report

Dr. Rodney P. Fagen, secretary, Iowa State Board of Medical Examiners, reports that 11 candidates were licensed by reciprocity at the meeting held at Des Moines, Jan. 18, 1923. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1902)		Wisconsin, (1919) Minnesota
(1922, 2) Illinois			
University of Minnesota Medical School	(1922)		Minnesota
St. Louis University School of Medicine	(1916)		Missouri
(1921) Illinois			
John A. Creighton Medical College	(1921)		Nebraska
University of Nebraska College of Medicine	(1922)		Nebraska
University of Buffalo	(1889)		California
Vanderbilt University	(1914)		Tennessee

Book Notices

HISTORY OF THE PSYCHOPATHIC HOSPITAL, BOSTON, MASSACHUSETTS. By L. Vernon Briggs, M.D., and Collaborators. Cloth. Price, \$3. Pp. 222, with illustrations. Boston: Old Corner Book Store, 1922.

The history of the Boston Psychopathic Hospital is of the greatest interest, as it marks almost a new departure in American psychiatry. This book by Dr. Briggs, to whose energy and persistence the final successful accomplishment was largely due, is therefore well worth reading; but it is unfortunate that Dr. Briggs has allowed personal feelings to enter so largely into the story, especially in regard to the conflict between himself and the state board of insanity, which appears to have been largely over methods of procedure. The first part of the book gives an outline of the history of the care of the insane in Massachusetts; and in the second part is an account of the organization for administration and of the work that has been accomplished during the first ten years of the existence of the hospital, written by past or present officers of the institution. It is a record well worth while and a fitting tribute to Dr. E. E. Southard, the first director, to whose memory the book is dedicated. The difficulties that were encountered and the solutions found will prove of the greatest value to other states in planning similar ventures, and the accomplishments should go far to demonstrate the vital importance of psychopathic hospitals to a community in meeting one of its greatest problems.

BRAIN ABSCESS: ITS SURGICAL PATHOLOGY AND OPERATIVE TECHNIC. Wells P. Eagleton, M.D. Cloth. Price, \$7.00. Pp. 297, with 40 illustrations. New York: The Macmillan Company, 1922.

"If all were frankly to record their thoughts and experiences, even of one day, humanity would be advanced centuries." With the memory of this teaching of his father, Dr. Eagleton has here set forth a considerable experience in operating on conditions within the skull, the results of original experiments on animals, and careful postmortem observations of cases in which death resulted from intracranial lesions. The author is a firm advocate of the technic in operating for intracranial suppuration elaborated by Professor Harvey Cushing. The greatest emphasis is laid on the pathologic and mechanical changes brought about by the conditions discussed.

As has been said, the work is a record of fifty cases of adjacent brain abscess which have been treated by Dr. Eagleton. Many of the case reports have appeared in periodical literature but are here assembled as a unit, and additional material and new cases have been added.

The work begins with a philosophical consideration of the attitude of the surgeon who is to undertake this type of surgery, "a peculiar mental attitude which will render him sensitive and attentive to the minute details of diagnosis and surgical procedure." The importance of adequate history taking and some elementary points in general technic are carefully stressed. Classification is made from the point of view of the pathologist and of the surgeon. In each instance significant points are emphasized by the citation of illustrative cases.

The author next considers brain abscess in relation to the part of the brain concerned: middle fossa, metastatic abscess, cerebellar abscess, frontal lobe abscess, etc. The importance of detailed consideration is obvious from a careful study of any one of these sections. As is well known, these cases are not frequent in the practice of the average surgeon. As Dr. Eagleton shows, the route of infection, the attempts of the tissues to resist the pathologic changes and the amount of tissue involved are important as guiding the operative procedure. In fact, a special chapter is devoted to the protective mechanism by which the brain resists infection. Several chapters follow in which detailed consideration is given to the diagnosis of brain lesions, and to complications and results after proper operative procedure. In several appendixes are a guide for detailed neurologic examination and an exhaustive record of the literature of the subject. Complete indexes to authors and subjects round out the book.

In considering Dr. Eagleton's special treatment of the subject, the method of dealing with intracerebral abscesses without surface evidence of the infection may be emphasized; the prime object here is to avoid traumatism to the brain and the spread of infection to the meninges. The recommendation to establish a track through which it is safe to eradicate the abscess, comparable to that which nature establishes as a means of evacuating such an abscess, is well worthy of thought and consideration. Practical difficulties in actual experience are also frankly recorded and the lessons to be learned therefrom discussed. The book is well illustrated and the author has been at great pains to avail himself of the experience of others and to credit them properly for it. Among some minor errors which may be corrected in future editions is the inclusion of the Babinski reflex and the Kernig sign under the head of deep reflexes, and some slight variation in the relation of circulation and blood supply to the brain to the formation of abscess. Surgeons who may be called on in emergency to meet the exceedingly difficult problems associated with lesions of the brain will find in this book an excellent collection of past work and the records of an extensive first hand experience.

PRÉCIS DE PARASITOLOGIE. Par E. Brumpt, Professeur à la Faculté de Médecine de Paris. Third edition. Cloth. Price, 50 francs. Pp. 1,215, with 741 illustrations. Paris: Masson et Cie, 1922.

The appearance of a third edition of this well-known work will be greeted with approval by those who are familiar with the value of the Collection de Précis Médicaux of which it forms a number, and especially by such as have known and used the earlier editions of the work. In one sense, the book hardly deserves to be called a compendium, for it covers more than 1,200 pages, and with its numerous illustrations presents one of the best surveys of the field of parasitology available. A review of the text shows significant additions to the older editions consonant with the progress made in parasitology since 1913. The most striking are naturally among the protozoa, in which the spirochetes, the hemogregarines and Leishmania have been given special consideration in the light of important recent researches. The work on these items is generally up to date, so that one is surprised to find the interesting form from a nasal polyp, generally known as *Rhinosporidium*, still retained among the protozoa in the order designated *Haplosporidia*. Several recent studies on this group seem to show, beyond question, its relationship to the lower plants and its lack of affinities with the protozoa. It would be wrong, even in a brief review, to leave a possible impression that the only elaboration of the older edition was to be found within the protozoa. While the most far reaching changes were made in that group because of the remarkable discoveries of recent years, yet a considerable number of new trematodes have been added to the list of human parasites, and are each of them duly considered in their appropriate place. In the cestodes, the development of the fish tapeworm, and, among the nematodes, the life history of the ascarids and of the trichocephalids is presented in accordance with important recent investigations. Among the arthropods, the agency of the blood-sucking ticks and insects in previously unsuspected relations as transmitters of disease has been given adequate attention. Finally, it is perhaps worthy of note that this work embraces not only the animal parasites but also, with the exception of the bacteria, the plant parasites and the diseases that they produce. In the section devoted to these organisms, the author has given a better review of the group than is readily available anywhere else. On the whole, the work may be highly commended for its clarity of presentation, so characteristic of French literature, and especially for the admirable illustrations. They are numerous, and more than 300 of them absolutely new. One rejoices at the omission of some time-honored and inadequate sketches that have graced the pages of so many manuals. The original illustrations are so good that one wishes the author could be persuaded in later reprints to go even farther in the direction of replacing sketchy and distinctly misleading illustrations that are all too general in this field. The publishers are to be congratulated on the printing and the paper, which has permitted them to present a volume of this size in a form that is both convenient and attractive.

Medicolegal

Use of Name Other Than Own—Board and Agent

(*Berry v. Alderson et al., Board of Medical Examiners (Calif.),*
211 Pac. R. 836)

The District Court of Appeal of California, First District, Division 1, in affirming a judgment that affirmed the action of the board of medical examiners in revoking petitioner Berry's license to practice medicine, says that he was charged with having violated the provision of the medical practice act which authorizes the revocation of a license for unprofessional conduct when the holder of the license uses in any sign or advertisement in connection with his practice any fictitious name, or any name other than his own. There was evidence that on a certain date a representative of a medicine company and the petitioner gave a free open-air show, part of which was a lecture by the petitioner on some medical subject; that on the platform there was a large sign which read "K. B. Bloodless Surgeons"; and that the performers distributed cards on which was printed: "This card entitles the holder to one free consultation and examination by the physicians and surgeons of the K. B. Medicine Co. Not good after ——. Corner P and Merced streets." The location indicated was the place of residence of the representative of the company and the petitioner, the latter occupying one of the rooms as an office or consultation room. On this building was also exhibited the sign "K. B. Bloodless Surgeons," but on the window and the door of the petitioner's consultation room appeared only his name. The profit, if any, to be derived by the petitioner from this enterprise was to come from fees received for medical treatment given by him to persons coming to his office, although, as stated on the cards distributed, the first consultation was gratuitous. The court thinks that the evidence showed that the petitioner did use in connection with his practice, in an advertisement thereof, the designation or name "K. B. Bloodless Surgeons," a name other than his own, bringing him within the provisions of the medical practice act relating to unprofessional conduct.

It was contended that the use by a physician of a name other than his own referred to in the statute must be of such a nature and under such circumstances as to amount to a fraud on the public—must be a fraudulent concealment of identity; otherwise this provision of the law is too vague to be given any effect. But this construction the court thinks is entirely too narrow. This provision is aimed at conduct much less reprehensible than fraudulent misrepresentation. The view of the court is that the legislature intended that a person to whom the privilege has been granted of practicing medicine and representing himself to the world as qualified and worthy of the confidence of the sick should, when offering his services by advertisement or announcement, do so under his own name. This simple requirement, so easily complied with, was not aimed particularly at the person who is willing to incur the odium of actual fraud, but was designed to offer a much wider protection to the public by assuring to it a reasonable certainty of knowing in every case precisely with whom it is dealing. The importance of the relation of physician and patient, and the very serious consequences which may follow unskilful or negligent treatment, render such openness and candor particularly desirable. That the provision of the law in question is neither vague nor indefinite is obvious.

Another contention was that because the charge against the petitioner was filed by a special agent appointed by the board, who also appeared as a witness, the board was at once prosecutor and judge; that the hearing was therefore a mere formality, and the result a foregone conclusion, in violation of the provision of the federal constitution requiring due process of law. But the court does not think that provision was violated by reason of the proceeding for the revocation of the petitioner's license having been initiated by an agent of the board. No direct or immediate interest on the part of the board could be predicated on such fact, nor

could any fair inference be drawn from it that the board in its hearing of the charges was biased against the accused thereby. The medical practice act provides for the appointment of such agent, and it was in the discharge of his duties that he filed the charges. Under these circumstances, the petitioner's contention appears to have little weight.

Hearing denied by the Supreme Court of California.

Two Decisions Regarding Operations for Hernia

(*Houston Electric Company v. Schmidt (Texas),* 244 S. W. R. 1110.
Sun Coal Company v. Wilson (Tenn.), 245 S. W. R. 547)

The Court of Civil Appeals of Texas, in affirming a judgment in favor of Mary Schmidt for \$10,000 damages for a double inguinal hernia and spinal trouble that were caused by a collision of one of the defendant electric company's cars with an automobile in which she was riding, says that she was 4 years old at the time of the accident, which accident was attributed to the defendant's negligence. The defendant contended that she should have submitted to an operation for the hernia; but the court does not think that the defendant's position was well taken. The rule is well settled that a person injured is required to exercise reasonable prudence to keep down the damage caused by the acts of the wrongdoer, but no person is required to risk his life on the operating table for any such purpose. Furthermore, as a matter of law, one who has been injured by the negligence of another is not bound to undergo a serious and critical operation which would necessarily be attended with some risk of failure and of death, but must be permitted to exercise the liberty of choice in the matter, and his refusal to submit to the operation, although under the evidence it would probably lessen the effects of the injury, cannot be considered in mitigation of the damages recovered therefor. The test is: Would a person of ordinary prudence, under all the circumstances, have done so, and this is a question for the jury. The plaintiff in this case was suffering from a double inguinal hernia. Several physicians testified that an operation for such a hernia is a major operation, and dangerous, involving the risk of life. A physician who was a witness for the defendant said that a normal man would shrink from such an operation. The question was submitted to the jury whether, under all the circumstances, an ordinarily prudent person would have submitted to an operation, and the jury answered, "No." The court thinks that the evidence supported this finding.

The Supreme Court of Tennessee, on the other hand, reduces a decree which allowed claimant Wilson \$4.73 a week for 300 weeks on account of his having, while in the employ of the Sun Coal Company, received an injury which produced hernia, the reduction being to \$4.73 a week for thirteen weeks, or the period from the date of his injury to the time he refused to be operated on. The court says that the evidence showed that a person so injured can never do efficient work; that the injury will likely become greater as time passes; that the earning capacity of the claimant had been reduced one third; that the only cure for a hernia is a surgical operation; that it is not a serious operation attended with unusual danger or pain, and can be successfully performed under a local anesthetic; that such an operation usually restores a man to his former earning capacity; that, when performed by skilled surgeons, virtually all such operations are successful; that the claimant in this case was physically able to undergo the operation, and that an operation was recommended by the several physicians who examined him. Under these facts, the court is of the opinion that the employer was within its right in demanding that the claimant submit to the operation. Under the undisputed evidence, the court is impressed with the idea that any reasonable man, under such circumstances, would have submitted to an operation. The workmen's compensation act of Tennessee is broad, and provides that the employer shall furnish medical and surgical treatment for thirty days following the service of notice, and that he may furnish it thereafter, which the employee must receive. However, the court does not wish to be understood as holding that, under all circumstances, a claimant should submit to an operation when so requested by the employer.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29.
Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
American Orthopedic Association, Rochester, N. Y., June 7-9. Dr. DeForrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.
American Psychiatric Association, Detroit, June 19-22. Dr. C. Floyd Haviland, Drawer 16, Capitol Station, Albany, New York, Secretary.
American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.
American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.
Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
California, Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.
Maine Medical Association, Houlton, June 5-7. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.
Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
Montana, Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.
New Jersey, Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.
New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.
Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.
Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.
Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 7. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
Southern Minnesota Medical Association, Faribault, June 11. Dr. H. T. McGuigan, Redwing, Secretary.
Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.
West Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.
Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.
Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., April 30, 1923

The President, DR. ELLIOTT P. JOSLIN, Boston, in the Chair

Clinical Observations on Insulin Hypoglycemia and the Carbohydrate Equivalent of Insulin in Man

DRS. WALTER R. CAMPBELL and A. A. FLETCHER, Toronto: When normal, nondiabetic and diabetic persons are placed on a nonnutrient diet and given a sufficient amount of insulin, there is a marked tendency, whatever the percentage of initial blood sugar may be, for the blood sugar to fall to a barrier level which lies in the range of normal blood sugar percentage. This is a protective mechanism. With considerable excess of insulin, the blood sugar becomes unduly depressed and gives rise to the symptom-complex of hypoglycemia. Various substances relieve this condition. In order of decreasing efficiency these are: glucose, maltose, galactose, lactose, sucrose, levulose and glycerin. Starches may also be used. Epinephrin is rapidly, but temporarily, effective. Raffinose, rhamnose and nonnutrient substances are not effective. The carbohydrate equivalent of insulin is the number of grams of carbohydrate properly metabolized per unit of insulin, and is a measure of its therapeutic efficiency. Units from different batches of insulin give

approximately the same carbohydrate equivalent in the same person. In suitable cases this lies between 2 and 2.5 gm. per unit of insulin. Considerable differences in carbohydrate equivalent occur in different patients, and are associated with various disturbing factors.

The Use of Insulin in Diabetes

DRS. D. M. COWIE and J. P. PARSONS, Ann Arbor, Mich.: Clinical observations seem to show that the person with so-called mild diabetes needs insulin as much as the person with severe diabetes, and that the condition is much more easily controlled and may possibly be overcome if treatment is instituted early enough. It is too early to say that there is actual evidence that in the average case of diabetes longevity can be increased by insulin. On the other hand, results thus far obtained by insulin treatment almost compel us to expect that the length of life will be increased greatly, particularly if beginning cases are carefully watched, and if skilful treatment with insulin is instituted. It is a mistake to be content with keeping a patient sugar free on a carbohydrate intake that is insufficient to overcome his natural, normal cravings and to keep his weight below the minimal normal weight necessary to enable him to carry on his daily duties with comfort when, perhaps, even a small amount of insulin daily will accomplish this. The old methods secure certain beneficial results by keeping a man's nutritive processes at the lowest possible level by forcing on him food which, perhaps not in a direct way but in a roundabout way, must ultimately be utilized by his diseased pancreas; thus his improvement is only apparent, not real. Our observations lead us to believe that there is never a time when the diabetic process is checked by these methods or when the curve of tolerance deviates from the line that leads to fatal coma within a well known and narrow space of years. Insulin seems to offer a means of at least staying an advancing process, of the true nature of which we are still ignorant. Observations on the symptomatology developing during the stage of hypoglycemia, which we prefer to call hyperinsulemia, because it seems to us that there is more than hypoglycemia in this condition, lead us to believe that this and many other phenomena are the result of this condition about which we shall know more as investigations continue. The symptoms of hyperinsulemia seem to differ in different subjects. Some seem to react more sensitively than others. Some will consume large amounts of glucose without its "spilling over" in the urine, or without spilling for many hours, while others spill on very much smaller amounts. It seems that little danger can come from the administration of insulin to babies with diabetes, because the usual method of spacing feedings can easily be taken advantage of to insure sufficient carbohydrate coming into the blood stream at a time when hyperinsulemia might otherwise develop. In children no longer bottle fed, danger might very easily arise because of the inability of the child to announce developing symptoms. However, averting danger in such cases is only a matter of careful management and meal spacing which will insure a carbohydrate income at these times. The patient should not be allowed to pass from under control until the lowest level of insulin intake is established.

The beneficial effect of insulin on coma is marked and quite rapid. Infections, such as boils, infected eczema, impetigo, infected wounds, contagious diseases, such as chickenpox, and respiratory infections occurring in the course of diabetes, are overcome more rapidly and without apparent harmful effects by insulin. Insulin intake should be increased at these times. The evil effects of surgery and anesthesia in cases of diabetes we believe can be overcome completely by proper administration of insulin. Any evil effects that may occur should be attributed to our lack of knowledge of the proper amount to administer, which will be overcome in the course of time, as our knowledge continues to accumulate. Insulin induces complete anesthesia when the stage of marked hyperinsulemia is reached. This state can be induced in nondiabetic persons almost as readily as in diabetic patients without untoward results.

The use of insulin will enable us greatly to simplify the diet of the patient with diabetes. Enough carbohydrate can

always be ingested and utilized to supply the normal carbohydrate demand for the complete and proper metabolism of the other food principles desired by the patient, provided, of course, that this demand is not excessive. Our experience has been that patients frequently ask whether it is necessary for them to eat all of the diet prescribed. It will, therefore, only be necessary to teach the patient how to select his quota of carbohydrate foods. We have observed in a number of patients studied thus far a demand for a large amount of insulin to cover a given amount of carbohydrate in the beginning of treatment, and a gradually lessening demand for insulin as time goes on. For example, a man required in the beginning of his treatment 60 units of insulin a day to metabolize 70 gm. of carbohydrate. At present he metabolizes 85 gm. of carbohydrate on 2 units of insulin a day, 1 unit before breakfast, and 1 unit before supper. This is almost an insignificant amount: in quantity, only 0.2 c.c. We are inclined to interpret this as the reaction of an increased tolerance on the part of the patient. In a case of renal glycosuria, insulin had no effect either in lowering the already low blood sugar perceptibly or in altering the glycosuria. Therefore, no deleterious effect resulted. If insulin were pushed it would probably react the same as it does in a normal person. At first we feared that danger might come from the use of insulin in such a case. While our observation negates this fear, it supports the general feeling that no diabetic should be given routine insulin treatment before a careful study of the blood sugar content is made by a reliable method. Insulin has changed the mental attitude of patients with diabetes from one of melancholy and depression to one of cheerfulness, happiness and satisfaction. If insulin will save a man in coma from death, what may it do for a man in the early stages of diabetes? Should this not be the most important question to settle? This being the case, all diabetic patients should receive insulin treatment.

The Excretion of Organic Acids in the Urine of Patients with Diabetes

DRS. REGINALD FITZ, A. V. BOCK, M. P. STARR and HENRY FIELD, JR., Boston: Isolated cases of fatal diabetic coma have been reported in which death seemed to be caused by acidosis but without ketosis. Van Slyke and Palmer reported a case of diabetes in which, as the excretion of organic acids increased, the fraction not accounted for by the acetone bodies also increased. In a case of diabetic coma in which insulin was administered, we observed that while the concentration of acetone bodies and sugar in the blood diminished rapidly, yet acidosis, as estimated by the alkali reserve, did not diminish proportionately. These facts led us to compare the excretion of organic acids and of acetone bodies in a series of cases of diabetes, and to look for other acids than the ketones as sometimes playing a part in diabetic acidosis. In most instances the increased organic acid excretion observed was closely paralleled by the excretion of acetone bodies. In one instance, however, severe acidosis, as measured by the blood carbon dioxide, persisted in the presence of a urine that was acetone free, and this urine contained a large amount of unidentified organic acid. In most cases of diabetes, the quantitative excretion of acetone bodies in the urine can be estimated with sufficient accuracy for ordinary clinical work by the very simple method of Van Slyke and Palmer. Alkali therapy for diabetic acidosis may be required urgently in those cases in which the acidosis is due to other acids than the ketones.

Relation Between the Fatty Acid Glucose Ration and the Excretion of the Acetone Bodies in Diabetes

DR. EDWARD H. MASON, Montreal, and DRS. HENRY B. RICHARDSON and WILLIAM S. LADD, New York: By means of the respiration calorimeter, we determined the quantities of protein, fat and carbohydrate oxidized by diabetic patients at rest. These data were used to compute the fatty acid glucose ration, using the formula of Woodyatt. A close parallelism was found to exist between this ratio and the threshold of excretion of the acetone bodies. Ketosis was defined as the elimination in the urine per twenty-four hours of 1 gm. of acetone bodies expressed as acetone. At the

threshold of ketosis, the ratio was about 1.5, the level at which, in theory, one molecule of glucose is oxidized for every molecule of keto-acid present. Diabetic patients can often take, without ketosis, diets containing a much larger proportion of fat than this ratio would allow. This is because a high ratio in the diet is often accompanied by a much lower one in the foodstuffs oxidized. The undernourished patient with diabetes tends to draw on his own tissues for extra amounts of protein and carbohydrate, and to store a good deal of the fat that he eats. Safety in the use of high fat diets depends on the patient's having an endogenous supply of utilizable carbohydrate, and on his being able to store fat. It is evident that these factors cannot be predetermined, and that close observation of the patient is required when he is taking a high fat diet. The fall in ketosis often observed in fasting patients with diabetes results from a change in the proportion of the foodstuffs oxidized, such that the fatty acid glucose ratio is diminished. The constancy of the relation mentioned is evidence that the quotient is a true measure of the relative quantities of foodstuffs oxidized.

Ketogenic-Antiketogenic Balance in Diabetes and the Therapeutic Use of Glycerol

DRS. WILLIAM S. McCANN and R. R. HANNON, Baltimore: Calculations of the ketogenic-antiketogenic balance were based on daily estimates of the foodstuffs actually metabolized by diabetic patients. These estimates were made as follows:

1. Basal heat production plus 10% = requirement at rest in bed.
2. Urine N gm. $\times 6.25$ = protein gm. metabolized (P).
3. Carbohydrate utilized = carbohydrate intake minus sugar of urine (C).
4. Fat metabolized, gm. = $\frac{\text{total heat produced} - 4.1 (P + C)}{9.3}$
5. Woodyatt's factors for fatty acid and glucose.
6. Shaffer's factors for molecular amounts of ketogens and anti-ketogens.

There is a parallelism between FA:G ratios and acetone body excretion in urine on corresponding days in diabetic patients. Ketonuria disappears generally when $FA/G = 1.5$, or $K/A = 1$, but this is not always true.

Tables are given showing the ratios of $K':A.K'$ = estimated millimols of ketogens completely oxidized. A = estimated antiketogens utilized. During periods of excessive ketonuria, the ratios vary from 0.9 to 2.8.

Glycerin, gram for gram, is as antiketogenic as glucose. Glycerin is not quantitatively converted into sugar (about 40 per cent.). In severe cases of acidosis, the maximum antiketogenic effect can be obtained from glycerin with less hyperglycemic and glycosuric effects than an equivalent weight of glucose or other carbohydrate. On a diet of 40 per cent. cream and glycerol, recovery occurred though the carbon dioxide combining power had been only 12 per cent. by volume.

Action of Insulin in the Utilization of Sugar in the Body

DRS. RUSSELL M. WILDER and H. D. KITCHEN, Rochester, Minn.: Experiments have been designed to throw light on the rapidity and effectiveness of the utilization of different sugars with varying concentrations of antidiabetic hormone in diabetic patients; *d*-glucose, *d*-fructose, *d*-galactose, *d*-mannose and glycogen have thus far been investigated. The carbohydrate has been fed by mouth; in some experiments insulin has been simultaneously injected subcutaneously. The patient has in each case been prepared by a preliminary standard regimen so that the effects of the ingested carbohydrate on the blood sugar, on the urine, on the heat production and on the respiratory quotient could be compared with a common standard established with glucose. With antidiabetic hormone known to be present, that is, in mild cases of diabetes or cases of diabetes in which insulin is injected, ingested fructose gives evidence from its effect on the blood sugar and on the urine, but especially from its effect on the respiratory quotient, that it is utilized better and more rapidly than glucose. Under such circumstances, glucose often causes an initial drop in the respiratory quotient, and the rise of the respiratory quotient which follows is always appreciably delayed as compared with events fol-

owing the ingestion of fructose. Under similar conditions, galactose gives evidence of better utilization than glucose, is judged from its effect on blood sugar and urine, and its action resembles that of fructose, as judged by the behavior of the respiratory quotient. Mannose and glycogen behave like glucose.

When the supply of the antidiabetic hormone is much reduced, the effect of glucose on the respiratory quotient may be inconspicuous while that of fructose is still appreciable. The more severe the diabetes, that is, presumably, the less the supply of antidiabetic hormone, the less appreciable is the effect of both glucose and fructose on the respiratory quotient. From this it appears probable that fructose, as well as glucose, is dependent on the antidiabetic hormone for its oxidation, and in the absence of any hormone, neither sugar would be used. The specific dynamic action is affected by all the sugars studied and seems to be little influenced by the presence or absence of the antidiabetic hormone. No explanation is offered of the significance of this.

The Retention and Elimination of Lead

DRS. J. C. AUB and ANNE MINOT, Boston: After lead has been absorbed through the gastro-intestinal or respiratory tracts, it is stored nearly completely in the calcareous portion of the bones. Here it remains normally for long periods, with the gradual release of only small amounts. In one group of animals the esophagus was tied and lead carbonate was introduced directly into the lungs. The animals were given physiologic sodium chlorid solution intraperitoneally. When the animals were killed, within eighty hours after the injection, nearly all of the absorbed lead was found in the bones. In animals allowed to live between 80 and 160 hours, only about 81 per cent. of the lead was found in the bones. When sodium bicarbonate instead of salt solution was injected intraperitoneally, the amount of lead found in the bones did not diminish, but remained at 94 per cent. of the total absorbed lead. This strongly suggested that the reduction of the alkali reserve allowed the liberation of lead from the bones. We next found that in leaded cats starvation will cause the lead to become distributed throughout the organism and be excreted with increased rapidity. Ingestion of large amounts of phosphoric acid has a similar but more marked effect. Using these observations in treating lead poisoning in man, we have found that ingestion of acid causes a markedly increased excretion of lead by the urine and feces. Phosphoric acid is the most effective method so far found. It is more efficient than potassium iodid, and causes a fourfold increase in the rate of lead excretion over that occurring without treatment.

These experiments explain how distortion of the acid-base equilibrium may liberate lead from the bones long after its absorption; they explain why lead poisoning is a chronic disease with possible late acute manifestations, and they offer a new method for increasing or decreasing the excretion of lead.

Action of Iodids on the Nonprotein Nitrogen of the Blood

DRS. G. P. GRABFIELD and B. J. ALPERS, Boston: Potassium iodid in small doses (from 0.3 to 0.6 gm., three times a day) caused an average increase of 30 per cent. in the total nonprotein nitrogen of the blood. The rise occurs on the first and second days after administration has been started, and on the third day the figure falls to the previous level. About 70 per cent. showed at some time a pathologic value (more than 40 mg. per hundred cubic centimeters), and in five cases the rise surpassed 70 mg. Sodium iodid causes a rise of only 10 per cent., and in none of the ten cases studied were pathologic heights reached. The average variation of controls under similar conditions is through a range of about 7 per cent. In cases in which potassium iodid was given, there was no change in the level of urinary nitrogen during the period in which the drug was administered (three days); but, following the return of the blood to the normal level, an increase in the output of nitrogen occurred, which, by the rough calculation possible, almost exactly corresponded with the amount that had been retained previously. Sodium iodid was followed by an immediate increase in the total nitrogenous output in the urine. The basal metabolic rate under similar conditions increased very slightly on the day after iodid administration was stopped, but only very little in excess of the limits of error of the

method used. Similarly, the phenolsulphonephthalein excretion apparently fell very slightly during the period of iodid administration, but hardly outside the limits of error.

The Rôle of Allergy in Pneumococcus Immunity

DR. G. M. MACKENZIE, New York: Guinea-pigs rendered allergic by repeated intracutaneous injections of pneumococcus antigen have little or no alteration in their susceptibility to infection by the homologous organism. The animals in a state of allergy to the pneumococcus antigen are not anaphylactic, but show a marked cutaneous hypersensitiveness. If the intracutaneous injections are continued over a period of thirty or forty days, the skin allergy disappears. In this postallergic state the susceptibility to infection by the homologous organism likewise differs little, if at all, from the susceptibility of normal controls. In the course of immunization of guinea-pigs with pneumococcus, anaphylactic reactions may be obtained at several stages of the immunization, either with the pneumococcus antigen or with a filtrate from a fresh culture. The existence of such specific sensitization does not appear either to interfere with or to further the development of active immunity. Results indicate that under the conditions of the experiments allergy may exist as a parallel phenomenon without any essential rôle in the development of immunity.

Treatment of Lobar Pneumonia with Kyes' Chicken Serum

DR. J. A. CAPPS, Chicago: During the last three years, and in 1916, Kyes' serum was used in one ward as routine treatment in lobar pneumonia. In all, 305 pneumonia patients were treated with serum. There were seventy-seven deaths, or a mortality of 25.2 per cent. In five control wards, in which no specific therapy was used, during the same period 1,406 patients were treated, with a mortality of 41.2 per cent. The clinical effect of the serum seems to be one of detoxication without materially affecting the course of the disease or the rate of resolution.

Experimental Production of Streptococcus Endocarditis

DRS. R. A. KINSELLA and C. C. SHERBURNE, St. Louis: In human patients, subacute streptococcus endocarditis is a fatal disease. No authentic report of a recovery has ever been published. The mechanism of production of this disease in human beings displays two constant factors—injury of the valve and later infection. The injury is usually represented by either congenital valvular heart disease or rheumatic valvular heart disease. The later implantation of *Streptococcus viridans* on this injury usually takes place through the medium of an infection of the middle ear or throat or some other locality where green streptococci normally breed. Our work consisted in injuring the aortic valve by inserting an appropriate instrument into the left carotid and then, after recovery, the animal is infected by intravenous inoculation of *Streptococcus viridans*. The inoculated bacteria became implanted at the site of the valve injury and there set up a bacterial vegetation identical with that of human patients. Dogs were used in these experiments. Dogs living twelve, thirteen and fourteen days failed to show any kidney lesion of the glomerular type, although larger infarctions were common. A longer survival of the animal seemed essential for producing the kidney picture. In a dog that lived seventeen days, the glomerular lesion consisted of partial thrombosis of the tuft, with hyaline degeneration and with hemorrhage and infiltration with polymorphonuclear leukocytes. One of the most important results of this work is that we have reproduced a bacterial infectious disease which is of sufficient duration to permit thorough study of many of the unknown factors of infection and immunity.

Physicochemical Studies of Calcium Chlorid Diuresis

DRS. D. W. ATCHLEY, R. F. LOEB and E. M. BENEDICT, New York: We have compared the diuresis produced by calcium chlorid in an edematous diabetic man, otherwise normal, with a subsequent spontaneous diuresis following adequate caloric intake under insulin therapy. From 20 to 35 gm. of calcium chlorid a day were given without discomfort to the patient. Marked diuresis began at the end of twenty-four hours. Calcium was eliminated in large part extrarenally. The chlorin of calcium chlorid was excreted mainly by the kidney as ammonium chlorid, with marked increase of ammonia excretion. The p_H of the urine was decreased. Sodium excretion

was increased markedly, whereas potassium and calcium excretion was only moderately increased. In the blood there is approximately molecular replacement of carbonate by chlorid with little change in total base. There is slight increase in the serum protein percentage, but no consistent change in the conductivity. In spontaneous diuresis, the urinary excretion of electrolytes showed no striking difference from that produced by calcium chlorid, except for the absence of the changes caused by such ingestion, the increased ammonia and chlorin output. There was a marked increase in sodium excretion. There was little change in the blood during spontaneous diuresis. The serum protein percentage increased somewhat. Twenty grams of calcium chlorid was then given to a normal person following a period of study. It was found that sodium, chlorin, potassium and ammonia excretions were markedly increased, particularly the sodium and chlorin. Sodium retention was present for three days after calcium chlorid ingestion. The water output was doubled. The blood showed decided increase in the serum protein percentage, great decrease in conductivity, and no change in calcium or chlorin, but a decrease in concentration of sodium and carbon dioxid. Severe gastric disturbance and depression followed the administration of calcium chlorid to this subject.

Contents of Glomerular Urine

DRS. J. T. WEARN and A. N. RICHARDS, Philadelphia: Using the potassium ferrocyanid-acetic acid test, it was found that the glomerular urine from eleven frogs was protein free. The bladder urine collected during the same period was also protein free. During November and December, the blood of frogs was virtually sugar free; the glomerular urine and bladder urine were also sugar free. Dextrose was injected subcutaneously, and with the blood sugar below 0.05 or 0.07 per cent., sugar appeared in the glomerular urine, but was absent in the bladder urine collected during the same period. Later observations showed the sugar content of frog's blood during March to be from 0.01 to 0.3 per cent., and the glomerular urine from these frogs contained sugar while the bladder urine contained none. Tests for chlorid showed chlorid to be present in the glomerular urine and absent in the bladder urine collected during the same period.

Studies on the mode of elimination of several dyes were made. Indigocarmine, methylene blue and phenolsulphonephthalein were injected into the circulation while the kidney was being observed with the microscope. The blue dyes appeared in the afferent vessels immediately after injection, and in rapid succession the glomerular tuft became blue and then the dye was observed passing through the capillaries into the glomerular space. Fluid collected from the glomerulus after the injection of the dye invariably contained the dye. Phenolsulphonephthalein behaved in the same way.

Relation of the Pulmonary Gas Diffusion Constant to Mountain Sickness

DR. GEORGE HARROP, New York: The physiologic effects of high altitudes on twenty-eight persons living at altitudes between 14,000 and 16,000 feet were determined by measuring the amount of carbon monoxid taken up by the lungs, as a whole, per unit of time and per millimeter of pressure difference existing between the alveolar air and the blood in the pulmonary capillaries. The results indicate that almost without exception every person whose diffusion constant, measured at the mean capacity and calculated for oxygen (Do_2), was above 40 did not suffer from the acute symptoms of mountain sickness and generally was free from the chronic discomforts due to prolonged life at high altitudes. On the other hand, those whose value Do_2 was 30 or less had marked, often very severe symptoms of the acute type, and the chronic symptoms frequently caused constant, often marked disability. The measurement of the diffusion constant indicates the limit of the rate of diffusion for gases through the lungs. When the factors tending to readjustment have not had adequate time to come into play, the diffusion alone, with the physiologic mechanism still adjusted to high barometric pressures, is of first importance in determining the adequacy of the response at low barometric pres-

ures, that is, the occurrence of the acute symptoms and of their probable severity. On the other hand, a sharp distinction must be made between these acute symptoms, suffered to a varying degree by the majority of persons who climb in a short space of time to an altitude of 12,000 feet or more, and the more chronic indications of the lack of physiologic adjustment manifested by some of those who live there. The question of susceptibility to the more chronic form is complicated by the uncertain efficiency of the physiologic factors tending to readjustment in a given person. Probably of chief importance in this readjustment is the increased tolerance of the central nervous system to lowered oxygen tensions, and the improved oxygen utilization. Of less importance are increased pulmonary ventilation and increased hemoglobin.

The Relationship of the Chlorid Content of Red Corpuscles to Their Percentage Volume

DRS. T. E. BUCKMAN and H. T. EDWARDS, Boston: Our observations are not in accord with those of Norgaard and Gram. In a series of forty cases including normal subjects, cases of anemia of various types and cases of polycythemia, we found a definite increase in the sodium chlorid content of the red corpuscles, proportionate to the increase in the volume percentage of red cells. No depression of the chlorid content of the red corpuscles peculiar to pernicious anemia was observed. We obtained low values, from 150 to 250 mg. of sodium chlorid per hundred cubic centimeters of red corpuscles in all types of anemia, with very low cell volumes, from 6 to 15 per cent. The elevation of the sodium chlorid content was found to be not in any way peculiar to polycythemia vera but was observed also in cases of increased cell volume due to other causes, such as congenital heart disease, chronic carbon monoxid poisoning, and emphysema. With cell volumes as high as 70 per cent. we found the sodium chlorid content to be as high as 440 mg. per hundred cubic centimeters of red corpuscles.

The Electrocardiographic Changes Following the Occlusion of the Left Coronary Artery

DR. F. M. SMITH, Chicago: An electrocardiographic study was made of eleven patients. In one case the descending branch of the left coronary artery was ligated in the repair of a stab wound of the heart. In two cases the clinical diagnosis of coronary thrombosis was verified at necropsy. In the remaining eight cases the character and duration of the cardiac pain and the subsequent clinical course was as characteristic of coronary closure as in those cases in which the diagnosis was checked by necropsy. Changes in the T-deflection and a decrease in the amplitude of the Q-R-S group were the most constant electrocardiographic findings. In six patients there was a decrease in the amplitude of the Q-R-S group. These changes in the T-deflection and the amplitude of the Q-R-S group resemble very closely those of the dog following the ligation of the branch of the left coronary artery. These observations indicate that the electrocardiograph may be employed to advantage in the diagnosis of a thrombosis of the left coronary artery in man.

Electrocardiographic Evidence of Myocardial Involvement in Rheumatic Fever

DRS. H. F. SWIFT and A. E. COHN, New York: Electrocardiograms were taken regularly of all patients with rheumatic fever. In a large number, distinctly abnormal electrocardiograms were obtained. The changes consisted not only of heart block and prolonged auriculoventricular conduction time, but also of other types of altered auriculoventricular mechanism, as well as changes of a transient nature in the form of the ventricular (Q-R-S) complex. Changes such as the last are interpreted as indicating the development or presence of lesions in those structures of the heart on the functioning of which the electrocardiogram depends. At the time of the appearance of these abnormal complexes there are usually clinical signs of cardiac abnormality, such as cardiac pain, precordial hyperesthesia, disturbed rhythms, or alteration in the character of the heart sounds. In certain cases, abnormal electrocardiograms are the only evidences of myocardial derangement.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Detroit

13: 259-354 (April) 1923

- School Health Supervision. I. V. Hiscock, New Haven, Conn., and W. T. Fales, Baltimore.—p. 259.
Viability of Bacterium Coli Group Under Natural and Artificial Conditions. C. C. Young, Lansing, Mich., and M. Greenfield, Santa Fe, N. M.—p. 270.
Proposed Standard for State Vital Statistics. L. E. Ross, Sacramento, Calif.—p. 274.
Benzol Poisoning. J. F. Hogan and J. H. Shrader, Baltimore.—p. 279.
Odors. Their Sanitary Significance and Their Elimination. J. R. Earp.—p. 283.
Relationship Between Tuberculin Testing, Vitamins, Pasteurization and Public Health. H. A. Harding, Detroit.—p. 293.
Some Results of National Cancer Week—1922. J. E. Rush.—p. 296.
Hemolytic Streptococci in High Grade Milks. W. D. Frost and F. M. Bachmann, Madison, Wis.—p. 300.

American Journal of Roentgenology and Radium Therapy, New York

10: 175-258 (March) 1923

- New Growths Within Chest: Roentgen Ray Diagnosis. S. B. Childs, Denver.—p. 175.
New Growths Within Chest. J. N. Hall, Denver.—p. 182.
Traumatic Diaphragmatic Hernia of Stomach; Operation; Recovery. P. L. Farinas, Havana, Cuba.—p. 187.
Sacro-Iliac Arthrosis Obliterans. E. S. Blaine, Chicago.—p. 189.
Value of Grant's Pins in Open Treatment of Fractures as Seen Roentgenologically. D. Y. Keith and J. P. Keith, Louisville.—p. 195.
Effect of Small Doses of Roentgen Rays in Certain Forms of Impaired Hearing. D. C. Jarvis, Barre, Vt.—p. 201.
Treatment of Defective Hearing by Small Doses of Roentgen Rays. J. McCoy, New York.—p. 203.
Rôle of Radium Needles in Treatment of Neoplastic Diseases. W. L. Clark, Philadelphia.—p. 204.
Suppurative Osteomyelitis of Left Side of Pelvis. I. P. Levi, Anniston, Ala.—p. 208.
Glass Retained in Hand and Foot. A. S. Risser, Blackwell, Okla.—p. 210.
Statistics and Technic in Treatment of Malignant Disease of Skin by Radium. H. Morrow and L. Taussig, San Francisco.—p. 212.
Technic of Treatment of Carcinoma of Cervix Uteri with Combination of Roentgen Rays and Radium Rays. H. Schmitz, Chicago.—p. 219.
New Radium Chart. L. A. Pomeroy, Cleveland.—p. 229.
Treatment by Radium of Cancer of Rectum. H. H. Bowing and F. W. Anderson, Rochester, Minn.—p. 230.
Possible Dangers in Connection with Use of Roentgen Rays and How to Avoid Them. J. S. Shearer.—p. 240.

Effect of Small Doses of Roentgen Rays in Certain Forms of Impaired Hearing.

Jarvis reports the case of a man, aged 40, who was treated by means of the roentgen rays for an enlarged lingual tonsil. One week later, the patient reported that the right ear, which had been "stuffy" for ten years, was clear, and that hearing was improved. One month later, having a patient who had appeared at varying intervals for inflation of both ears by means of the eustachian catheter, and not succeeding readily in restoring the hearing by means of the usual inflations, a trial of the roentgen rays was suggested, the area exposed for treatment being that recommended by Witherbee in treating tonsils. Two days later, the patient stated that his hearing was restored, the sensation of stuffiness in his ears was relieved, and that he experienced no difficulty in hearing while waiting on customers. As other cases were treated, it became apparent that all patients complaining of impaired hearing were not improved. As observations were continued, it was noticed that the patient whose throat symptoms were usually a prominent part of the clinical picture, responded best to the use of the roentgen rays. A study of these subjects disclosed the fact that the inferior and middle turbinates were often increased in size, that lymphoid nodules were present on the posterior pharyngeal wall, and often a prominent band of lymphoid tissue ran up either side of the pharynx just posterior to the posterior tonsillar pillar. A study of the lymphoid tissue present in the throat following the use of the roentgen rays showed that in forty-eight hours it markedly decreased in size and redness, and that the catarrhal discharge from the throat. It was concluded that the results obtained were due to the effect of the

roentgen rays on lymphoid tissue. There is another effect of the use of small doses of the roentgen rays, and that is its effect on head noises. In the type of patient mentioned the treatments so far have not failed to give relief. When head noises occur in the elderly type of patient, relief does not seem to be so often accomplished.

Treatment of Defective Hearing by Small Doses of Roentgen Rays.—Using Stokes' method of applying the roentgen rays in turn to the regions of the right ear, left ear, the occiput and the open mouth in a direction toward the pituitary gland in forty-five cases of chronic catarrhal, purulent and residual otitis media and otosclerosis, McCoy has achieved satisfactory results. In only nine cases was there no improvement whatever.

Glass Retained in Hand and Foot.—In one of Risser's cases an irregular piece of glass, measuring $1\frac{1}{4}$ by $\frac{5}{8}$ inches, was removed from beneath the deep plantar fascia nineteen years after the patient had stepped into a box of glass. In the second case a large triangular fragment of glass was removed from between the third and fourth metacarpal bones twenty months after its entrance. In neither case had any symptoms been manifested until just before seeking medical advice.

Treatment of Carcinoma of Cervix Uteri with Roentgen Rays and Radium.—Methods for the determination of the intensities of roentgen rays and gamma rays are described by Schmitz and a definition is given of the biologic unit of the radiation dose. It is designated as a 100 per cent. erythema skin dose (E. S. D.). This dose is measured with an iontoquantimeter, that is, it is standardized. The same dose, therefore, may be reproduced for all qualities of rays. The lethal carcinoma dose has been determined. It is, on an average, from 110 to 130 per cent. of an E. S. D. A technic has been developed by Schmitz, based on these investigations, which he says enables any one to solve the problem of the successful treatment of cervical carcinomas with the combined use of roentgen rays and gamma rays of radium.

Journal of Bone and Joint Surgery, Boston

5: 180-396 (April) 1923.

- Importance of Correct Furniture to Assist in Best Body Function, as Recognized by Massachusetts Institute of Technology and Smith College. J. E. Goldthwait, Boston.—p. 180.
Study of Gaits. C. L. Lowman, Los Angeles.—p. 185.
*Clinical Study of Thirty Cases of Muscular Dystrophy. R. V. Funsten, Iowa City, Ia.—p. 190.
Types of Tubercle Bacilli Concerned in Surgical Tuberculosis. G. R. Girdlestone, Oxford, England.—p. 204.
*Abnormalities of Fifth Lumbar Transverse Processes Associated with Sciatic Pain. B. H. Moore, Chicago.—p. 212.
*Operative Treatment of Hallux Valgus. D. Silver, Pittsburgh.—p. 225.
*Operation for Relief of Flexion-Contracture in Forearm. C. M. Page, London.—p. 233.
Concerning Diagnosis of Lesions of Lateral Process of Fifth Lumbar Vertebra and of Its Removal. J. T. Rugh, Philadelphia.—p. 235.
Fracture of Neck of Femur Without Shortening. H. L. Taylor, New York.—p. 237.
Obturator Dislocations. Report of Four Cases. J. T. Watkins, San Francisco.—p. 243.
Retardation of Growth Following Poliomyelitis. P. W. Nathan, New York.—p. 260.
Coxa Plana and Its Causation. M. Jansen, Leiden, Netherlands.—p. 265.
Results of Tendon Transplantation for Intrinsic Hand Paralysis. (Ney's Operation.) J. G. Johnstone, London.—p. 278.
*Treatment of Flail Ankle; Panastagaloid Arthrodesis. A. Steindler, Iowa City, Ia.—p. 284.
Electrical Treatment of Infantile Paralysis and Other Lower Neurone Lesions. G. M. Levick, London.—p. 295.
Congenital Radio-Ulnar Synostosis. Treatment. A. Gibson, Winnipeg, Man.—p. 299.
Bone Block at Hip Joint. W. Truslow, Brooklyn.—p. 305.
Pathology and Treatment of Tuberculosis of Hip-Joint. J. K. Young, Philadelphia.—p. 313.
Value of Roentgen Ray in Diagnosis and Prognosis of Sarcoma of Long Bones. H. W. Meyerding, Rochester, Minn.—p. 323.
*Unusual Case of Congenital Asymmetry of Pelvis and Lower Extremities. G. Peremans, Boston.—p. 331.
Physiotherapy in Back Sprains. A. Gottlieb, Los Angeles.—p. 339.
Case of Myositis Ossificans Progressiva, with Bibliography. J. J. Nutt, New York.—p. 344.

Muscular Dystrophy.—Of the thirty cases analyzed by Funsten four were of the juvenile form, coming on at the ages of 12, 15, 18 and 21 years, respectively, and usually starting as the upper girdle type. The other twenty-six were

of the infantile form, and more frequently started as the girdle type, the weakness being noticed in the lower limbs, with difficulty in getting up from the floor and in going upstairs. Stumbling, lordosis, waddling gait, and loss of reflexes were the characteristic symptoms. Twenty-four cases were of the infantile type, either the hypertrophic or atrophic form. There were two cases of the facio-scapulo-humeral type. Seven cases were beyond the walking stage and had various contractures. Twelve cases were treated for from two weeks to three months with various glandular extracts without any appreciable effect. Seven cases were treated with calcium lactate and eleven with massage and exercises (either with or without glandular treatment). It is felt that calcium lactate is of some benefit. Wassermann tests made in fourteen cases were negative. The microscopic blood picture was normal in six cases examined. The reflexes were either absent or greatly diminished in all cases, with the exception of the cremasteric and abdominal reflexes, which, as a rule, were present. Microscopic examination of muscle, made in four cases, showed the fibers to be pale, with diffuse areas of granular degeneration and vacuolization. There were also areas of fat infiltration between the muscle fibers. The striations were present, except in a few places where complete degeneration had taken place. Of the thirty cases, twenty-three patients are known to be living, three are dead from intercurrent diseases, and four have not recently been heard from. In none of the cases was there any tangible connection between the onset of the disease and acute infectious diseases. In no case was the onset acute.

Sciatic Pain Associated with Abnormalities of Lumbar Vertebrae.—The clinical picture in the nine cases cited by Moore was that of irritation of the sciatic nerve, combined usually with some deviation of the spine from the vertical. It does not differ materially from the picture presented by arthritis of the lower lumbar spine associated with sciatic pain, except that there is less general rigidity of the spine and more localized limitation at the lumbosacral junction. The roentgen ray is the determining factor in the diagnosis, but one plate is not a safe guide. Several roentgenograms should be made at varying angles, or stereoscopically, to determine completely the relations of the process to the sacrum and ilium. Furthermore, in cases with a marked list of the spine, the roentgen ray may not show the process in contact with the ilium, yet at operation these structures are found in close contact. The list of the spine is apparently an attempt to draw the process away from the ilium. The mechanism of the production of the pain is an open question. By amputation of the affected processes the pains have been relieved and the motion of the spine improved. None of the patients were put in plaster or braces, and they were gotten out of bed in from ten to fourteen days. Back-bending exercises were begun as soon as they could be done with comfort. In two cases, the process was not completely removed, yet the symptoms were relieved. In these cases the removal of a portion of the ilium was probably the effective part of the operation.

Operative Treatment of Hallux Valgus.—Silver describes a method of operating in these cases which differs from other methods mainly in the manner of treating the internal and the external portion of the capsule and the definite attempt to restore muscle balance.

Muscle Sliding Operation to Relieve Flexion-Contracture.—Rather than to shorten both bones of the forearm, or clongate the individual tendons which have become shortened, Page has carried out in six cases a muscle-sliding operation. The attachments of the whole flexor group of the forearm are systematically detached from their origin, the supra-condylar ridge is cleared and the common tendon of origin of the flexors is cut close to the internal condyle and stripped away from the lateral ligament (the elbow joint is usually opened at this stage). The aponeurosis on the ulnar side of the subcutaneous aspect of the ulna is then cut through in its whole length close to the bone. The muscle mass so loosened is raised from the surface of the bone with a raspator, any definite tendinous origins below the coronoid process of the ulna are divided with the knife, the insertion of the brachialis anticus being fully exposed. If the flexor

longus pollicis is contracted the process of muscle-stripping is carried across the interosseous membrane so that the attachment of the thumb flexor to the front of the radius can also be raised. Lastly, the bicipital fascia is cut through if it appears to offer any opposition to the descent of the muscle group. The whole muscle group will be made to descend an inch or more from its origin. This procedure is but the first stage toward the restoration of the use of the hand. Careful splintage and the usual physiotherapeutic measures must be employed in order to complete the cure.

Panstragaloid Arthrodesis for Flail Ankle.—The method used by Steindler is essentially a modification of the technic devised by Goldthwait, but with the extension of the fusion to all joints of the whole ankle excepting the articulation between the cuboid and the calcaneum. The cases which have been largely selected for the use of this method were those of drop and drop dangle foot. Most of the cases of the cavus and calcaneocavus deformity were reserved for Whitman's operation. Clinical experience has convinced Steindler that the resulting arthrodesis is equal in stability to that obtained by other methods, and in addition to this it may be argued that the method described is not mutilating and that it is extremely simple in execution.

Congenital Asymmetry of Pelvis and Leg.—Peremans' patient presented an asymmetrical pelvis, a small, shortened femur with some atrophy of the shaft. The left tibia was narrower than the right, with some atrophy also; the left fibula medially rotated, without narrowing; there was no bone destruction, but a marked decreased density throughout these bones. There was a visible atrophy of all muscles between the anterior superior spine and the ankle, but principally marked in the buttock and the mesial region of the lower third of the thigh. All the motions of the joints were normal in both legs, except that extreme abduction of the right thigh was prevented by some contraction of the adductors, and except, also, total extension of the left knee, which remained flexed to about 25 degrees, because of the contraction of the inner hamstrings, combined with the lessened power of the quadriceps. The back showed a slight total left dorsal curve. The patient walked with the pelvis tilted downward toward the left side, with the left knee slightly flexed. There was a double genu valgum, adduction of both legs and a left equinus.

Journal of Experimental Medicine, Baltimore

37: 431-600 (April) 1923

- Distribution of Rickettsia in Tissues of Insects and Arachnids. E. V. Cowdry, New York.—p. 431.
- *Determination of Lung Volume Without Forced Breathing. D. D. Van Slyke and C. A. L. Binger, New York.—p. 457.
- *Experimental Studies of Nasopharyngeal Secretions from Influenza Patients. XII. Effects of Subcutaneous Injections of Vaccines of Bacterium Pneumointes in Man. P. K. Olitsky and F. L. Gates, New York.—p. 471.
- *Relation of Tetanus Bacilli in Digestive Tract to Tetanus Antitoxin in Blood. C. Tenbroeck and J. H. Bauer, Peking, China.—p. 479.
- Relation of Antibody to Rate of Disappearance of Circulating Antigen. G. M. Mackenzie and E. Fröhbauer, New York.—p. 491.
- *Experimental Studies on Inflammation. II. Experimental Chemical Inflammation in Vivo. E. P. Wolf, Chicago.—p. 511.
- *Prophylaxis and Treatment of Syphilis. H. J. Nichols and J. E. Walker, Washington, D. C.—p. 525.
- *Mechanism of Bacteriostasis. J. W. Churchman, New York.—p. 543.
- *Influence of Sodium Salicylate on Arthritis of Rabbits Inoculated with Nonhemolytic Streptococci. H. F. Swift and R. H. Boots, New York.—p. 553.
- *Influence of Calcium Chlorid on Experimental Botulism. I. C. Hall and N. C. Davis, Berkeley, Calif.—p. 585.

Determination of Lung Volume Without Forced Breathing.—The method described by Van Slyke and Binger determines total capacity and its subdivisions coincidentally. The maximum error of the method is estimated at ± 3 per cent. of the lung volume determined. Considerably greater variation from the mean may be encountered, however, because of inconstancy in the lung positions assumed by the subject.

Effect of Injection of Bacterium Pneumointes Vaccines.—Thirteen volunteers were injected subcutaneously with a vaccine prepared from two strains of *Bacterium pneumointes*. Three doses were given corresponding, by capacity tests, to 1,000, 2,000 and 2,000 million staphylococci. The intervals between the several injections were five and eight days.

Local reactions of mild and transitory character only were noted. Constitutional reactions also mild and transitory, consisting of headache, depression and generalized muscular pains, were infrequently observed. None of the men was prevented by the vaccine from pursuing his ordinary duties. The vaccinations induce a transitory leukocytosis and lead to the appearance of specific agglutinins in the blood serum.

Relation of Tetanus Bacilli in Digestive Tract to Tetanus Antitoxin in Blood.—The serums of twenty-six persons who carried tetanus bacilli in their digestive tracts were examined by Tenbroeck and Bauer and all were found to contain appreciable amounts of antitoxin. The serums of thirty persons in whose stools no tetanus-like organisms were found were, with two exceptions, free from tetanus antitoxin. Although the authors have been unable to measure accurately the antitoxin content of these human carriers of tetanus bacilli, 0.1 c.c. of serum neutralizes ten or more M. L. D. (minimum lethal doses) of toxin and it is evident that they have acquired an active immunity due to the bacilli in the intestinal tract. These results are said definitely to prove that tetanus bacilli grow in the intestinal tract of man. Many of the subjects who have no tetanus bacilli in their intestinal tracts and whose serum is free from antitoxin show agglutinins to tetanus bacilli. It is probable that they have been carriers of the bacilli in the past and that the agglutinins have persisted longer than the antitoxins. It seems likely, therefore, that these persons are potentially immune to tetanus. If tetanus bacilli can be established in the digestive tract of man, there is a means of immunization which might be useful in armies or in regions where tetanus infections are common, though the authors do not recommend this method of immunization at present.

Experimental Chemical Inflammation.—All substances tested by Wolf which produced marked and rapid inflammation on injection were positively chemotactic, but not all strongly positive chemotactic substances produced inflammation; i. e., calcium compounds, sodium phosphate, etc. Only substances which were positively chemotactic and also soluble in oil seem capable of producing inflammation in animals.

Prophylaxis and Treatment of Syphilis.—By inoculating the scarified surface of both sides of the scrotum of rabbits with suspensions of *Spirochaeta pallida*, 100 per cent. infections were obtained by Nichols and Walker on one side or the other. Infection through the unbroken skin could not be produced. By gland transfers from animals with positive local inoculations, 87.5 per cent. of takes were produced. These two methods were used by Nichols and Walker to test the prophylactic value of 30 per cent. calomel ointment. (a) Calomel ointment proved efficacious up to eight hours after inoculation with syphilis. (b) No marked difference appeared between the action of calomel in a base of lanolin and petroleum and in a base of benzoated lard and wax. (c) Death from mercurial poisoning was produced in rabbits by a single application of a large amount of calomel ointment. The method of gland transfers was used to test the sterilizing effect of arsphenamin and neo-arsphenamin on old infections in the rabbit. The infection was completely abolished in every instance, whether by one, two or four intravenous doses.

Mechanism of Bacteriostasis.—Churchman observed that between gram-positive and gram-negative organisms gentian violet exhibits the same type of selective activity whether the dye be added to the medium on which the bacteria are planted unstained (extrinsic bacteriostasis), or the organisms be stained with it before being planted on plain agar (intrinsic bacteriostasis). In both instances the gram-positives are inhibited and the gram-negatives remain unaffected. Between gram-positive spore bearing aerobes and the commoner gram-negative bacteria, acid fuchsin, related sulfonic substances, and the flavines exhibit one type of selective activity when the dye is added to the medium (extrinsic bacteriostasis) and the opposite type when it is added directly to the bacteria (intrinsic bacteriostasis). In the former case, the gram-positive spore bearers are inhibited and the gram-negatives remain unaffected; in the latter case the gram-

negatives are inhibited and the gram-positive spore bearers remain unaffected. Selective bacteriostasis is not necessarily conditioned by selective penetrability. Stained organisms may grow, and dyes which do not stain well may inhibit reproduction. Churchman says there is evidence that the phenomena of bacteriostasis may be due to changes effected by the dye at the surface of the organisms.

Sodium Salicylate in Arthritis.—Rabbits inoculated intravenously by Swift and Boots with nonhemolytic streptococci, while under the influence of full therapeutic doses of sodium salicylate, developed almost as many inflamed joints as the untreated controls similarly inoculated. The salicylated rabbits, on the other hand, had a much higher proportion of mildly inflamed joints than did the controls. This anti-inflammatory action was most evident in the animals inoculated with streptococci of the lowest virulence, and could not be demonstrated in animals inoculated with hemolytic streptococci.

Influence of Calcium Chlorid on Experimental Botulism.—Hall and Davis state that calcium chlorid given subcutaneously, intraperitoneally, or intravenously has been found to have no effect on the production of botulism following the injection of *Bacillus botulinus* (strain 80B) into the peritoneal cavity of guinea-pigs.

Journal of Infectious Diseases, Chicago

32: 247-314 (April) 1923

- *Immunologic Significance of Vitamins. I. Influence of Lack of Vitamins on Production of Specific Agglutinins, Precipitins, Hemolysins and Bacteriolysins in Rat, Rabbit and Pigeon. C. H. Werkman, Ames, Ia.—p. 247.
- *II. Influence of Lack of Vitamins on Resistance of Rat, Rabbit and Pigeon to Bacterial Infection. C. H. Werkman, Ames, Ia.—p. 255.
- III. Influence of Lack of Vitamins on Leukocytes and Phagocytosis. C. H. Werkman, Ames, Ia.—p. 263.
- Gas Production by Bacteria in Symbiosis. H. J. Sears and J. J. Putnam, Portland, Ore.—p. 270.
- *Intestinal Flora in Diarrhea. L. E. Hines, Chicago.—p. 280.
- *Variations in Streptococcus Hemolyticus on Animal Passage. J. E. Walker, Washington, D. C.—p. 287.
- Incidence and Classification of Staphylococci in Throats of Normal Persons and Persons with Common Colds. Influenza Studies. XII. N. P. Hudson, Chicago.—p. 297.
- Study of Bacterial Products by Means of Excised Mammalian Heart. I. Endotheliotoxin of *S. Cholerae*. W. H. Manwaring, W. H. Boyd and S. Okami, San Francisco.—p. 307.
- *II. Subhemagglutinin, Endotheliotoxin and Myotoxin of Streptococcus Hemolyticus. W. H. Manwaring, W. H. Boyd and R. C. Chilcote, San Francisco.—p. 309.

Immunologic Significance of Vitamins.—The results of Werkman's experiments lead him to conclude that cataphylaxis in animals suffering from the lack of vitamins is not the result of the destruction or paralysis of the antibody forming mechanism that produces agglutinins, precipitins, hemolysins, or bacteriolysins.

Lack of Vitamins and Bacterial Infection.—In this series of Werkman's experiments, rats, rabbits and pigeons suffering from pronounced vitamin deficiencies suffered a marked break in their resistance to infection. Rats and rabbits lacking vitamin A became less resistant to infection with the anthrax bacillus and the pneumococcus. As rats suffering from the lack of vitamin B likewise developed an increase in susceptibility to the anthrax bacillus and pneumococcus, the cataphylaxis is not peculiar to vitamin A deficiency. The results are similar to starvation susceptibility. Pigeons fed on a diet lacking vitamin B only, and pigeons fed on a diet of polished rice, readily succumbed to infection with the anthrax bacillus and the pneumococcus, while the control pigeons survived.

Intestinal Flora in Diarrhea.—The intestinal flora in eight cases of diarrhea, connected with intestinal lesions, studied by Hines was proteolytic, while in two cases of fermentative diarrhea the flora was aciduric; but in another similar case, the flora was proteolytic. Spores of *B. welchii* were present in great numbers in stools with a proteolytic flora and absent in those with an aciduric flora.

Effect of Animal Passage on Streptococcus Hemolyticus.—Evidence is presented by Walker that tends to show that the "moist" type of colony, characteristic of the so-called *Streptococcus epidemicus*, is but a temporary character, and may be acquired by an ordinary *Streptococcus hemolyticus*. The

virulence of a strain having acquired this "moist" type of growth is greatly increased, and the virulence decreases with the loss of these special characteristics. The confirmation of the fact that an ordinary strain of *S. hemolyticus* may acquire the properties of *S. epidemicus* is believed to have an important bearing on the epidemiology of "septic sore throat." It is suggested that, analogous to observations on other bacteria, the antigenic properties of hemolytic streptococci may possibly also vary along with these variations in the character of the colony.

Toxic Products Produced by Streptococcus Hemolyticus.—*Streptococcus hemolyticus* grown in 10 per cent. defibrinated rabbit blood in Locke's solution gave products producing the following toxic reactions on the excised rabbit heart: (a) intravascular hemagglutination; (b) marked capillary vasoconstriction; (c) slightly increased capillary permeability; (d) auriculoventricular dissociation (heart block); (e) marked loss of ventricular tone, and (f) reduction in the strength of the ventricular contractions, leading to cessation of recordable movements in from twenty-five to thirty minutes. These reactions are in line with clinical observations and necropsy findings.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

21: 161-224 (April) 1923

- Detection of Benzene in Cadavers. A. O. Gettler, New York.—p. 161.
Rate of Deposition and Paths of Absorption of Strontium in Rat. E. M. Kinney and E. V. McCollum, Baltimore.—p. 165.
*Action of Camphor, Menthol and Thymol on Circulation. R. St. A. Heathcote, Oxford, England.—p. 177.

Action of Camphor, Menthol and Thymol on Circulation.—Heathcote found that camphor, thymol and menthol depress the isolated heart of both the frog and the rabbit directly, acting on the cardiac muscle. All three agents dilate the coronary vessels. In anesthetized animals, camphor, however given, does not cause a rise of blood pressure, if the dose is not sufficient to cause convulsions. Similarly, after the cerebral hemispheres are removed, no rise of blood pressure occurs even with doses up to 1 gm. per kilogram. There is no convincing pharmacologic evidence that camphor possesses any value whatever as a cardiac or circulatory stimulant. Its value, if any, for this purpose in man should be established or disproved by more exact clinical observations. The unpleasant results which sometimes follow the administration of thymol can readily be explained.

Journal of Radiology, Omaha

4: 105-146 (April) 1923

- New Technic for Positive Identification of Sphenoid Sinus and Ethmoid Cells. A. Granger, New Orleans.—p. 105.
Roentgen Rays and Roentgen Ray Apparatus; An Elementary Course. J. K. Robertson, Kingston, Canada.—p. 112.
Bone Tumors Sarcoma. Periosteal Group. Ossifying Type Benign Ossifying Periostitis and Myositis. J. C. Bloodgood, Baltimore.—p. 119.
Relative Value of Roentgen Ray Evidence in Diagnosis of Duodenal Ulcer. C. D. Enfield, Louisville.—p. 127.

Laryngoscope, St. Louis

33: 161-234 (March) 1923

- Transatlantic Development of Rhinolaryngology. H. S. Birkett, Montreal, Canada.—p. 161.
Deaf-Mutism. J. S. Fraser, Edinburgh.—p. 177.
Aerocele of Brain; Report of Cases. A. D. McCannel, Minot, N. D.—p. 189.
Value and Ultimate Fate of Bone and Cartilage Transplants in Correction of Nasal Deformities. W. W. Carter, New York.—p. 196.
Diagnosis of Subacute and Chronic Inflammatory Lesions of Mucosa Lining Antrum of Highmore. W. Spielberg, New York.—p. 203.
Conclusions Concerning So-Called Connellan-King Diplococcus. J. J. King, New York.—p. 207.
Safety-Pin in Trachea. R. S. Moore, Syracuse, N. Y.—p. 212.
Removal of Wire Ring in Esophagus. E. G. Gill, Roanoke, Va.—p. 213.
Cresatin. M. D. Lederman, New York.—p. 214.

Michigan State Medical Society Journal, Grand Rapids

21: 177-218 (April) 1923

- Visual Changes Due to Sinusitis. Report of Two Cases. W. R. Parker, Detroit.—p. 177.
Civilian Gunshot Wounds of Abdomen. C. F. Vale, Detroit.—p. 183.

- Nontuberculous Bronchial Gland Infections in Children. T. B. Cooley, Detroit.—p. 186.
Difficulty of Early Diagnosis of Tuberculosis in Infancy and Childhood. G. L. Bliss, Kalamazoo.—p. 188.
Diagnostic Value of Artificial Pneumoperitoneum in Sterility in Women. B. Friedländer, Detroit.—p. 195.
Paralysis Agitans. F. R. Starkey, Detroit.—p. 199.

Military Surgeon, Washington, D. C.

52: 343-454 (April) 1923

- Management of Common Complaints of Ear, Nose and Throat in Troops on Active Service; Relationship Which Should Exist Between Specialist and Medical Officer. P. G. Goldsmith, Washington, D. C.—p. 343.
Functional and Nervous Heart Disorders. A. Hoffmann, Düsseldorf, Germany.—p. 361.
Acute Catarrhal Jaundice. H. C. Michie.—p. 390.
Parliamentary Procedure. A. N. Tasker, Washington, D. C.—p. 422.
Hydrochloric X of Bovine Parathyroid. A. M. Hanson, Faribault, Minn.—p. 434.

Minnesota Medicine, St. Paul

6: 211-278 (April) 1923

- Practical Application of Local Anesthesia to Major Surgery. R. E. Farr, Minneapolis.—p. 211.
*Use of Delayed Flap in Secondary Operations on Palate and Antrum. G. B. New, Rochester, Minn.—p. 214.
Heart in Certain of Severe Exhausting Infections. C. L. Greene, St. Paul.—p. 220.
Diagnosis and Treatment of Ureteral Calculi. G. J. Thomas, Minneapolis.—p. 226.
*Training of Laboratory Technician. W. E. King, St. Paul.—p. 233.
Value and Importance of Blood Chemistry in Clinical Medicine. M. Barron, Minneapolis.—p. 238.
Painful Shoulder. A. E. Wilcox, Minneapolis.—p. 245.
Present Status of Medical Opinion Concerning Nature, Diagnosis and Prognosis of Epidemic Encephalitis. C. R. Ball, St. Paul.—p. 248.
*Uterine Fibromyomas Complicating Pregnancy. R. D. Mussey, Rochester, Minn.—p. 256.
Foreign Bodies (Dental Crown, Dental Plate, Granuloma) Removed from Air Passages. P. P. Vinson, Rochester, Minn.—p. 260.
Heliotherapy in Infectious Diseases of Bones and Joints. E. S. Geist, Minneapolis.—p. 263.

Use of Delayed Flap in Secondary Operations for Cleft Palate.—The method which New has found most successful in the closure of both the large and the small openings is the application to cleft palate surgery of the principles employed in using the delayed flap in plastic surgery of the face and neck. The flap is outlined on one side of the opening with the pedicle posterior, and then elevated and placed back in its original bed. At the same time, the opposite side of the opening is elevated from its mesial margin and allowed to fall back. In a week's time the flap is again elevated, the mesial margin trimmed and sutured across the opening to the freshened and elevated margin of the opposite side. During the week of the delay, the blood supply to the flap is improved a great deal and the flap becomes thicker. In the second stage, minute areas of slough, if present, are trimmed off as the margins are freshened. In case the original opening is very large, or the postoperative complete cleft palate is very wide, with marked scarring, the closure may have to be accomplished in two stages. That is, the anterior part of the palate may be closed by delayed flaps from each side in the first stage. The aponeurosis of the palate is not freed at this time. Three months later the closure is completed by the two-stage Langenbeck operation.

Training of Laboratory Technician.—King feels that under present conditions rigid insistence on the maintenance of definite prerequisites for those desiring to become laboratory technicians, would be ill advised. Student technicians should receive a defined, carefully planned course in theory. A certain portion of time should be devoted to textbook assignments, quizzes, lectures and demonstrations. The course should include proper allowance of time for the interpretation of laboratory findings, the elements of medical ethics and the suggestions of specialists who place dependence on different phases of clinical laboratory work. The minimum period for such a course, including theory and didactic teaching is six months. A definite course of studies for such a six months' course is submitted by King.

Uterine Fibromyomas Complicating Pregnancy.—Sixty-six of the 101 patients reported on by Mussey were treated expectantly. Ten had cesarean sections at or near term. Twenty-four patients, on three of whom an abdominal-pelvic

exploration was made, had operations prior to the period of viability. One of these patients, on whom a myomectomy was performed, had a vaginal cesarean section done elsewhere at term. Of the group of sixty-nine patients, including those treated expectantly and those having explorations, seventeen had miscarriages, ten had premature labor, and forty-two had labor at term with thirty-six living children. This shows a slight increase above the normal incidence of miscarriages and a decrease in the number of living children. Following delivery, seventeen of these patients had operations for the removal of the tumor. Twenty-five of the remaining fifty-two reported that they were well, but some had symptoms attributed to the tumors, and twelve among those reexamined were advised that removal of the tumor was not necessary. Four have died, one following hysterectomy for the tumor and three from other conditions. One patient returned five years after confinement with an inoperable carcinoma of the cervix. There were fifteen myomectomies, seven hysterectomies, and eleven cesarean operations in this group.

Nebraska State Medical Journal, Norfolk

8: 117-152 (April) 1923

- *Transposition of Viscera (Situs Viscerum Transversus). Report of Case without Transposition of Usual Abdominal Reflex. J. E. Summers, Omaha.—p. 117.
- Vitamins. H. M. McClanahan, Omaha.—p. 120.
- Surgical Study in Vienna Today. J. W. Duncan, Omaha.—p. 122.
- Lumbar Spinal Puncture and Cisternal Puncture. J. J. Keegan, Omaha.—p. 129.
- Chronic Endocervicitis. M. W. Flothow, Omaha.—p. 132.
- Factors Influencing Safety of Ether Anesthesia. R. M. Waters, Sioux City, Ia.—p. 136.
- Syphilis of Upper Air Passages. B. M. Kully, Omaha.—p. 138.
- Intussusception. Points in Diagnosis and Plea for Earlier Recognition. F. Clarke, Omaha.—p. 142.
- Importance of Pathologic Laboratory in a Hospital. M. G. Wohl, Omaha.—p. 143.

Dextrocardia and Normal Abdominal Reflex.—Summers'

case of dextrocardia came to his attention because of pain over the right lower quadrant of the abdomen. Finger pressure over McBurney's point not only produced a characteristic right rectus reflex but also a drawing-up of the right thigh. A diagnosis of subacute recurrent appendicitis was made and operation advised. A right rectus incision disclosed the sigmoid flexure transposed to the right side of the abdomen, the cecum, with its attached appendix, freely movable, transposed to the left side of the abdomen. The pelvic organs were normal. There was also in this case transposition of the spleen, the liver and the heart. The direction of the stomach was from right to left.

New Jersey Medical Society Journal, Orange

20: 109-144 (April) 1923

- Asthma. A. Vander Veer, Jr., New York.—p. 109.
- Correction of Nasal Deformities Associated with Harelip and Cleft Palate. W. B. Davis, Philadelphia.—p. 113.
- Observations in Treatment of Pulmonary Hemorrhages by Artificial Pneumothorax. M. J. Fine, Newark.—p. 119.
- Some Newer Methods of Infant Feeding. H. R. Mixsell, New York.—p. 122.
- Importance of Sleep in Infancy and Early Childhood. J. H. Marcus, Boston.—p. 127.
- Diagnosis and Treatment of Cardiac Irregularities. M. J. Raisbeck, New York.—p. 128.
- Elimination of Arsphenamin in Urine. L. Koppel and A. V. St. George, Jersey City.—p. 129.

New York Medical Journal and Medical Record

117: 385-446 (April 4) 1923

- Pathogenesis and Treatment of Exophthalmic Goiter in Light of Our Present Knowledge. A. Gordon, Philadelphia.—p. 385.
- Physiologic and Pathologic Importance of Thyroid Secretion. H. Stanley-Jones, Southampton, England.—p. 389.
- Probable Normal and Pathologic Physiology of Thyroid. J. Rogers, New York.—p. 393.
- Results of Treatment in One Hundred Consecutive Cases of Hyperthyroidism. H. A. Freund, Detroit.—p. 395.
- Comparison of Basal Metabolic Rate with Histopathology in Thyroid Dysfunction. J. B. Rucker, Toledo, Ohio.—p. 398.
- Goiter of Adolescence. J. Selinger, New York.—p. 399.
- Endocrines in Gynecology. J. T. Schell, Philadelphia.—p. 401.
- Present Day Considerations of Thyroid. J. B. Macberlin, Chicago.—p. 403.
- Relation of Spleen to Metabolism. Review of Literature. J. Rosenbloom, Pittsburgh.—p. 406.

- Enlarged Thymus Gland from Viewpoint of Laryngologist. L. Hubert, New York.—p. 410.
- Recent Developments in Parathyroid Therapy. H. W. C. Vinew, Cambridge, England.—p. 412.
- Some Neurologic and Therapeutic Aspects of Hypophyseal Tumors. I. H. Pardee, New York.—p. 415.
- Pituitary Tumors. F. C. Grant, Philadelphia.—p. 419.
- Endocrines in Uterine Hemorrhage. W. Lintz, Brooklyn.—p. 422.
- Endocrines in Otolaryngology. S. M. Wilson, Philadelphia.—p. 425.
- Relation of Endocrines to Internal Medicine. A. H. Hopkins, Philadelphia.—p. 426.

Rhode Island Medical Journal, Providence

6: 51-66 (April) 1923

- Atrophic Arthritis. L. T. Swaim, Boston.—p. 51.
- Schick Test and Toxin Antitoxin Immunization. H. J. Connor, Providence.—p. 55.

South Carolina Medical Association Journal, Greenville

19: 451-482 (April) 1923

- Value of Hospital Standardization to Medical Profession. F. M. Routh, Columbia.—p. 460.
- Clinical Results Following One Thousand Nonsurgical Drainages of Pathologic Gallbladders. G. M. Niles, Atlanta, Ga.—p. 463.
- Leukocyte Count in Diagnosis and Prognosis of Appendicitis. H. W. Rice, Columbia.—p. 467.

Southern Medical Journal, Birmingham, Ala.

16: 237-326 (April) 1923

- *Diagnosis of Abdominal Adhesions. C. W. Strickler, Atlanta, Ga.—p. 237.
- *Ileocecal Delay and Vagus Reflex as Etiologic Factors in Bronchial Asthma. J. T. Wolfe, Washington, D. C.—p. 244.
- *Malaria in Children and Abuse of Quinin. E. Rosamond, Memphis, Tenn.—p. 252.
- Family Group of Typhoid Simulating Meningitis. H. G. Beck and F. A. Ries, Baltimore.—p. 257.
- Development of Malaria Control Work in Alabama on County-Wide Basis. S. W. Welch, Montgomery, Ala.—p. 260.
- *Methods for Determining Malaria Prevalence. Spleen Rate of School Boys. K. F. Maxey and C. P. Coogle, U. S. P. H. S.—p. 269.
- "Man Made" Malaria. H. R. Carter, Washington, D. C.—p. 279.
- Acute Gangrenous or Perforative and Suppurative Retrocecal Appendicitis. J. N. Jackson, Kansas City, Mo.—p. 282.
- Transference of Crest of Ilium for Flexion Contracture of Hip. W. C. Campbell, Memphis.—p. 289.
- Treatment of Carcinoma of Bladder. W. Neill, Jr., Baltimore.—p. 292.
- Problem of Obscure Nose and Throat Affections. E. A. Looper, Baltimore.—p. 298.
- Direct Intubation in Neglected and Desperate Cases of Tracheal and Bronchial Diphtheria. C. E. Purcell, Paducah, Ky.—p. 301.
- Teaching of Physical Diagnosis and Its Position in Curriculum. I. I. Lemann, New Orleans.—p. 305.
- Use of Dispensary in Teaching of Clinical Medicine. L. Hamman, Baltimore.—p. 309.
- Use of Dispensary in Teaching of Clinical Surgery. I. Cohn, New Orleans.—p. 312.
- Teaching of Surgical Specialty. M. F. Arbuckle, St. Louis.—p. 317.

Diagnosis of Abdominal Adhesions.—Strickler is satisfied that many of the bad results following abdominal operations have been due to the fact that the patients were dismissed too early and did not receive the after-care they should receive. The operation is only the first step toward the cure. All these patients should, following the operation, be placed under the care of a competent internist until they are fully restored to health. In certain instances a rest cure is indicated, followed by a change of scene and environment and an abundance of outdoor exercise. In addition, these patients must be taught the right attitude toward life, its duties and responsibilities.

Ileocecal Delay and Vagus Reflex as Causes of Bronchial Asthma.—Wolfe contends that asthma can be relieved by locating and removing the cause of the hypertonic state of the vagus nerve, and that a majority of the causative pathologic factors will be found within the peritoneal cavity, and that adhesions will constitute a large majority of these intra-peritoneal conditions. The production of intestinal toxemia must always be considered as a factor in keeping the patient's health below par. For two years Wolfe has been employing slowly distending enemas daily to distend the colon, following abdominal operations, to prevent the colon from being bound again by adhesions. Under this method no case has given trouble with adhesions following operation. Also he refrains from feeding the patient till the third or fourth day.

Abuse of Quinin in Malaria in Children.—The abuse of quinin in its overdosage to children according to Rosamond,

is almost universal throughout the South. The giving of quinin in surgary syrups to infants and children with gastro-intestinal diseases is deprecated as it may aggravate the existing condition. The giving of overdoses of quinin may account for many nervous phenomena not otherwise explicable.

Spleen Rate for Determining Malaria Prevalence.—In certain areas of high malaria prevalence in the United States, Maxcy and Coogle have found the spleen rate of school boys to be a satisfactory index of this disease. One half of the boys in whose peripheral blood parasites were demonstrated, had enlarged spleens. Of the boys with palpable spleens only 20 per cent. were shown to be positive by a single blood smear. If every boy, or even most of these boys, were potential carriers of malaria infection, the examination of blood smeans revealed only about one fifth of the actual chronic malaria.

Tennessee State Medical Association Journal, Nashville

15: 513-552 (April) 1923

- Hydrocephalus. T. D. McKinney, Nashville.—p. 513.
Diagnosis and Treatment of Renal Tuberculosis. O. S. McCown, Memphis.—p. 521.
Splinting. Its Principles and Relation to Function. R. W. Billington, Nashville.—p. 524.
Pellagra. M. B. McCrary, Woodbury.—p. 529.
Kidney Surgery. G. R. Livermore, Memphis.—p. 534.
Cesarean Section. J. L. Crook, Jackson.—p. 539.

U. S. Naval Medical Bulletin, Washington, D. C.

18: 291-390 (March) 1923

- Mosquito Control in St. Thomas. E. Peterson and F. D. Walker.—p. 291.
Diagnosis and Treatment of Gastric Syphilis. W. A. Brams, Washington, D. C., and E. Antoine, Paris, France.—p. 303.
Scope of Roentgen-Ray Therapy in Naval Practice. E. L. Whitehead, Washington, D. C.—p. 309.
Composition, Equipment, Organization and Operation of Medical Department for Spring Exercises of Marine Corps Expeditionary Force, 1922. C. A. Costello, Washington, D. C.—p. 330.
Samoan Tattooing. D. Hunt and L. Humphreys, Washington, D. C.—p. 346.
Manipulation of Wax for Inlay Patterns. H. E. Harvey, Washington, D. C.—p. 348.
Postoperative Treatment. L. Martin, Washington, D. C.—p. 351.
Fatal Case of Nephritis with Special Reference to Nitrogen Retention. G. A. Alden and C. F. Behrens, Washington, D. C.—p. 365.
Pappataclike Fever Occurring in Cuba. E. A. Stephens, Washington, D. C.—p. 368.
Case with Symptoms of Motor Aphasia Following Neo-Arsphenamin Injection. A. J. Desautels, Washington, D. C.—p. 370.

West Virginia Medical Journal, Huntington

17: 409-450 (April) 1923

- Acute Intestinal Obstruction. C. S. Hoffman, Keyser.—p. 409.
West Virginia's Progress with Model Vital Statistic Law. C. F. Raver, Charleston.—p. 419.
Potter Method of Version. D. A. MacGregor, Wheeling.—p. 422.
Focal Infection in Relation to Diseases of Eye. W. F. Beckner, Huntington.—p. 429.
Modern Treatment of Bronchial Asthma and Hay-Fever. O. Biern, Huntington.—p. 433.
Growth within Spinal Canal Comprising Cord and Roots Localized: Operation: Recovery. T. A. Williams, Washington, D. C.—p. 437.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

20: 1-64 (Jan.-March) 1923

- *Treatment of Congenital Hypertrophic Pyloric Stenosis. Medicine Versus Surgery. L. Findlay.—p. 1.
Hereditary Tylosis. J. D. Rolleston.—p. 16.
*Rubella without Rash (Rubella Sine Exanthemate). G. Flöystrup.—p. 20.
*Case of Extreme Recurrent Drowsiness in Child, Apparently Due to Hepatic Disturbance. J. Thomson.—p. 23.
Raynaud's Syndrome in Nonsyphilitic Infant, with Remarkable Family History. F. P. Weber.—p. 25.
Case of Congenital Aneurysm of Pulmonary Artery. G. A. Sutherland.—p. 27.
Sudden Death from Blocking of Air Passages by Caseous Gland in Boy Aged Nine Years. F. J. Poynton and W. Williams.—p. 28.
Albuminuria in Family of Children. H. H. C. Gregory.—p. 29.

Treatment of Congenital Hypertrophic Pyloric Stenosis.—Spasm of the hypertrophied pylorus is regarded by Findlay as the most important factor in causing the symptoms in congenital pyloric stenosis. In his experience results of treatment are invariably better in private than in hospital practice. He is convinced that medical measures give as good, if not better, results than operation. Many figures are cited to uphold this assertion. Operation should, he says, probably be reserved for the youngest patients and for those seen soon after the onset of the symptoms. The great danger to be avoided in any form of treatment is underfeeding. The infant with congenital hypertrophic pyloric stenosis requires constant and individual care. In Findlay's opinion it is the absence of this individual care which is such a serious drawback to hospital treatment of disease in infancy.

Rubella Without Rash.—Flöystrup reports what he believes to be a unique case, the first on record, of rubella without a rash. The adenitis and the transient catarrh are pathognomonic symptoms. Flöystrup suggests that such cases may explain an apparent immunity to rubella.

Extreme Recurrent Drowsiness in Child.—Shortly after being weaned, Thomson's patient, aged 5 years, had his first attack of drowsiness. He was apparently in good health at the time. The drowsiness set in suddenly, without any warning. At the onset, the child's hands were noticed to be hot and his face cold and clammy, but there was no rise of temperature, no quickening of the pulse, and no sweating. On a few occasions vomiting occurred, but usually there was none. Wherever he was, he would suddenly say "I am tired," lie down on the floor or on the road, and fall sound asleep. He was put to bed, and generally slept for three days on end, waking once, or sometimes twice, in twenty-four hours to ask for a drink of water and to empty his bladder. He would then fall sound asleep again within a minute or so. His sleep seemed to be of an ordinary healthy character. The second attack occurred three months after the first. Later the intervals became gradually shorter, till when the boy was 3 years old he was having one about every three weeks. Thereafter the attacks decreased in frequency. The only abnormal points found on examination were a thick brown fur on the tongue, a definite increase of the cardiac dulness to the right, with visible epigastric pulsation, and an enlargement of the liver (3 fingers' breadths), which was quite soft. A mixture of sodium bicarbonate, nux vomica, infusion of gentian, and calomel, was given for six months. In the following year the boy had two or three attacks, and then they ceased altogether. He is now aged 21.

Calcutta Medical Journal

27: 49-96 (Feb.) 1923

- Coliform Organisms Found in Carbuncles and Open Ulcers. C. C. Basu.—p. 49.
Main Principles of Cardiac Practice. S. C. Bose.—p. 56.
Case of Anthrax. S. N. Ghosh.—p. 69.
Eye Cases. S. K. Ganguly.—p. 74.
"Anaerobe Edematogene" in Ulcerated Appendix. A. C. Ukil.—p. 76.

Edinburgh Medical Journal

30: 133-188 (April) 1923

- Edinburgh Medical School and Its Professors in My Student Days. B. Bramwell.—p. 133.
True Congenital Dislocation of Shoulder. D. M. Greig, Edinburgh.—p. 157.
*Intestinal Obstruction by Unusual Form of Enterolith. B. S. Simpson, Edinburgh.—p. 176.

Intestinal Obstruction by Mass of Twigs.—The obstructing mass in Simpson's case, which measured 4½ inches long by 2¾ inches at its broadest part, was composed of heather roots and twigs wound tightly together till the whole was of almost stony hardness. The patient, aged 16, had for a long time been in the habit of chewing heather while herding cattle. The mass had lodged in the ileum, 16 inches from the ileocecal valve.

Irish Journal Medical Science

5: 1-48 (March) 1923

- *Types of Pneumococci Causing Acute Lobar Pneumonia in Dublin. H. F. Moore.—p. 1.

- Diagnosis and Treatment of Gastric and Duodenal Ulcers. W. I. De C. Wheeler.—p. 12.
Thrombus of Aortic Valve Infected with Pneumococci. J. H. Pollock.—p. 18.
Application of Radium to Gynecology as Practiced by Vienna School. D. Cannon.—p. 20.

Pneumococcus Types in Dublin.—An analysis made by Moore of the types of pneumococci in 110 cases of pneumonia showed that the incidence of the four types of pneumococci causing acute lobar pneumonia is not very different in Dublin, the London area, or in America. As regards mortality, however, the case is somewhat different: in Type 1 cases, 16.66 per cent. mortality in Dublin as against 25.2 per cent. in America, and no mortality in Type 3 cases as against 56 per cent. in America. The total Dublin mortality was 18.18 per cent. as against 26 per cent. in America.

Journal of Laryngology and Otology, Edinburgh

38: 173-228 (April) 1923

- Aim and Use of Special Hospitals. S. Russell-Wells.—p. 173.
*Uncommon Tonsillar Appendage. Its Relationship to Cartilage Formation in Tonsil. A. L. Turner and T. Sprunt.—p. 179.
Oculovestibular Coordination as a Biologic Survival Factor. J. D. Lithgow.—p. 187.
Mesothelial Growth of Left Vocal Cord. B. S. Jones.—p. 191.
Three Cases of Zygomatic Mastoiditis. N. Rankin.—p. 192.

Tonsillar Appendage Containing Cartilage.—Turner records a case in which a fingerlike process, attached apparently near the lower pole of the left tonsil posteriorly and hanging free, passed downward into the pharynx. The appendage was removed. Under the low power, the specimen was seen to consist of a central core of loose connective tissue of a vascular adipose type. At the attached end of the appendage the core passed into the tonsil to unite with the connective tissue at its base. Many blood vessels were distributed in the fibro-adipose core, and several irregular islets of cartilage lay in a broken chain extending from the upper to the lower pole of the appendage. Turner inclined to the view that, in this case, either cartilage cells from the second branchial arch or primitive chondrogenetic mesenchyme cells have become included during fetal life in the fibro-adipose tissue situated toward the lower part of the base of the tonsil. The growth of the cartilage cells or the development of the primitive chondrogenetic cells produced a prominence toward the lower tonsillar pole. This became elongated by the act of swallowing and the passage of food aided by the action of the pharyngeal constrictors. The process would be analogous to the formation of polypoid adenoma of the bowel or uterine polypi. The case, apart from the peculiar character of the appendage, seems to correspond in every way with the cases which have been recorded by Mantchik, Ruckert and others, who support the embryonic inclusion theory of origin of the cartilage areas.

Journal of State Medicine, London

31: 151-200 (April) 1923

- Influence of Temperature on Antigens and Antibodies. T. Madsen.—p. 151.
Arsenobenzol Treatment of Syphilis. L. W. Harrison.—p. 177.
"Dyscratic Index"; Suggestion for New Method of Feeling Public Health Pulse of Towns or Nations. G. E. Brooke.—p. 183.
Ambulance Department of Order of St. John of Jerusalem as Civic Welfare Auxiliary. H. V. Miller.—p. 187.

Lancet, London

1: 779-832 (April 21) 1923

- Psychology of Courage. J. L. Birley.—p. 779.
Cultivation of Tissues and Tumors in Vitro. A. H. Drew.—p. 785.
*Considerations of Sacro-Iliac Joint. C. S. L. Roberts.—p. 787.
Peptone Immunization in Asthma and Other Allergies. A. G. Auld.—p. 790.
*Case of Erosion of Rectum by an Ectopic Placenta. J. A. C. Forsyth.—p. 795.
Treatment of Flail Elbow Joint with a New Operation of Arthrodesis. W. Mercer.—p. 796.
Case of Hypertrophic Peripheral Neuritis. F. G. Hobson.—p. 798.

Mechanics of Sacro-Iliac Joint.—The sacro-iliac joint is considered by Roberts under the following headings: (1) Morphology, (2) gross anatomy, (3) movements, (4) the commoner pathologic conditions of relaxation and strain. In order to understand the mechanics of the sacro-iliac joint, it is necessary to make a brief comparison between the con-

ditions obtaining in pelves of pronograde and orthograde animals. Of the last named he says: Relaxation arranges itself under three headings: (1) The physiologic relaxation associated with menstruation; (2) that associated with pregnancy, being an exaggeration of the normal physiologic condition; (3) that due to trauma, general weakness, or some known pathologic process in which various conditions predispose to joint trouble. Sacro-iliac strain may be of the following types: (a) Subacute; (b) acute; (c) chronic. The symptomatology of sacro-iliac strain and relaxation may be: (1) subjective, as pain; (2) objective, such as abnormal mobility, abnormal attitudes and postures, and abnormal limitation of movements. The danger of diagnosing sacro-iliac disturbance too often is emphasized.

Erosion of Rectum by Ectopic Placenta.—Severe hemorrhage from the rectum was one of the initial symptoms of ectopic pregnancy in Forsyth's case. The illness commenced with a sudden attack of colicky pain in the hypogastrium. The pain was so acute that the patient had to rest in bed for a few days and, on getting up, it returned with increasing severity. Obstinate constipation supervened, and with it intense pain in the rectum, causing a false desire to go to stool. Without the help of enemata the bowels refused to act, and when they did the agony was excruciating. At no time during the illness had any blood or pus been passed per rectum. On examination, a hard swelling about the size of an orange could be felt projecting above the pubes. It was slightly mobile and not tender. Per vaginam, the cervix was found to be high and tightly pressed against the symphysis. The posterior fornix was bulging from the presence of a hard rounded swelling which, per rectum, appeared to be about the size of an egg. No fluctuating point could be detected. Three days after admission the patient had a severe hemorrhage from the bowel and became very pale and collapsed. In the bulging wall of the rectum, just within reach of the finger, was an umbilicated depression. It was decided that most probably the case was one of ruptured tubal gestation with erosion of the rectum by the placental trophoblast. When the abdomen was opened no free blood was found. The suprapubic swelling proved to be the fundus uteri, occupied by a fibroid the size of the closed fist. Signs of old inflammatory trouble were evident in the left tube, which was converted into a small retort-shaped hydrosalpinx, and in the left ovary, which was firmly embedded in the mesosigmoid. The right tube turned sharply down behind the uterus and entered Douglas' pouch, the mouth of which was closed by adhesions. These were separated and the tube traced downward; it was found to terminate in a ruptured tubal gestation. The ectopic gestation had evidently occurred in the ampullary end of the tube, and the gestation sac had been extruded by tubal abortion rather than by tubal rupture, for the ostium, although expanded, was intact, except for a small tear in its upper edge. Part of the mole remained within the cornucopia-like end of the tube. Dissection of the mole revealed a small amniotic cavity containing the crushed remains of a tiny fetus a few millimeters long.

Tubercle, London

4: 289-336 (April) 1923

- Advantages and Disadvantages of Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. L. S. T. Burrel.—p. 289.
*Association of Bronchitis with Pulmonary Tuberculosis. J. C. McClure.—p. 293.
Advantages and Disadvantages of Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. G. E. Soltau.—p. 297.

Better Treatment for Tuberculosis Patients with Bronchitis.—McClure stresses the point that the consumptive who is prone to bronchial catarrh requires much more careful climatic treatment than the one who does not exhibit this tendency, and that a serious attempt to cure recurrent catarrh, even of the nasopharynx, is advisable in all cases of pulmonary tuberculosis. This is important not only in view of the possibility of immediate complications, but in view also of the establishment of a chronic condition which may invalid a patient whose pulmonary tuberculosis has reached the stage of complete arrest, and who might have looked forward otherwise to years of usefulness and comfort.

Archives des Maladies du Cœur, Paris

16: 97-160 (Feb.) 1923

Complete Heart Block from Disturbance of Excitability. Laubry and Doumer.—p. 97.

*Physiologic Dilatation of Heart. E. Bordet.—p. 103.

Arrhythmic Paroxysmal Tachycardia. Gallavardin.—p. 117.

Partial Branch Block. Lutembacher.—p. 120.

Physiologic Dilatation of Heart.—Bordet studied roentgenologic changes of the heart. The supposed diminution of the heart volume after moderate exercise is probably due to the fact that a person asked to hold his breath does it in maximal inspiratory position if he is out of breath after exercise. It is always necessary to compare the height of the diaphragm and not merely measure the heart. Another point which should not be forgotten, is the amplitude of the pulsations of the heart. Exertion easily doubles the amplitude.

Bulletin de l'Académie de Médecine, Paris

89: 331-356 (March 13) 1923

Osteoperiostosis of Bones in Leprosy. Delamare and Said Djémil.—p. 345.

Artificial Pneumothorax in Children. F. Armand-Delille.—p. 347.

*Preventive Serotherapy in Whooping Cough. R. Debré.—p. 348.

*Treatment of Wounds. S. Mercadé.—p. 352.

Preventive Serotherapy.—Debré has been applying to scarlet fever, mumps and whooping cough Nicolle's method of prophylaxis with convalescents' serum. He decided by the complement fixation test that the fourth week of whooping cough is the best time for obtaining the serum. Injected after the disease was under way, no effect was apparent, but it prevented the development of the disease when injected during the incubation, except at the very last; even then it materially attenuated the disease. These results were constant in the forty infants and other children thus immunized after prolonged exposure in three separate epidemic foci. The immunization—like that with measles—is probably only transient, but it answers the purpose. The incubation period of whooping cough is so long that ample time is available. He used a mixture of from four to eight serums, kept on ice for several days, injecting 2 or 3 c.c. in children under 3.

Treatment of Wounds.—Mercadé says that asepsis is not enough; material should be supplied the tissues for their regeneration, as the normal supply from within is shut off. Normal tissues do not take up substances supplied from without, but an inflammatory focus seems to absorb them with avidity. He has thus been treating all wounds since 1917, war and peace wounds, burns, chronic ulcers, etc., first gently rinsing the surface. The substance found most effectual is peptone mixed with manganese. Whether it acts by supplying elements from without or by attracting them from within, or both, healing proceeds exceptionally rapidly. Young cells develop by the second day, and the dressings over this powder do not stick to the surface.

Bulletin Médical, Paris

37: 327-414 (March 24-April 7) 1923

*A World-Wide War Against the Venereal Peril. Bayet.—p. 333.

*Hysteria. P. Kahn.—p. 363.

Pithiatism. J. Jumentie.—p. 366.

Hysteria and Mythomania. B. J. Logre.—p. 369.

Hysteria and Psychoanalysis. R. Laforgue.—p. 372.

*Syphilis and Tuberculosis in Children. J. Gényvriér.—p. 393.

Cancer of the Larynx. F. Bonnet-Roy.—p. 395.

A World War Against the Venereal Peril.—This address on the venereal peril was delivered in a private drawing room at Brussels. Professor Bayet said that circumstances now justify the hope of the complete extinction of the endemic of syphilis in time by sterilization of the contagious. Belgium is peculiarly adapted for this as it is compact and closely settled, and the task was undertaken with energy immediately after the war. The government promptly proceeded to provide the drugs and subsidize clinics and the entire medical profession of the country rallied to the work. Rich and poor are given the drugs without charge and, if unable to pay for treatment, they are treated gratuitously, the state reimbursing the physicians who give the treatment. The expense has been very small, and 17,000 persons were thus given sterilizing treatment last year. "As each syphilitic infects at least two others, on an average, this represents 40,000 pre-

served from syphilis in one year." This work has been effectively supplemented by a national antivenereal disease league which aims to unite all the social, moral and scientific forces of the country for intensive propaganda on the necessity for therapeutic sterilization of the contagious and avoiding of contagion. The social prominence of the leaders in this movement aided in carrying it to rapid success. Already the proportion of "new" cases of syphilis in his service has dropped to 20 per cent. from the 85 per cent. recorded in 1905 and 1906 in 2,500 cases. He added that a similar movement for concerted international action is the next step. The endemic of syphilis in Belgium is approaching extinction, and the same policy should be applied to all the great seaports of the world as the first measure. He insists that this is feasible. Another pressing measure is the repression of adulteration of the drugs used in the sterilizing treatment of syphilis. The extent of this adulteration, he declared, surpasses all belief. "There should be a central headquarters for the world war against syphilis, to which each nation could apply for advice and counsel."

Hysteria.—Kahn defines hysteria as a psychopathy characterized by three kinds of functional disturbances: morbid suggestibility; hyperemotivity linked to excessive excitability of the sympathetic nervous system, rendering possible organic trophic lesions as a consequence of emotional trauma, and an instinctive preferring of imagined lies to true facts.

Syphilis and Tuberculosis in Children.—Gényvriér denies that syphilis induces a predisposition to tuberculosis, or imprints a special character on it, and cites statistics to sustain this view.

Journal de Chirurgie, Paris

21: 273-400 (March) 1923

*Surgical Correction of Crooked Limbs. F. Cadenat.—p. 273.

*End-to-Side Entero-Anastomosis. J. Bloch.—p. 294.

*Rupture of Iliac Arteries from Contusion. G. Jean.—p. 303.

Surgical Correction of Crooked Limbs.—Cadenat gives an illustrated description of the gage and compass which he has devised for precision in wedge resection of the bone in genu valgum or other crippling deformity of the members. His thirty-two illustrations show the technic and the ideal outcome whether the broad end of the wedge faces the concave or the convex side.

End-to-Side Entero-Anastomosis.—Bloch's method seems to combine the advantages of both the end-to-end and end-to-side methods. The anastomosis is made like a stove-pipe; both have the same axial direction until the smaller bowel turns abruptly at a right angle to enter the larger. The junction is made so close to the sutured stump that there is no room for a blind pouch to form. The peristalsis is all in the same direction, and the parts stretch in time until the passage is continuous as with an end-to-end junction.

Rupture of Iliac Artery from Contusion.—Jean adds another case to the six he has found on record of isolated rupture of the common or external iliac artery. Only one of the seven patients survived. The prognosis would be better if the aorta could be compressed at once. In his case he applied the Momburg method of hemostasis, and ligated the external iliac artery and the vein, which was torn at three points. The man died fifteen minutes later.

Journal d'Urologie, Paris

15: 81-160 (Feb.) 1923

*Kidneys with Double Ureters. J. Guyot and Jeanneney.—p. 81.

*Roentgen Ray Treatment in Urology. Nicolich.—p. 89.

*The Ureosecretory Constant. S. Rolando.—p. 95.

*Eosinophilia with Hypertrophied Prostate. M. Negro.—p. 99.

Pyonephrosis from Congenital Hydronephrosis. A. Boeckel.—p. 105.

*Improvised Urinal After Cystostomy. Jeanbrau.—p. 109.

*Calcium Chlorid in Conservation of Catheters. M. Bonnet.—p. 111.

*Renal Crepitation with Calculi. A. G. Casariego.—p. 112.

Kidney with Two Ureters.—Guyot and Jeanneney discuss the great importance of the discovery that with two ureters the kidney is practically a double kidney. This makes it possible to resect one half in case of a circumscribed lesion, and leave a well functioning half. The two ureters may have only a single opening into the bladder. Legueu's patient is still in good health after removal of one kidney for tuber-

culosis and removal of half of the other kidney, which had two ureters. He resected the half kidney first, and waited until complete recovery from this operation before the complete nephrectomy on the other side. In the case illustrated here, one kidney had been removed and the double ureter on the other side had been sutured to the skin, as a vesicovaginal fistula and recurring pyelonephritis had entailed complications. Legueu has encountered double ureters in twenty-two cases, and in five was able to induce a clinical cure by partial resection of the kidney.

Roentgen-Ray Treatment from the Standpoint of an Old Urologist.—Nicolich's rather derogatory remarks have been summarized already, as they were published elsewhere last year. He says of Wetterer's "splendid results" with roentgen-ray treatment in 956 cases of prostatitis, that if the results are so "splendid" why does Wetterer follow the roentgen exposures with systematic daily massage of the prostate, when massage alone is enough to cure prostatitis? After thorough catheter treatment of disturbances from enlargement of the prostate, conditions may improve to such an extent as to simulate a cure. This is the explanation of the alleged "cures" after castration, vasectomy, roentgen-ray treatment and other measures that have been applied for hypertrophied prostate. The benefit from the systematic catheterization and general measures was ascribed to the local measures that had happened to be applied at the time. In Nicolich's experience with 486 tumors of the bladder, the majority malignant, only two instances of perforation of the rectum were observed, and in both of these cases roentgen treatment had been applied.

The Ureosecretory Constant.—Rolando relates that in the Genoa hospital the urine is examined with the Ambard and van Slyke formulas in every case of kidney disease, and the van Slyke formula has proved more reliable and instructive than the Ambard.

Diagnosis of Cancer of the Prostate.—Negro gives the data from twenty-five cases of hypertrophied prostate and eleven of cancer. In 75 per cent. of the first group the number of eosinophils was above normal while the neutrophil polynucleosis was almost invariably normal. With cancer of the prostate, the eosinophils were much below normal and the neutrophil polynuclears much above normal.

Improvised Urinal After Cystostomy.—Jeanbrau slits the upper end of an inner tube from a bicycle and ties the slit ends to tapes around the waist. The tube reaches nearly to the ankle; it is tied to the leg below the knee. It thus serves as a urinal with the patient up and around, the tube from the bladder, or the retention catheter, extending into the gaping top. He adds that rinsing the tube with vinegar water removes all odor of urine, as from rubber goods in general.

Calcium Chlorid for Conservation of Catheters.—Bonnet has found a shallow dish of calcium chlorid in the sterilizers very useful to insure continuous dehydration. It absorbs the moisture completely; by calcining the calcium chlorid occasionally, it can be used over and over again.

Renal Crepitation.—Casariego calls attention to a peculiar sensation felt on bimanual palpation of the kidney when it contains a calculus. The sensation is like that on palpating a bag full of snow. He calls it renal crepitation.

Paris Médical

13: 81-96 (Jan. 27) 1923

*Ocular Disturbances in Respiratory Affections. F. Terrien.—p. 81.

*Transfusion of Blood from Animals to Man. Cruchet and Ragot.—p. 82.

*Pathology of the Intervertebral Foramina. J. Forestier.—p. 86.

Coxalgia and Pseudocoxalgia. E. Bressot.—p. 89.

Ocular Disturbances in Affections of Respiratory Apparatus.—Terrien reviews the mutual relations of ocular and respiratory disturbances. Even a normal inspiration and expiration is accompanied by a slight dilatation and contraction of the pupil. This is of nervous origin and not due to changes in the blood content of the iris. In pneumonia, herpes of the cornea is comparatively frequent. The defect of the epithelium may be easily discovered by the fluorescein test. Dilatation and subsequent contraction of the pupil on the side of a pneumonia or spinal lesion has been found by

Chauffard. Three weeks after pneumonia a paralysis of the ciliary muscle (not of the sphincter of the pupil) similar to a postdiphtheric palsy may occur. Sarcomas of the lung and mediastinum may lead to metastasis in the choroid. On the other hand, affections of the eye may have an influence on the respiratory tract: Compression of the eye retards expiration. Irritation of the cornea may stop spasm of the glottis. Strong light can provoke sneezing in some individuals. This is probably due to an increased flow of tears, which irritates the mucous membrane of the nose.

Transfusion of Blood from Animals to Men.—Cruchet and Ragot draw the attention of scientists to the study of transfusion of blood of animals into men. They repeated Oré's experiments, but used citrated blood. They were able to transfuse very large quantities of blood in animals usually without hurting them much. Therefore they gave injections of from 25 to 40 and even 80 c.c. of citrated sheep's blood to ten patients and horse blood to ten other patients, two of whom received it twice. Agglutination in vitro is almost the rule, though there are exceptions. The injection was usually followed by pains in the lumbar region, radiating toward the bladder, slight or severe chills, dyspnea, fever or fall in temperature. These sensations lasted only for a quarter or half an hour. Hemoglobin was found in the urine twice (after sheep's blood); albuminuria occurred frequently. The injection killed immediately only one of their patients, who had received serum before.

Pathology of the Intervertebral Foramina.—Forestier reviews the affections of the spinal nerves passing through these foramina. The most constant clinical sign is a contracture of the dorsal musculature on the opposite side. This contracture is not present if only one root (not the whole nerve) is affected, as in herpes or tabes. The contracture causes a functional scoliosis. The palpation of apophyses of the articulations is painful. The cerebrospinal fluid shows a slight increase in albumin, with a normal number of cells, while affections of the roots cause lymphocytosis. The clinical picture varies according to the region affected. Torticollis, intercostal neuralgia, and the scoliotic form of sciatica (*ischias funiculaire*) with hypesthesia of the radicular type, are different affections of these nerves. A localization in the sacrolumbar joint is indicated by pains during the change from the sitting to the standing position. Secondary neuralgia of the spinal nerves occurs in tuberculosis, cancer, infections and injuries of the vertebrae, in *spondylose rhizomélisque*, osteophytic vertebral arthritis, and especially in the preankylosis stage of vertebral rheumatism. One very tenacious form of lumbago is a bilateral affection caused perhaps by hypertrophy of the epidural fat. Five such cases recovered after laminectomy. The differential diagnosis must eliminate visceral troubles (aneurysms, renal calculi), affections of the roots and of peripheral nerves. Epidural injections, colloidal metals, roentgen rays and physical treatment act favorably.

Presse Médicale, Paris

31: 141-152 (Feb. 14) 1923

Physiologic Bases for Intrathoracic Surgery. E. A. Graham.—p. 141.

*Beta Rays of Radium. P. Degrais.—p. 145.

*Pregnancy and Nephrectomy in Renal Tuberculosis. Favreau and Querrioux.—p. 146.

Beta Rays of Radium.—Degrais draws attention to the importance and therapeutic action of the beta rays of radium. The gamma rays constitute 4.8 per cent. of the radiating energy; the beta rays, 3.2 per cent. It is regrettable that the 92 per cent. consisting of alpha rays cannot be utilized. The disadvantage of beta rays lies in the difficulty of measuring the exact amount. The thickness of the filter plays an enormous part in the dosage, while it is almost negligible with gamma rays. The action of beta rays is comparatively superficial, but they have a great repressive action on living cells. They are excellent in some very superficial squamous epitheliomas, eczemas, pyodermias, nevi, lupus and angiomas. The cosmetic effect is very good.

Pregnancy and Nephrectomy in Tuberculosis of Kidneys.—Favreau and Querrioux found a normal development of pregnancy in women who had been nephrectomized for renal

tuberculosis. The prognosis is good for mother and child in unilateral cases.

31: 153-164 (Feb. 17) 1923

- *Oxidases in Mechanism of Fever. G. Marinesco.—p. 153.
- Periodicity of Atomic Weights of the Main Constituents of Higher Organisms. C. Strzykowski.—p. 156.
- *Sugar in Cerebrospinal Fluid and Blood. W. Mestrezat.—p. 157.
- *Liver Cells and Protein Metabolism. R. Noel.—p. 158.
- *Sun Rays and Rachitis. P. F. Armand-Delille.—p. 159.

Oxidating Ferments in Mechanism of Thermogenesis and Fever.—Marinesco examined histologically the amount of oxidating ferments under different conditions in animals and in men. He found a remarkable parallelism between function, temperature and the amount of these ferments. The heart of birds contain more of them than the heart of mammals, and much more than of frogs. He found them even in the glomeruli of kidneys, where they are present in mammals only in the embryonic stage. Hibernating frogs do not have much oxidase in muscles. This content increased if he kept these animals at a higher temperature. A very remarkable fact is that he could never find any trace of oxidases in the liver of frogs, while they abound in the liver of warmblooded animals. Hypothyroidism and avitaminosis cause diminution of them; certain islands in the liver lack them entirely in such cases. Embryos have a large amount of oxidases, even in organs whence they disappear later (peripheral nerves, nucleated red corpuscles, etc.). He believes that leukocytosis is an important factor in the mechanism of fever, because leukocytes are filled with oxidating ferments. He found a parallelism between the number of leukocytes and the fever in fatal cases of apoplexy. He believes that oxidases are the instrument with which the organism maintains or varies its temperature. The nervous system serves only to coordinate the vascular reactions which play a part in the distribution of cells containing oxidases.

Sugar in Cerebrospinal Fluid and Blood.—Mestrezat found in twenty normal cerebrospinal fluids from 0.055 to 0.065 per cent. of glucose. The average in twenty-five cases was 0.06, with variations from 0.048 to 0.070.

Liver Cells and Protein Metabolism.—Noel found in mice, without regard to diet modifications, mitochondria of the liver cells, which he considers as protein material in the process of elaboration ("proteoplasts").

Sun Rays and Rachitis.—Armand-Delille surveys the preventive and therapeutic effects of sun-rays in rachitis.

Schweizerische medizinische Wochenschrift, Basel

53: 161-184 (Feb. 15) 1923

- Heredity in Diseases of Eyes. A. Vogt.—p. 161. Conc'n p. 188.
- Atypical Course of Primary Carcinomas of Lung. Hedinger.—p. 165.
- *Associated Phenomena with Extrapyrimal Ridity. Bing.—p. 167.
- Epidemic of Pemphigus. H. Schultheiss.—p. 171.
- Two Cases of Rare Malformation of Heart. H. Trenkel.—p. 173.

Associated Phenomena in Extrapyrimal Ridity.—Bing found among sixty-two patients with a postencephalitis parkinsonian syndrome, two patients who were not able to sit still (Haskovec's akathisia). Sixteen patients were able to dance and make other rapid movements, though they were otherwise rigid (paradoxical kinesia). He found frequently in the writing of these patients a tendency to make the letters progressively smaller (micrography).

53: 209-256 (March 1) 1923

- *Annual Meeting of Swiss Surgical Society.—p. 209.
- Multiple Hemangiomatic Tumors in Thorax. R. Schweizer.—p. 243.
- Prophylaxis of Goiter. H. Eggenberger.—p. 245.
- *Duodenal Tube with Automatic Stopper. Baer.—p. 250.

The Constitution from the Surgical Standpoint.—This was the main subject discussed at the annual meeting of the Swiss Surgical Society, addressed by Askanazy, Vulliet and Kocher, opening the discussion.

Duodenal Tube with Stopper.—Baer gives illustrations of his double, fused tube, terminating in a rubber bulb. The inflated bulb plugs the outlet to the duodenum, and the contrast suspension, injected through the side opening in the metal olive, fills up the duodenum. He suggests that a second bulb might be added, to plug the pylorus, and the suspension or air might then be forced into the bile passages.

Riforma Medica, Naples

39: 145-168 (Feb. 12) 1923

- *Absorption Experiment in Diagnosis. A. Fragomelc.—p. 145.
- *Cholesterol Content of the Tonsils. L. Maffeo.—p. 146.
- *Busacca's Intracutaneous Reaction in Tuberculosis. Palmieri.—p. 148.
- *Relation of Erythrocytes to Blood Pressure. Lenaz.—p. 152.
- Infectious Diseases in Province of Lecce. G. Candido.—p. 157.
- Helminthiasis. G. Molinari.—p. 158.

Absorption Experiment in Diagnosis of Some Infectious Diseases.—Fragomele recommends Castellani's experiment (specific absorption) in cases where the agglutinin titer of the patient's serum is low or where it is high because of the presence of co-agglutinins.

Cholesterol Content of Pharyngeal and Palatal Tonsils.—Maffeo found a very low cholesterol content (0.0001 to 0.087 per cent.).

Busacca's Intracutaneous Reaction in Tuberculosis of Skin.—Palmieri examined a large number of patients suffering from tuberculous lesions of the skin, using also controls, with Busacca's intracutaneous injections of 0.2–0.3 c.c. of normal horse serum. The reaction is of no practical value.

Relation of Number of Erythrocytes and Blood Pressure.—Lenaz believes that the relation between the blood pressure and the number of erythrocytes is of diagnostic and prognostic significance, especially with regard to decompensation of heart and of kidneys.

Gaceta Médica de Caracas, Venezuela

29: 283-304 (Dec. 31) 1922

- *The Pasteur Centennial. L. Razetti et al.—p. 284.
- The Fight Against Malaria in Venezuela. R. Medina Jiménez.—p. 294.

The Pasteur Centennial in Venezuela.—This entire special number of the *Gaceta* is devoted to a tribute to Pasteur for which the profession of Venezuela had been preparing for more than a year. A public subscription was organized, a prize offered for the best work on national hygiene, and Pasteur's portrait was placed in the hall of the Academia de Medicina with much ceremony and historical surveys. The prize was awarded to Dr. R. Medina Jiménez for his work demonstrating the necessity for a vigorous campaign against malaria in Venezuela, and outlining ways and means to carry it out.

Siglo Médico, Madrid

71: 201-224 (March 3) 1923

- *Mental Disease of Endocrine Origin. A. Fernandez-Victorio.—p. 201.
- *Mucomembranous Colitis. C. Jiménez Díaz.—p. 203.

Endocrinopsychopathies.—Fernández-Victorio relates that a youth, of good family and a brilliant student, suddenly lost interest in his studies and family and developed a paranoid schizophrenic state. A tendency to adiposogenital dystrophia was pronounced and the young man was abnormally tall. This suggested that the pituitary was responsible for the endocrinopsychopathy, but pituitary treatment alone and thyroid treatment alone failed to benefit. Under mixed organotherapy, marked improvement was realized.

Mucomembranous Colitis.—Jiménez Díaz protests against this term, saying that proper treatment requires us to distinguish between stercoraceous mucous colitis and vagotonic mucous colitis. The latter is an actual myxoneurosis of the colon. It may be of primary constitutional origin, or secondary to acquired overstimulation of the vagus nerve, modifying the constitution. The expulsion of membranes merely signifies the coexistence of mucus and fat acids.

71: 249-276 (March 17) 1923

- *The Teeth in Relation to Chronic Rheumatism. G. Marañón.—p. 249.
- *Gumma of Inner Canthus. M. Marín Amat.—p. 254.
- Spirochetal Diseases from Immunologic Standpoint. W. H. Hoffmann.—p. 256. Begun p. 225.

Rheumatism of Dental Origin.—Marañón says that the idea of an infectious focus in the teeth as responsible for chronic rheumatism is still in embryo in Europe, and he urges the profession in Spain to listen to the Americans on the subject. Although he accepts infectious conditions in the teeth as an important factor in a certain group of cases of chronic

rheumatism, he insists that a predisposition in the way of disturbance of metabolism and body juices is always the primary factor.

Gumma of the Inner Canthus Simulating Malignant Disease.—In Marín Amat's case the tumor developed in the lacrimal region. He assumed at first that it was a furuncle, having had a number of cases of furuncles in the inner canthus. But the rapidly destructive course suggested tentative treatment as for syphilis, although the serologic tests were negative. No benefit was observed under mercury, but on supplementing this with an arsphenamin preparation, the lesion promptly retrogressed. The patient was a woman, aged 33. No other manifestations of syphilis were detected.

Archiv für Kinderheilkunde, Stuttgart

72: 161-240 (Feb. 6) 1923

*Influence of Phosphates on Excretion of Chlorids. W. Röckemann.—p. 161.

Therapeutic Action of Mercury and Arc Lamps. Hermann.—p. 172.

*Tendency to Edema in Infants. E. Slawik.—p. 178.

*Respiratory Stridor, Especially in Goiter. F. Wiltshcke.—p. 189.

*Schick Test in Diphtheria. J. Geissmar.—p. 194.

*Histophysiology of Irradiation with Quartz Lamp. A. Eckstein and W. Möllendorff.—p. 205.

Influence of Phosphates on Excretion of Chlorids.—Röckemann found retention of chlorids in children during periods of ingestion of primary sodium phosphate.

Tendency to Edema in Infants.—Slawik reviews edema in infants. He believes that scleredema is only a species of the comparatively frequent edema of new-born children. The difference lies in the subnormal temperature of infants suffering from scleredema, in which the subcutaneous fat becomes hard.

Respiratory Stridor, Especially in Goiter.—Wiltshcke emphasizes the significance of goiter for the genesis of respiratory stridor in infants. He never found stridor in infants in whom necropsy showed the presence of a hyperplastic thymus. Iodin cures the stridor, because the goiter disappears.

Schick Test in Diphtheria.—Geissmar gives the history and technic of Schick's test. She recommends that it be adopted in Germany more extensively in the fight against diphtheria.

Histophysiology of Irradiation with Quartz Lamp.—Eckstein and Möllendorff injected rats with trypan blue and irradiated them with a mercury quartz lamp. They found in the irradiated animals a very strong accumulation of the dye in the kidneys in the first hours, while the controls did not show at the time any changes. Later the controls had more dye in the kidneys than the irradiated animals.

Deutsches Archiv für klinische Medizin, Leipzig

141: 257-380 (Jan. 30) 1923

*Atrioventricular Automatism. W. Mobitz.—p. 257.

*Cholesterol Metabolism. S. Thannhauser.—p. 290.

Experimental Nephritis by Injection of Uric Acid. Aufrecht.—p. 312.

*Formation of Urobilin in Intestines. Kämmerer and Miller.—p. 348.

Disturbances of Conduction and of Irritability of Heart. H. von Hoesslin.—p. 348.

*Sugar in Blood and Tissues in Diabetics. Barát and Hetényi.—p. 358.

*Function of Skin Capillaries. L. A. M. van der Spek.—p. 366.

Atrioventricular Automatism.—Mobitz finds that certain well characterized dissociations between auricle and ventricle may be due to an interference of the impulses from the sinus and Aschoff's node, if the latter are more frequent. These interference dissociations are usually incomplete.

Cholesterol Metabolism.—Thannhauser found that the duodenal contents and the bile are able to split esters of cholesterol if it is dissolved (best in fat). Ingestion of fat is necessary for the resorption of cholesterol. If human blood is incubated, the amount of free cholesterol does not change. This, however, is not due to lack of a ferment splitting the esters, but simply to the already existing equilibrium between them and the free cholesterol. If esters are added to the blood, the amount of the free cholesterol increases. He publishes a method for estimating the cholesterol and bile acids in human feces, and made determinations of their metabolism. The necessary daily minimum of cholesterol is in adults approximately 0.03 gm. There were no indications

as to the ability of adults to synthesize cholesterol. An increased cholesterol intake does not cause increase in the production of bile acids. They do not seem to be the end-product of normal decomposition of cholesterol, but rather a physiologic secretion of the liver.

Formation of Urobilin in Intestines.—Kämmerer and Miller found that an emulsion of almost any human stool may reduce chemically pure bilirubin and mesobilirubin to urobilin. Biliverdin was not reduced by it, nor do the feces of herbivora reduce bilirubin, probably because their fermentation is stronger than putrefaction. The optimal p_H is = 7.0. Berkefeld filtrates of the stools caused no reduction. The responsible microbes are identical or similar to the anaerobic *Bacillus putrificus*. Yet synergism with aerobic bacilli, which are without effect when used alone, is essential. Colon bacilli increase the formation of bilirubin if there is no material for fermentation. Otherwise they inhibit the reduction, as do sugar or starch.

Sugar in Blood and Tissues in Diabetics.—Barát and Hetényi found an increased amount of sugar in tissues of diabetics, but not in other hyperglycemias.

Function of Skin Capillaries.—Spek found that the blood stream in the capillaries of a constricted finger is maintained if the pressure exerted by a broad finger cuff is only 10 mm. mercury lower than the maximal actual pressure measured on the finger. In insufficient capillaries this difference is higher, especially in hypertonia. He considers this method of investigation of the circulation by means of capillary functioning as better than Weiss' because it is restricted to this small area of the capillaries, and is not so dependent on the action of the heart. He tabulates the various findings from 120 persons, healthy and with various diseases.

Deutsche medizinische Wochenschrift, Berlin

49: 175-206 (Feb. 9) 1923

*Treatment of Syphilitic Aortitis. Schottmüller.—p. 175.

Serum Treatment of Influenza and Botulism. W. Steinbrinck.—p. 176.

Different Tuberculin Preparations in Pirquet Tests. Schreiber.—p. 178.

*Diagnosis of Pancreas Stones. J. L. A. Peutz.—p. 178.

*Diagnosis of Contraction of Mesentery. E. Schill.—p. 179.

Diagnostic Trepanation of Sternum. Seyfarth.—p. 180.

Acute Osteomyelitis of Spine. A. Wagner.—p. 181.

*Phlorizin in Diagnosis of Pregnancy. P. Köster.—p. 182.

Toxicity of Methyl Alcohol. G. Reif.—p. 183.

*Comparison of Serologic Tests. H. Förtig.—p. 184.

Melting Mercury Rods for Intramuscular Injections of Insoluble Compounds of Mercury. Pinczower.—p. 185.

*Choked Disk in Syphilis. R. Baruch.—p. 186.

*Arsphenamin in Malaria. K. Surbek.—p. 187.

"Combined" Treatment of Epilepsy. Rosenberg.—p. 188.

Formaldehyd Test for Albumin in Urine. Kaufmann.—p. 190.

"Fat Splitting Function of Lymphocytes." S. Bergel.—p. 190.

The Practitioner and Pulmonary Tuberculosis. Goldscheider.—p. 191.

Hygienic Teaching of People. G. Tugendreich.—p. 193.

Tuberculosis, Legitimacy and Illegitimacy. H. Reiter.—p. 194.

Treatment of Syphilitic Aortitis.—Schottmüller considers syphilitic aortitis, especially in its first stage, as curable. He recommends intensive and prolonged treatment with arsphenamin and mercury. The treatment should be tried even in decompensated syphilitic aortic insufficiency. He has roentgenograms of a man whose ascending and descending aorta in 1913 were three times the normal diameter. The man took part in the war as artillery officer, and has no subjective disturbances now. A patient suffering from aneurysm in 1916 is still living, as well as other similar cases. The aneurysm may become smaller. Syphilitic affections of the coronaries may be very favorably influenced. He starts with weekly injections, from 0.45 to 0.6 gm. (in women 0.3 to 0.45) of neo-arsphenamin, giving a total of 5 to 8 gm. Besides this, he injects weekly calomel or salicylate of mercury (0.05 to 0.1 gm.). After this he prescribes potassium iodid for a month or two. As a rule, especially with a positive Wassermann reaction, the patient gets for two or three years one injection of neo-arsphenamin monthly, or at least two intensive treatments as above, with a total of 5 gm. in a year.

Diagnosis of Pancreas Stones.—Peutz considers repeated microscopic examination of feces, especially after the Schmidt-Kashiwado nuclei test, as a good method. The increase of bilirubin in the serum after an attack speaks for

cholelithiasis. He injected one patient with pilocarpin, after which the amount of diastase in the blood increased. Pancreatic ferments were not present in the stool. Roentgen-ray examination revealed a shadow in the pancreas region, due to calcified mesenteric glands, and not to calculi in the pancreas.

Diagnosis of Contraction of Mesentery.—In cases with free ascites giving no tympanitic percussion note at all or only low in the flanks, Schill concludes that retraction of the mesentery has taken place. It may be due to carcinosis or tuberculosis of the peritoneum. He does not mention that Thomayer thirty years ago described an abnormal distribution of the percussion sounds as a sign of retraction in tuberculosis and carcinosis of the peritoneum.

Phlorizin in Diagnosis of Pregnancy.—Köster examined 100 cases with the phlorizin test. She found that a positive result does not always prove, nor the negative disprove, pregnancy. The test may give opposite results on two successive days.

Comparison of Dold and Meinicke Reaction with Wassermann Reaction.—Förtig examined 450 serums. He objects to the Meinicke and Dold technics that they give too many false positive reactions.

Choked Optic Disk in Syphilis, Its Prognosis, and Treatment with Arsphenamin.—Baruch finds that optic neuritis in syphilis has not become more frequent since arsphenamin was introduced. Most of the patients recover after treatment.

Silver Arsphenamin, Neosilverarsphenamin and Sulphoxylarsphenamin in Malaria in Dutch East Indies.—Surbek recommends these preparations especially for carriers of gametes.

49: 207-240 (Feb. 16) 1923

- Diuresis and Diuretics. F. Müller.—p. 207.
Recent Modifications of Serologic Tests. M. Schneider.—p. 209.
Treatment of Syphilis with Bismuth Preparations. Voehl.—p. 210.
*Errors in Diagnosis of Lead Poisoning. Schwarz and Hefke.—p. 212.
Paraneuritic Abscess. F. Franke.—p. 214.
Osteoma of Frontal Sinus. H. Reh.—p. 216.
Diagnosis of Epidemic Encephalitis. E. Hachez.—p. 217.
Arsphenamin Encephalitis Treated with Epinephrin; Recovery. Voithenberg.—p. 217.
*Early Affection of the Auditory Nerve in Syphilis. M. Bab.—p. 218.
Examination of Speed of Sedimentation. A. Westergren.—p. 218.
Hemoglobinuria in Acute Infectious Diseases, Especially in Scarlet Fever. B. Günther.—p. 219.
Venesection. Burwinkel.—p. 221.
Jupiter Arc Light in Therapeutics. A. Hartmann.—p. 221.
The Practitioner and Pulmonary Tuberculosis. Goldscheider.—p. 222.
Dermatological Diagnosis. M. Joseph.—p. 224.
Public Health Statistics in the United States. Sieveking.—p. 226.
A Picture of Copernicus as Physician. F. Sorge.—p. 226.

Errors in Early Diagnosis of Lead Poisoning.—Schwarz and Hefke agree with P. Schmidt on the four cardinal symptoms for early diagnosis of lead poisoning: complexion, border of gums, basophilic stippling of erythrocytes, and hematoporphyrin in urine. As a preliminary examination of blood, the "thick droplet" is useful.

Early Affection of the Auditory Nerve in Syphilis.—In 15 per cent. of primary syphilitic affections Bab found changes in the vestibular nerve (tendency to nystagmus, pastpointing reaction) even if no subjective signs were present. He considers the ear function test an aid in the diagnosis of primary syphilis.

Klinische Wochenschrift, Berlin

2: 285-332 (Feb. 12) 1923

- Pathology of Urination. O. Schwarz.—p. 285.
Mechanism of Tonus of Muscles. E. A. Spiegel.—p. 288. Cone'n p. 339.
*Constitutional Types in Gynecology. P. Mathes.—p. 291.
*Muscularis Mucosae in Evacuation of Stomach. K. Sick.—p. 293.
*D'Herelle's Phenomenon. W. Borchardt.—p. 295.
*Acquired Resistance of Bacillus Prodigiosus. Meyer.—p. 297.
*Boiled Human Milk. E. Martin.—p. 299.
*Serologic Tests in Internal Medicine. A. Holländer.—p. 302.
*Influence of Vitamin A on Weight of New-Born. Schlossmann.—p. 304.
*Bilirubin and Fibrinogen in Blood. P. Levi.—p. 305.
*Thymus in Parthenogenetic Tadpoles. H. Voss.—p. 306.
*Urea Content in Saliva. M. Landsberg.—p. 306.
*Decapsulation of Kidney in Anuria. A. Niedermeyer.—p. 307.
Rare Malformation of Alae of Nose. T. Liebermann.—p. 307.
Use of Hypnotics in Neurology. F. Stern.—p. 308.
Venereal Diseases and Prostitution. Tjaden.—p. 312.

Constitutional Types in Gynecology.—Mathes points to the frequency of intersexual types in women. The most important sexual differentiation is not in the sex gland, but in the preponderance of one sex chromosome throughout the body. He considers the intersexual type as identical with Kretschmer's schizoid type in psychiatry. The vegetative nervous system and its center in the base of the brain are unstable. Such women are in a continuous struggle with the disharmonious impulses of their ambiguous sexuality. The critical exacerbations come when they are forced bodily or mentally to a sexual decision: puberty, menstruation (dysmenorrhea), choice of mate (nuptial psychoses, vaginism), pregnancy (hyperemesis, functional heart disturbances), marital troubles due to inability to fulfil the duties of wife, mother and housewife, and the menopause. More cases of sterility are due to intersexuality, than to simple hypoplasia of the uterus. Dread neuroses and hopelessness are frequent in their affective life. The sexual traumas of childhood are not the real cause of the later neurosis; they are rather its precursors, and get a strong affective value only because everything sexual is a problem to these patients. Preparations of pituitary are sometimes valuable. They act on the vegetative centers perhaps directly, perhaps through their action on the sex glands. Psychic treatment should explain the condition to the patients, and either teach them to suppress their sexual tendencies, supplanting them by other qualities, or to develop the small feminine sexuality which they have. Older patients may be castrated by roentgen rays.

Action of Muscularis Mucosae in Evacuation of Stomach.—Sick found that small waves, which he attributes to the muscular layer of the mucosa, play a part in the evacuation of the last remnant of the meals.

D'Herelle's Phenomenon.—Borchardt found that extracts of pancreas of cats with the addition of an extract of the mucosa of the small intestine start the lytic phenomenon of bacteriophagy in bacilli of the colon group and staphylococci. Extracts from pancreas or from the mucosa alone were not active. He believes that trypsin leads to decomposition of the bacilli in such a way that it frees from their bodies a similar tryptic ferment. The results were negative with other micro-organisms.

Acquired Resistance of the Prodigiosus Against Roentgen Rays.—Meyer found that a culture of *Bacillus prodigiosus* can be made resistant, by irradiation, against subsequent applications of roentgen rays. These roentgen resistant strains were not resistant to ultraviolet rays. The acquired resistance lasted for about four weeks.

Boiled Human Milk.—Martin had excellent results with the use of boiled human milk in infants.

The Sachs-Georgi and Dold Reactions in Internal Medicine.—Holländer concludes from a study of 2,763 serums with the Sachs-Georgi reaction and 415 of them with the Dold reaction, that they are valuable as controls of the Wassermann reaction.

Influence of Vitamin A on the Weight of the New-Born.—Schlossmann publishes the average monthly weights of 13,805 infants from one clinic in eighteen years. He does not find any marked influence of the season. He declares that it would be dangerous to try to influence the weight and hardness of the skull by lack of vitamins in the food of the prospective mother.

Bilirubin and Fibrinogen in Blood.—Levi found that addition of proteolytic ferments to a serum giving the indirect reaction of Hijmans van den Bergh changes it quickly to a direct. He believes that physiologically the cells of the liver split bilirubin from a protein rest of hemoglobin. The indirect reaction is due to the binding of bilirubin to protein. The presence of proteolytic ferments in the blood can split this complex, and makes thus a safe differentiation between hemogenous and hepatogenous icterus with Bergh's test impossible.

The Thymus in Parthenogenetic Tadpoles.—Voss found in parthenogenetic tadpoles a very small thymus, resembling the cases of accidental involution due to lack of food. The alimentary canal and liver were abnormal in these animals, and the sex glands underdeveloped.

Urea Content in Saliva.—Landsberg found approximately the same amount of urea in saliva as in urine.

Recovery After Decapsulation of Kidney in Case of Uremic Anuria.—Niedermeyer's patient suffering from anuria and uremia recovered after decapsulation of one kidney.

2: 333-380 (Feb. 19) 1923

- *Pathology of Growth in Childhood. H. Aron.—p. 333.
- *Surgery of Angioneuroses. C. Kreibich.—p. 337.
- *D'Herelle's Phenomenon. E. Putter and S. Vallen.—p. 339.
- *Mechanism of Tonus of Striated Muscles. E. Spiegcl.—p. 339. Conc'n.
- *Action of Phlorizin on Sugar in Blood. M. Rosenberg.—p. 342.
- *Question of Neurogenous Heterochromia of Iris. Heine.—p. 345.
- *"Mitral Form" of Healthy Hearts. G. Nemet.—p. 348.
- Formation of Bilirubin Outside of Liver. Papendieck.—p. 350.
- *Specificity of Focal Reaction. C. Mau.—p. 351.
- New Agglutinoscope. A. Korach.—p. 352.
- Reaction Energy of Organic Arsenic and Antimony Compounds in Relation to Their Biologic Action. H. Schmidt.—p. 352.
- *Action of Ultraviolet Rays in Avitaminosis. B. Ishido.—p. 353.
- Epithelization with Roentgen Rays. H. Haberland.—p. 353.
- Trauma as Factor in Syringomyelia. M. Zielaskowski.—p. 354.
- Use of Hypnotics in Neurology. F. Stern.—p. 355. Conc'n.
- School and Tuberculosis. S. Samelson.—p. 358.
- Cultivation of Pure Strains of Cells. R. Erdmann.—p. 362.

Pathology of Growth in Childhood.—Aron deals with the causes of growth with special regard to over-tall children. In judging children, neither the weight nor the length is as important as harmonious proportions. "Sufficient muscular exercise can act against a disproportionate growth in height."

Surgery of Angioneuroses.—Kreibich agrees with Cassirer, who considered angioneuroses as irritative and not parietic phenomena. He believes that the cells die because of a vasomotor anemia and not from disturbances of trophic nerves. He found with Polland that a blister contains approximately blood serum (more proteins than an inflammatory exudate). He does not much believe in the existence of trophic nerves. Leriche's periarterial sympathectomy may act also centripetally, and should be tried in Kaposi's pigment sarcoma and other affections of the skin. It is possible, that a unilateral operation would be sufficient. He cites a case of psoriasis which disappeared on the side of the body on which the ulnar nerve was injured by a bullet, and other cases showing that there may be centripetal action.

D'Herelle's Phenomenon.—Putter and Vallen filtered bile, bouillon cultures, killed by heat, through de Haen's membrane filters, and found that the filtrates showed bacteriophagy.

Mechanism and Innervation of Tonus of Striated Muscles.—Spiegel finds that the tonus of striated muscles is due to the same changes in the fibrils (acid formation) as the quick contractions. The mechanism of both actions is centrad to the cells of the anterior horn of the spinal cord.

Action of Phlorizin on Sugar in Blood and Urine in Diabetes and Nephritis.—Rosenberg found frequently a stronger reaction to phlorizin in diabetics than in healthy subjects. It depends on the severity of the process. He believes that the action of phlorizin is not limited to the kidneys in these cases. In severe insufficiency of kidneys, the glycosuria is smaller and hyperglycemia occurs. He attributes it to an osmotic decompensation and not to the lack of glycosuria.

Question of Neurogenous Heterochromia of Iris.—Heine is very skeptical on the question of neurogenous heterochromia.

"Mitral Form" of Healthy Hearts.—Nemet found in healthy subjects that the outline of the heart sometimes resembled that in mitral stenosis. He believes that it may be due to a rotation of the heart from the right, dorsad, to the left, centrad.

Specificity of Focal Reaction.—Mau found a positive focal tuberculin reaction in forty-eight cases among 178 surgical patients. A typical focal reaction may also follow an injection of tuberculin in certainly not tuberculous lesions. The probability of tuberculosis in a positive focal reaction is about 80 per cent.

Compensatory Action of Ultraviolet Rays on Avitaminotic Disturbances of the Bone Marrow.—Ishido found that ultraviolet rays prevent the atrophy which would otherwise occur in the bone marrow of rats in avitaminosis.

Medizinische Klinik, Berlin

19: 163-194 (Feb. 11) 1923

- *"Rheumatic" Infection. J. Wiesel.—p. 163. Conc'n p. 197.
- Swedish Gymnastics. M. Kaufmann.—p. 165.
- *Diseases of the Abdomen in and After Influenza. Esau.—p. 168.
- Sugar Injections in Diseases of Heart and Vessels. Mocwes.—p. 169.
- Indications for Digitalis and Adonis. J. Citron.—p. 170.
- Neo-silver arsphenamin. Nolten.—p. 171.
- Stomach Function Test with Fluid Material. H. Galewski.—p. 174.
- Diuretic Action of the Sulphur Thermal Water of Baden. J. Schütz.—p. 176.
- Agglutination of Tubercle Bacilli. E. Christensen.—p. 177.
- Estimation of Disability. Wulsten.—p. 178. Conc'n.
- Sickness and Complaints of Schoolchildren. K. Blühdorn.—p. 181.
- Recent Works on Cardiovascular Disease. E. Edens.—p. 183.

"Rheumatic" Infection.—Wiesel emphasizes the great frequency of a hypoplastic constitution in cases of acute polyarthritis. Heredity is almost always present.

Diseases of the Abdomen In and After Influenza.—Esau observed several cases of serous peritonitis in soldiers during the epidemic of influenza. The men fell sick suddenly with chills, vomiting, high fever and pains in the abdomen, but the abdominal muscles were not rigid. All the men recovered in ten to fourteen days. Influenza may also cause spasms of the intestine and pains in the musculature. Many such cases have been wrongly diagnosed and eventually operated on as appendicitis.

19: 195-230 (Feb. 18) 1923

- Anesthesia in Surgical Operations. F. König.—p. 195.
- Acute Rheumatic Arthritis. Wiesel.—p. 197.
- *Determination of Virulence of Streptococci. C. Ruge. II.—p. 200.
- Moral Depravity After Injury of Head. Rad.—p. 201.
- Symptomatology of Pleuritis. L. Hess.—p. 203.
- Temporal Crescent in a Scotoma in Migraine. O. Sittig.—p. 204.
- Treatment of Angina Pectoris. G. Rosenfeld.—p. 205.
- Periarthritis Nodosa. W. Löwenberg.—p. 207.
- Lymphangioma of Small Intestine. E. Schnebel.—p. 208.
- Estimation of Mental Fatigue in Children. Strauch.—p. 209.
- *Instability of Serum Proteins in Syphilis. Krömeke.—p. 210.
- Sarcoma of Left Kidney Not Due to Injury. A. Wilde.—p. 211.
- Anodynes. C. Bachem.—p. 212. Cont'n.
- Gynecology of Practitioner. E. Runge.—p. 214.

Determination of Virulence of Streptococci.—Ruge, in obstetric and gynecologic infections, takes 2 or 3 loopfuls of the genital secretions containing cocci, and mixes them with 0.5 c.c. of the defibrinated blood of the patient. He observes one drop of this mixture on a warm stage. Usually the cocci disappear gradually. If they start to multiply within the first four hours, the prognosis is unfavorable. This simple reaction serves to estimate the relation between virulence of the germs and resistance of the organism. If the germs are in the blood, an analogous method devised by Philipp is useful: Serial plate cultures are made from the incubated blood every one or two hours. With very virulent germs, the number of colonies increase in the later portion. Ruge used his test in 111 women—usually infections in childbirth or miscarriage—and the test was done at a time when the clinical symptoms did not give a certain prognosis. Two cases were failures and five were doubtful. In all others its value was confirmed by the results, even when they contradicted the clinical expectations. The test may give valuable indications for operative proceedings.

Colloidal Lability of Serum Proteins in Syphilis with Regard to Darányi's Reaction.—Krömeke recommends Darányi's alcohol flocculation as a good indicator of the amount of toxins formed. He does not consider the Wassermann reaction an absolute indication for repeated treatment if Darányi's reaction is negative. The Wassermann reaction is much more frequently nonspecifically positive than is generally assumed.

Monatsschrift für Kinderheilkunde, Leipzig

24: 401-761 (Jan.-Feb.) 1923

Transactions of German Pediatrics Congress, Leipzig, 1922.

Münchener medizinische Wochenschrift, Munich

70: 197-228 (Feb. 16) 1923

- *Some Basic Problems of Nutrition. A. Bier.—p. 197.
- *Nutrition After Injections of Blood of Animals. E. Kisch.—p. 199.
- Shock Treatment of Chronic Affections of Joints and Muscles. A. Zimmer and E. Schulz.—p. 202.

- *Endocrine Lesions of Genitals. Kämmerer and Lorber.—p. 203.
Protein Treatment of Septicemias. R. Koch.—p. 206.
Tabes from Practitioner's Standpoint. Curschmann.—p. 213.

Some Basic Problems of Nutrition.—Bier finds that vitamins, iron, arsenic and phosphate have no certain effect on nutrition. Exercises are more effective. Other measures are injections of foreign proteins, especially of animal blood. He attributes their action to the stimulating effect of products of their decomposition. This is the reason why he prefers to inject small quantities of animal rather than human blood. Hopeless cases of tuberculosis, severe exophthalmic goiter and chronic arthritis were favorably influenced. In one diabetic woman, cutaneous gangrene and carbuncle followed the injection of 0.2 c.c. of swine blood. Large and frequently repeated injections caused loss in weight. Psychic nutritive stimuli (more appetizing food) should not be neglected. Gymnastics should not be confined to one line; the whole body must be developed harmoniously.

Amelioration of Nutrition of Tuberculous Patients After Intravenous Injections of Blood of Animals.—Kisch made 300 intravenous injections of blood of different animals to test Bier's theory, mentioned in the preceding abstract. He chose the severest cases of tuberculosis. Collapse occurred rarely and there was no death. He injected small (5 c.c., decreasing to 1 c.c.) amounts of blood from different animals into the same patient. The weight of many patients started to increase after this treatment was instituted. Swine blood was most active. The injections caused a rapid but brief decrease in the number of erythrocytes (to 50 per cent.) with unchanged hemoglobin. Regeneration was rapid.

Cerebral Irritation in Endocrine Lesions of Genitals.—Kämmerer and Lorber point to the possibility of the localization of some cerebral sensory phenomena (headache, dizziness, even syncope) in the diencephalon, especially if other symptoms caused by its affections (disturbances of sex organs, obesity, polyuria) are present.

Wiener klinische Wochenschrift, Vienna

36: 121-138 (Feb. 15) 1923

- *Surgery of Gallbladder. P. Walzel-Wiesentreu.—p. 121.
*Pyocyaneus Bacteriophages. S. Okuda.—p. 125.
Paresthesias and Edema Due to Roentgen Injury. L. Haas.—p. 128.
Treatment of Acute Roentgen Intoxication with Hypertonic Solutions. Mahnert and Zacher.—p. 129.
Influenza in Children. K. Dietl.—p. 130.
*Births and Miscarriages. E. Waldstein.—p. 131.

Surgery of Gallbladder.—Walzel-Wiesentreu does not recommend early operation except in urgent cases. One must not wait, however, too long. He dilates the papilla Vateri and introduces a rubber drain, which usually passes by the bowels after a short time. He considers this sufficient drainage. Primary suture of the abdominal wall is done only exceptionally in Eiselsberg's clinic.

Pyocyaneus Bacteriophages.—Okuda confirms Cancik's discovery of pyocyaneus bacteriophages. He found them in several cultures and preparations of these bacilli. They contain two specific types of bacteriophages.

Births and Miscarriages.—Waldstein finds that those who are worried about the supposed lack of will to procreate forget the spontaneous miscarriages. As long as the mortality of children has not been lowered at least to 7 per cent. and as long as poor women are exposed in a higher degree to spontaneous abortion, it is not fair to talk about a decrease in the will to procreate. He found that of the thirty-two children of one woman, repeatedly quoted as an example, only one child reached the age of 19; he prefers a smaller more valid progeny. He is opposed to artificial abortion, except when medically indicated; yet, he agrees with Grotjahn that preventive means are the best way to stop dangerous abortions. More of Waldstein's statistics were quoted in the Vienna Letter, p. 1328.

Zeitschrift für Kinderheilkunde, Berlin

35: 1-66 (Feb. 14) 1923

- Hemopoietic Foci in Prostate and Skin of Soles in New-Born and Fetus. A. J. Weils.—p. 1.
Saliva of Infants. H. Davidsohn and A. Hymanson.—p. 10.

- Weight of Thymus in Infants and Children, and Its Relation to the Suprarenal Capsules. K. Keilmann.—p. 25.
*So-Called Idiosyncrasy for Cow's Milk in Infants. Holstein.—p. 38.
Periodic Vomiting of Children. Gehrt.—p. 51.
Feeding with Boiled Human Milk. E. Wülffing.—p. 56.
Speed of Development and Constitution of Infants. Salge.—p. 59.

So-Called Idiosyncrasy Against Cow's Milk in Infants.—Holstein believes that the supposed idiosyncrasy of some infants against cow's milk is due to disturbance of the ion equilibrium. Cow's milk contains only a little more potassium than human milk, but too little chlorin to balance the excretion. Other foods containing too much potassium caused similar effects in a case described.

Zentralblatt für Gynäkologie, Leipzig

47: 417-464 (March 17) 1923

- The Mechanics of Childbirth. A. Mueller.—p. 418.
*Combined Mercury and Arsphenamin in Sepsis. H. Kiehne.—p. 429.
*Albuminuria of Pregnancy. D. Fuchs and A. v. Fekete.—p. 433.
Torsion of Fallopian Tube. K. Laemmle.—p. 436.
Effect on Fetus of Morphine Given Mother. J. Brock.—p. 437.
Treatment of Leukorrhoea by Continuous Irrigation. R. Kuhn.—p. 439.

Combined Use of Mercuric Chlorid and Neo-Arsphenamin in Puerperal Sepsis.—Kiehne reports good results, much better than had been formerly secured with silver salts, etc. If the patient does not improve under this treatment, placental remnants should be sought. From 1911 to 1921 the death rate from puerperal sepsis in the Halle clinic had ranged from 13 to 30 per cent. Since the introduction of the combined mercury-arsphenamin treatment, in 1922, the mortality has fallen below 10 per cent. Kiehne dissolves 0.3 gm. of neo-arsphenamin in 5 or 6 c.c. of tap water and adds 2 c.c. of a 1 per cent. solution of mercuric chlorid. The mixture is injected intravenously. After two or three days a second injection may be required. In some cases as many as five injections were given, the intervals being progressively longer.

Albuminuria of Pregnancy.—Fuchs and Fekete, in studying diseases of the kidneys during pregnancy, considered the question to what extent the changed body attitude in pregnant women might be the cause of albuminuria. It is well known that in certain constitutions, without pathologic changes in the kidneys, orthostatic or postural albuminuria occurs, which passes away when the position of the body is changed. It was therefore thought that possibly the changed attitude of the body in pregnant women might play a part in the genesis of albuminuria. Their experiments showed that the position of the body in the pregnant has no bearing on the presence of albuminuria; at the most, it may increase slightly an albuminuria already present.

Zentralblatt für innere Medizin, Leipzig

44: 81-128 (Feb. 10-17) 1923

- *Hypertension with Hyperglycemia and Hyperuricemia. E. Kylin.—p. 81.

Hypertension with Hyperglycemia and Hyperuricemia.—Kylin divides hypertension into a pure arterial form (in benign sclerosis of kidneys) and into a form in which the pressure in the capillaries is also increased (in acute glomerulonephritis). The morphologic changes, increased permeability and pressure in the capillaries make a diffuse affection of the capillaries in acute glomerulonephritis more than probable. These changes are not present in essential hypertension, and edema occurs in the latter disease, only if the heart is decompensated. The lability of blood pressure is here more characteristic than its height. This speaks, besides other reasons, for vasoconstriction due to nervous influence. The blood sugar is slightly increased, the carbohydrate tolerance lowered. Subcutaneous injection of 1 mg. epinephrin usually lowers the blood pressure in essential hypertension, but increases it in acute glomerulonephritis, as in healthy persons. Epinephrin usually does not increase the glycemia much in essential hypertension. He concludes that it indicates a disturbance of the vegetative nervous system—probably vagotonia. One form of diabetes characterized by hyperglycemia, hyperuricemia and hypertension belongs to this group of essential hypertension.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 23

CHICAGO, ILLINOIS

JUNE 9, 1923

THE ELICITATION AND EVALUATION OF PHYSICAL SIGNS

IN THE DIAGNOSIS OF PULMONARY
TUBERCULOSIS *

HENRY F. STOLL, M.D.
HARTFORD, CONN.

A skilful technic and sound judgment in appraising symptoms are the essentials of good surgery. The importance placed on the former is evinced by the numerous articles that appear in the medical journals each year, describing in great detail how various operations are performed. On the other hand, discussions of technic in conducting physical examinations are very uncommon—yet a skilled neurologist may detect a nerve palsy or elicit a reflex not previously noted because of his superior technic in conducting the examination.

There can be no doubt that the failure to remove the clothing and lack of familiarity with the technic necessary to elicit the physical signs that accompany early tuberculous disease result in many incipient cases being unrecognized. Mistakes in diagnosis are about equally divided between the failure to detect the physical signs and the erroneous interpretation placed on the signs elicited. The former results in missing the early cases; the latter frequently causes tuberculosis to be incorrectly diagnosed.

There is not time, nor is it necessary, to describe in minute detail all the steps of the complete physical examination. Only certain points that seem of special importance will be considered. It is desirable, I believe, to ascertain the position of the apex beat of the heart before proceeding with the examination of the lungs, as the examination of the heart is apt to be rather cursory, once pathologic changes are discovered elsewhere. Not infrequently, patients are seen in whom tuberculosis has been diagnosed because of a cough associated with dulness, distant bronchial breathing and râles over the lower part of the chest, in whom the true condition of pleural effusion might have been recognized had it been noted that the apex beat was displaced several inches from its normal position.

INSPECTION

In examining for tuberculosis, inspection, if properly carried out, often gives information of considerable value. It is essential, however, that the patient directly face the light so that both sides of the chest are equally

illuminated. It is desirable to have the subject sit on a revolving stool, erect but with the shoulders relaxed. Unilateral apical retraction suggests an old process that has undergone fibrosis. It may or may not be active. The motion of the chest with inspiration should be closely observed, as very commonly the diseased side or the side presenting the more active lesion, if both are involved, will lag as inspiration begins. The delay in the initiation of the inspiratory act can be graphically seen by means of the fluoroscope, which enables one to see not only a momentary delay in the descent of the diaphragm on the diseased side as inspiration begins, but also a similar delay at the onset of expiration. This attempt of nature to diminish the amplitude of the respiratory act as much as possible is a lesson all of us may well take to heart. Clinically, the movement with inspiration can be best seen when one is standing behind the patient, who is seated on a stool facing the light and looking downward over the front of the chest.

As an aid in training the eyes to observe the two sides at the same time, I have found the ingenious method suggested by Dr. Roy D. Adams of Washington, D. C., helpful. With a skin pencil, dots are placed in exactly corresponding areas directly below each clavicle about opposite the middle third, in such a position that they are not evident when one is standing behind the patient after he has breathed out (Fig. 1 A). If the spots are of the same size and are placed with care, one observes in the normal subject that, as inspiration proceeds, the dots appear synchronously. With unilateral tuberculosis, however, the dot on the side of the lesion appears later (Fig. 1 B and C).

The inspiratory lag, however, is, I think, best elicited by a method demonstrated to me a few years ago by Dr. Lawrason Brown:

The patient stands erect with his back against the wall, but with the shoulders relaxed. The examiner, standing directly in front, places his right hand below the clavicle over the left upper lobe, and the left hand in a corresponding position on the right side, and exerts slight pressure as the patient inspires. In the normal person the inspiratory lift of the two sides is synchronous and equal. A well-marked delay of either side in getting under way is suggestive of a pathologic process on that side.¹

PERCUSSION

In the detection of early tuberculous lesions, percussion is much less trustworthy than auscultation. The physician who is not fortunate in having a quiet

* Read before the Hartford Medical Society, Feb. 19, 1923.

* The illustrations, with two exceptions, are from the motion picture "The Diagnosis of Tuberculosis," prepared for the Surgeon General during the World War, and are reproduced by his permission.

1. Dr. R. S. Starr of Hartford, Conn., told me the following, as illustrating the value of inspection: As he was a member of one of the heart boards in the army, cases were frequently referred to him because of tachycardia. In many of these cases unilateral inspiratory lagging was evident. Subsequent reexamination of the lungs almost invariably showed tuberculosis on the side of the lag. In a few instances in which the physical examination was negative, roentgen-ray examination showed the lesion to be present.

examining room would do well to spend the time commonly devoted to percussion in studying the symptoms and in searching for râles, as the heavy blow necessitated by distracting noises is quite valueless. Not only must the blow be a light one, but the pleximeter finger must be closely applied to the chest wall and the pressure at all times be constant. Moreover, unless one compares the note in exactly corresponding areas

on the two sides, unwarranted deductions may be made.

The descent of the lower lobes with quiet and deep breathing should always be ascertained. Failure to do this is the most common reason for missing small pleural effusions at the base. Percussion of the supraclavicular space is somewhat simplified, and comparison of corresponding areas on the two sides is made easier if the space is divided into two or three sections, depending on the size, by lines going anteroposteriorly. If then one stands behind the patient, who is seated, it is very easy to compare the note in the corresponding segments (Fig. 2).

This is much easier of performance than the percussion of the apexes after the manner of Kroenig.

AUSCULTATION

Two children at play, one tapping the end of a long beam while the other listened with the ear applied to the farther end, suggested the stethoscope to Laënnec and there dawned a new era in medicine. The stethoscope furnishes us with the most trustworthy signs of pulmonary disease. In the detection of early tuberculous lesions, the study of the breath sounds alone is of little value. Slight diminution of the respiratory murmur sometimes appears early; but, unsupported by other evidence, it may be disregarded.

The overzealous and inexperienced examiner not uncommonly interprets the slight prolongation of the expiration at the right apex as evidence of tuberculous disease, overlooking the fact that the trachea inclines toward the right and is intimately in contact with the inner aspect of the right apex. Then, too, the right apex contains slightly less pulmonary tissue; and this fact, together with the position of the blood vessels at the right apex, causes the percussion note to be slightly less resonant.

The most significant auscultatory findings, however, are râles. It is surprising and most unfortunate that,

though râles were described a hundred years ago and have been much discussed ever since, an agreement in terminology has never been attained. Fortunately, it is the interpretation placed on them that counts, though it would greatly facilitate in the exchange of ideas if some common language could be spoken. Crepitant and subcrepitant, dry and moist, large, medium, small and indeterminate are the terms used by various clinicians to describe what they hear.

TECHNIC OF RÂLE ELICITATION

In order to understand why in certain cases a special technic is necessary to elicit râles, a brief consideration of their probable method of production is necessary. They are produced in the air vesicles and smaller bronchioles, presumably in the following manner: When there is a great deal of increase in the bronchial secretion, the mere passage of air in and out of the bronchioles and air vesicles with ordinary respiration is sufficient to set in motion the mucus on their walls, which results in the vibrations we interpret as râles. In the early case of tuberculosis there is not enough secretion to be set in motion by quiet breathing. The vesicles are more or less expanded at all times because of the reserve air in the lung (Fig. 3 A).

It is not difficult to see why the common admonition, "Now take a deep breath," so often fails to elicit râles (Fig. 3 B). The normal lung tissue expands so readily and so greatly exceeds in amount the early tuberculous lesion that the inspired air, following the line of least resistance, finds it much easier to expand the normal vesicles than those that are more or less collapsed and occluded. Furthermore, while deep breathing increases the amplitude of inspiration, it does not materially affect the amount of reserve air in the lung.

If the reserve air is expelled, however, by a forced expiration terminating in a cough, the air vesicles will be compressed and their mucus-coated surfaces approximated (Fig. 3 C). With the succeeding inspiration, these walls are suddenly torn apart, and râles are produced (Fig. 3 D).

It is therefore important not only that the patient expire but that he conclude the expiratory act with a short cough, or, better still, with two short coughs. Now there are two reasons for this cough: Not only does it aid in getting rid of the reserve air and thus inducing a maximum air vesicle collapse, but, owing to the fact that with the act of coughing, the intrabronchial pressure is suddenly increased to a considerable degree, certain air vesicles may be expanded that would otherwise remain collapsed and "silent" (Fig. 3 D). So it is that râles are sometimes heard only during the act of coughing, and it is for this reason that two short coughs are preferable to one.

The importance of expiration and cough has been shown by Bray. He found that while only 23 per cent. of incipient cases exhibit râles on deep breathing alone, it was possible to demonstrate them in 76.5 per cent. if expiration and cough were employed. Even in advanced cases, only 27 per cent. show râles without cough. It

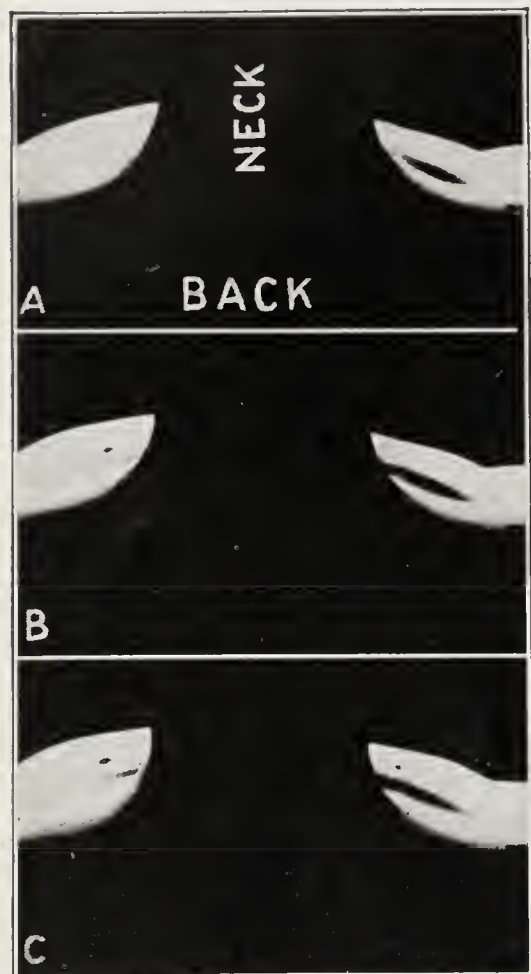


Fig. 1.—View of inspiration as one stands behind patient and looks down on front of chest: A, retraction and flattening of right chest apparent; photograph at end of expiration; dots not visible; B, inspiration begins, and as the right side lags, the dot appears first on the left; C, toward the latter part of inspiration the dot appears on the right side.



Fig. 2.—Division of supraclavicular fossa into equal spaces by anteroposterior lines; compare note in corresponding areas; same position used to detect lagging.

is unfortunate that the optimum time for cough is following expiration, because the natural time to cough is at the end of inspiration. It is, therefore, important to explain to the patient at the beginning of the examination exactly what is desired. Most patients will grasp what is wanted if told to "breathe out and cough all with one breath," but much time can be saved by illustrating just how it should be done. When all

size is not constant, large and small râles being intermingled ("indeterminate").

SOUNDS SIMULATING RÂLES

Various sounds of extrapulmonary origin, such as muscle snaps, and sternoclavicular, scapular and sternal sounds, are sometimes mistaken for râles. With the possible exception of sternal sounds, they do not, as a rule, occur as early in inspiration following expiration and cough as the râles due to parenchymal change. Atelectatic râles are heard at the end of forced inspiration and disappear on deep breathing.

A nervous patient may swallow after each cough, and a clicking sound is produced that sometimes closely simulates an air vesicle râle. In the lateral and anterolateral aspects of the chest, especially in long, slender persons, showers of fine, crepitant râles are often heard in the latter part of inspiration below the level of the transverse mammary line. Several deep inspirations superimposed on one another will cause them to disappear, while several forced expirations will cause their reappearance. They are always heard on both sides of the chest, are relatively drier than the râles of pulmonary disease, and are always heard toward the middle and latter part of inspiration. If a stethoscope with two bells is used, they appear first in the upper bell (Fig. 4). The râles originating in the air vesicles and smaller bronchioles, however, appear in the two bells synchronously.

Whether the sounds are due to the expansion of compressed air in the lower part of the lung or to the stripping off of the diaphragmatic pleura from the parietal pleura, as Bushnell believes, the practical point is that they are not indicative of a pathologic condition. Many an unwarranted diagnosis of tuberculous pleurisy

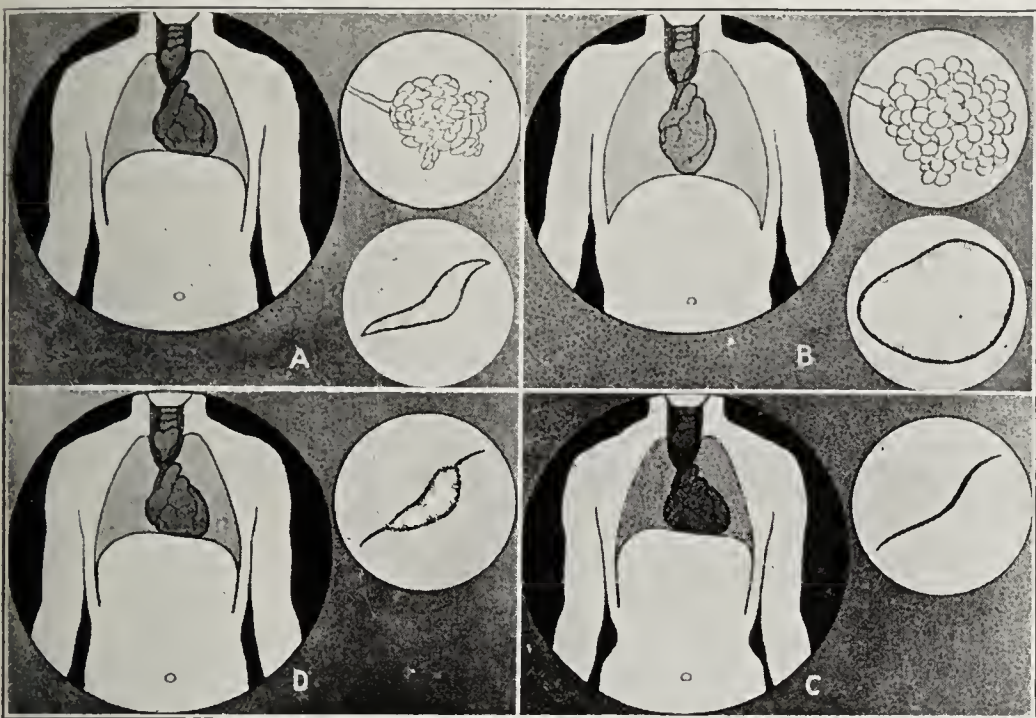


Fig. 3.—Why the common admonition, "Now take a deep breath," fails to elicit râles: A, air vesicle just prior to inspiration, at the end of a natural expiration; the cross-section of air vesicle shows the secretion on the walls of the air vesicle which are not in contact; B, with forced inspiration the air vesicle fills up but does not set in motion the small amount of viscid secretion present, and the walls are still separated; C, forced expiration followed by a cough results in the approximation of the walls of most of the air vesicles; D, occasionally the act of coughing suddenly and momentarily opens up collapsed and occluded vesicles, and râles are heard; more often the sudden inspiration following the cough separates the moistened surfaces, and râles are produced.

methods of instruction fail, if the patient is instructed to cough two or three times consecutively, the lungs are pretty thoroughly emptied with the last cough.

It does not seem that enough attention has been given to the part of inspiration that râles occupy. Textbooks are rather apt to be vague or to ignore it entirely. In the advanced case, if râles are heard without expiration and cough, they occupy chiefly the middle and latter part of inspiration. Now, if this patient breathes out and coughs, the râles are heard either with the act of coughing or the moment inspiration starts, and they continue throughout. As the activity lessens, the râles become fewer in the latter part of inspiration, though present at the beginning, and finally they may be heard only with cough. Accordingly, not only is it important to have the patient expire and cough, but one must have the bell of the stethoscope in place before the cough, and listen during cough and especially throughout the first half of the inspiration following. The movement of the stethoscope should be so timed that it takes place during expiration. In this manner the whole chest should be ausculted, especial care being given to the area adjacent to the spine of the scapula, from the second to the fourth thoracic spines, the supraclavicular and infraclavicular regions, and laterally the region under the lower edge of the pectoralis major muscle. More will be said concerning the last region later on.

The râles of an early case of tuberculosis are slightly moist in sound, relatively "small," and for the most part of the same size. In the more chronic case the

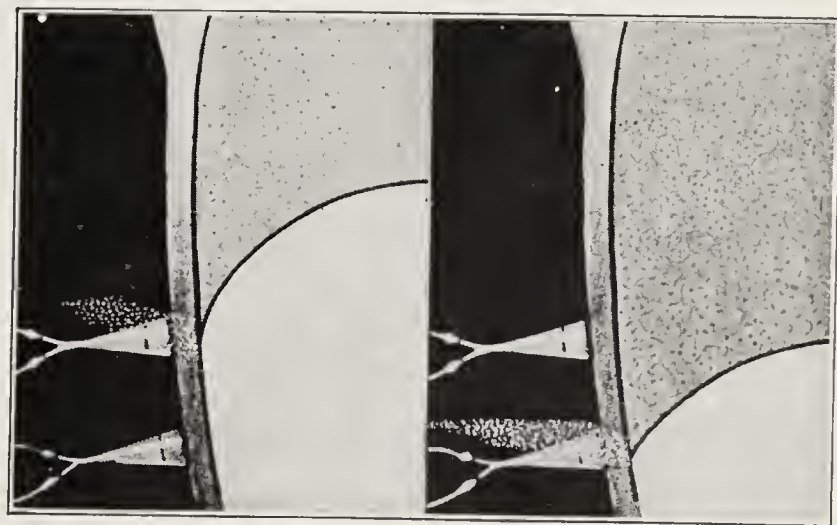


Fig. 4.—Marginal sounds are heard as the diaphragm descends—first in the upper bell, then in the lower; on the left, about the middle of inspiration; on the right, at the end of inspiration.

has been made in persons presenting vague symptoms on the strength of these marginal râles. The crepitant râles of early lobar pneumonia also appear during the middle of inspiration, and attain their maximum at the end. They would scarcely be confused with marginal râles. Expiration and cough do not materially alter their appearance in inspiration; but when resolution is under way and the secretion is less viscid, the

râles begin early in inspiration following expiratory cough.

Some years ago, I sent a man who I suspected might have tuberculosis to the hospital for observation and roentgen-ray examination. I had examined him once in my office and found no definite signs, yet the roentgen ray showed a tuberculous process in the outer part of the upper lobe below the apex, though the apex itself was clear. I then reexamined him, and when the stethoscope was placed well up under the lower edge



Fig. 5.—It is high up under the pectoralis major muscle that one often finds a lesion.

of the pectoralis major muscle (Fig. 5) in about the anterior axillary line, many râles could be heard following cough. Many times since then I have discovered a lesion in this area. Sometimes it is impossible to demonstrate it clinically even when the roentgen ray reveals well marked pathologic changes. There is apt to be an inspiratory lag on that side, however, even when râles are not evident. A study of Figure 6 shows how inaccessible a lesion in this region is. Posteriorly, the interposition of the scapula renders the examination unsatisfactory; approach from above is prevented by the shoulder joint, while in front a well developed pectoralis major muscle obscures the signs. The most satisfactory access is secured if the arm is held in a position that relaxes the pectoralis major muscle, thus enabling the bell of the stethoscope to be pushed up under its lower border.

THE IMPORTANCE OF IMMEDIATELY RECORDING PHYSICAL SIGNS

That the significance of the physical signs may be determined, they must be studied together—they must be “added up,” as it were. As few are skilled in mental arithmetic, it is desirable to record signs as soon as discovered rather than at the conclusion of the examination, as some important bit of evidence may be forgotten. This can be done quickly if symbols are used and a diagram of the chest is employed. After using a variety of rubber stamps of different sizes and a cut that I had incorporated in my history chart, I have found that a simple diagram drawn at the time of each examination has much to commend it (Fig. 7).

Now let us assume that our patient has been correctly inspected, properly percussed and skilfully auscultated, and that certain incriminating signs have been legally recorded. What are we to tell him? What justification have we for considering the process tuberculous—and if tuberculous, is it clinical tuberculosis that needs treatment or anatomic tuberculosis that does not require treatment? Failure to make this differentiation has resulted in the unnecessary breaking up of many homes, and during the war robbed Uncle Sam of many a soldier.

It is generally recognized that physical signs limited to the upper part of the lung are as a rule indicative of

tuberculosis, and that those confined to the base, with no evidence of old trouble at the apex, are in most instances nontuberculous. Yet exceptions occur, and one must be ever on the alert to recognize them.

A middle aged woman, who complained of fatigue and cough, on several examinations exhibited a few râles above the right clavicle. The sputum and the roentgen-ray examination were negative, however, and her cough was cured by the removal of polypi from the right naris.

A young woman who for the last two years, since her recovery from a very early tuberculous lesion, had been in excellent health, developed a “cold” and cough a few months ago. Physical signs were very indefinite, and confined wholly to the extreme right base. The roentgen ray revealed a new tuberculous area just above the diaphragm, and bacilli were found in the sputum.

SYMPTOMS, NOT RÂLES, DETERMINE ACTIVITY

We may determine with reasonable accuracy from physical signs that tuberculous infection has occurred; but no physical sign—not even râles—can be accepted as an indication of activity. In fact, râles may not make their appearance till months after improvement has begun. A careful study of the symptoms is very necessary in every case.

As is well known, the so-called constitutional symptoms—anorexia, rapid pulse, loss of weight, easily induced fatigue, digestive disturbances, sweats and fever—are an evidence of toxemia, the cause of which may be the tubercle bacillus; but an almost identical symptomatology may accompany other conditions, as, for example, neurasthenia, syphilis and hyperthyroidism. If, in addition to the constitutional symptoms mentioned above, a persistent cough is complained of, especially if followed by vomiting, the suspicion of tuberculosis is strengthened; but, it should be noted, it is only a suspicion. Unless supported by a history of hemoptysis or pleurisy with effusion, or accompanied by persistent râles in the upper third of the lung, a parenchymatous roentgen-ray lesion or bacilli in the sputum, a definite diagnosis of tuberculosis is unwarranted.

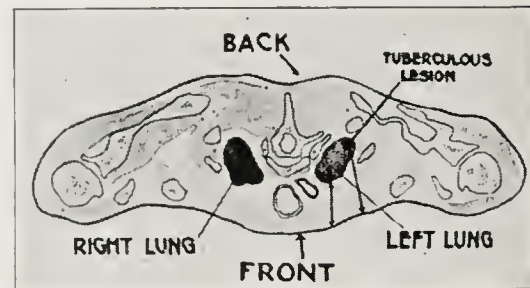


Fig. 6.—Cross-section, from above, at about the level of the third thoracic vertebra, showing inaccessibility of a lesion in this region.

Only recently has it been appreciated that cough, the most common of all symptoms, may be due to extrapulmonary conditions:

A woman, aged 34, consulted me a year ago because of a cough of four years' duration. It varied in severity, and of late had been much worse, interfering with sleep. Tuberculosis had recently been diagnosed, and she had been urged to take the cure. I was unable to substantiate the diagnosis, and the roentgenogram of the lungs was negative. A roentgenogram of the head, however, showed both antrums and the ethmoid cells filled with pus, the evacuation of which brought prompt gratifying relief of the cough.

In some instances, the infection of the sinuses seems to “spill over,” as it were, from time to time, causing bronchitis of the larger tubes. In such cases it sometimes happens that, though the cough may be very loose and accompanied by profuse expectoration, thorough examination of the lung may demonstrate very few râles. This combination, loose productive cough with no physical signs, was the picture presented by

three cases of syphilitic bronchitis observed during the last few years.

During the early days of the late war, France lost two divisions, about 86,000 fighting men, by classing them as tuberculous. Of the soldiers returned to Canada suspected of being tuberculous, 33 per cent. were found to be nontuberculous. In this country, nearly one quarter (23 per cent.) of 18,713 soldiers admitted to tuberculosis hospitals were found to be nontuberculous [Bushnell].

During the year that I was chief of the tuberculosis division of the Walter Reed General Hospital in Washington, 426 cases were referred as tuberculosis suspects. As the result of combined clinical and roentgenologic examination 47.6 per cent. were found to be nontuberculous, and 30 per cent. had active lesions. The remainder had old inactive processes. In eighty-five, the lesion was disregarded and they were returned to full duty.

Hypertrophied tonsils are sometimes responsible for a persistent cough, but the throat specialist who operates without first excluding a pulmonary lesion is assuming a grave responsibility. In one such case in which the underlying tuberculosis was not recognized, a rapidly progressive faucial tuberculosis developed.

Several years ago, a young man came to me for examination who presented extensive disease of the larynx. He had been sent by his family physician to a throat specialist, and a diagnosis of tuberculosis had been made. Immediate departure for the Southwest had been advised, and a bad prognosis had been given. I could find no sign of pulmonary disease, a very rare thing with extensive laryngeal involvement. A chancre was admitted, and the Wassermann reaction was positive.

Hemoptysis, not associated with mitral stenosis, should always be considered due to tuberculosis, even though occurring in a robust person who is apparently in the best of health. At the Adirondack Cottage Sanatorium, a definite roentgen-ray lesion was found in 90 per cent. But let no one deduce that the remaining 10 per cent. were not tuberculosis because of the negative roentgen-ray examination. Concerning such cases, Baetjer says: "We find lungs which are absolutely clear; yet six or eight months later we begin to see slight changes which at that time we can say are tuberculous, when during the period of hemorrhage the lungs were absolutely clear." Insidious pleurisy with effusion should be considered tuberculous and so treated:

Recently I saw, in consultation, a boy, aged 16, because of a recent hemorrhage. He had had a serous pleuritis eight years before, but it was made light of by his physician, and no treatment for tuberculosis was instituted. The greater part of one lung is now involved.

A young married woman was referred to me who, when a child, had been very ill with pleurisy, but recovered and for a number of years appeared to be in good health. When about 22 and while seemingly very well, one morning she suddenly had a hemoptysis of about 1 ounce. She was at once examined and assured that her lungs were "as strong as a coal heaver's." There was never any recurrence of the bleeding, and except for rather frequent colds she has enjoyed good health till about two months before. When I saw her the right upper lobe was quite extensively involved, and invasion of the lower lobe had already begun.

In view of the fact that municipal and state laboratories throughout the country make sputum examinations, it is surprising that recourse to this valuable diagnostic procedure is not more frequently made.

Only 267 tests were made in our city laboratory during 1922, and from personal observation during the time I was assistant bacteriologist it was very uncommon to have a second specimen sent if the first was negative. A physician once told me that, as the patient's family seemed very well pleased with the single negative report, he thought he would leave good enough alone. We should accustom ourselves to think that sputum examinations are performed in several stages, and have specimens sent in on several consecutive days or until a positive finding is reported. And let it be said that a careful examination cannot be performed quickly. Extensive physical signs and repeatedly negative sputum almost certainly exclude tuberculosis.

Individuals who can ill afford the expense are too often referred to the roentgenologist when an examination of the sputum would settle the diagnosis.

The roentgen ray is of great help, not only in revealing lesions that escape detection by physical examination but also in accurately determining the extent of the lesion and, to a certain extent, the activity. The roentgenologist who combines a skilful technic with

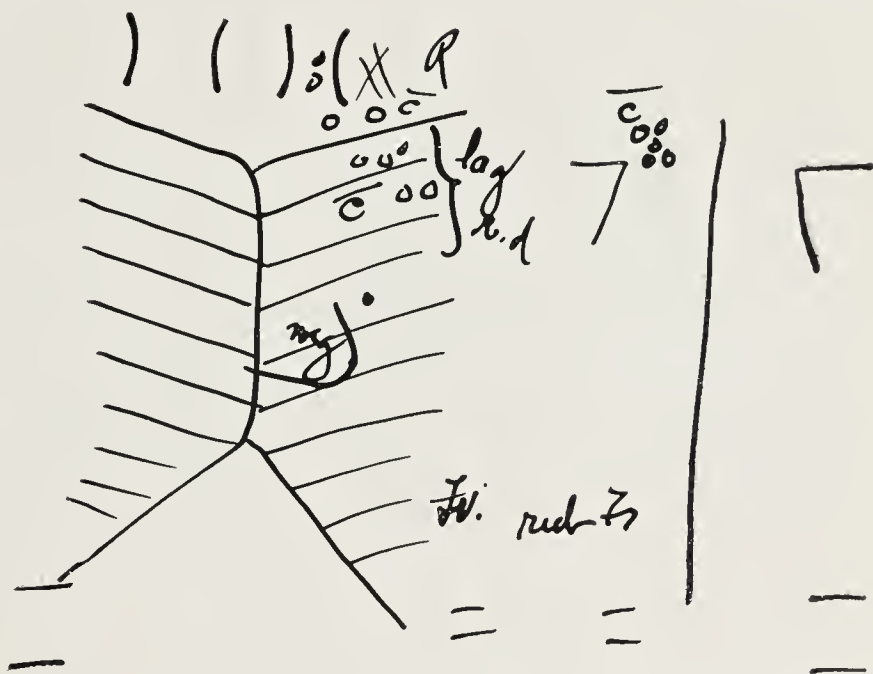


Fig. 7.—Simple diagram drawn at time of examination. Interpretation: Retraction above left clavicle. Left upper chest lags with inspiration. Kroenig's isthmus on left narrowed, owing to inward displacement of outer border. Expansion at left base, both anterior and posterior, is diminished. On the right there is good expansion. The breath sounds are somewhat distant below left clavicle. Râles are heard only following expiration and cough, and are present above the left clavicle and below in the outer part of the first and second spaces; also posteriorly in the inner part of the supraspinous fossa just above and to the level of the spine of the scapula. A friction rub is heard over the left lower lobe. The heart is normal in size, and no abnormality is detected. It took one and one-half minutes to make this diagram and record the findings. When one is familiar with the symbols, the diagram can be "read" in a few seconds—almost instantly. Rapidly writing these findings in long hand took four and one-half minutes. Reading them a month later would require at least as long.

sound judgment based on a large experience is of great assistance to the clinician. He will, however, be led into error from time to time if he considers only the roentgenologic aspect of the case.

We have considered the methods of eliciting physical signs and have discussed their significance; but whom shall we examine? There can be no difference of opinion as to the necessity of carefully examining the lungs of all young adults irrespective of their complaint. But is it essential to make a similar examination of persons who are well past middle life?

A stonemason, aged 65, consulted me because of sores in his mouth. Although his radial arteries were very markedly beaded, he did not look his age. The right half of the lower lip was somewhat swollen and red. On each side of his tongue and on the inner aspect of the lower lip were ulcers

having the same characteristic. They were about 1 cm. long, not indurated, and covered with only a small amount of exudate. They appeared to be rather shallow; but, when put on tension, they presented numerous rather deep sulci suggesting a cauliflower. The adjacent lymphatics were not enlarged. Syphilis at first seemed the most probable cause. During the complete physical examination, the left upper lobe was found to be extensively infiltrated. The sputum was loaded with tubercle bacilli, and Dr. J. C. Rowley, who examined a specimen removed from the ulcer, reported it to be tuberculous. The Wassermann reaction was negative.

A man, aged 62, was referred to me because of a persistent sore on the side of his tongue. He had a single ulcer that resembled in all particulars the ulcers in the case previously described. Aside from the ulcer he felt perfectly well. He was working daily, and had lost neither in weight nor in strength, though he had a cough. Both upper lobes were extensively involved, and the sputum contained large numbers of tubercle bacilli. A specimen from the ulcer was examined by Dr. Rowley, who reported "tuberculoma."

These two very unusual cases demonstrate that tuberculosis is not confined to middle life. In fact, the death rate, when based on the number of those living for various age groups, shows fully as high a rate for those past 60 as during earlier periods.

CONCLUSION

There is no divining rod for detecting tuberculosis. Valuable as the diagnostic aids are, it is the clinician who must assemble and carefully weigh the various and at times conflicting bits of evidence. Irrespective of the patient's age or the presenting symptom, the possibility of tuberculosis should always be considered. The diagnosis does not consist merely in the detection of breath changes, the elicitation of râles, or the discovery of suspicious roentgen-ray findings. It is only by the consideration of all available data that diagnostic accuracy can be obtained.

179 Allyn Street.

DIAPHRAGMATIC PLEURISY*

H. B. WEISS, M.D.

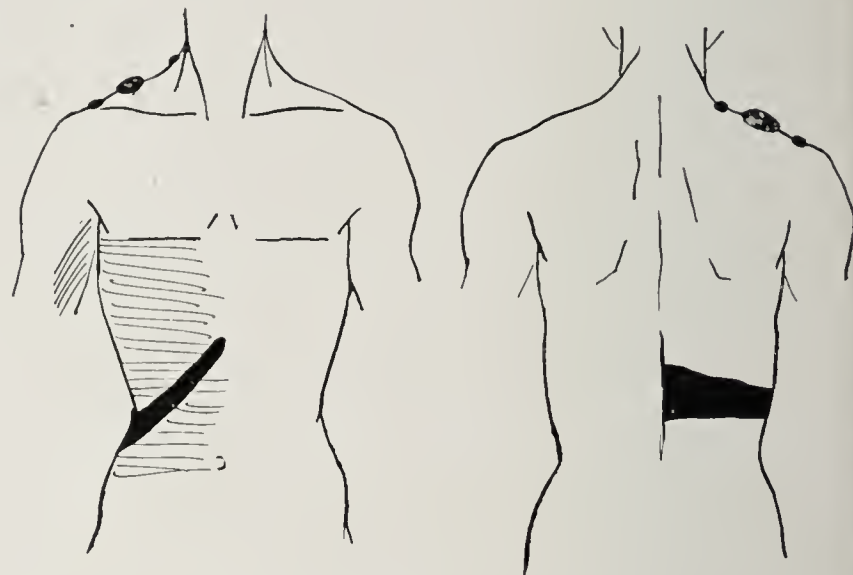
Assistant Professor of Medicine, College of Medicine,
University of Cincinnati

CINCINNATI

One of the most trying and difficult symptoms to interpret is pain. When the pain is not felt by the patient at the site of its origin but is referred to other and perhaps distant parts of the body, the difficulty obviously increases. Such pain is referred pain and is found in diaphragmatic pleurisy.

Capps,¹ by means of a series of ingenious experiments on man, demonstrated, in 1911, that the visceral pleura is not endowed with pain sense and that the parietal pleura is richly supplied with sensory fibers from the intercostal nerves; that irritation of the parietal pleura produces pain that is accurately localized by the individual over the spot irritated. He demonstrated, at the same time, that the diaphragmatic pleura receives its nerve supply from two sources, the phrenic nerve and the lower six intercostal nerves. The intercostal nerves supply the peripheral rim of the diaphragm anteriorly and laterally, as well as the posterior third of the diaphragm. The phrenic nerve supplies the central segment of the diaphragm; and when this por-

tion of the pleura is irritated, the pain is referred to the skin and tissues supplied by the third and fourth cervical nerves, from which part of the phrenic nerve originates. Irritation of that portion of the diaphragmatic pleura supplied by the seventh to the twelfth intercostal nerves produces pain over the lower thorax, epigastrium and, at times, the abdomen, extending almost to Poupart's ligament. These pains are referred pains, since the patient localizes them at some distance from the site of the irritation.



Heavily shaded areas show points of tenderness. Lighter shaded area, possible area of hyperesthesia.

Recently, Capps and Coleman² demonstrated on patients that irritation of the diaphragmatic peritoneum produces referred pains almost identical with those produced by irritation of the diaphragmatic pleura. They state that stimulation of the diaphragmatic peritoneum produces pain which is never felt in the diaphragm itself but is localized in the neck, especially in the trapezius muscle and over the lower chest and portions of the abdomen. Their explanation of the referred pain from the diaphragm is that the impulses are carried by afferent fibers of the phrenic nerve to the cervical cord, and referred to the neck by sensory cutaneous nerves of the fourth cervical segment.

Mackenzie³ believes many pains, especially those originating in irritation or disease of a viscus, are referred pains. He feels that irritation of a viscus produces a group of stimuli traveling along a reflex arc, which, in turn, produce a sensation of pain in certain referred areas, often more or less distant from their point of origin.

Clinically, the onset of a pneumonia with severe pain in the abdomen, either upper or lower portions, has been noted innumerable times and reported,⁴ especially in children. We have found that with the onset of pneumonia in adults pain will frequently be present in the abdomen, a shoulder or one side of the neck, as well as in the chest. Careful examination of the patient may not reveal any abnormal physical findings in the chest even at the site of pain except a possible hyperesthesia of the skin or some tenderness of the subcutaneous tissues or of the muscles beneath the skin, but tenderness may be elicited in various remote areas, as in the neck, the back and abdomen. In the neck

2. Capps, J. A., and Coleman, G. H.: Localization of Pain Sense in Parietal and Diaphragmatic Peritoneum, *Arch. Int. Med.* **30**: 778 (Dec.) 1922.

3. MacKenzie, Sir James: *Symptoms and Their Interpretation*, London, Shaw & Sons, 1920.

4. Griffith, J. P. C.: Pneumonia and Pleurisy in Early Life Simulating Appendicitis, *J. A. M. A.* **41**: 531 (Aug. 29) 1903. Herrick, J. B.: Abdominal Pain and Pleurisy in Pneumonia, *J. A. M. A.* **41**: 535 (Aug. 29) 1903.

* From the medical clinic of the Cincinnati General Hospital and the department of internal medicine of the University of Cincinnati.

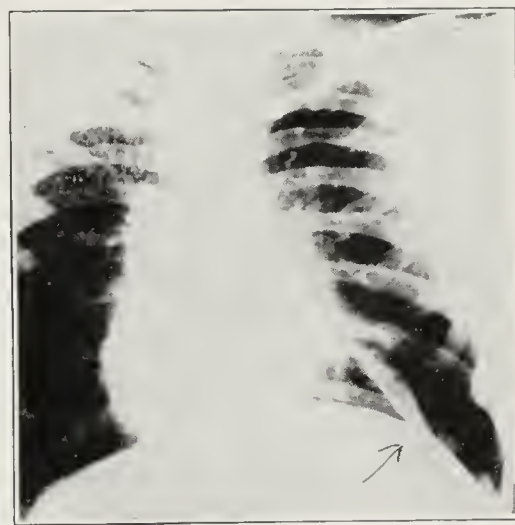
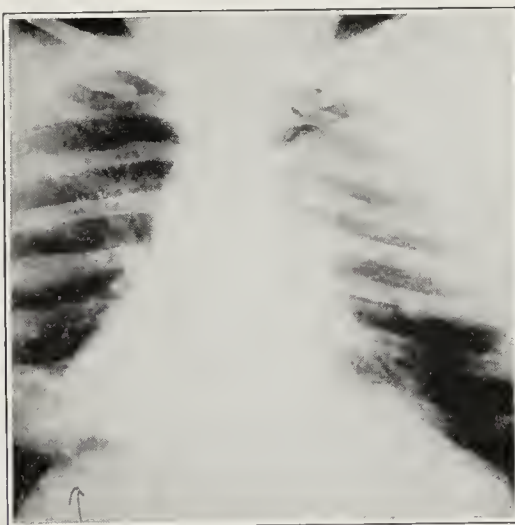
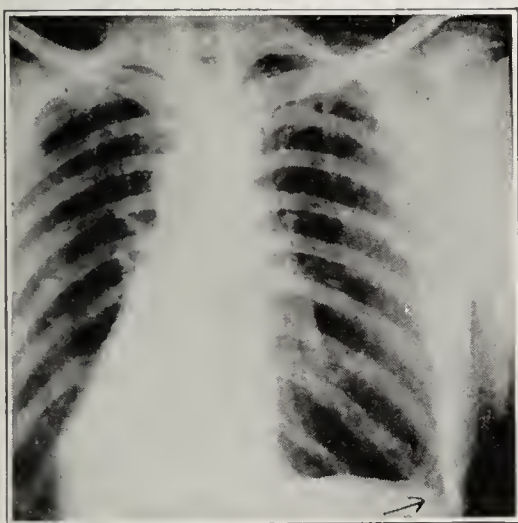
1. Capps, J. A.: An Experimental Study of the Pain Sense in the Pleural Membranes, *Arch. Int. Med.* **8**: 717 (Dec.) 1911.

and shoulder, the tenderness is usually elicited by pinching the skin overlying the ridge of the muscle, as the trapezius; more often, by pinching the muscle edge itself. The middle third of the trapezius edge is the most frequent segment involved, though the upper and lower segments are tender almost as often as the middle third. At times, the entire muscle edge or a great part of it is tender to pressure. This symptom was the commonest evidence of referred pain, being present eighty-five times in 126 patients, or in almost 70 per cent. The tender areas were found on the affected side, though at times the trapezius edge of the opposite side was involved without any other evidence of involvement of that side of the diaphragmatic pleura. Tenderness may be elicited in other parts of the neck and shoulder, though infrequently, as in the supraclavicular and infraclavicular fossae, at the tip of the shoulder, over the scapula and in the interscapular region.

The area of tenderness second in point of frequency (68 per cent.) was in the abdomen. The most frequent location was a rim several centimeters wide below the costal margin on the affected side. The tenderness may

tional regions in which tenderness was elicited were present, though not constantly. Some of these regions were the supraclavicular and infraclavicular fossae, shoulders, axillae, anterior surface of the chest, spinous processes of the vertebrae, the pectoralis major and the lower scapular region.

A very dramatic symptom, when present, is hyperesthesia and hyperalgesia of the skin. This symptom was present in almost 20 per cent. of the patients. Its extent varied from a small area which the patient could localize with his finger to involvement of the skin from above the nipple to below the umbilicus and extending from the midline anteriorly to the vertebral column. Usually, the hyperesthesia is not extensive, and it has been found especially localized in the lower chest and axilla and the upper abdomen. In three patients, the upper arm was involved; and in one of these three, the pain extended to the finger tips. Several other areas were involved at times. These regions were the interscapular spaces, flanks, lower abdomen, lower half of the breast and various scattered areas of the back, usually in the neighborhood of the angle of the scapula and once to the thigh.



Adhesions distorting the diaphragm in chronic diaphragmatic pleurisy.

commence at the xiphoid region and extend into the flank. The pain elicited was rather sharp, and as a rule there was only moderate muscle spasm and rigidity. The tenderness was usually more severe in the flank than below the ribs anteriorly. The entire half of the abdomen on the affected side may be involved, as determined by the extent of the diaphragmatic pleural irritation. In five patients, there was marked pain and tenderness over the right lower quadrant, associated with muscle spasm and rigidity. The entire side of the abdomen in two patients was rigid throughout and exquisitely tender to pressure. There may also be tenderness localized in the epigastrium.

In 60 per cent. of the patients studied, tenderness was elicited beneath the twelfth rib posteriorly. This area of tenderness is in reality a continuation of the tender zone beneath the ribs anteriorly and in the flank. There is actually a rim of tenderness along the rib margins from spine to xiphoid. This area beneath the ribs in the back is usually broader than the involved region beneath the ribs anteriorly. The pain elicited here may also be severe, but is usually not as sharp as in the flanks and is of about the same intensity as the pain in front. In the back, tenderness has at times been elicited along the spinous processes or to each side of the spine of the lower six dorsal vertebrae, and less frequently below the angles of the scapulae. Addi-

Any portion of the skin supplied by the lower six intercostal nerves may be involved as well, though rarely, as the skin of the arms, shoulders and neck. In several patients, this hyperesthesia was so marked that the pressure of the gown was almost unbearable. At times, pain is elicited on percussion and again it may only be detected by pinching the skin.

In the majority of the patients, the onset was acute, as was to be expected. Just as we have acute costal pleurisy occurring alone or associated with pneumonia, so we have diaphragmatic pleurisy. Kelly and Weiss⁵ reported, in 1918, a small series of patients with diaphragmatic pleurisy, and in this series of patients one of the first observed was a man in whom most of the symptoms were referred to the abdomen. Later, he slowly developed consolidation in the affected side. The increase of the infiltration could be watched from day to day, until the entire lower lobe was involved. Frequently, with the onset of pneumonia with pleurisy, the patient does not come under the physician's care until there are definite signs of consolidation. This is especially true of patients seen in hospital practice. In the last few years, diaphragmatic pleurisy has been detected many times in association with pneumonia when there was no definite evidence of costal pleurisy.

5. Kelly, T. H., and Weiss, H. B.: *Am. J. M. Sc.* **156**: 808 (Dec.) 1918.

With the acute onset, the areas of tenderness and hyperesthesia, as described, were almost always present. In the patients with chronic involvement, all of the characteristic signs were not present. Usually one, rarely two, of the distinctive areas of tenderness were absent. In this type of patient, the history of respiratory infections is a great aid in the diagnosis.

In a few of the chronic cases, there have been acute exacerbations giving all of the characteristic physical findings. In the series of 126 patients, thirty were classed as chronic and four of these presented an acute exacerbation. In only 18 per cent. of the patients studied were friction rubs heard. These sounds were due to the involvement of the costal pleura. It is evident that the pleural involvement can be so extensive as to affect both the costal and the diaphragmatic portions. The friction rubs were usually localized over small areas, most frequently over the axillae, rarely extending into the front or back of the chest.

The onset of pneumonia was heralded in 20 per cent. by symptoms of diaphragmatic pleural disease. As the consolidation increased, the characteristic findings of pleurisy were dissipated, as usually occurs when there is only a costal involvement. Nausea occurred in only 5 per cent. of the patients; vomiting was present in 7 per cent. Only three patients of the 126 had hiccup. This is much less than one would expect with diaphragmatic disease. One patient with involvement of the right side had contraction of the entire right rectus muscle. The entire muscle would move upward about one half inch with each contraction, while the left rectus muscle was almost stationary.

The diagnosis in the majority of patients with diaphragmatic pleurisy is not difficult. In the acutely ill patients, there is usually a history of respiratory symptoms, as sudden onset, pain in the side, cough; perhaps a chill. Soon, there appears the characteristic areas of pain localized in the neck, upper abdomen and back, with the tender regions along the trapezius edge and beneath the rib margins in the affected side, perhaps associated with areas of hyperesthesia and hyperalgesia. Usually, all the noted areas of pain and tenderness will be present. The difficulties arise when the pain in the abdomen is sharp and is associated with varying degrees of muscle spasm and rigidity. In abdominal disease, deep pressure increases the pain over the affected area. Other symptoms, such as constipation or diarrhea, and frequently nausea and vomiting, without symptoms of respiratory disease, usually are present. Again, in abdominal disease, tenderness beneath the ribs posteriorly and along the edge of the trapezius is quite infrequent. Most of the difficulty will lie in the differentiation of disease in the upper abdomen, and such a patient can usually be observed for twenty-four hours or more, when other findings will have developed, clinching the diagnosis of disease above or below the diaphragm. An increased white blood cell count, with an increase in polymorphonuclear neutrophils, will usually be present in both pleural and abdominal disease.

The greatest difficulty will present itself when there is irritation of the diaphragmatic peritoneum. In such instances, a careful history and repeated physical examinations while the patient is under observation should aid in determining the diagnosis.

In pericardial disease, there may be pain referred to the epigastrium and shoulder, but examination of the heart will usually allow one to determine the nature

of the disease producing the symptoms. In angina pectoris, when pain is referred to the neck, shoulder and arm and at times to the abdomen, the history of the onset of the disease, together with the examination of the circulatory system, will usually aid in differentiating the condition from diaphragmatic pleural disease.

In patients suffering from chronic forms of the disease, there are remissions in the severity of the symptoms, and occasional acute exacerbations; and most of the time, all of the characteristic findings will not be present. In one, the pain in the shoulder may be present; in another, the pain beneath the ribs, either anteriorly, posteriorly or in the flanks will not be present. Hyperesthesia is infrequent in this form of the disease. Early in the study of this syndrome, it was felt that the roentgen-ray examination would be of great aid, but recently it has been felt that less information has been obtained than had been hoped. In the acutely ill patients, there is often a lagging of the diaphragm on the affected side, as seen under the fluoroscope, though many patients with all of the characteristic physical findings did not have this symptom. In the chronic cases, distortion of the diaphragm due to adhesions is frequently seen, the distortion depending on the type and extent of the adhesions.

The treatment has been that of any other form of pleurisy. Patients who have had the disease for some time will find great relief when the upper abdomen and lower chest is tightly strapped, the diaphragm thus being splinted.

In patients with marked pain in the side or with hyperesthesia, iced packs, usually kept on the chest, for from one to two hours, gave great and often permanent relief of the pain.

4 West Seventh Street.

ACUTE INTESTINAL OBSTRUCTION

WITH SPECIAL REFERENCE TO PARALYTIC ILEUS
FOLLOWING ABDOMINAL OPERATIONS

HUGH McKENNA, M.D.

CHICAGO

In 1909 and again in 1913 I¹ published two papers on the subject of acute intestinal obstruction. Since that time I have been keenly interested in the clinical phase of this subject as it has arisen in patients coming under my own observation, and also in the voluminous published reports on this subject.

In reviewing the literature, one is amazed at the conflicting reports pertaining to the fatal factor in acute intestinal obstruction. This is strikingly illustrated in the extensive review by Ellis.²

Nesbitt,³ in 1899, in a study of the content above the occlusion, found that food rich in lecithin resulted in cholin and neurin, and he believed that neurin was the responsible fatal factor in acute intestinal obstruction.

Buchbinder,⁴ in 1900, showed that the intestinal wall is not permeable to bacteria until a severe degree of gangrene develops, or until injury is produced in the intestinal wall.

1. McKenna, Hugh: Paralytic Ileus, *J. A. M. A.* **52**:1239-1241 (April 17) 1909; Drainage of the Upper Intestinal Loop for the Relief of Ileus, *Surg., Gynec. & Obst.*, 1913, p. 674.

2. Ellis, J. W.: Cause of Death in High Intestinal Obstruction, *Ann. Surg.* **75**:429-448 (April) 1922.

3. Nesbitt: *J. Exper. Med.* **4**:1, 1899; quoted by Ellis (Footnote 2).

4. Buchbinder: *Deutsch. Ztschr. f. Chir.* **55**:458, 1900; quoted by Ellis.

Kukula,⁵ in a study of intestinal contents from an occluded bowel, divided the toxic substances into two groups: (a) an excessive breakdown of the carbohydrates, and (b) putrefaction of proteins. He says that this toxic substance is obscure, but may be extracted with amyl alcohol. This extract is as toxic as the first filtrate of the intestinal content, so the toxin is unchanged by the method of extraction.

Borszeky and Generisch⁶ say the toxin is due to *Bacillus coli*, and that *Bacillus coli* is found in the blood and peritoneum before there is any injury to the intestinal wall.

Albeck⁷ tested the intestinal wall as to permeability, and concludes that death is due to a toxin found at necropsy, and that the intestinal mucosa is ecchymotic. He says that this toxin is soluble in water, resists boiling, and passes through a Chamberland filter. In backing up his theory, he cites intestinal strangulation without peritonitis.

Wizosck⁸ made bouillon cultures under aerobic conditions and obtained the same result as in the original intestinal content. He states that the toxin possesses hemolytic, cytolytic and heat-resisting properties. He thinks that the toxin is bacterial in origin, that there are different toxins from different bacteria, and that bacteria may develop under symbiotic conditions.

Magnus-Alsleben,⁹ after feeding meat and apparently after feeding bread, fats and starches, produced a toxic substance from the upper intestinal content and its mucosa which he did not get when he fed milk protein only. He concludes that the toxic agent does not come from the pancreas, as tests made from a pancreatic fistula gave trypsinogen but no trypsin. He thinks that the intact mucosa and liver are retoxifying agents.

Von Khautz¹⁰ says that death in mechanical or paralytic ileus without simultaneous peritoneal infection is not due to bacteremia. It is assumed that the toxic substance comes from the intestinal content.

Stone, Whipple and Bernheim say that the toxin is derived from the mucosa of the obstructed small intestine, and that this agent is not destroyed by heat.

Gerard¹¹ says that a combined histamin derivative is also present in obstruction fluid. Evidence is presented that this is of peptid nature. This article refers frequently to the work of Hanke and Koessler. Koessler¹² writes:

The intestinal content contains normally, as proved in the last two years, toxic amines of the type of histamin and

tyramin. Histamin has a constrictor action on the smooth muscle fibers of the bronchi and the intestinal wall. Normally, these toxic substances are not absorbed from the intestinal mucosa. When the mucosa is injured, absorption will take place and might lead to symptoms of severest intoxication. Histamin or a similar amin might play an important rôle in producing spastic constriction of the intestine with a fall of blood pressure and symptoms of general shock. We found enough histamin in the content from the ileum (ileac fistula) to kill the patient if it had been absorbed. In the normal person, it is stored in the liver, where it is gradually catabolized to harmless derivatives. It seems that injury of the normal blood supply, leading to ischemia and necrosis of the mucous layer of the intestine, is probably most frequently the first cause of the ileus, owing to absorption of the toxic material.

Embryologically, the duodenal wall has an extensive network of glandular tubules in striking contrast to any other part of the intestinal tract, although some glands are found in other parts of the canal. These embryologic duodenal tubules are the anlage of the glands of Lieberkühn and Brunner. If the theory respecting the toxic origin of the intestinal content is correct, then there is a scientific basis for the well-established clinical fact that high intestinal obstruction, unrelieved, leads early and rapidly to a fatal termination.

CAUSES

The causes of intestinal obstruction are well known and will not be enumerated here. Interest centers chiefly in one cause, namely, paralytic ileus following abdominal operations. I will deal here, therefore, with this phase of acute intestinal obstruction. It is interesting to note the relative infrequency with which the surgeon sees this condition, as compared even with the relatively short time since the publication of the earlier communications. The explanation of these beneficent results lies chiefly in two factors: (a) an earlier diagnosis of acute abdominal lesions with the institution of immediate surgical intervention, and (b) a more refined surgical technic in the management of abdominal operations that permit the surgeon to perform the most extensive operations with a minimum of insult to the abdominal viscera. There still remains, however, an appallingly high mortality rate in high intestinal obstruction, and it is toward the solution of this grave problem that my efforts here are directed.

DIAGNOSIS

The clinical picture is so well understood that I will direct attention only to certain salient features that would appear to corroborate the theory of a rapid absorption of a powerfully toxic intra-enteric substance. This reaction gives expression in a rapidly lowering blood pressure, a quickened thready pulse, a pinched face, a cold clammy skin. The patient, in addition to having distention, reversed peristalsis and intestinal vomiting, has the appearance and symptoms resulting from a profound poisoning.

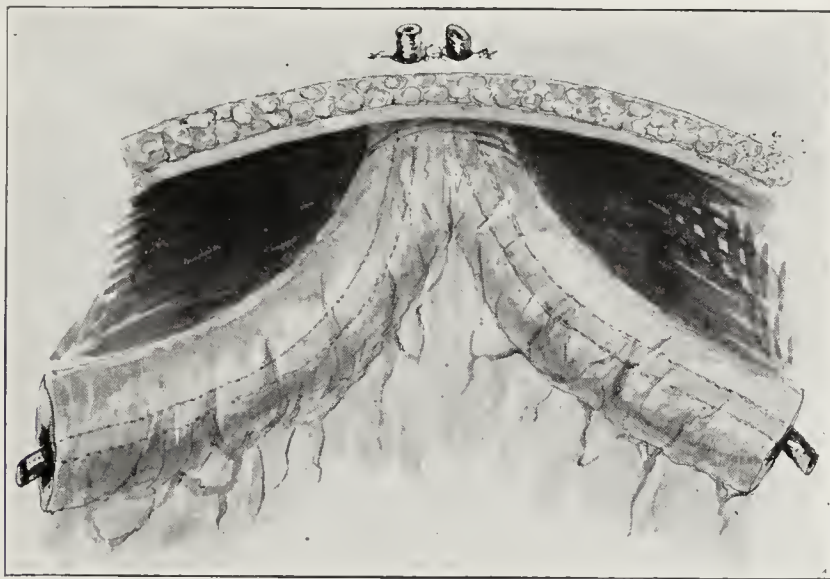


Fig. 1.—Plan of jejunostomy made through small opening in abdominal wall, with two catheters in place.

5. Kukula: Arch. f. klin. Chir. **63**: 773, 1901; **65**: 773, 1901; quoted by Ellis.

6. Borszeky and Generisch: Beitr. z. klin. Chir. (Bruns') **36**: 448, 1902; quoted by Ellis.

7. Albeck: Arch. f. klin. Chir. **65**: 569, 1902; quoted by Ellis.

8. Wizosck: Virchows Arch. f. path. Anat. **78**: 82, 1904; quoted by Ellis.

9. Magnus-Alsleben: Beitr. z. chem. Physiol. u. Path. (Hofmeister's) **6**: 503, 1904-1905; quoted by Ellis.

10. Von Khautz: Arch. f. klin. Chir. **88**: 42, 1908-1909; quoted by Ellis.

11. Gerard, R. W.: J. Biol. Chem. **52**: 11 (May) 1922.

12. Koessler, K. K.: Personal communication to the author.

If these patients are seen early, examination of the abdomen by auscultation may be of some value; but I must say that I have paid but little attention to this means of diagnosis. To the experienced surgeon, the most important factors in diagnosis are: (1) history; (2) abdominal distention; (3) intestinal vomiting; (4) heart action and blood pressure; (5) facial expression; (6) leukocytosis, and (7) elevation of temperature. As I enumerated in a previous paper, there are many other diagnostic points, but those outlined are the cardinal symptoms on which to base a radical type of treatment.

TREATMENT

Before the institution of surgical treatment for the relief of obstruction, it is presupposed that all sane methods of medical treatment have been exhausted.

In considering the surgical treatment of high intestinal obstruction, it is gratifying to note the fact that high enterostomy is coming to be more frequently recognized as a logical surgical procedure in the treatment of this condition. Because of the discussion occasioned, chiefly by inexperienced clinicians, respecting the value of treating these patients by passing a duodenal tube by mouth, I will quote from a previous communication:

Can the duodenal secretions be drained off per os by means of the stomach or duodenal tube? I believe not.

(a) Clinical experience in these cases with duodenal lavage has not given good results.

(b) Anatomically, it would be difficult to remove all secretions from the duodenum, and particularly so in cases of acute paresis of this portion of the intestinal tract.

(c) Drainage of the duodenum must be permanent until the paresis of the bowel has completely subsided.

Permanence of drainage of the duodenum can most effectively be established by an enterostomy, preferably high up in the jejunum. However, I do not recommend as high a jejunostomy as I did in a previous communication; first, owing to the disturbance with pancreatic digestion resulting in rapid emaciation of the patient if closure of the fistula is not early established, and secondly, because of the rapid digestion of the skin around the enterostomy produced by the trypsin from the pancreatic secretion. It is my opinion that if the operation be performed early enough, enterostomy in any part of the small intestine may give relief. I cannot urge too strongly the necessity of preventing trauma and shock to the abdominal viscera by noninterference with any but the very small loop of distended intestine in which you wish to establish enterostomy. For this reason, I have always maintained that consultation should be arranged in all cases, so that a definite plan of action may be laid down which will enable the surgeon to understand precisely what he intends to do before the operation. I have seen failures of this operation, and have had others reported to me, in which an abdomen was opened in an acute ileus, where the operator, after traumatizing large portions of the viscera and finding no organic obstruction, performed enterostomy. It is needless for me to tell you that with a patient in the extreme degree of shock in which we find them in acute ileus, this extra amount of manipulation of the abdominal viscera is enough per se to produce death.

Any surgeon of experience would recognize the futility of attempting the passage and maintenance of a duodenal tube in the presence of acute distention, reversed peristalsis and practically continuous vomiting. I believe that clinicians will be pretty generally agreed that if by chance the tube were inserted, there would be no likelihood of keeping it in the duodenum, and therefore the procedure would be of no therapeutic importance in this consideration.

I am even more strongly of the opinion that high enterostomy should be performed than I was in my previous discussions. As I have repeatedly emphasized, enterostomy, which is always performed under local anesthesia, is made well above and to the left of the umbilicus, as this location gives entrance to the abdominal cavity at a point at which the upper portion of the jejunum can be picked up most accurately. The first loop of small intestine that presents itself is picked up at the site of the opening. In a large percentage of cases, this will give a loop of small intestine well up in the jejunum.

In my early experience in the postoperative treatment

of some of these patients, I was agreeably surprised to note that, within a short time after the performance of enterostomy, normal evacuations began to take place by rectum. This fact was somewhat puzzling until intestinal resection was performed for the closure of the enterostomy. Figure 2 represents the fistulous diverticulum of the intestine at the time of secondary operation, and explains the anatomic arrangement of the bowel which permits the intestinal current to pass in the normal way.

In a recent patient, a boy, aged 7 years, admitted to

St. Joseph's Hospital suffering with a desperate condition of general peritonitis following a delayed diagnosis of acute perforative appendicitis, in which an immediate operation of incision and drainage of the abdomen was performed, paralytic ileus was so advanced at the time of admission that, under the most painstaking care, the distention remained, and on the tenth day the obstruction became complete. High enterostomy was performed under local anesthesia, and the patient recovered.

I present this brief history for two reasons, as aside from these there was nothing unusual about this case: (1) the obstruction became complete at a late date, and (2) the enterostomy remained open for only a few days. During this critical period, however, it served a twofold purpose: (1) allowing a direct and immediate escape of gas, and (2) permitting the lavage of the toxic duodenal content by means of the instillation of salt solution. Within a week, practically no intestinal secretion passed out through the artificial stoma. The bowels began moving in the normal way, and the enterostomy opening closed of its own accord, and Figure 3 is a photograph of the abdomen of the patient as it has remained since, with no apparent intestinal

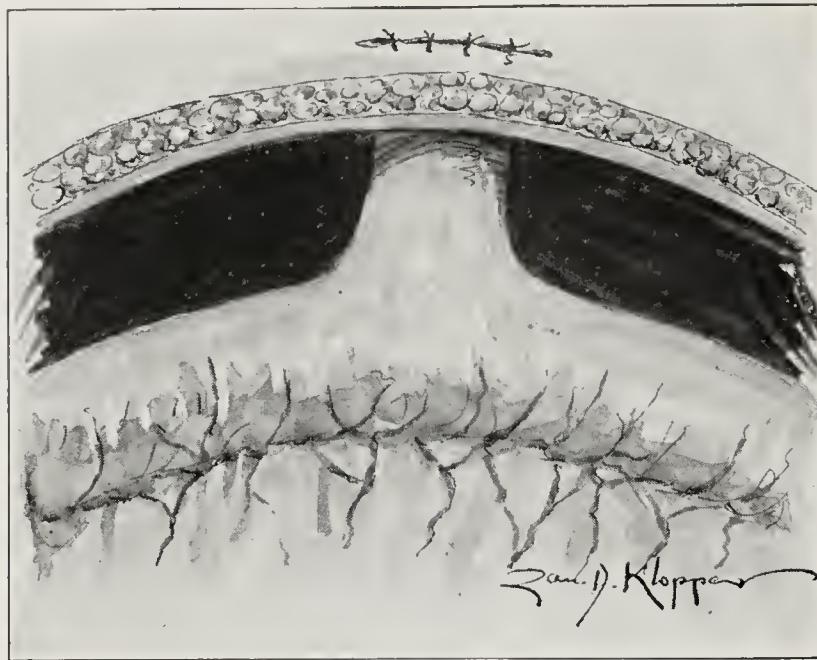


Fig. 2.—Diverticulum produced by performing type of enterostomy described.

disturbance because of this self-closing enterostomy and its fixed attachment into the abdominal wall.

I present these facts because I have always been of the opinion that enterostomy for acute obstruction should be performed in a precise and definite way. I laid definite stress on this point in a previous paper, and still do so. For this reason I shall review briefly cer-



Fig. 3.—Enterostomy that has automatically closed.

tain points in connection with the technic that seem imperative to me:

1. The anatomic location should be such that it will permit picking up the upper jejunum with a minimum amount of trauma.

2. The incision through the abdominal wall should be small, as this arrangement prepares the way for the early formation of a diverticulum of the intestine, which anatomic condition early permits at least a part of the intestinal current to pass in the normal way, after enterostomy has relieved the acute obstruction. This plan is of paramount importance, especially in badly weakened patients in whom, if the entire intestinal content passes out of the enterostomy opening for more than a week, absorption is so interfered with that emaciation swiftly ensues. Moreover, when the enterostomy is high, the pancreatic secretion pouring out on the skin becomes very distressing because of its digestive action. It is therefore of much importance to divert as much of the intestinal content to its normal course as early as possible. This is particularly true in those patients who will not stand early secondary operations for the enterostomy closure.

3. In performing enterostomy, I follow the plan of using one row of Lembert's sutures to approximate closely the serosa of the intestine to the cut edges of the skin. This arrangement invites the early formation of an intestinal diverticulum. Mayo¹³ presents what appears to be a rather ideal scheme of performing enterostomy by passing a catheter through the omentum and then invaginating it in the wall for some distance before entering the lumen of the intestine. This plan is worked out with the idea of avoiding a secondary operation for the closure of the enterostomy opening.

Whatever type of enterostomy is performed, I am of the opinion that the procedure having a minimum of intra-abdominal manipulation, with the maximum security against peritoneal contamination, will be considered the operation of choice, irrespective of whether

or not a secondary operation will be necessary to close the intestinal fistula. I have always followed the plan of picking up the loop of distended small intestine with rubber mounted forceps, rarely, if ever, introducing the fingers or other instruments into the abdominal cavity; and I wish to place special stress on the point of minimizing the amount of intra-abdominal manipulation in the management of these grave cases.

CONCLUSIONS

It would appear that a diverticulum may be produced in the formation of the jejunostomy, an anatomic arrangement which permits the enterostomy to perform a dual function: (a) the immediate introduction of salt solution into the upper intestine permitting the escape of the intra-enteric toxins and gases; (b) the early establishment of the enteric current, a condition which produces normal intestinal absorption and digestion, thereby preventing rapid emaciation of the patient.

104 South Michigan Avenue.

CANCER OF THE URINARY BLADDER CURED BY RADIUM

CURTIS BURNAM, M.D.

AND

GEORGE WALKER, M.D.

BALTIMORE

Justification for the report of a single case is, in this instance, furnished by two distinct features: 1. An infiltrating bladder cancer was healed and has not returned in more than seven years. 2. This heal-



The upper left half shows the normal bladder wall, the lower right half, the invading carcinoma. The solid strands can be observed.

ing was accomplished by transabdominal radium radiation. One mild intravesical topical application of radium was made, but a review of the record shows that its influence, if any, was insignificant. The case was observed from October, 1914, to March, 1923.

REPORT OF CASE

History.—W. C. C., a white man, aged 56, American, whose family history was unimportant, and in whose personal his-

13. Mayo, C. H.: Acute Intestinal Obstruction, J. A. M. A. 79: 194-197 (July 15) 1922.

tory only an attack of cystitis, in 1911, was of any importance in the present connection, had suffered for two months with intermittent hematuria, frequency of micturition and pain in the pelvis, all increasing.

Physical Examination.—There was a general appearance of robust health. The heart and lungs were normal. The blood pressure was 150 systolic, 100 diastolic. The abdomen was normal except for tenderness and a little muscle spasm over the bladder. The urine contained red blood cells and albumin. The prostate gland was a little enlarged. The seminal vesicles felt normal.

Cystoscopic Examination.—Cystoscopy revealed an ulcer with raised edges and a necrotic ground or base the size of a 10-cent piece, on the anterior bladder wall. The remainder of the bladder was normal except for a slight general injection. After an interval of waiting, the symptoms increased, and cancer was diagnosed.

Operation.—Under general anesthesia, the usual suprapubic incision revealed a small mass on the anterior bladder wall, penetrating the wall and involving the adjacent peritoneum. The entire growth, with a liberal margin, was excised. The bladder and abdominal walls were closed down to a small drain in the customary manner.

Convalescence.—After a week of nausea and intestinal distension, there was an uninterrupted recovery, which was complete except for an increased frequency of voiding, attributed to reduced bladder capacity.

Recurrence.—In the summer of 1915, the symptoms set in anew, rapidly increasing until the loss of blood, and more particularly the loss of sleep, due to the necessity of painful voiding every ten minutes, caused great exhaustion.

After several unsuccessful trials, due to vesical irritability, a satisfactory cystoscopic examination was made. An irregular, angry-looking growth, about 3 cm. across, was found on the site of the scar of the previous operation. The remainder of the bladder was injected but not ulcerated. Palpation revealed an induration in and below the abdominal suprapubic scar.

Microscopic Examination.—Recurrent cancer was evident, as the original tissue removed presented the ordinary solid flat cell carcinoma invading the normal bladder in strings, columns and nests, as shown in the accompanying illustration.

Radium Treatments.—August 25, 1915, 230 millicuries of radium emanation in a brass tube 1 cm. long and having walls 1 mm. thick was placed in the end of a silver catheter and held directly against the tumor for fifteen minutes. The application was difficult; and following it, there was for a number of days increased bleeding, pain and frequency. On account of the unfavorable effects of this treatment, it was decided to treat transabdominally. The tumor lay favorably for this kind of treatment, about 1½ inches beneath the skin surface. The radium in the form of emanation in many 1 mm. thick brass tubes 1 cm. long was distributed in a 3½ inch square lead box, 2 mm. thick. This was covered with rubber and placed on a block of gauze 2½ inches thick for the first four treatments, while in the fifth a distance of 4½ inches was employed. The dates and dosages were:

September 16, 1,829 millicuries for five hours; October 9, 1,632 for two hours each, of two areas; November 18, 1,371 for two hours; Jan. 19, 1916, 632, over each of three areas for one hour and thirty minutes; May 11, 2,780 for eleven hours and forty-five minutes.

There was almost immediate improvement following the first external treatment in September. On the fourth day, the urine had lost its red color, and by the end of two weeks all microscopic evidence of blood had disappeared. On only one or two occasions subsequently was blood noted, and after Jan. 1, 1916, bleeding did not recur. From the beginning, the frequency and pain diminished. At the end of a month and a half, the patient was still voiding every hour at night. At the end of four months, tenesmus and pain disappeared. At the end of a year and a half, he had no symptoms and had gained 52 pounds (23.6 kg.) in weight.

Following the first two treatments, there was a severe erythema of the skin. This cleared up completely in two months.

It is now nearly seven years since the last treatment. The patient refuses cystoscopic examination, and so a description of the present intravesical condition is impossible. His general health and the complete absence of any disability of the bladder warrant the assumption of a cure.

CONCLUSIONS

The inference from this case, and it does not stand alone, is that in the treatment of cancer of the bladder the employment of gamma radiation from the exterior of the body is very valuable. It is also susceptible of wide application, as it can be combined with surgical operation and with topical application of radium, as well as with implantation of bare emanation tubes. It is possible, if adequate radium is available and proper use is made of it, to bring any desired amount of radiation to any part of the bladder without serious injury to the skin.

1418 Eutaw Place—Charles and Centre streets.

SUPRACLAVICULAR DEPRESSIONS IN THE DIAGNOSIS OF EARLY PUL- MONARY TUBERCULOSIS *

H. A. BRAY, M.D.

AND

A. H. DUERSCHNER, M.D.

RAY BROOK, N. Y.

Supraclavicular depressions, particularly if unequal or unilateral, are generally regarded as suggestive evidence of tuberculous disease at the apex of the lung. In the recent classification of pulmonary tuberculosis adopted by the American Sanatorium Association,¹ a slight depression above the clavicle is mentioned among the physical signs of early or minimal tuberculosis. In attempts to estimate the value of this sign, however, observers apparently have failed to recognize the significance of similar depressions occurring in healthy persons. This is an important fact to establish, because the relative value of a sign in disease is decreased proportionately with the frequency of its occurrence in health. With this point in mind, we made a comparative study of the incidence, distribution and depth of the supraclavicular depressions in 153 healthy adults and 150 patients with incipient pulmonary tuberculosis.

At the same time, an attempt was made to discover methods of differentiating the depressions found in health and in disease.

In the healthy series, comprising 153 adults between the ages of 18 and 50 years, mostly between 18 and 35 years, the proportion of men and women was approximately the same, and the clinical history and the physical and roentgen-ray examinations failed to reveal evidence of pulmonary disease. Persons presenting definite evidence of chest asymmetry due to spinal curvature, injury, occupation, etc., were excluded, because these conditions may occasion depressions and so lead to confusion in a comparative study of this nature.

Although the number of persons here examined is too small to form a basis for any conclusive opinions, still it is large enough to warrant the following impressions:

* From the New York State Hospital for Incipient Pulmonary Tuberculosis.

1. Classification of Pulmonary Tuberculosis, Am. Rev. Tuberc., September, 1922.

1. The depressions are more evident in the lean than in the well-nourished. In the same subject we have noticed them appear with loss of weight, and again disappear with gain in weight, owing probably to a temporary variation in the amount of subcutaneous fat occupying the fossae. Changes in the depressions due to varying nutrition are generally more marked in women, because with them the deposit of fat in this region is normally greater than in men. In some persons the accumulation of supraclavicular adipose tissue is excessive, forming a fatty pad which obliterates all evidence of depressions.

2. The depressions are usually deeper when the muscles about the region of the lung apex are well developed, a fact that probably explains in part the greater depth of the depressions in men than in women, in laborers than in those following a sedentary occupation, and on the right side in right-handed persons and on the left side in left-handed persons.

3. The contraction of these muscles also tends to deepen the depressions.

4. The depressions are notably influenced by the size and shape of the clavicle and the different positions which it may assume.

The study of the clavicle in this respect is both interesting and significant. If the clavicle conforms to the long, heavy, straight type, and if its outer head is on the same line with the inner head, the bone is usually prominent, the supraclavicular space is large, and the depressions are more or less marked (Fig. 1). Conversely, the short type of clavicle, with accentuated curves, the outer head above and well posterior to the inner head, is generally inconspicuous, the supraclavicular space relatively small and the depressions absent or negligible (Fig. 2). There are many gradations between these two extreme types of clavicle, and these partly explain the variations in the depth of the fossae

if its outer head is elevated and brought forward, depressions will appear, or existing depressions become accentuated; while, if the outer head is drawn well backward, existing depressions will be partially or completely effaced. Thus, in a person standing erect, the shoulder girdle, of which the clavicle is an integral part, is thrown backward, and existing depressions



Fig. 2.—Accentuated curves of the clavicle in a healthy person. The outer head is well posterior to and above the inner head, and the supraclavicular spaces are relatively small. In health, depressions are often absent with this type and position of the clavicle.

diminished or effaced; while, when the person is seated, the shoulders tend to fall forward, thereby deepening the depressions.

Even during the examination of a healthy person, the depressions at times may be seen to come and go, or be temporarily accentuated on one side and then on the other, and such changes may be observed to be intimately related to alteration in the position of the clavicle. This point is illustrated in the three views of the same subject reproduced in Figure 4. The bilateral depressions shown in Figure 4 *A* are effaced in Figure 4 *B* when the shoulders are thrown backward, and in Figure 4 *C* the relative depth of the depression on the left side is increased because of the forward position of the left shoulder. In other words, these changes, hinging on clavicular movement, frequently account for the disappearance of a depression previously noted, and vice versa. Consequently, in confirming observations on supraclavicular depressions, the position of the clavicle should always be identical. To attain this end, it has been suggested that the person assume a posture of relaxation. One must remember, however, that for every individual there are several postures of equal relaxation, each of them influencing the position of the clavicle and the depth of the depression.

Because of the influence of the previously mentioned factors on the depressions, it is obvious that the statistical data on the incidence and depth of supraclavicular depressions in health, presented in Table 1, are only approximately accurate. However, as these factors also play a similar rôle in disease, the data may be helpfully employed in appraising the sign in the diagnosis of early tuberculosis.

Among the 153 healthy individuals included in Table 1, the depressions were absent or negligible in approximately 25 per cent. Unilateral depressions occurred in



Fig. 1.—Straight horizontal type of clavicle in healthy person. The outer head of the bone is forward and about on the same line with the inner head. The supraclavicular spaces are relatively large. With this type and position of the clavicle, depressions more or less marked are frequently encountered in health.

encountered in health. A notable difference in the shape of the clavicles in the same individual may cause definite inequalities in the depressions (Fig. 3). A change in the position of the clavicle also exercises an important influence on the depressions. For instance,

approximately 21 per cent., and of this group the right side showed 18 per cent. as compared with 3 per cent. on the left. In the remaining 54 per cent., bilateral depressions were found. These were equal in 28 per

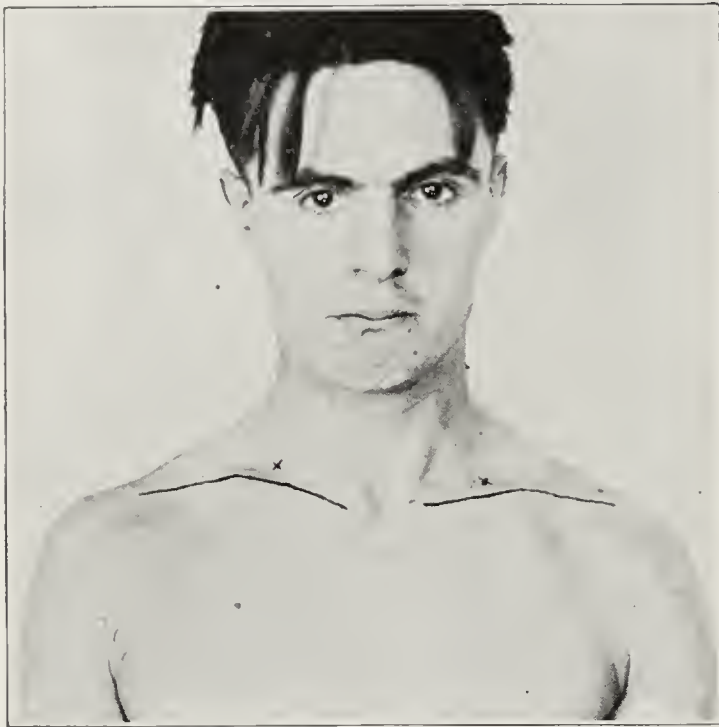


Fig. 3.—Healthy person. Note the difference in the shape of the clavicles, which in part at least explains the inequality in the depth of the depressions.

TABLE 1.—The Incidence and Depth of Supraclavicular Depressions in One Hundred and Fifty-Three Healthy Persons

Supraclavicular Depressions *		Number	Per Cent.
Right	Left		
—	—	39	25.4
+	—	27	17.6
—	+	6	3.9
+	+	27	17.6
++	+	15	10.0
+	++	9	5.9
++	++	15	10.0
+++	+	6	3.9
+	+++	3	1.8
++	+++	6	3.9
		153	

* Symbols: —, depression absent; +, depression slight; ++, depression moderate; +++, depression marked.

cent., while the right side showed a greater depth in 14 per cent. and the left, in 12 per cent.

From a study of Table 1, it is obvious that depressions occur frequently in health; they may be slight or marked, and in distribution, unilateral or bilateral. The incidence and relative depth of the depressions are greater on the right than on the left side.

The supraclavicular fossae were studied in 150 cases of incipient pulmonary tuberculosis. The lesion was confined to the region of the apices. The term "incipient" as here employed is not used in its strictest sense, but more broadly to include lesions distributed over an area not greater than that represented by the upper third of one

lung as revealed by the physical and roentgen-ray examinations. Patients with definite chest deformity due to extrapulmonary conditions, or patients presenting tumors or defacing scars of the neck, were not included. The sputum was positive for tubercle bacilli in approximately 32 per cent. of the cases. The dif-

TABLE 2.—The Incidence and Depth of Supraclavicular Depressions in One Hundred and Fifty Patients Suffering from Incipient Pulmonary Tuberculosis

Supra-clavicular Depressions		Location of Lesion					Total	Per Cent.
		Unilateral Disease		Bilateral Disease				
		Right Apex	Left Apex	Greater on Right	Greater on Left	Equally Distributed		
Right	Left							
—	—	9	6	6	6	3	30	20.0
+	—	9	8	5	5	4	31	20.6
++	—	0	1	2	1	0	4	2.6
+++	—	1	0	0	0	0	1	0.6
—	+	5	1	1	1	1	9	6.0
—	++	1	0	0	0	0	1	0.6
+	+	4	6	3	3	3	19	12.6
++	+	10	8	5	2	3	28	18.6
+	++	5	6	3	1	1	16	10.6
++	++	6	1	0	0	1	8	5.3
+++	+	0	0	0	0	1	1	0.6
+++	++	0	0	1	0	0	1	0.6
++	+++	1	0	0	0	0	1	0.6
		51	37	26	19	17	150	

ference in nutrition between these patients and the healthy group apparently was not sufficient to cause any appreciable alteration in the sign.

In Table 2 are shown the distribution of the pulmonary lesion, and the incidence and distribution of the supraclavicular depressions in 150 cases of incipient pulmonary tuberculosis. In thirty, or approximately 20 per cent., the depressions were absent; in seventy-four, or approximately 49 per cent., they were bilateral, and in the remaining forty-six, or approximately 30 per cent., they were unilateral.

Attempts to correlate the depressions with the site of lesion proved unsuccessful. This is best illustrated in the thirty-seven patients presenting a lesion confined to the left apex. Here the incidence and depth of the depressions were greater on the right (healthy) side. In six of the thirty-seven, the depressions were absent; in nine, confined to the right (healthy) side;



Fig. 4.—Healthy subject: A, depressions bilateral, equal and of moderate depth; B, the shoulders are thrown backward and the depressions effaced; C, the left shoulder has been brought slightly forward, a position which has increased the relative depth of the depression on this side.

in one, confined to the left (diseased) side; in seven, bilateral and equal; in eight, bilateral but deeper on the right (healthy) side, and in six, bilateral but deeper on the left (diseased) side. More or less similar results were obtained in attempts to correlate depressions and

lesions when the disease was confined to the right apex or distributed bilaterally. These conflicting results are explained, (1) by our inability to differentiate depressions in health from those in early tuberculosis, and



Fig. 5.—The pulmonary disease is moderately advanced, bilaterally distributed, confined to the upper lobes and greater on the right side. The depressions are bilateral and of equal depth. From our studies we would be inclined not to attach diagnostic significance to the depressions here present. They occur with the pulmonary lesion but are probably unrelated to it.

(2) by the striking similarity in their incidence and depth in health and in early tuberculosis.

Even in patients suffering from tuberculosis in the moderately advanced stage, it apparently is not possible to establish satisfactorily in most instances any definite relation between the distribution of the disease and the depressions.

TABLE 3.—The Incidence and Depth of Supraclavicular Depressions in One Hundred and Sixty-Nine Patients Suffering from Moderately Advanced Pulmonary Tuberculosis

Supra-clavicular Depressions		Location of Lesion					Total	Per Cent.
		Unilateral Disease		Bilateral Disease				
		Right Apex	Left Apex	Greater on Right	Greater on Left	Equally Dis- tributed		
Right	Left							
—	—	2	2	19	15	2	40	23.6
+	—	2	0	14	9	5	30	17.7
++	—	0	0	3	0	0	3	1.7
—	+	0	0	4	6	0	10	5.9
+	+	3	0	13	4	4	24	14.2
++	+	2	1	18	7	3	31	17.8
+	++	0	1	6	2	1	10	5.9
++	++	1	1	7	3	0	12	7.1
+++	+	0	0	0	1	0	1	0.5
+++	++	0	0	0	2	0	2	1.1
++	+++	0	0	1	0	2	3	1.7
+++	+++	0	1	1	1	0	3	1.7
		10	6	86	50	17	169	

Thus, in Table 3, which presents the depressions and site of lesion in 169 patients suffering from moderately advanced disease, the depressions, notwithstanding the extent of the pulmonary involvement, were absent in no less than approximately 24 per cent., findings similar to those obtained in health and in early tuberculosis.

The moderately advanced cases admitted to Ray Brook are a selected group in good nutrition, which

may account for the relatively large number showing no depressions. In the patients who did present depressions, no definite relation could be established in most instances between them and the site and extent of lesion. For instance, in Figure 5, although the depressions are of equal depth, the pulmonary disease, in the moderately advanced stage, is definitely greater on the right side. In Figure 6, although the right lung is apparently healthy, and the left extensively diseased, the greater depression is on the right (healthy) side.

COMMENT

The earlier observers found supraclavicular depressions a constant sign in pulmonary tuberculosis. At that time, the diagnosis was usually delayed until the pulmonary lesion was advanced and the patient emaciated. They apparently attributed the depressions entirely to the underlying lung disease, whereas the major rôle in their production was probably played by the tilting forward of the shoulders from weakness and the associated emaciation. This view is supported by the fact that depressions invariably appear with emaciation, irrespective of its cause. Anatomists and even dressmakers have long recognized this relationship. On the other hand, in well nourished patients suffering from advanced pulmonary tuberculosis, the depressions may be absent.

When depressions have their origin in disease of the underlying lung, they are due to loss of lung volume associated with local retraction of the chest wall. Local retraction of the chest wall sufficient to influence the depressions occurs for the most part with extensive pulmonary disease and marked loss of lung volume. Even here the presence or absence of depressions depends on the extent to which the individual compensatory factors participate.²

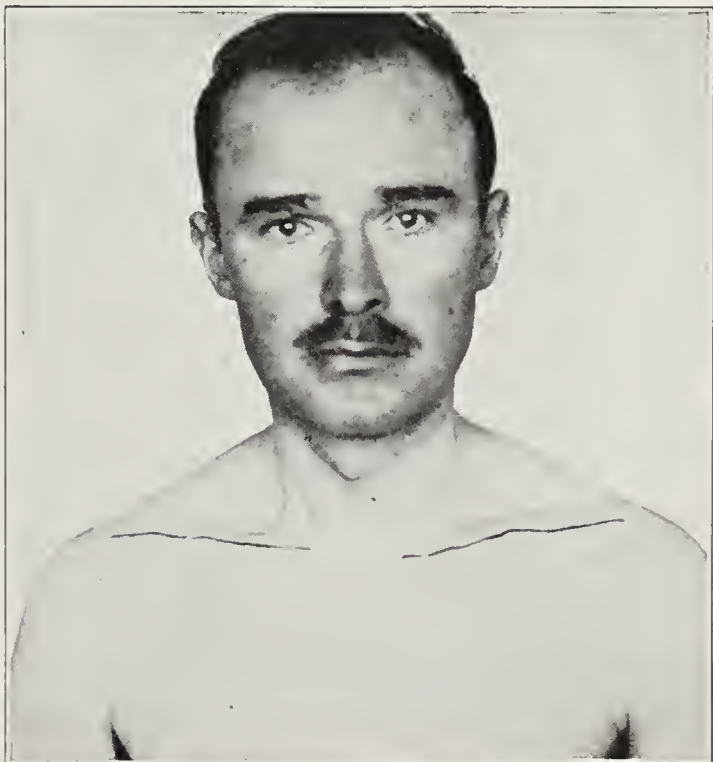


Fig. 6.—Bilateral depressions, slightly greater on right; massive involvement of left lung with antrum formation at the apex; right lung apparently healthy. In tuberculosis, it is not uncommon to find the greater depression on the right side when the lesion is confined to the left lung.

In early disease, the loss of lung volume is slight, and is usually compensated by emphysema or hypertrophy of the lung contiguous to the focus, and there is

2. Bray, H. A.: The Mechanism of Compensation in Pulmonary Tuberculosis, and Its Relation to Physical Signs, *Am. Rev. Tuberc.* 6: 1008 (Jan.) 1923.

neither local retraction of the chest wall nor change in the soft structures above the clavicle. Therefore, on purely pathologic grounds, one would not expect to find any material change in depressions in early disease.

Although depressions above the clavicle have been regarded as one of the traditional signs for the detection of early tuberculosis, the present study suggests that their value in this respect is open to question.

SUMMARY

- 1. There is a definite relation between nutrition and the presence and absence of supraclavicular depressions.
- 2. The depressions are influenced by the size, shape and position of the clavicle.
- 3. There is a striking similarity in the incidence, distribution and depth of supraclavicular depressions in health and in early tuberculosis.
- 4. No method was discovered for differentiating depressions in health from those in early tuberculosis.
- 5. Attempts to correlate depressions with the site and extent of the lesion in early disease have proved impracticable.
- 6. Although depressions occur with early disease, they are probably not due to the pulmonary lesion.
- 7. Except possibly in rare instances, supraclavicular depressions are of questionable value in the diagnosis of early pulmonary tuberculosis.

BACILLARY DYSENTERY

REPORT OF CASE, WITH A STUDY OF THE
INTESTINAL BACTERIOPHAGE *

ROBERT K. CUTTER, M.A.
NEW HAVEN, CONN.

An opportunity recently presented itself to study a case of bacillary dysentery caused by a laboratory accident. The case seems to justify report, since (a) the infecting organism was known; (b) the time of infection and therefore the incubation period was known; (c) the carrier state followed, and (d) a study of the intestinal bacteriophage was made.

REPORT OF CASE

On the afternoon of Oct. 25, 1922, while filtering a culture of *B. dysenteriae* (Flexner), my hands became badly contaminated. The hands were washed thoroughly and rinsed with 5 per cent. compound solution of cresol and the incident forgotten until after the onset of the disease. There were no symptoms until the next evening, twenty-eight hours after the accident. At this time, chilly sensations suddenly developed and persisted throughout the evening. There was no rigor. Extreme weakness and a severe throbbing headache set in and became increasingly more marked throughout the night. During the night there were seven movements, which became increasingly more fluid and showed more and more mucus. There was no blood. Abdominal distress was not marked.

A clinical diagnosis of bacillary dysentery was made, and transfer to the New Haven Hospital was advised. The subsequent course of the disease at the hospital was very brief. At the time of admission, the temperature was 102.2 F.; pulse, 120; respiration, 22, and leukocyte count, 14,000. *B. dysenteriae* (Flexner) was isolated from the stool.

The pulse and temperature remained elevated for only thirty-six hours, at which time there was a marked clinical improvement.

There had been twelve stools the first day and six the following night. After this time, the diarrhea ceased entirely, and the stools became normal. Cultures of the stools, however, except for one on the seventh day after the onset, continued to show *B. dysenteriae*. On the tenth day after the onset, permission to go home under quarantine restrictions was granted. On the eleventh and twelfth days, stool cultures were reported negative for *B. dysenteriae*, and because of this, quarantine was discontinued on the thirteenth day. The special precautions that had been observed while quarantined were nevertheless continued, and the stools were examined at weekly intervals for the next two months. One week after I had been discharged as cured, *B. dysenteriae* was again isolated from the stool. All other examinations were negative.

The finding of *B. dysenteriae* a week after two consecutive negative cultures emphasizes that this arbitrary test, too often accepted as final, is not satisfactory evidence of the nonexistence of the organism in the intestine, and that neither the patient nor the physician should be led to a false sense of security by it. This observation is not new, attention having been directed to it many times, especially in connection with typhoid fever. The isolation of organisms of the typhoid-dysentery group from stools of carriers is necessarily attended with more or less of an element of chance, and the failure to find organisms even in heavily infected material on two consecutive trials is a coincidence not at all outside the bounds of possibility. In order to prevent the dissemination of *B. dysenteriae*, the patient released from quarantine on the strength of two negative tests should be kept under observation; the stools should be examined over a period of weeks, and he should be instructed in methods for caring for himself in a sanitary way.

THE AGGLUTINATION REACTION

The agglutination reaction of the blood was followed. On the eighth day it agglutinated a stock culture of *B. dysenteriae* (Flexner) treated with formaldehyd, in dilutions up to 1:80, while the recovered strain was agglutinated only in the lowest dilution, 1:20. A month and a half later, there was frank agglutination with the formaldehyd-treated strain in 1:20 dilution only, with loss of whorl in the 1:40. Both the infecting and recovered strains showed loss of whorl in the 1:20 and 1:40 dilutions. Four months after the onset, the only sign of agglutination was a loss of whorl in the first tube with the infecting strain.

These results are summarized in Table 1. The gradual loss of agglutinins from the blood is evident.

TABLE 1.—Agglutination Reaction with *B. Dysenteriae*
(Flexner) *

	1:20	1:40	1:80	1:160	Control
11 Days after Onset:					
Antigen treated with formaldehyd..	++	++	+	±	—
Recovered strain.....	+	—	—	—	—
44 Days after Onset:					
Antigen treated with formaldehyd..	+	±	—	—	—
Recovered strain.....	±	±	—	—	—
Infecting strain.....	±	±	—	—	—
124 Days after Onset:					
Antigen treated with formaldehyd..	—	—	—	—	—
Recovered strain.....	—	—	—	—	—
Infecting strain.....	±	—	—	—	—

* In the tables, + indicates growth; —, no visible growth; I, presence of irregular colonies; 1 and 2, separate tests, made at different times.

CARRIER STATE

During the time that I was quarantined in my home, and for a month or so more while I continued to take precautions to avoid contamination, I became more and more impressed with the difficulties involved. Mention of the precautionary measures used will indicate what is necessary.

* From the Department of Internal Medicine, Yale University School of Medicine.

In general, it should be borne in mind that the anal region is contaminated, and that everything that might possibly come in contact with it should be burned, boiled, or soaked in an antiseptic solution. The simplest and best way of avoiding clothes contamination

TABLE 2.—Presence of Bacteriophage in Stools

Days After Onset	Infesting Strain	Bacteriophage Present	Recovered Strain	Bacteriophage Present
Control	1 ++++++		+++++	
	2 ++++++	No	+++++	No
4	1 +++		+++ I	
	2 ++	Yes	++	Yes
6	1 —		+++ I	
	2 —	Yes	+++ I	Yes
7	1 ++ I		+++ I	
	2 +	Yes	++ I	Yes
8	1 ++++++		+++++ I	
	2 ++++++	Yes	+++++	Yes
9	1 ++ I		++ I	
	2 +	Yes	++ I	Yes
21	1 ++++++		+++++ I (?)	
	2 ++++++	No	+++++	No

is the wearing of a napkin, night and day, which may be burned. A covered container should be provided in which to soak undergarments, night clothes, towels, etc. It is desirable to have a receptacle with a relatively strong antiseptic solution in which feces should be kept for a few hours before being flushed into the sewerage system. This also avoids contamination of the toilet seat. The only type of bath allowable is a sponge bath, as a tub or shower bath contaminates not only the bath tub or shower room, but the whole body as well.

While it is obvious that it is useless to expect a patient to carry out these measures unless he is of average intelligence and at the same time willingly cooperative, nevertheless, there is no reason why an intelligent, responsible person taking these precautions should not be allowed freedom from prolonged quarantine restrictions.

STUDY OF THE INTESTINAL BACTERIOPHAGE
(D'HÉRELLE'S PHENOMENON)

A 5 gram specimen of each stool for bacteriologic examination was inoculated into 50 c.c. of alkaline peptone water and, after incubation over night, set aside in the refrigerator. Later, these cultures were examined for filtrable bacteriolytic agents (the bacteriophage), according to the method of d'Hérelle; namely, filtration through infusorial earth, Berkefeld filters and testing this filtrate by adding it to alkaline peptone water cultures of the organism to be tested against; then, after overnight incubation, subculturing on agar slants. The presence of the bacteriophage is manifested by a clearing of the liquid culture and by sparse growth, even to apparent sterility, when the bacteriophage is very active, by irregular, moth-eaten appearing colonies, or by plaques or bare areas on heavy bacterial growths on agar subcultures. Each test was controlled by a culture treated in the same way, except that no filtrate was added.

The filtrates from the stools of the fourth, sixth, eighth, ninth and twenty-first days after the onset were tested for bacteriophage action with both the infecting and the recovered strains, these strains being identical except that the recovered strain had had one human passage. The results are shown in Table 2. It will be seen that bacteriophage against the Flexner organism was present in the filtrates of stools from the

fourth to the ninth days, but was not present twenty-one days after the onset. In stool filtrates examined occasionally since then, there has been no bacteriophage action demonstrable. On the whole, the bacteriophage seemed to attack the infecting strain more heavily, but produced more irregular colonies in its reaction toward the recovered strain.

The filtrate from the stool of the eighth day after onset of symptoms was found to act on *B. dysenteriae* (Shiga) and *B. coli*, as well as on *B. dysenteriae* (Flexner). It did not attack the stock strains of *B. typhosus*, *B. paratyphosus* A, or *B. paratyphosus* B. The other filtrates were not tried with these organisms.

SUMMARY

A study was made of a laboratory infection with *B. dysenteriae* (Flexner). The incubation period was twenty-eight hours. The duration of the disease was thirty-six hours. The carrier state lasted at least two weeks. Examination of only two consecutive negative stools is unreliable as a criterion for release from quarantine. Study of the intestinal bacteriophage showed lytic action present in the stool filtrates from the fourth to the ninth day after onset, but no longer demonstrable by the twenty-first day.

330 Cedar Street.

AGGLUTINATION TEST FOR THE PRESENCE OF BACILLUS DIPHTHERIAE
IN FIELD (MIXED) CULTURES

PRELIMINARY NOTE *

J. G. FITZGERALD, M.D.

Professor of Hygiene and Preventive Medicine; Director Connaught Antitoxin Laboratories, University of Toronto

TORONTO

AND

DOROTHY G. DOYLE, A.B.

BERKELEY, CALIF.

The problem of differentiating true *B. diphtheriae* from diphtheroids and other morphologically similar species of micro-organisms is one of constant interest and often of considerable difficulty to bacteriologists and public health laboratory workers. The criteria ordinarily applied in the routine examination of throat cultures are typical morphology and virulence. These satisfy the requirements in the great majority of instances when the cultures are taken from the exudate in well-marked cases of diphtheria when very little doubt could possibly arise as to diagnosis. In the examination of smears from such cultures, every field of the microscope, as a rule, presents great numbers of granular and beaded forms of *B. diphtheriae*, chiefly Types C and D in Wesbrook's classification. It is not difficult in these circumstances to isolate *B. diphtheriae* in pure culture, to perform virulence tests and to determine the carbohydrate fermentation reactions. If any doubt whatever exists, protection experiments with mixtures of known diphtheria antitoxin and toxin produced by the strain of micro-organism under investigation may be made and identification finally established with certainty. There seems to be general agreement that micro-organisms presenting the morphology of any of Wesbrook's types, fermenting glu-

* From the Department of Bacteriology and Experimental Pathology, University of California.

cose, lactose, mannite, dextrin, saccharose or glycerol, and yielding diphtheria toxin as shown by positive subcutaneous or intracutaneous tests are *B. diphtheriae*.

Since 1906 very considerable advances have been made in the matter of simplification of technic in the determination of virulence of strains of *B. diphtheriae*, largely as a result of Römer's¹ demonstration of the specific reaction following the intracutaneous injection of minute amounts of diphtheria toxin. Neisser² employed living cultures of *B. diphtheriae* instead of the filtrates of such cultures, and Zingher and Soletsky³ have modified Neisser's method in such a fashion that diphtheria antitoxin is given to a control animal before or at the time of the test, and small amounts (0.15 c.c.) of saline suspensions of several cultures to be tested are injected intracutaneously into one guinea-pig. This, of course, results in a considerable saving of animals. Eagleton and Baxter⁴ have quite recently standardized the procedure of Zingher and Soletsky.

These methods all require the isolation of *B. diphtheriae* in pure culture from the original mixed field culture, and there are certain very serious disadvantages in such methods. Not at all infrequently the isolation from the field culture of the strain of *B. diphtheriae* in pure culture for virulence testing is difficult or impossible. This, of course, is particularly likely to be the case when the slant of Löffler's blood serum medium on which the original field culture has been made is covered with colonies of many other micro-organisms and relatively few colonies of *B. diphtheriae*. This may happen when cultures are improperly taken or in cultures from mild clinical cases of diphtheria or in convalescent or contact carriers harboring perhaps but few diphtheria bacilli. A method recently described by Force and Beattie⁵ of testing field cultures directly by intracutaneous injection of the whole mixed culture is without such disadvantages and marks a decided step in advance in the determination of virulence of cultures of *B. diphtheriae*. It would appear, further, that the intracutaneous method of Force and Beattie, employing whole field cultures, is superior to the subcutaneous method proposed by Wayson.⁶ Havens and Powell⁷ have confirmed the work of Force and Beattie.

There is one additional criterion in identification which, until recently, has received little consideration; that is specific serum agglutination. Various early workers, Landsteiner (1897), Nicolle (1898) and others were unable to demonstrate agglutinins for *B. diphtheriae* in antitoxic serums. Graham-Smith has reviewed the literature dealing with agglutination of *B. diphtheriae* down to 1906 in the monograph by Nuttall and himself.⁸

In the course of other experimental work we have made certain observations on the agglutination of field cultures which may have considerable practical importance, and for that reason we have dealt with them in this preliminary communication. As a result of the

work of Durand,⁹ Mason,¹⁰ Havens,¹¹ Park, Williams and Mann,¹² Paxson and Redowitz,¹³ Bell,¹⁴ Baxter and Eagleton¹⁵ and others, it has been abundantly established that there exist several serologic types of *B. diphtheriae*, and that these can be differentiated by means of the reaction of agglutination and absorption of agglutinins (Durand and Bell). Furthermore, both Durand and Mason have shown that it is possible by means of serum agglutination to distinguish very definitely and clearly cultures of *B. diphtheriae* from various strains of diphtheroids. Durand carefully investigated sixty cultures of diphtheroids and was able with a diphtheria-agglutinating serum in every instance to distinguish them from true *B. diphtheriae*. Mason, in a study of ten strains of micro-organisms "morphologically diphtheroids" isolated from various sources, found that they were inagglutinable with diphtheria agglutinating serum. We have been able to confirm and extend Durand and Mason's results. In no instance have we obtained agglutination of a diphtheroid strain (by diphtheroids are meant solid or barred types, not fermenting any carbohydrate tested and giving negative intracutaneous virulence tests) with diphtheria agglutinating serum. For the purpose of investigating the relationship existing between virulence and agglutinability, we have examined a large series of pure cultures of *B. diphtheriae*. The results of these and other studies will be communicated later. During the progress of this work, we were led to investigate the possibility of specific serum agglutination of mixed field cultures of *B. diphtheriae*, and our results are presented herewith.

Thanks to the courtesy of Dr. Wilfred H. Kellogg, director of the State Hygienic Laboratory of the California State Board of Health, we were able to obtain 104 field cultures received in the laboratory for diagnosis. These cultures were examined in smears stained by acetic toluidin blue by members of the staff of the state hygienic laboratory and reported in the usual way, on the basis of smear examinations, as positive or negative. The cultures were received from clinical cases, from convalescent carriers and from contacts. When the smears had been made from the field cultures, after from eighteen to twenty-four hours of incubation they were then given to us for agglutination experiments.

METHOD OF PROCEDURE

The cultures were again placed in the incubator for from eighteen to twenty-four hours. They were then taken out, and the growth on the surface of the slant of Löffler's blood serum was washed off with 2 c.c. of sterile physiologic (0.9) sodium chlorid solution. The emulsions of mixed cultures so prepared were used as antigens, and macroscopic agglutination tests were carried out with two monotypical diphtheria agglutinating serums in dilutions ranging from 1:10 to 1:640. Each macroscopic agglutination tube contained 1 c.c. of serum dilution and 0.1 c.c. of antigen (emulsion of field culture). The tubes, after being set up, were placed in a water bath at 56 C. for two hours, then left in the icebox and read the next day, usually after from sixteen to eighteen hours. The emulsions used as antigens were thus forty-eight hour cultures of the colonies of micro-organisms contained in the original field culture. This is, we believe, a point of considerable importance.

1. Römer: Ztschr. f. Immunitätsforsch. Orig. **3**: 208, 1909.
2. Neisser: Centralbl. f. Bakteriol. I, Ref. **57**: 1, 1913.
3. Zingher and Soletsky: J. Infect. Dis. **17**: 454, 1915; **19**: 557 (Oct) 1916.
4. Eagleton, A. J., and Baxter, E. M.: Virulence of Diphtheria-Like Organisms, Brit. M. J. **1**: 775 (May 28) 1921.
5. Force, J. N., and Beattie, M. I.: Am. J. Hyg. **2**: 490 (Sept.) 1922.
6. Wayson, N. E.: Diphtheria, Pub. Health Rep. **31**: 3113 (Nov. 10) 1916.
7. Havens, L. C., and Powell, H. M.: Am. J. Hyg. **2**: 234 (May) 1922.
8. Nuttall, G. H. F., and Graham-Smith, G. S.: The Bacteriology of Diphtheria, Cambridge, University Press, 1908, p. 226.

9. Durand: Compt. rend. Soc. de biol. **81**: 1011, 1918; **83**: 611, 1920.
10. Mason, E. H.: Mil. Surgeon **45**: 560 (Nov.) 1919.
11. Havens, L. C.: J. Infect. Dis. **26**: 388 (May) 1920.
12. Park, W. H.; Williams, G. W., and Mann, A. G.: J. Immunol. **1**: 243 (May) 1922.
13. Paxson, W. H., and Redowitz, E.: J. Immunol. **7**: 69 (Jan.) 1922.
14. Bell: J. Roy. A. M. C., January, 1922.
15. Baxter and Eagleton: Proc. Roy. Soc. Med., March, 1923.

RESULTS

Of fifty-two cultures which on smear examination were reported positive, forty-seven gave a positive agglutination with one or both type serums in dilutions up to 1:640. The remaining five cultures were not agglutinated with either serum. This was probably due to the fact that they were representatives of other agglutinative types of *B. diphtheriae*. Of the cultures reported negative on smear examination, fifty-two in all, forty-seven also gave negative agglutinations. The remaining five cultures, reported negative from smear examination, gave positive agglutinations. These discordant results are of considerable interest. The first culture was sent to the laboratory for examination for release from quarantine and was taken from a convalescent carrier, from whom twenty-three cultures in all had been taken. Agglutinations were positive in dilutions of 1:640 with both type serums. The second positive agglutination test obtained when a negative smear was reported was with a culture for first diagnosis. This culture was taken from a student who had had a mild sore throat for several days and had received local treatment. A second culture taken from this man some days later was negative by both smear examination and agglutination.

A third positive agglutination with a culture on which a negative smear report was given was a culture for first diagnosis. The history of the patient from whom the culture was obtained was as follows: The child had had a sore throat for four days. A physician was called, and on examination found a small spot on one tonsil. He diagnosed diphtheria. A second physician who was called said the case was not diphtheria, but he took a throat culture. This culture was negative in smear but positive by agglutination. The physician reported that the spot on the throat was easily rubbed off without bleeding, and the child recovered without the use of diphtheria antitoxin.

Positive agglutination tests were obtained in two other instances in which negative reports on smears were made. These cultures were taken to test for release and were from convalescent carriers.

COMMENT

There is a certain amount of presumptive evidence in these five cases that the agglutination reactions which were positive though smears were negative may have more correctly reflected the true clinical condition. Spontaneous agglutination may occur in dilutions of 1:10 with field cultures agglutinated with specific diphtheria agglutinating serums. This has not been encountered in higher dilutions. Inhibition of agglutination, the so-called prezone phenomenon, was not observed in the agglutination of field cultures. This has been noted, however, in agglutination of pure cultures of *B. diphtheriae* by monotypical serums. Field cultures taken twenty-four hours previously have been employed as antigens, but the growth, as a rule, is less luxuriant and the preparation of satisfactory emulsions for antigens is difficult. Rapid agglutination tests by the centrifugalization of mixtures of agglutinating serums and emulsions of field cultures have been tried, and the results have corresponded with those obtained, the technic described above being employed.

When the rapid method is used, results can be read about thirty minutes after the mixtures of antigen and agglutinating serums are made and then centrifugalized

for five minutes. This, of course, means that the entire procedure may with this method be completed within twenty-four hours after the original field culture has been taken.

Cultures have been made from four definite clinical cases of diphtheria, and the results of smear examinations, intracutaneous virulence tests and specific serum agglutination have been correlated. In these few instances there was complete correspondence in results obtained. Agglutination of (artificially prepared) mixtures of *B. diphtheriae*, staphylococci and streptococci have also been observed. These observations will be described more fully later.

Considerable difficulty may be encountered in the preparation of satisfactory agglutinating serums. This has been noted by many who have endeavored to utilize rabbits for the production of diphtheria agglutinating serums. By repeatedly washing emulsions of *B. diphtheriae*, even twelve times if necessary, as recommended by Moloney and Hanna,¹⁶ we have obtained emulsions which, on injection intracutaneously into guinea-pigs, have given negative virulence tests. Not all strains of *B. diphtheriae* can be thus washed free of toxin. This is the procedure followed at present, however, and Dr. Ruth L. Stone, working in this laboratory, has recently obtained a diphtheria-agglutinating serum in a rabbit in less than three weeks after the first series of injections, having a titer of 1:3,200 complete and 1:6,400 partial agglutination. The method of giving injections intravenously on three successive days, originally proposed by Gay and FitzGerald¹⁷ for the rapid production of hemolysins, was followed in this instance.

In order to determine whether this method of agglutination of field cultures may be substituted for intracutaneous virulence tests in guinea-pigs, and also whether it may be desirable to employ it as a routine procedure before cultures are reported negative, further work is contemplated.

It is proposed to prepare widely polyvalent agglutinating serums by the immunization of horses with a number of different serologic (agglutinative) types of *B. diphtheriae* and to use this in a parallel series of virulence and agglutination tests of field cultures. It will also be necessary to ascertain whether avirulent diphtheria bacilli give positive agglutination tests. We have no evidence on this later point as yet.

16. Moloney, P. J., and Hanna, L. O.: Proc. Soc. Exper. Biol. & Med. **19**: 231, 1922.

17. Gay and FitzGerald: University of California Publications, Pathology **2**: 873, 1912.

Eugenics, Heredity and Tuberculosis.—Our keenest interest and perhaps the most practical problems center not about unit-character differences in man but about those more complicated types of heredity expressed in continuous and irregular variation. Considering such human characteristics as resistance and susceptibility to disease, variations in physical and mental endurance, initiative, industry and ambition, emotional stability and power of application, capacity for accurate or abstract thought, what we most want to know is not the exact nature of the hereditary mechanism, but simply to just what extent these conditions are dependent on heredity and to what extent they may be controlled by environment. From a eugenic point of view, the question as to the exact number and linkage relationships, of factors responsible for susceptibility to tuberculosis is of no great practical value. It is sufficient to know to just what extent heredity is actually responsible.—P. W. Whiting: *Nation's Health* **5**:136 (March) 1923.

SIMULTANEOUS LIGATION OF VEIN
AND ARTERY

AN EXPERIMENTAL STUDY*

BARNEY BROOKS, M.D.

AND

KIRBY A. MARTIN, M.D.

ST. LOUIS

Makins called attention to the possible advantage of simultaneous ligation of the accompanying vein if an artery is occluded. In his Hunterian Oration, Makins¹ makes the following statement:

These considerations lead me not only to regard obligatory simultaneous occlusion of a main artery and vein as a negligible factor in the risk of gangrene of the limb, but to hold further that the procedure is preferable whether the vein be wounded or not, the result of the combined procedure being to maintain within the limb for a longer period of time the smaller amount of blood supplied by the collateral circulation.

Oeppel² ascribed the good results which sometimes follow operative arteriovenous anastomosis (the operation also known as reversal of the circulation) to the fact that such a procedure obstructs the vein, and he was led to substitute simple occlusion of the vein to accomplish the same result. La Roque³ has reported a case of successful simultaneous occlusion of the femoral artery and vein. In this report is an excellent summary of the prevailing opinion as regards this question. Halsted⁴ has expressed the opinion that simultaneous ligation of the vein is probably the preferable procedure in certain instances in which it is necessary to occlude the artery, but he states that it would seem advisable to wait until ligation of the vein is clearly indicated. Neuhof and St. John⁵ have recommended simultaneous ligation of the vein when it becomes necessary to occlude a primary artery for hemorrhages due to infection.

THREE SERIES OF EXPERIMENTS

In order to study the changes in an extremity which follow obstruction of the primary artery alone and the simultaneous occlusion of the vein and artery, three series of experiments were done:

1. Experiments in which the effect on the temperature of the tissues distal to the ligatures was studied.
2. Experiments in which the blood pressure distal to the ligation was measured.
3. Experiments to test the comparative frequencies of gangrene from simultaneous ligation of artery and vein, and ligation of the artery alone.

Dogs and rabbits were used for the experiments. All experiments were carried out under complete anesthesia, and every effort was made to prevent any unnecessary pain or suffering. Only one experiment in each series will be described in detail. The experiments were repeated sufficiently often to demonstrate the constancy of the observations described.

1. *Experiments to determine the changes in temperature of the tissues of the extremity distal to ligation of the primary artery alone and the simultaneous ligation of artery and vein.*

In general, the maintenance of the temperature of the tissues of extremities above that of the surrounding air is an index of the amount of blood flowing through those extremities.

If the temperature of one extremity falls and the temperature of the body and surrounding air remains constant, it can be assumed to be due to a decreased flow of blood through this extremity.

Large dogs were used for these experiments. The animals were anesthetized by the administration of paraldehyd. Thermometers were inserted into the tissue of both feet and thighs of the posterior extremities, and into the rectum. The room temperature was recorded.

The abdomen was opened in the midline. The left common iliac vein and the left iliac artery were exposed. Suitable clamps for obstructing these vessels were pro-

TABLE 1.—Temperature Changes at Fifteen Minute Periods

Room.....	21.6	21.6	Artery ligated	21.4	21.4	21.3	21.3	21.2	Vein ligated	21.2	21.2	21.1
Rectal.....	38.0	38.0		38.0	37.8	37.6	37.5	37.4		37.4	37.3	37.0
Right thigh..	37.6	37.6		37.6	37.6	37.5	37.5	37.5		37.6	37.5	37.5
Right foot...	35.0	35.0		35.0	35.0	35.0	34.9	34.8		34.8	34.4	34.4
Left thigh...	37.5	37.5		37.2	37.0	36.6	36.0	35.8		35.0	34.8	34.5
Left foot....	35.0	35.0		31.0	29.8	29.5	29.0	28.9		27.4	27.0	27.0

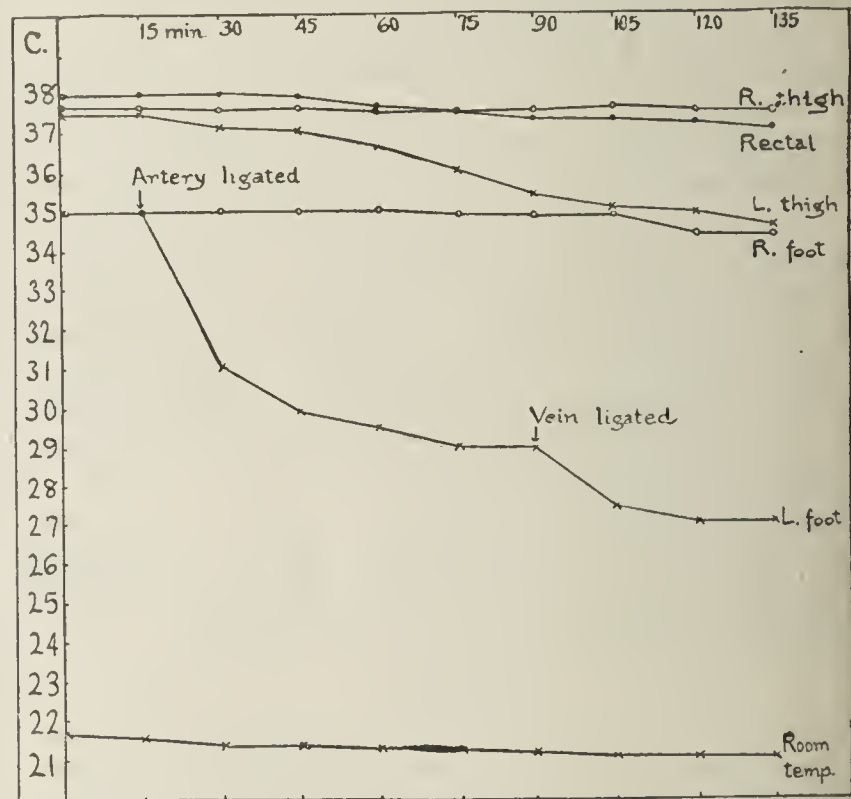


Chart 1.—Temperature changes of the extremities following ligation of the primary artery of an extremity and a subsequent ligation of the corresponding vein.

vided. After this preparation, the temperature in the extremities was observed until it became constant. The left iliac artery was then clamped, and temperature readings were recorded until the temperature of the left thigh and left foot became constant. The common iliac vein was then clamped, and the readings were again recorded until a constant was reached. In some experiments, the vein was clamped first and the artery second. In other experiments, the effects of removal of the clamp from one or the other vessel or both vessels were observed. In some experiments, the observations were continued for four hours. Thirteen experiments were done. The results of these experiments were the same in all instances. Table 1 and Chart 1 show the results of a typical experiment.

From these experiments it was evident that ligation of the primary artery of the extremity resulted in a fall in the temperature of all the tissues distal to the

* From the Department of Surgery, Washington University Medical School.

1. Makins, G. H.: *Lancet* 1: 249 (Feb. 17) 1917.
 2. Oeppel: *Zentralbl. f. Chir.* 2: 1241, 1913.
 3. La Roque, G. P.: *Ann. Surg.* 73: 265 (March) 1921.
 4. Halsted: Personal communication to the authors.
 5. Neuhof, H., and St. John: *Surg., Gynec. & Obst.* 29: 130 (Aug.) 1919.

ligature. The fall in temperature was progressively greater, the more distal the tissue temperature was measured. The temperature of the tissues was immediately restored if the arterial obstruction was removed. If the artery was obstructed and the temperature of the tissues distal to the ligature became constant at a level below normal but still above room temperature, then occlusion of the vein resulted in a further fall of tissue temperature. Furthermore, this fall of temperature took place in all tissues of the extremity. Occlusion of the vein alone caused a fall in tissue temperature of the entire extremity distal to the occlusion.

These experiments show that simultaneous ligation of the vein and artery results in a greater reduction of volume flow of blood through the entire extremity than ligation of the artery alone.

2. *Experiments in which the changes in blood pressure in the veins and arteries distal to the ligatures were measured, after ligation of the artery alone and after simultaneous occlusion of the vein and artery.*

Large dogs were used for these experiments. The animals were anesthetized with paraldehyd. The abdomen was opened in the midline. The left iliac artery and vein were exposed. The left iliac artery was divided near its origin. Cannulas were inserted in both the proximal and distal stumps, and the blood pressure in each was determined by mercury manometer, maximal and minimal value, and recording tambour methods. The venous pressure was determined in the common iliac vein by inserting a hollow needle into the vein (without occluding the vein) and measuring by a mercury manometer the lowest pressure that would cause physiologic sodium chlorid solution to flow into the vein. The vein was then clamped proximal to the needle cannula and the pressures again measured in both stumps of the artery and vein. The effects of removal of the occlusion of the vein alone were also observed. Six experiments were carried out. The results of a typical experiment are shown in Chart 2.

These experiments demonstrated that the intravascular pressure in both the arteries and veins of an extremity is decreased by ligation of the primary artery alone. If the artery is ligated and the intravascular pressure in both arteries and veins becomes constant at a level lower than normal, then obstruction of the vein results in a rise in intravascular pressure in both arteries and veins distal to the ligatures. The blood pressure in the veins rises proportionately more than in the arteries, so that the difference in arterial and venous pressures is less after ligation of both artery and vein than if the artery alone is occluded. The marked increase in intravascular pressure within the veins would indicate an increased resistance to outflow of blood from the extremity, and consequently a decrease in the amount of blood flowing through the extremity.

3. *Experiments to test the frequencies of gangrene after ligation of the artery alone and after simultaneous ligation of the artery and vein.*

Rabbits, rather than dogs, were used for these experiments, because the terminal branching of the aorta is more suitable for the constancy of the operative technic. Also, the ligation of the vessels can be accomplished with less trauma in rabbits than in dogs. The aorta in the rabbit terminates very much the same as in man. This is not true in dogs, in which a common iliac artery is not usually found. The operative technic was the

same in all instances. All of the operations were performed by one of us, and the two types of operation were performed alternately in order that there should be no difference resulting from the facility of performing the operation acquired by its frequent repetition.

The animals were anesthetized with ether. The abdomen was opened in the midline. The right common iliac artery was exposed at the site of origin of the hypogastric artery. The right common iliac vein was then freed from the surrounding tissue. The isolation of the vessels was done with the least possible trauma. In one series of experiments, the common and external iliac arteries were ligated just proximal and distal to the origin of the hypogastric artery. This procedure resulted in complete obstruction of both the external iliac and hypogastric arteries at their origin. It had been found from preliminary experiments that this procedure resulted frequently in gangrene. In the other series of experiments the same technic was followed in ligation of the arteries, and the right common iliac vein was ligated.

All animals were carefully observed after operation for the manifestations of disturbed circulation of the

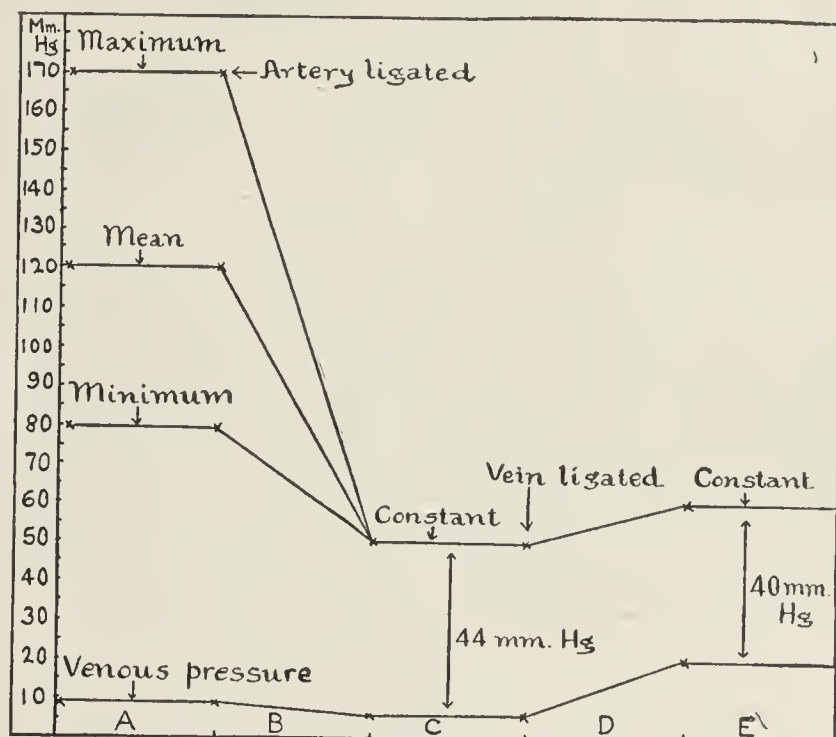


Chart 2.—Changes in the pressure in the arteries and veins distal to the occlusion of the primary artery and subsequent occlusion of the vein: A, normal maximal, minimal and mean arterial pressures of the external iliac artery and the normal pressure in the common iliac vein; B, effect of ligation of the external iliac artery alone on the pressure in the artery and vein distal to the occlusion; it will be noted that the pulse pressure completely disappears and the intra-arterial pressure falls; there is a slight fall in the venous pressure; D, effect of subsequent occlusion of the common iliac vein; it will be noted that both the arterial and venous pressure rises; the arterial pressure rises to a point almost as high as the minimal pressure in the unobstructed artery, and the venous pressure higher than the normal.

extremity. In all instances there was evidence of a marked deficiency of circulation. In every instance, in the right extremity there was marked ischemic muscular weakness. In those experiments in which gangrene did not appear, there was no noticeable difference in the results of the two operative procedures. All animals that did not develop gangrene and did not die from some other cause completely recovered from all symptoms of circulatory disturbance. These animals were subsequently killed, and the arterial circulation was studied by means of barium sulphate injections and roentgenograms.

Thirty-nine experiments were carried out. The results of these experiments as regards the relative frequencies of gangrene following ligation of the artery

alone and following simultaneous ligature of artery and vein are shown in Tables 2 and 3.

These two series of experiments show a very striking difference in the frequency of gangrene. The operative technic in all the experiments was as nearly identical as it could be made, except that in one series the right common iliac vein was ligated. In order that

thereby force a circulation through the vessels of the leg and foot. The experiments, however, in which the temperature of the tissues was measured was contradictory to this theory. These experiments demonstrated that after venous occlusion the temperature of both the foot and the thigh was decreased by occlusion of the vein. This indicated that the volume flow of blood was decreased in both the proximal and the distal portions of the extremity.

It is possible, however, that the distribution of blood in respect to small areas of tissue may be changed by simultaneous ligature of the vein. The temperature of tissue is determined by the temperature of adjacent tissues, and a small area of tissue with no circulation of blood would not differ in an appreciable amount from the temperature of adjacent tissue with a circulation adequate to maintain life. The distribution of circulation as regards small areas of tissue is a matter of blood pressure rather than of volume flow. If the intravascular pressure on both the arterial and the venous side of the capillary circulation is very low, it is probable that the blood filters through only those communicating channels that remain open on account of the rigidity of their own walls. Capillaries that do not remain open from the rigidity of their own walls collapse, and no blood flows through them. This would result in some areas of tissue receiving no nutrition. Simultaneous ligature of the vein would result in a greater intravascular pressure in all the capillaries. This would help to prevent collapse of the vessels in any particular area, and thus result in a more homogeneous distribution of blood.

Another beneficial influence of increased intravascular pressure is to be considered. It is possible that

TABLE 2.—*Ligation of the Right Common and External Iliac Arteries*

Number	Day of Occurrence of Gangrene	Condition of Leg	Condition of Animal	Day after Operation
1	2d	Gangrene	Died, gangrene	8th
69	19th	Gangrene	Died, gangrene	21st
51	14th	Gangrene	Died, ?	16th
68	30th	Ulcer	Healed, alive	68th
17	4th	Gangrene	Killed	5th
93	....	No gangrene	Died, ?	7th
13	2d	Gangrene	Died, gangrene	4th
81	....	No gangrene	Condition good	47th
47	....	No gangrene	Died, ?	9th
73	2d	Gangrene	Died, gangrene	4th
8	2d	Gangrene	Died, diarrhea	10th
74	35th	Ulcer	Died, ?	42d
75	2d	Gangrene	Died, gangrene	9th
14	....	No gangrene	Died, infection	17th
42	2d	Gangrene	Died, gangrene	9th
91	....	No gangrene	Died, ?	3d
77	5th	Gangrene	Killed	8th
100	3d	Gangrene	Died, gangrene	3d
16	24th	Gangrene	Died, ?	71st
67	....	No gangrene	Condition good	36th
80	2d	Gangrene	Died, gangrene	3d

SUMMARY

No. of Animals	With Gangrene		Without Gangrene		Animals Alive after 10th Day	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
21	15	71.5	6	28.5	10	47.5

any possible influence of trauma of the sympathetics should be the same in the two series of experiments, in those experiments in which the artery alone was ligated the vein was isolated just as it was in the series of experiments in which it was ligated. In the experiments in which the artery alone was occluded, 71.5 per cent. of the animals developed gangrene of some degree. In the experiments in which both artery and vein were occluded, only 33.3 per cent. of the animals developed any manifestation of gangrene.

COMMENT

From these experiments, therefore, it is evident that gangrene following arterial obstruction is dependent on some other factor than the amount of blood flowing through the vessels distal to the obstruction; for, if the primary artery of the extremity was occluded, the amount of blood flowing through the extremity was decreased, and if the primary vein and the artery were obstructed, the volume flow was further decreased, but gangrene was less frequent. The statement that gangrene is less frequent after simultaneous ligature of the vein because this procedure results in a retention of blood in the tissues is not an adequate explanation, for tissues require not blood but an exchange of certain substances from blood to the tissues. Tissues require circulation of fluids, not stagnation; movement rather than mass.

It was at one time thought that the simultaneous occlusion of the vein might bring about a wider distribution of the smaller quantity of blood. It seemed possible that, after obstruction of the common iliac artery, the blood reaching the thigh through the collateral circulation might pass through the capillary bed of the thigh and return through the veins of the thigh without reaching the foot, and that occlusion of the common iliac vein might prevent this easy return and

TABLE 3.—*Ligation of the Right Common and External Iliac Arteries and the Right Common Iliac Vein*

Number	Day of Occurrence of Gangrene	Condition of Leg	Condition of Animal	Day after Operation
4	....	No gangrene	Died, abdominal abscess	10th
55	....	No gangrene	Died, ?	4th
95	....	No gangrene	Killed	63d
12	....	No gangrene	Died, ?	8th
82	2d	Gangrene	Died, gangrene	4th
88	8th	Gangrene	Died, gangrene	11th
49	....	No gangrene	Good condition	50th
45	7th	Gangrene	Killed	9th
21	....	No gangrene	Good condition	65th
55	....	No gangrene	Good condition	73d
72	....	No gangrene	Died, ?	17th
50	....	No gangrene	Good condition	66th
76	....	No gangrene	Died, ?	43d
94	....	No gangrene	Killed	68th
89	....	No gangrene	Killed	60th
92	31st	Gangrene	Died, ?	53d
22	2d	Gangrene	Died, gangrene	5th
93	2d	Gangrene	Spontaneous amputation, died	56th

SUMMARY

No. of Animals	With Gangrene		Without Gangrene		Animals Alive after 10th Day	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
18	6	33.3	12	66.6	17	76.5

intravascular pressure below a certain level is not compatible with the exchange of nutrient substances from within the vessels to the tissues. If the artery alone is obstructed, the intravascular pressure may fall below this level at which tissues may acquire adequate nutrition. Simultaneous ligature of the vein may increase the intravascular pressure so that even though it diminishes the amount of blood flowing through the vessels, it may make it possible that the tissue exchange is adequate for preserving life.

The relation of the results of the experiments described in this paper to the results of some previous experiments reported by one of us⁶ should be mentioned. In the previous experiments it was found that complete occlusion of the vein of a muscle which had been isolated from all vascular connections except a single artery and vein led to the development in the muscle of a marked inflammatory process and the transformation of the muscle into fibrous tissue. This change did not follow the occlusion of the artery alone or occlusion of both the vein and artery. It was believed that the pathologic process in the muscle which followed complete venous stasis was the result of raising the intracapillary pressure to the point of completely disrupting the entire capillary bed. In the discussion of these experiments, it was stated that gangrene was more likely to follow arterial obstruction if there was an existing venous obstruction. This statement was based on some experiments in which a much more complete venous obstruction was produced than in the experiments described in this paper. In these previous experiments it was found that, if one common iliac vein of a dog was ligated and the distal stump of the vein injected with barium sulphate paste sufficient to cause an extensive venous thrombosis, and that this procedure was followed by persistent edema of the extremity, then occlusion of the abdominal aorta led to gangrene only of the extremity with the venous occlusion.

It would therefore seem true that if an arterial obstruction exists, simultaneous occlusion of the vein brings about two distinct changes in the circulation, distal to the obstruction, one of which may be beneficial and the other harmful. The magnitude of these changes is determined by the degree of venous obstruction of the entire extremity. The more complete the venous obstruction, the more nearly the intravascular blood pressure is raised to that in the artery proximal to the arterial obstruction. But the more complete the venous obstruction, the more nearly the volume flow of blood is diminished to nothing. Ligation of the vein accompanying the obstructed artery results in only a relative venous obstruction, since the collateral veins are not obstructed. The degree of venous obstruction that would follow ligation of a single vein would certainly vary widely in different veins and, no doubt, in the same vein in different individuals. The ligation, then, of a vein or veins would be beneficial or harmful accordingly as the venous obstruction produced would cause to predominate the beneficial effect of elevation of the intravascular pressure or the harmful effect of the decrease in volume flow of blood.

This discussion has referred only to the immediate consequences of arterial obstruction with and without simultaneous venous obstruction. The late results must also be considered. It is possible that simultaneous ligation of the vein might decrease the frequency of gangrene and yet produce a condition of chronic venous stasis that would make this procedure inadvisable. In other words, the saving of the extremity from gangrene would be accomplished by the risk of the establishment of a condition more intolerable than the effects of the gangrene avoided. In the experiments described in this paper, all animals that did not develop gangrene or die from some other cause recovered completely, and there was no difference noted in the function of

the extremities of the animals in which the common iliac vein had been occluded. In fact, it has been found experimentally impossible to produce edema by ligating all of the larger veins of an extremity.

A complete discussion of the possible clinical applications of the results of the conclusions from this experimental study would, of necessity, include an extensive review of a large number of different varieties of arterial obstruction. It may be briefly stated, however, that intentional venous occlusion would benefit those conditions in which arterial obstruction leads to low intra-arterial pressure and a volume flow which is in excess of that necessary to maintain viability of the tissues. The same procedure would be harmful in any condition in which the volume flow was decreased to an amount insufficient to maintain adequate nutrition. The former condition would undoubtedly most often be found after a sudden localized occlusion of an artery such as would result from ligation. Also, ligation of a vein would certainly be expected more likely to be beneficial in a condition in which the arterial circulation is seriously obstructed for a relatively short time, and relatively rapidly improves by the establishment of a collateral circulation.

The advisability of ligating any vein for improvement of the circulation of an extremity would also be determined by the relative amount of venous stasis which would be expected to follow. If there is no existing venous stasis, it is probable that ligation of only the vein accompanying the occluded artery would result in merely a relatively small amount of venous stasis and would be beneficial. If, however, there was evidence of obstruction in the collateral veins, it would be inadvisable. In other words, if there is no evidence of any venous obstruction existing and an artery is to be occluded, it would seem best to occlude the vein also; and if there is evidence of an existing venous obstruction at the time at which the artery is occluded, then further venous obstruction would probably be harmful.

The idea of the ill effect of a lack of a certain balance between the arterial and venous circulations is well expressed by Halsted in a discussion of arteriovenous fistula. He writes:

We are compelled, I believe, to subscribe to the view that some degree of equilibrium of the arterial and venous systems must be maintained. Granting this, there vanishes any difficulty that there may have been in accounting for the very high percentages of gangrene observed to follow ligation of the artery in cases of arteriovenous fistula. There is in these cases not only a great enlargement of the venous bed but also a curtailment of the arterial tubage—a shrinkage or hypoplasia of the arteries distal to the fistula. Thus, even before the artery is ligated the limb is handicapped by this lack of balance. When, now, the artery above a fistula is tied, irrigation with arterial blood is suppressed on one side of the capillary bed; and on the other side of it the mixed blood is deprived of a share of the pressure by virtue of which the life of the limb was partly sustained. It seems permissible to conjecture that in some instances the limb distal to the fistula may have been hardly less dependent on the pressure from the venous than from the arterial side, and if so we can more readily comprehend the ensuing gangrene than the frequent absence of it after ligation of the fistulated artery.

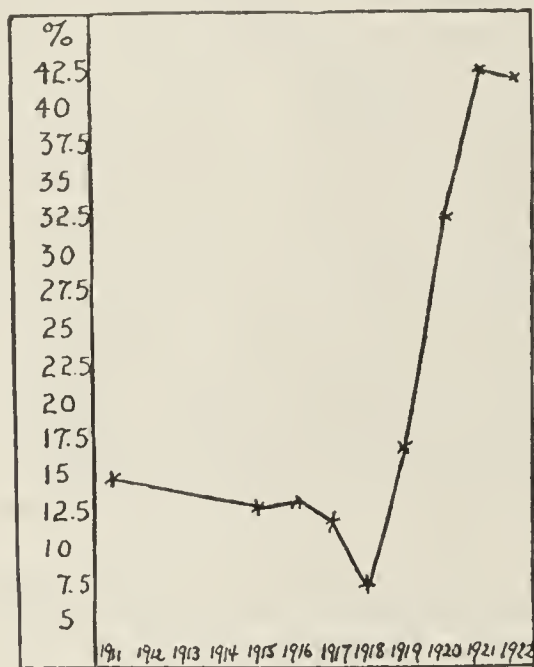
Incontrovertible Evidence.—Finding tubercle bacilli in material from human sources, excluding the possibility of contamination from outside, is the one incontrovertible piece of evidence establishing a diagnosis of tuberculosis. Many cases, though without question clinically tuberculosis, fail to reveal the bacillus—Freed and Black: *Am. Rev. Tuberc.*, May, 1923.

6. Brooks, Barney: Pathologic Changes in Muscle as a Result of Disturbances of Circulation: An Experimental Study of Volkmann's ischemic Paralysis, *Arch. Surg.* 5: 188 (July) 1922.

THE NEED FOR POSTMORTEM EXAMINATIONS AND METHODS OF SECURING THEM *

E. B. KRUMBHAAR, PH.D., M.D.
Director of Laboratories, Philadelphia General Hospital
PHILADELPHIA

The value of postmortem examinations, both as a means of advancing our knowledge of disease and as a necessary step in the complete study of a case, is widely recognized even in these antimorphologic days when the study of function is put at such a premium over the study of structure. What a common occurrence it is for a medical man of any hospital experience to lose the fruits of a most painstaking and alluring clinical study by the inability to secure from an ignorant or misguided relative the necessary necropsy permission. While this state of affairs is bound more or less to continue as long as the right to make such an examination depends on the volition of the next of kin, nevertheless, those sufficiently interested can do much to increase materially the number of permissions



Necropsy percentages, Philadelphia General Hospital

granted. The high necropsy percentages secured at the Mayo Clinic (95 per cent. in 1915) and at the Johns Hopkins Hospital are too well known to require further comment; but it is just as well recognized that such high figures can be approached or maintained only by unrelenting effort, and at best they cannot hope to be equaled in the larger general hospitals. In fact, one of the best and largest hospitals in the country has recently pointed with satisfaction to the fact that it has raised its necropsy percentage from 8 to 12.

Dr. J. C. Doane,¹ medical director of the Philadelphia General Hospital, in discussing recently the questionable value of present-day civilian mortality statistics, mentioned the relatively high percentage of necropsies that was being secured in this hospital. As we have had since then numerous requests for more information as to how this improvement was obtained, I am here considering the methods which have produced results, in which, for a general hospital, I think we may take pardonable pride.

Broadly, it might be said that every avenue of approach to the securing of necropsies is cultivated assiduously by the medical director and his staff, and that the curve of necropsy percentage is very sensitive to laxity in any particular.

The interns are impressed at every opportunity with the importance of securing necropsy permissions, and a monthly tabulated record is published, through the hospital, of each individual's results. (Tables arranged according to chiefs and services are also exhibited). It is understood that success in this field is an important item in determining the intern's standing for certification. It is well known that the number of necropsy permissions secured can be greatly increased by the sympathetic handling of relatives at an opportune moment, and preliminary training in how to approach the matter is given the new intern on more than one occasion. The chief objections on the part of the family are nearly always sentimental—natural, to be sure—but usually not insuperable if the reasons for the request are put in a sufficiently tactful and convincing manner. There are many valid, powerful arguments, well known in hospital circles, that may be used, and special ones for the individual case must be readily forthcoming. Euphemism in terms must be carefully followed by the young medical officer, prone to forget how the opposite grates on bereaved relatives. Objections on religious grounds are made chiefly by Jews, but I have been told more than once, by rabbis well versed in Hebrew laws, that such objections are based only on customs. Mount Sinai Hospital in New York, for instance, with mostly Jewish patients, has attained an enviable necropsy record of 56 per cent.²

I understand that, in Pennsylvania, at least, legal opinion has been given that, as the law compels the physician to give a certificate of the cause of death, in the absence of any law to the contrary it presupposes that the physician has the right to take necessary measures to ascertain such cause. Acting on this opinion, therefore, the superintendent, under proper authority, may authorize an examination, if the medical attendant has stated that he cannot certify the cause of death. If safeguarded against abuse, this method may occasionally be resorted to and has, in fact, in one hospital that I know of, proved to be a valuable help in just the type of case in which necropsy is apt to be most needed. It has also been found that a proper explanation by the ambulance intern at the time the patient is being brought to the hospital is very productive of the necessary signature, and if only a partial necropsy can be obtained, this is much better than none at all. The intern in charge of the patient at the time of death, is, of course, notified of the time of necropsy, and is given a copy of the "front sheet" of the necropsy record for his own information and record within forty-eight hours of the performance of the necropsy. If it has been a particularly interesting case, he will be asked to present the clinical side at the weekly clinicopathologic conference. He knows that his turn will come during his laboratory service to perform twenty or thirty necropsies, at which time particular attention is paid by the pathologist in charge to the instruction of the intern in pathologic technic.

The interest of the "chief" is important and constantly sought. A word from an older physician, or perhaps a note from him, to the intern emphasizing the need for a postmortem examination is often enough to turn the tide in the mind of the partly convinced

* From the Laboratory of Postmortem Pathology of the Philadelphia General Hospital.

1. Doane, J. C.: The Questionable Value of Present-Day Mortality Statistics, *J. A. M. A.* **79**: 1868 (Nov. 25) 1922.

2. Bluestone, E. M.: *Mod. Hosp.* **18**: 423 (May) 1922.

but undecided relative. The "chief" also receives a copy of the "front sheet" of the necropsy record, the full record being available later, either in the laboratories or bound with the history in the hospital record room. The necropsy percentages, tabulated according to the individual "chief's" record, are posted each month, and usually good or bad records are not infrequently commented on by personal communications.

One of the most important items in raising necropsy percentages we have found to consist in increasing cooperation with the undertakers. Under the conditions existing in a large hospital, a hostile undertaker, seeing the family shortly after the patient's death, can easily prevent a permission or get one revoked that has already been granted; whereas we have now found more than once that our efforts have been aided by a broadminded and sympathetic undertaker. This cooperation has been secured in a number of ways. Students in the local school of embalming are invited to the necropsy room to see how carefully and respectfully a necropsy is performed, the amount of work entailed and the uses made of the findings. Conferences are held with the officers of undertakers' associations, or an occasional talk is given at an undertakers' meeting, to promote better mutual understanding and to clear away unnecessary points of conflict. We have constantly found that the better grade of men in charge of these organizations are not only willing to cooperate themselves, but also anxious to bring the more poorly equipped members of their profession into line.

In the necropsy room, our pathologists and morgue officers are urged to take every precaution that no unnecessary extra trouble is caused the undertaker through the performance of a necropsy and that proper respect for the dead is exhibited. Thus unusual incisions are limited to the necessity of the case; if the aorta is entirely removed, string is attached to the carotid stump so that it can easily be secured when retracted into the neck; if the brain is removed, the cavity is filled with plaster of Paris and the skull cap securely attached to prevent future displacement and embarrassment, and so on with many details, which, if not observed, may cause considerable trouble and bad feeling.

A special room is maintained, in which the undertaker may embalm the body if so desired, even before the postmortem incision has been sewed up, and we hope soon to have a set of embalming instruments and some fluid for special cases. In the rare event of a contagious disease, an altar and benches provide a makeshift chapel for a religious service.

Finally, in special cases, we may advance the time of performance of necropsy to suit the family or undertaker, and we strive particularly to live up to any arrangement made. If, for instance, a body is promised at a certain hour, we always are sure to have it ready at that time, instead of keeping the undertaker waiting perhaps two or three hours, as is sometimes unfortunately the case in other hospitals. By such means, we have found that the mental eyes of the undertaker and the family will usually respond either to light or in accommodation (to paraphrase Dr. Bluestone's remark), and surely it is worth the while of the hospital and laboratory staff to utilize such simple methods as here described if they can succeed in raising the voluntary permissions in a general hospital, as they have here, from 10 to 51.3 per cent. (September, 1922).

Thirty-Fourth and Pine streets.

CARDIAC DISORDERS ACCOMPANYING EXOPHTHALMIC GOITER

SOME FACTORS IN THEIR PATHOGENESIS *

ERNST P. BOAS, M.D.

Medical Director, Montefiore Hospital for Chronic Diseases
NEW YORK

Many theories have been suggested to explain the development of the cardiac disorders that so frequently accompany exophthalmic goiter, but none of them are adequate. The most generally accepted belief is that toxic substances, which are related to the increased activity of the thyroid gland acting through the cardiac nerves or directly on the myocardium, are responsible for the tachycardia and the heart lesions that develop. Support for this view has been sought from the pathologic findings.

At necropsy, the heart in exophthalmic goiter usually exhibits moderate hypertrophy and dilatation of both chambers, with fatty infiltration of the heart muscle cells. In some cases, small scars with interstitial or perivascular round cell infiltration are found scattered through the heart muscle. These, however, may be found as well in the hearts of patients with simple goiter.¹ Several observers have experimentally produced similar lesions by feeding desiccated thyroid to animals.² Recently, Goodpasture³ described two cases of exophthalmic goiter in which there was extensive myocardial necrosis, unaccompanied by inflammatory reaction or by coronary artery disease. He pointed out, however, that this is an uncommon finding.

Chiari⁴ has emphasized the fact that constitutional cardiovascular anomalies, such as the dropped heart and narrow fragile arteries, as well as vasomotor instability, frequently determine the intensity of the cardiac symptoms in exophthalmic goiter. He recalls that functional heart symptoms may precede the onset of exophthalmic goiter and may continue after the disease has become arrested.

I wish to call attention to two additional factors which have not, to my knowledge, received proper emphasis. In exophthalmic goiter, as in the early stages of simple goiter, there is a tremendous increase in the vascularity of the thyroid gland. The thyroid arteries and veins are greatly dilated; indeed, the vascular dilatation often includes the carotid arteries and the large neck veins. It has been shown that the maximum blood flow through the normal thyroid gland is 100 c.c. per minute, and that in the gland of exophthalmic goiter it ranges from 500 to 1,000 c.c. per minute. Clinical evidence of this increased blood supply is found in the pulsation of the gland, as well as in the palpable bruit and in the dilated thyroid veins found at operation. The dilated blood vessels of the thyroid gland act as a shunt which short circuits a large part of the blood from its usual course to the head and brain and returns it immediately to the heart. To maintain an adequate circulation, a larger amount of blood must be thrown into the carotid arteries per unit of time, thus entailing

* From the Medical Division of Montefiore Hospital for Chronic Diseases.

1. Fahr, T., and Kuhle, J.: Zur Frage des Kropfherzens und der Herzveränderung bei Status thymicolymphaticus, *Virehows Arch. f. path. Anat.* **233**: 286, 1921.

2. Hashimoto, H.: The Heart in Experimental Hyperthyroidism, with Special Reference to Its Histology, *Endocrinology* **5**: 579 (Sept.) 1921.

3. Goodpasture, E. W.: Influence of Thyroid Products on Production of Myocardial Necrosis, *J. Exper. Med.* **34**: 407 (Oct.) 1921.

4. Chiari, R.: Sind alle bei Morbus Basedowii vorhandenen Herz- und Gefässerscheinungen Basedowsymptome? *Ztschr. f. ang. Anat. u. Kenstit.* **1**: 280, 1913-1914.

an increased minute volume output from the heart. There is no evidence that the increased blood supply to the thyroid is compensated for by a lessened supply to other organs. This persistently increased load on the heart must result in dilatation and hypertrophy, and, if long continued, in myocardial insufficiency. Marine and Lenhart⁵ have suggested that the goiter heart is primarily the result of a work hypertrophy.

The mechanism seems analogous to that determining the hypertrophy and dilatation of the heart observed in arteriovenous aneurysms, in which, too, a short circuit is interpolated in the circulation.⁶ Another analogy between the two conditions is the high systolic and low diastolic pressure that is found in patients with exophthalmic goiter, as well as in those with arteriovenous aneurysms. The resultant high pulse pressure suggests an increased systolic output of the heart.

The increased basal metabolism so constantly observed in the active phase of exophthalmic goiter, and particularly the close correlation between the pulse rate and basal metabolism, point to another factor that must affect the heart. With the heightened metabolism, there is a greater consumption of oxygen and an increased elimination of carbon dioxide by the tissues. Since there is no change in the hemoglobin or red cell content of the blood in exophthalmic goiter, this necessitates an increased minute volume flow of blood through the tissues. This may be attained by an increased systolic output of the ventricles or by an accelerated heart rate, or by both. This increased load, continuous twenty-four hours every day for months at a time, must place a great strain on the heart and result in cardiac dilatation and hypertrophy, as well as greater susceptibility to other noxious factors that may exist during the disease.

In order to obtain some quantitative concept of the increased work thrown on the heart, the oxygen consumption was studied in fifty-five unselected patients who had been referred to the laboratory division of Montefiore Hospital for the determination of their basal metabolic rate. I am indebted to Dr. Marine for placing the records at my disposal. Of the fifty-five patients, twenty-three exhibited a basal metabolism above +10, three, a rate below -10, and twenty-nine, a rate between -10 and +10. The patients with high rates all suffered from exophthalmic goiter. In all, 102 estimations were available on these fifty-five patients. In each case, the oxygen consumption per minute, corrected for temperature, barometric pressure and tension of water vapor, the metabolic rate, the pulse rate and the weight of the patient were noted.

The oxygen consumption varies with the size of the patient, and the readiness with which it is transported from the lungs to the tissues depends on the blood volume circulating in a unit of time, provided the oxygen-carrying power of the blood and the rate of oxygen absorption by the tissues are constant. Since the total volume of blood in the body is a function of the body weight (approximately 7.5 per cent.), the oxygen consumption was calculated in cubic centimeters per kilogram for each subject in order to make the figures comparable. In fifty-seven readings in which the metabolism ranged from +12 to +80 (average +41), the average oxygen consumption was 5.1 c.c.

per kilogram of body weight per minute. In thirty-one cases in which the metabolism ranged from +10 to -10 (average 0), the average oxygen consumption was 3.8 c.c. per kilogram of body weight per minute. Assuming that the blood volume in these subjects varies with the body weight, the patients with exophthalmic goiter had to transport one quarter again as much oxygen from the lungs to the tissues by means of the same amount of blood as the normal controls. The chief means of accomplishing this is by a circulation rate which is one quarter again as rapid as the rate in normal persons.

Theoretically, a greater abstraction of oxygen from the blood by the tissues, in other words, a greater oxygen unsaturation of the venous blood, might compensate for the increased tissue demand for oxygen. Lundsgaard⁷ has shown that a retarded blood flow through the capillaries as well as bodily exercise will cause an abnormally great reduction of oxygen saturation in the capillary blood. Although this may play a small part, Plesch⁸ has definitely proved that there is an increased minute volume flow in exophthalmic goiter. Indeed, in the cases which he studied, the figures correspond rather closely to mine. The patients with exophthalmic goiter consumed, on the average, 6.47 c.c. of oxygen per kilogram per minute, while the controls consumed 3.52 c.c. per kilogram per minute. He further found that the minute volume flow per kilogram in the patients with exophthalmic goiter was 97.43 c.c., while in the normal persons it was 61.62 c.c. per kilogram. Further investigation revealed that the systolic output per beat was not increased in exophthalmic goiter, and that, therefore, the greater minute volume was due to the rapid heart beat accompanied by little reduction in the systolic output per beat. Studying his material from a different angle, he showed that although the heart work per beat is not increased in exophthalmic goiter, the work per minute is considerably greater because of the factors discussed above.

SUMMARY

The current theories of the cause of the cardiac disorders that accompany exophthalmic goiter are inadequate. Evidence is presented that two mechanical factors may play a part in overloading the heart in exophthalmic goiter, thus making it more susceptible to secondary noxious influences. 1. The tremendous dilatation of the arteries and veins of the thyroid short-circuit the blood flowing to the neck and increase the load on the heart in the same manner as do arteriovenous aneurysms. 2. The heightened oxygen consumption causes an increased minute volume flow of the blood, which may be from 25 to 60 per cent. greater than normal.

The increased work thus thrown on the heart is the chief cause for cardiac dilatation, hypertrophy, and insufficiency in exophthalmic goiter.

7. Lundsgaard, C.: Studies in Cyanosis, *J. Exper. Med.* **30**: 271 (Sept.) 1919.

8. Plesch, J.: Haemodynamische Studien, *Ztschr. f. exper. Path. u. Therap.* **6**: 395, 1909.

Vitamins as Important Factor in Treatment of Pulmonary Tuberculosis.—F. Gardey remarks that many symptoms of pulmonary tuberculosis resemble those of deficiency diseases. He pleads to have the dietary in different countries investigated in relation to the prevalence of pulmonary tuberculosis and the influence of food, with and without vitamins, on the course of the disease. The organism of the tuberculous acts as if it were void of vitamins.—*Semana Médica* **27**: 759, 1920.

5. Marine, David, and Lenhart, C. H.: Pathological Anatomy of Exophthalmic Goiter, *Arch. Int. Med.* **8**: 265 (Sept.) 1911.

6. Reid, M. R.: The Effect of Arteriovenous Fistula upon the Heart and Blood Vessels, *Bull. Johns Hopkins Hosp.* **31**: 43 (Feb.) 1920. Cazamian, P.: Le retentissement cardiaque et circulatoire d'un anévrysme artériovénoux d'origine traumatique des vaisseaux fémoraux profonds, *Bull. et mém. Soc. méd. d. Hôp. de Paris* **41**: 46, 1917.

PROTEIN AND PELLAGRA

M. HINDHEDE, M.S.

Director, Danish State Laboratory for Nutrition Researches
COPENHAGEN, DENMARK

I have followed the discussion on pellagra and its causes in the American scientific periodicals with great interest. Here I shall simply discuss the question: Is the cause of pellagra the lack of animal food? Goldberger and Tanner,¹ from their observations, conclude that "the dominating rôle of diet in the prevention and causation of pellagra must be referred primarily to the character of the protein (animo-acid) supply, this being the only other dietary factor at present known to be necessary to physiological well-being."

Is this conclusion correct? In my opinion, it is not. While I have not experimented with pellagra, the question of protein has been, in a way, my specialty. I was born and brought up in the country among farmers in the western part of Jutland. In my childhood—fifty years ago—the food consisted chiefly of bread, porridge, potatoes and milk, to which was added a little fat corned pork and dried fish. Fresh meat was for the most part known only during the butchering season. On this diet my countrymen were healthy and able-bodied. We did not know anything of the now so fashionable neurasthenia. To be sure, the working hours numbered eight, but they were eight hours in the morning and eight hours in the afternoon.

I came to Copenhagen in my sixteenth year and turned to the ordinary town food. But my health diminished on this food. My interest in the question of nourishment was roused. I experimented on myself, and, later, on my whole family. The Danish state, in 1910, on account of the Danish farmers, gave me a laboratory and three assistants, since which time I have devoted myself to the study of diet. When the war and the blockade came, as a result of which Denmark was cut off from more than half her supply of nourishment, I exerted a substantial influence on our scheme of rationing, which was founded on the new nourishment theories.

While others experiment with rats, rabbits and pigs, I experiment with men. I insist on a supply of the best experimental subjects in the world. It is well known that when the officers go at the head, the soldiers follow them. My soldiers have walked a long distance in front of me. My assistant, Frederik Madsen, lived (1) for one year on potatoes and margarin;² (2) for six months on whole rye-bread, margarin, prunes, sugar and starch;³ (3) for six months on barley-meal porridge made with water, margarin and sugar,⁴ and (4) for two years on bread, potatoes, cabbage soup and fruit soup without fat.⁵ The object was to find the protein minimum and the fat minimum. Madsen was not the only test subject. I have always had at least two on the same experiment, and the results were always exactly the same.

THE PROTEIN AND THE FAT MINIMUM

By Experiment 1 we found that the protein minimum for a grown-up strong man is about 20 gm. of

digestible potato protein.² The test subjects found that this diet agreed very well with them. But a condition is that the water in which the potatoes are boiled and which contains important substances (salt and vitamins) be ingested as well. Therefore, the potatoes ought to be peeled before they are boiled, out of regard to cleanliness. The experiments were later controlled by Abderhalden and other physiologists. The result was the same.

By Experiment 2 we found that the protein minimum by bread diet is about 20 gm.³ In other words, protein in potatoes, bread, meat and milk has the same biologic value.

By Experiment 3 we found that barley groats form an excellent article of food, which, unlike polished rice and sieved oatmeal, contains sufficient vitamins. This agrees with several practical experiences. In the old days in Denmark, barley-meal porridge was eaten two or three times a day in the country.

By Experiment 4 we found that fat is not necessary. Vegetables can replace it.⁶

Our second experiment, on bread, opposes, it is true, the results of other investigators. Thomas found that bread protein has only one-third the value of meat protein. But his experiments were of too short a duration. While my experiments extended over six months, he contented himself with three days. In addition, Thomas seems rather biased. I once critically examined the experiments. I ended by declaring:³

The fact is that Thomas, by selecting all the big figures for the nitrogen secretion in the urine, in the bread experiments, while he selected all the small and rejected all the big figures in the meat experiments, succeeded in reducing the value of the bread protein to one-third that of the meat protein. Is such a method scientifically allowable? If Thomas had acted conversely and chosen the small figures for bread and the big for meat, he might just as well have found the value of bread protein to be two or three times that of meat.

It is undoubtedly true that some proteins in cereals lack certain amino-acids. But when we eat bread, we do not isolate the single protein. The aggregated sum of proteins in corn has full value. Even the two men who especially have isolated and experimented with the deficient proteins say so. I will quote:⁷

Hence a misconception of the possible value of the cereals as sources of protein has developed in the minds of some persons owing to their failure to realize that, in the form in which these grains are most commonly fed, the sum total of their various proteins must be taken into account.

The same men, to their surprise, have found that bran contains not only the vitamins, which the endosperm lacks, but also protein substances that supplement the deficiencies in the proteins of the endosperm. They write:⁸

The "crude protein" of bran appears to be quite as efficient as that of the combination of wheat flour with egg, milk or meat, under the condition of this experiment.

The bran can replace meat and milk. In other words, it is one of our most valuable articles of nourishment. It has certainly been believed that bran is

1. Goldberger, Joseph; and Tanner, W. F.: Pub. Health Rep. **37**: 462 (March 3) 1922.

2. Hindhede, M.: Skand. Arch. f. Physiol. **30**: 97.

3. Hindhede, M.: Skand. Arch. f. Physiol. **31**: 259.

4. Hindhede, M.: Skand. Arch. f. Physiol. **35**: 294.

5. Hindhede, M.: Skand. Arch. f. Physiol. **39**: 78.

6. In 1918 I wrote to Prof. Lafayette B. Mendel, New Haven, Conn.: "Two men have now lived one and one-half years without fat. No sign at all of any hurt. It would be of interest if you would try whether vegetables can replace fat." Eleven months later Mendel published researches showing that spinach, alfalfa, etc., really can replace fat (Mendel, L. B.: Vitamines in Green Foods, J. Biol. Chem. **37**: 187 [Jan.] 1919).

7. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **41**: 275 (March) 1920.

8. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **37**: 557 (April) 1919.

indigestible for man, but our thorough experiments have—to our own surprise—shown us that man, as well as the domestic animals, can digest bran. The correctness of these results has been confirmed by Johansson¹⁰ in Stockholm and Wiegner in Zürich.¹¹ The Danish war rationing was largely based on the value of the bran. Therefore I do not deny the possibility that pellagra is due to the absence of protein; but in that case it is not necessary to take to animal

TABLE 1.—Food Consumption in South Carolina, 1916 *

	Nonpellagrous		Pellagrous	
	Highest Intake	Lowest Intake	Lowest Intake	Two or More Cases
Group 1:				
Bread, flour, grits, sugar, syrup, jams	689	647	546	675
Lard, salt pork fat	92	88	102	100
Group 2:				
Butter.....	27	30	16	11
Group 3:				
Meat.....	128	42	38	40
Eggs.....	70	39	31	31
Milk.....	379	554	187	127
Group 4:				
Fruits.....	90	45	36	36
Vegetables.....	239	112	98	124
CONTENT OF PROTEIN AND CALORIES				
Protein in all groups..	128	105	84	85
Animal protein.....	50	35	24	21
Calories.....	4,267	3,836	3,288	3,310

* In Tables 1, 2 and 3, the figures represent grams for each adult male, daily.

protein. The compensation is much nearer. However, I am most inclined to think that the question of pellagra is not a question of protein but of vitamin.

In Table 1, I give some of Goldberger's¹² results.

I have collected the articles of food into four groups, according to the content of vitamins. Group 1 is practically free from vitamins; Group 2 contains vitamin A; Group 3 represents vitamins from the animal kingdom and Group 4 from the vegetable kingdom. Group 1 contains only imperfect nourishment (chemically pure substances or artificial products; in bread and flour the bran is lacking). But this group represents, for the pellagrous families, under Group 4 2,800 of the 3,310 calories, and consequently more than 90 per cent. of the nourishment. When nine tenths of the food consists of such defective articles of food, is it surprising that illness increases? We have often tried to live on white bread and butter as the main source of sustenance, but we soon became listless and ill. When one considers that the greater part of the meat and half of the fruits and vegetables were not fresh, but salted, dried or preserved, one might—with present knowledge—predict that such a diet would not work in the long run.

In fact, there is only a slight difference in the food in Groups 2, 3 and 4. Therefore the families are either just on or under the border. It is likely that it is the large milk consumption that saves Group 2, but the same result would probably have been reached—and virtually is reached—by the addition of more fresh fruit and vegetables. A factor that speaks decidedly for the part of the vitamins is the seasonal appearance. Goldberger's¹³ figures are: January, 0; February, 1; March, 4; April, 13; May, 20; June, 37; July, 18; August, 8; September, 10; October, 3; November, 1; December, 0.

9. Skand. Arch. f. Physiol. 33: 59, 263.
10. Johansson: Svenska Läk. Sällsk. Förhandl., 1917, p. 302.
11. Wiegner: Mitt. d. Gesellsch. Schweizerisch. Landwirte, 1918, No. 5.
12. Goldberger, Joseph; Wheeler, G. A., and Sydenstricker, Edgar: Pub. Health Rep. 35: 648 (March 19), 1650 (July 9) 1920.
13. Goldberger, Wheeler and Sydenstricker (Footnote 12, second reference).

According to this, pellagra rises in the springtime, when there are virtually no fresh vegetables, and decreases in the course of the summer, when there are plenty of vegetables and fruits available. But Goldberger's investigations are made only in periods of fifteen days in April and May, and consequently at a time when the food is most deficient. Why have investigations not been made in July and August, when the food evidently is satisfactory? Investigations at this time would probably have readily unearthed the cause. Is it probable that people in the hot summer use more meat and milk? Hardly. But it is likely that they use more vegetables.

EXPERIMENTS AT EDEN

I will report some of the results of our experiments in the garden settlement Eden, at Oranienburg, 20 miles north of Berlin. About 100 families, twenty-eight years ago, bought a piece of land, which they parceled out in lots of two-thirds acre. Each family has one or more lots. These people are nearly all vegetarians. The slogan is: Away from the towns, away from culture, back to nature; live in fresh air and sunshine, and support yourself as much as possible by the products of your own garden. Throughout the war they had sufficient nourishment. The state of health was perfect. The mortality of children under 1 year of age is only one fourth in proportion to that of the neighboring villages, and in the twenty-eight years not one school child has died.¹⁴ I have followed this colony for a number of years and have made a series of investigations concerning which a more extensive report will soon be published. The composition of the food is given in Table 2.

If the theory of the necessity of plentiful animal protein were right, it would look bad for these Eden families, with absence of meat and insignificant consumption of eggs. Several families use hardly even

TABLE 2.—Food Consumption in Eden, 1921

	Families*										Average
	1	2	3	4	5	6	7	8	9	10	
Group 1:											
Bread, flour, grits, sugar, jams.....	342	557	550	406	464	480	665	364	613	370	481
Margarin....	51	48	34	45	53	50	63	29	75	3	45
Group 2:											
Butter.....	4	..	..	..	..	..	..	..	..	..	0.4
Group 3:											
Meat, eggs..	5	8	1	..	14	1	12	5	..	..	5
Milk, cheese.	321	158	479	229	65	153	318	232	19	23	200
Group 4:											
Fruits.....	1,354	658	1,908	899	708	613	1,502	618	821	1,005	1,071
Vegetables..	285	102	207	199	173	367	302	438	61	330	251
Potatoes....	685	366	771	346	669	582	686	777	1,067	911	686
CONTENT OF PROTEIN AND CALORIES											
Protein in all groups.....	64	63	63	56	66	59	81	59	80	56	65
Animal protein.....	11	7	15	9	4	6	11	9	5	1	9
Calories in all	2,945	2,871	3,917	2,591	2,881	2,910	3,998	2,710	4,296	2,760	3,189

* 1, teacher; 2, rector; 3, artist; 4, judge, retired; 5, musician; 6, director; 7, gardener; 8, engineer; 9, physician; 10, teacher in agricultural college, retired.

milk. Families 9 and 10, who have a scientific understanding of the problem of nourishment, use the smallest quantity of animal products. Family 10 consists of husband, wife and four grown-up children, who are all uncommonly healthy.

The food lacks animal protein, but it does not lack vitamins. Whole bread is eaten, and there are plenty of fruits, vegetables and potatoes.

I could continue indefinitely along this line, did space permit. I shall content myself with the comparison

14. Eden 25 Jahre Obstbausiedlung, Oranienburg bei Berlin, 1920.

given in Table 3, and for further explanations refer to my books and reports.¹⁵

Column 1 represents two or more cases of pellagra in 1916, which, with the ten families at Eden, 1921, in Column 5, have been mentioned before. Column 2 represents six families of Danish farm laborers in 1880, at which time they had a comparatively low death rate. Column 3 represents ten families of English farm laborers in 1910 on a low income; with

TABLE 3.—Food Consumption in Poor Families

	1 South Carolina, Pellagrins	2 Denmark, Farm Laborers	3 England, Farm Laborers	4 Germany Weavers	5 Eden
Group 1:					
Bread, flour, grits, sugar, syrup, jams	675	797	662	724	481
Margarin.....	...	...	8	...	45
Lard, salt pork....	100	41	22	8	...
Group 2:					
Butter.....	11	42	5	33	0.4
Group 3:					
Meat, fish.....	40	...	52	20	...
Eggs.....	31	...	...	1	5
Milk, cheese.....	127	322	105	132	200
Group 4:					
Fruits.....	35	...	12	1	1,071
Vegetables.....	124	...	84	9	251
Potatoes.....	73	458	477	678	686
CONTENT OF PROTEIN AND CALORIES					
Protein in all.....	85	86	72	65	65
Animal protein.....	21	19	12	11	9
Calories.....	3,310	3,430	2,785	2,703	3,189

the exception of the clergymen, these had the lowest death rate in England. Column 4 represents twenty-eight families of Saxon weavers in 1885, who almost all grew old, and who lived as did a great part of the German population forty years ago. The people represented in Columns 2 to 5, according to the old protein theory, should be undernourished, but evidently they were not. Why? The Danish working men ate only whole rye bread. The German weavers also ate chiefly whole bread. All had a large consumption of potatoes.

SUCCESSFUL RATIONING DURING THE BLOCKADE

Our great experiment of rationing during the war blockade was instructive. The situation was critical when it began, in February, 1917, because we were accustomed to import about half of the grain and feed that we used for men and animals. Moreover, the drought in 1917 took one third of our crop. When the government requested me to be one of the two physiologic advisers, the result was that the rationing, in large part, was based on the results of our experiments. At the annual meeting of the British Medical Association in Glasgow in July, 1922, I gave a short summary,¹⁶ from which I shall quote:

- Our chief measures were:
1. All bread cereals and most of the barley and potatoes were requisitioned by the government to be used as food alone for the people.
 2. As a result of this measure, the raising of pigs was reduced to one fifth. The small amount of pork which was available was eaten by the farmers. The city folk got hardly any pork.
 3. The rye was ground out to 100 per cent., and thus rye bread contained all the bran. In addition to this, 12 to 15 per cent. bran of wheat was mixed into the baking of rye bread—that is to say, all the bran which was left over in

making white bread was made use of in this way. Because of this the domestic animals had no bran in their feeds while the ration system was in force.

4. All production of alcoholic liquors for general consumption was prohibited. All supplies on hand were seized, and of the supply only 100,000 bottles (each containing 750 c.c.) were given out every month, which meant 25 c.c. of alcoholic drink for each person a month. In order to avoid any special fight for this dram, there was placed so high a tax on spirits that the price went up to an amount twenty times higher than was normally paid.

5. The production of brewing beer was reduced to one-half the ordinary output, and the amount of alcohol contained therein was not allowed to exceed 3 per cent.

6. In addition to these regulations, all export of fruit and vegetables was prohibited.

The main result of the rationing on the state of health was that the death rate from all cases of death (infectious diseases excepted) in the age group 25-65 went down 34 per cent. for men and 19 per cent. for women. With regard to the men, the main cause may be looked for in the restriction of alcohol. But the great decrease, even with the women, cannot be explained in this way alone.

Most illuminating in that respect are the figures for the old people past 65. The three main causes of death are: diseases of the heart; bronchitis and bronchopneumonia, and senility. Deaths from these causes occurred as set forth in Table 4.

Owing to the fact that the death rate among women from these causes is larger than that among men, the consumption of alcohol cannot be of any essential consequence. Then what can be the cause of the conclusive and regular decrease during the rationing, and the just as punctual rise afterward? During the rationing we had less meat, less coffee and less white bread, but more potatoes, large quantities of barley-meal porridge and unusually coarse bran bread.

TABLE 4.—Deaths per Ten Thousand from Heart Disease, Bronchitis and Bronchopneumonia, and Senility

	1910-1914	1918	1919-1921
Men.....	334	255	352
Women.....	343	279	360
RATIO			
Men.....	100	76	105
Women.....	100	81	105

TABLE 5.—Food of Japanese Farmers

	Gm.	Protein	Fat	Calories
Animal:				
Fish, eggs.....	19	6.1	0.9	36
Vegetable:				
Rice, bran, beans, fruits and vegetables.....	2,270	75.3	17.7	2,731
Total.....	2,289	81.4	18.6	2,770

According to what has been said about the worth of potatoes, barley groats and bran, the good results are not surprising. The rationing became a control trial on a large scale. The results of our experiments passed the test with flying colors.

BERIBERI

The pellagra situation is strikingly reminiscent of the Japanese beriberi situation thirty-eight years ago. The typical food of Japanese farmers, according to Suto's researches, is presented in Table 5. On such food, which contains only 1/3 per cent. of animal nourishment, the Japanese have lived thousands of years,

15. Hindhede, M.: Protein and Nutrition, London, Edward Seymour Co., 1913; Die neue Ernährungslehre, Dresden, Emil Pahl, 1922; engelske Landarbejdere (English farm laborer) 12. Beretning fra hindhedes Kontor for Ernæringsundersøgelser, Copenhagen, 1919.
16. Hindhede, M.: Alcohol Restriction and Mortality, Brit. M. J. : 248 (Aug. 12) 1922.

and they are extraordinarily energetic and enduring.¹⁷ With the introduction of European culture into Japan, however, there occurred, almost at the same time, epidemics of beriberi, in which 33 per cent. of the soldiers were affected. Occidental science surmised that the cause was the rice diet, poor in protein. The European meat diet was introduced, and beriberi disappeared as if by magic.

Do you realize that it was the meat protein? science asked.

In Norway, in 1894, the opposite experiment was made. The food on board ship was improved, rye bread being exchanged for white bread, and salt pork for preserved meat. The result was many cases of beriberi, which before had been unknown. Therefore, in Japan, meat was introduced, and beriberi disappeared; in Norway, meat was introduced, and beriberi came. Accordingly, the cause cannot be the meat. People did not remember that the population in Japan exchanged rice for bread together with the meat, and introduced large quantities of potatoes and vegetables. Now everybody knows the cause of beriberi: It was the polished rice. The Americans have now—as far as I know—prohibited the import of polished rice from the Philippines. But perhaps they have not reached the point of prohibiting the use of sifted Indian meal

TABLE 6.—*Number of Deaths per Thousand Population, 1840-1870*

Age	Men			Women		
	Iceland	Denmark	Ratio 100:	Iceland	Denmark	Ratio 100:
From 35 to 45	19.3	11.0	175	13.2	10.8	122
From 45 to 55	28.0	18.3	153	18.6	13.8	135
From 55 to 65	48.0	34.0	141	38.8	26.6	146

and wheat flour in South Carolina. If they would do that and introduce whole wheat bread and give large quantities of potatoes and vegetables, then I suppose that there would not be a lack of amino-acids.

CONDITIONS IN ICELAND AND IN INDIA

It is notable to see the great agitation for more meat in Chittenden's country. McCollum has here taken the lead. His experiments with rats are very interesting, but he is a bad historian. The historical chapter in his last book seems to me to be agitation, without one strong verified proof. As he gives no dates, it is impossible to control most of his statements. But where I am able to do this, it shows that the statements run quite contrary to the reality. Concerning the nutrition of the people of Iceland, he writes:¹⁸

A most interesting experience is that of the people of Iceland. The island was settled in the ninth century by colonists from Scandinavia and Ireland. The colonists took with them cattle and sheep, but no poultry. The latter were not introduced until about a century ago. Their diet was practically carnivorous in character for several hundred years. Since agriculture did not prove profitable, they subsisted on milk, mutton, fish, and in some parts of the island during the summer, eggs were added to the fare. Very little vegetable food was eaten. The health conditions on this regimen were good, and dental caries was unknown until after about 1850.

Let us examine "the good health conditions" about 1850. The figures are given in Table 6. It will be seen that health conditions in Iceland were very bad

as long as people chiefly lived on animal food. On the whole, it has not been possible for me to find during my searches and studies one single class of people who lived on a strong meat fare and who had a low death rate. The low death rate is always to be found in the classes of people who live on Spartan food. One, of course, can also find a high death rate among people who live frugally, but it is always caused by unhygienic circumstances (bad housing, alcoholism, and so on).¹⁹ The death rate in the lower class of the towns is far larger than in the upper class, but the higher death rate is due to epidemic diseases, tuberculosis and other diseases of the lungs; on the other hand, the death rate of diseases of the brain, heart and digestion is largest in the upper class.²⁰

McCollum refers to McKay's studies regarding the nourishment of the different classes of people in India, from which it appears that the meat-eating races are by far the strongest. Some of McKay's investigations are the most curious I have ever seen. If one goes through his works one finds that his data prove just the opposite of what the author means them to. McKay's ideal is the meat-eating Sikhs. But what is the food of the ideally trained Sikh soldiers? According to McKay, it consists of: milk, 16 ounces daily; flour (wheat), 24 ounces daily; ghi (butter), 2 ounces daily; dhall, 4 ounces daily; vegetables (potatoes), from 4 to 6 ounces daily; meat, 16 ounces two or three times a month, and rum, 3½ ounces daily. Meat two or three times a month gives, then, the ideal food. I can subscribe to this, as it is much like my own manner of living.²¹

INFLUENCE OF TRADITION

The conclusions of Goldberger, McCollum and McKay do not seem reliable. Of course, it is not the intention of these observers to mislead. They are the victims of dogmas that have been impressed on their minds. Nobody understands this better than I. It took me a long time to break with the traditions. What caused me to lose faith in them was my experience in 1895, when I lived for a month on new potatoes, butter, strawberries and a very little milk, all of these being eaten three times a day. This food, which contained only about one fourth of the normal amount of protein, gave me an increased feeling of well-being.

No one ought to be permitted to appear as a food expert until he has experimented on himself for a long time. This is the only thing that will cause dogmas to fall. But it is not enough to try to live as a vegetarian. It will not do to eat too much food made of flour, white bread and sugar. Another point is to refrain from eating until one is really hungry, and to stop "when the food has the best taste." It should be remembered that the years between 20 and 30 are the dangerous age for tuberculosis, and that the length of life is in inverse proportion to the weight, as demonstrated by the statistics of the forty-three life insurance companies.

VARYING NEEDS OF DIFFERENT SPECIES

Although the statement may be superfluous, I am going to remark that I am not a vegetarian on principle. As a scientist I am not allowed to insist on that which I cannot prove. And although I take it as demonstrated that one can easily live on a purely vegetable diet, it can hardly be proved that a small consumption

17. Hindhede, M. (Footnote 15, first reference, pp. 38-47).

18. McCollum: *The Newer Knowledge of Nutrition*, Ed. 2, p. 394.

19. Eden 25 Jahre Obstbauesiedlung, pp. 147-177.

20. Hindhede, M.: *Protein and Nutrition*, p. 110.

21. Eden 25 Jahre Obstbauesiedlung, p. 85.

of meat does any harm. I consider milk a good article of food, but I do not believe it is necessary for adults. When McCollum places milk higher than vegetables as "protective food," one may be certain that he experimented with pigs and rats. Especially regarding the question of protein, I do not think it is permissible to draw conclusions from rats and pigs to men. McCollum gives the figures in Table 7 for the rate of growth.

TABLE 7.—Rate of Growth

	Weight at Birth	Weight at Age of 280 Days	Weight at 1 Year	Weight Doubled
Man.....	7 pounds	.....	21 pounds	3 times
Rat.....	4.83 gm.	280 gm.	.....	55 times
Pig.....	2 pounds	300 pounds	.....	150 times

It is a matter of course that such rapidly growing animals have a comparatively larger requirement of protein. It is also evident from the fact that the percentage of protein in the milk follows the growth rate. But he gives the figures reproduced in Table 8.

TABLE 8.—Growth Rate, and Protein in the Milk *

	Time for Doubling Growth, Days	Protein in Milk, per Cent.
Man.....	180	1.6
Ox.....	60	3.5
Sheep.....	15	4.9
Pig.....	14	5.2
Cat.....	9.5	7.0
Rabbit.....	6	10.4

* For rats, no figure for the protein content is given, but it may be assumed to be high.

It is always hazardous to draw conclusions from one species of animal to another. The nourishment of men requires experiments with men as a foundation.

PRODUCTION OF ADEQUATE NOURISHMENT

Physicians certainly should not agitate for a dietary rich in meat. We can leave that to the farmers and the big slaughter houses. They have some reason for fear. I once calculated that if people lived only on products of the earth—corn, potatoes, fruits and vegetables—seven grown-up men, or nine persons (men, women and children), could get nourishment enough from 1 hectare (2½ acres). From the cultivated acreage, it can be calculated ²² how many million people it would be possible to support in the different countries.

TABLE 9.—Present Population and Possible Increase

	Area, Hectares, Millions	Millions of Population		Number of Times Population Can Increase
		Possible	Present	
Denmark.....	2.5 × 9 =	22.5	3	7.5
Norway.....	0.64 × 9 =	5.8	2.5	2.3
Sweden.....	3.5 × 9 =	31.5	6	5.3
Germany.....	26.4 × 9 =	238	65	3.7
Austria-Hungary.....	26.4 × 9 =	238	52	4.6
France.....	28.5 × 9 =	256	40	6.4
England.....	8.1 × 9 =	73	46	1.6
Italy.....	17.8 × 9 =	160	35	4.6
Russia.....	123.0 × 9 =	1,107	130	8.5
All Europe.....	272 × 9 =	2,448	450	5.4
United States.....	168 × 9 =	1,512	100	15.1

When we consider how the people in the greater part of central Europe have been starving and are still starving because not enough nourishment can be produced, these figures look a bit curious. But the solution of the riddle is simple enough when it is remembered that

22. Conditions have been considered as they were before the war.

the production of pork and milk gives a loss of nourishment of 80, and of beef even 95 per cent.²³ The central powers are starving only because the people require too many animal products. They believe in the necessity of a greater use of these products and are in that supported by the scientists. For that reason it is an irresistible necessity for Europe that the populations begin to realize that science here has committed a fatal mistake.

The experiences of Denmark during the rationing showed how easy it is to procure nourishment enough if people only limit sufficiently animal production. It would, of course, be foolish to abolish this production. What would it avail if we in Denmark produced food for twenty-two million people when we have only three million? In that case six sevenths of the food would have to be wasted, provided, of course, the other countries acted in the same way, so that nothing could be exported.

Frederiksborg Allé 28.

ISCHIORECTAL ABSCESS FOLLOWED BY
GAS GANGRENE; GAS GANGRENE
FOLLOWING TRAUMA

REPORT OF TWO CASES *

SAMUEL GORDON BERKOW, B.S.(MED.), M.D.

AND

NATHAN ROBERT TOLK, M.D.

NEW YORK

In the five days from February 27 to March 4, 1923, there were two deaths from gas gangrene at St. John's Long Island City Hospital. The first infection was of the scrotal, perineal and ischiorectal regions and followed ischiorectal abscess; the second gas infection followed a crushing injury to the left leg. In each case the diagnosis was substantiated by bacteriologic and postmortem examination.

In the traumatic case, the patient entered the hospital three days after our first patient succumbed, and occupied an adjoining bed. Since there is no other case of gas gangrene on record in this institution, the possibility of cross-infection having occurred must be considered. And yet a review of the literature reveals a remarkable paucity of reported cases of gas gangrene in civil practice. Christopher ¹ asserts that "a careful search of recent medical literature revealed only seven writers who reported nine cases of gas gangrene in civil practice." Such infrequency of occurrence is certainly inharmonious with our conception of communicability. But can the rarity of incidence be more readily reconciled with the known prevalence of the organisms responsible for gas gangrene?

REPORT OF CASES

CASE 1.—F. M., a tailor, aged 54, entered St. John's Hospital, Feb. 24, 1923, at 4 p. m., complaining of pain and swelling in the region of the anus and scrotum. The previous history was entirely negative. The bowels had always been regular. February 18, the patient first experienced a mild pain in the region of the anus. The next morning the pain increased, and the patient noticed a swelling in the perineal region. The

23. Report to the minister of the interior from the Committee of April 4, 1917, p. 107.

* From the surgical service of Dr. F. C. Keller; pathologic service of Dr. Carl Boettiger, St. John's Long Island City Hospital; operations by Dr. William Lavelle; technical assistance of Miss Mary E. Barrow.

1. Christopher, Frederick: Gas Gangrene in Civil Surgery: Report of a Case, Internat. Clin. 1: 129, 1922.

swelling became red and extended anteriorly, reaching the scrotum, February 22. He was now unable to sit, and could not defecate because of the pain and swelling. A physician was summoned, and hot and cold water bags were applied, but without relief. He was advised to enter the hospital.

The patient was admitted to the male general surgical ward. A large, red, indurated area was noted in the ischio-rectal region, extending to the left buttock. Fluctuation was present, and bulging and redness of the perineum. The scrotum was only slightly enlarged. A provisional diagnosis of ischio-rectal abscess, and periurethral abscess was made.

February 25, at 9 a. m. the scrotum was the size of a coconut, was very tense and painful, and there was bluish discoloration of the skin. The veins were dilated. This had apparently occurred within the preceding fifteen hours. The mass in the left ischio-rectal region and perineum was larger and more painful. At 2:15 p. m., ethyl chlorid being used locally, multiple incisions and drainage of the ischio-rectal region and scrotum were performed. At that time, the scrotum was enormously swollen, was bluish in places and the veins were prominent. When the scrotum was incised, dark blood, gas bubbles and foul odor were noted.

Digital examination revealed the scrotal tissues to be thickened and crepitant, and a dark, foul smelling, bloody fluid was expressed. The operative record stated that the swelling of the scrotum seemed to be due to general infiltration, rather than to a collection of fluid; gas bacillus infection was suspected.

After operation, the patient was isolated.

At 4 p. m. the patient was drowsy, as he had been since the operation. At 6 p. m., skin crepitation was present just above the pubis, and the skin was becoming red and very tender. At 7 p. m., the patient voided some urine voluntarily. At 11 p. m., he was doing badly. The chest was filled with loud, coarse râles. The suprapubic region was very painful. The skin was indurated and crepitant.

On the morning of February 26, the patient complained of great pain in the lower abdomen. Crepitation and induration were present to about 4 inches above the symphysis pubis. At 5 p. m., he became somewhat irrational. The redness and crepitation extended to the flanks. The skin of the scrotum became black and dry. From the wounds came a thick, bloody, foul-smelling discharge.

February 27, the patient was irrational. Breathing was rapid and stertorous. The induration seemed to be spreading upward. Axillary temperatures had to be resorted to, as oral and rectal temperatures could not be taken. Later in the day, crepitus was noted at the umbilicus. Pulmonary edema developed. At 11 p. m. the patient died.

The admission temperature was 99 F. In thirty-six hours, the temperature rose to 101.2. Thereafter, the temperatures were axillary. None was above 99, the last temperature recorded (February 27, 5 p. m.) being 98. The pulse was 108 on admission. It rose to 128 in thirty-six hours; then decreased to 100, and was 110 on the last day. The respirations were 30 a minute on admission, and gradually rose to 40 a minute on the last day.

The first culture (February 25) was an agar stab covered with melted agar. No growth was obtained (ten days). Direct smear showed gram-positive bacilli of variable length (some almost coccoid) and a few short chains of long, thin gram-negative bacilli. Another sample of the scrotal discharge was taken at 10 a. m., February 27. A culture of part of this was taken in tubes of agar covered with petrolatum, and in these, too, no growth was obtained. The remaining cultures were also deep stabs in agar tubes, with oxygen exhausted by pyrogalllic acid and sodium hydroxid (Wright's modification of Buchner's method). In these tubes, gas formation was noted after twenty-four hours' incubation at 37.5 C. Smears and subcultures were made. The smears showed a profusion of short, rather thick gram-positive bacilli. The subcultures produced gas, and smears looked the same as above, except that a few gram-negative bacilli were present; further subcultures showed marked pleomorphism.

A further portion of the discharge (1 c.c. of discharge and 1 c.c. of saline solution) obtained, February 27, was injected into the marginal ear vein of a rabbit. Five minutes later,

the rabbit was killed and placed in the incubator at 37.5 C. After eight hours, the rabbit was removed and a necropsy was performed. Gas bubbles were found, and crepitus in the subcutaneous tissues of the abdominal wall, and in the omentum, spleen and properitoneal fat. No gas was seen or felt in the liver. Direct smears and cultures were made from gas-containing areas. The gram-positive organism previously described was seen, and cultures were made, resulting in gas formation in twenty-four hours. Aerobic cultures were made, and no growth was obtained.

CASE 2.—A. K., aged 54, a truckman, was brought to St. John's Hospital at 8:15 p. m., March 2, 1923, from a lumber yard. A pole, hit by an automobile truck, had fallen and struck the patient's left leg in the region of the popliteal space. The previous history was negative. When examined the patient was tossing about in bed. His face was pale, the skin cold and clammy. The pupils reacted to light and in accommodation. There was a severe laceration of skin and muscle tissue of the lateral surface of the left leg below the knee. A false point of motion was obtained below the knee (?). There was bleeding from the lacerated wound. A tourniquet was applied, and routine treatment (including the injection of 1,500 units of tetanus antitoxin) was administered. The diagnosis on admission was (1) shock; (2) severe contusion and laceration of the left leg, and (3) possible compound fracture of the left tibia.

The patient was sent to the male genital surgical ward, and placed in a bed adjoining the one which had been occupied by the man with the ischio-rectal abscess on the night of the latter's admission, six days before.

Next morning, the patient was still pale. His left foot was white with a bluish tinge over the dorsum, and cold to the touch. No pulsation was felt in the dorsalis pedis or posterior tibial arteries. There was absence of sensation to about 3 inches above the knee. A slight amount of oozing was still present. A roentgenogram of the left hip, knee and leg was made.

During the night, the patient was restless and did not sleep. March 4, crepitation was elicited about the ankle, leg, knee, thigh, and in the left groin. At this time, the possibility of a gas bacillus infection was first entertained, and agreed on. The roentgen-ray report was negative. At 8 a. m., the patient vomited; at 3 p. m., he was delirious. The amputation of the lower extremity through the upper third of the thigh was performed at 5 p. m. At the time of the operation, the patient was distinctly in shock. He died during the course of the operation.

Several pieces of tissue were taken at necropsy. Deep stabs were made into glucose-blood broth, covered with sterile petrolatum. Gas formation was noted in the tubes after incubation at 37.5 C. for three hours. Smears showed the short, fairly thick, straight, gram-positive rods.

The patient's temperature was 96 on admission. The temperature did not go above 99.2 for twenty-four hours. It then took a sharp rise, and was 102.6 at death (within forty-eight hours after admission). The pulse was 120 on admission, and did not go above that rate until just before expiration, when it was 160. Respirations were 22 a minute until just before death, when they were 50 a minute.

NECROPSY FINDINGS IN FIRST CASE

The necropsy on the first patient revealed marked local and general changes. The abdomen was markedly discolored from the umbilicus to the symphysis on the right, and half that extent on the left. The penis and scrotum were very much discolored and edematous; and, when opened, the entire area was necrotic and gangrenous. No fistula was found between the ischio-rectal abscess and rectum. Microscopically, there was moderate polymorphonuclear infiltration, with wide separation of muscle fibers and large, irregular spaces in the tissue. The gangrenous areas contained many gram-positive bacilli.

The spleen was about twice normal size, very soft, with marked crepitation on pressure. On section, the splenic tissue was dark, very soft, with loss of markings; and on pressure, it exuded a frothy, gaseous fluid. Microscopic section showed mainly connective tissue, blood vessels and a few areas of

lymphoid tissue. The pulp was almost completely destroyed. No bacilli were present in gram-stained sections.

There was biliary cirrhosis and parenchymatous degeneration of the liver. The kidneys showed chronic and acute toxic nephritis. In the cranial cavity, the blood vessels of the circle of Willis and small cerebral vessels contained small, irregularly distributed gas bubbles. The cortex showed distention of the capillaries, with slight polymorphonuclear and more marked mononuclear infiltration. No organisms were found in gram-stained sections of the tissues previously mentioned.

Cultures, aerobic and anaerobic, were taken from the abdominal wall muscle, heart, lung, liver, spleen, and from gas bubbles in the circle of Willis. The anaerobic cultures from the brain were "shot to pieces" by gas formation, in twenty-four hours. Smear showed gram-positive bacilli of the same morphology as the previous positive cultures. Cultures from the remaining tissues gave no growth.

TREATMENT

The first patient was treated by multiple wide incisions and drainage, followed by continuous flushing with hydrogen peroxid. The second patient was treated by amputation of the affected limb. Further treatment consisted of the routine measures against shock.

COMMENT

There are four strains of gas-producing organisms: *B. aerogenes-capsulatus* (bacillus of Welch); *B. perfringens*; *B. phlegmonis-empysematosae* and *B. enteritidis-sporogenes*. Stitt² maintains that all of these are possibly a single group of organisms. *B. perfringens* is very abundant in fertilized soil. *B. enteritidis-sporogenes* is constantly present in feces.²

Greeley³ writes: "As the organism is a recognized common inhabitant of the intestinal tract and of distinct pathogenic abilities, it would be expected that lesions of the abdominal organs would, not infrequently, be followed by inflammation directly caused by this bacillus."

In view of these facts, we assume that the route of the ischio-rectal infection was through the gastro-intestinal tract, by way of a fistula communicating with the ischio-rectal region.

Our second case is of value in that it is evidence for the existence of contagion in gas-bacillus infections. It must be remembered that, while the second patient occupied the adjoining bed three days after the first patient with gas-bacillus infection had died, the organism responsible is spore bearing and resistant to ordinary routine hospital disinfection.

What explanation of the nature of the process do clinical observation and pathologic findings suggest? Of the many diverse opinions, those of Bull and Pritchett and of Kenneth Taylor seem to fit best.

Bull and Pritchett⁴ assume "that soluble chemical substances entering the circulation from the local lesion bring about the severe symptoms and the fatal termination." Taylor⁵ conceives that "the real action of the toxic principle is . . . that of converting healthy muscle tissue adjacent to the wound into favorable medium for growth and gas production by bacteria." He⁶ suggests that the gas bacillus is a saprophyte, and that the purely mechanical action of the gas produced

from the carbohydrate-containing tissues (hence muscle) on the blood vessels of the part causes necrosis with invasion of the dead tissue by bacteria, producing "putrefactive, autolytic and colliquative necrosis," which "induces rapid and profound toxic symptoms."

These two views are divergent. There is in them, however, a common element, the correctness of which is attested by our observation of a rapid spread, from the local focus, of gangrene preceded by crepitus; the low temperature and pulse rate throughout the course of both cases, and by the macroscopic and microscopic pathologic changes. Especially confirmatory is the fact that while internal organs—spleen, kidney, liver and brain—showed marked changes, the organism was seen only in the muscle tissue of the local focus. On this basis, the presence of the bacilli in gas bubbles in the brain vessels, as demonstrated by culture, must be explained as a terminal affair.

It may be noted that in neither case was the antitoxin, or serum of Bull and Pritchett, administered. Of this serum, Bull⁷ writes: "In the light of the results obtained in treating the infection in guinea-pigs, it is reasonable to hope that antitoxin will be of value as a therapeutic agent. The indications are that early infectious cases can be readily arrested and the more advanced and severe ones ameliorated, if not wholly checked, so that surgical interference may be resorted to with greater probability of effectiveness." The serum, moreover, is not readily obtainable.

The question has previously been raised: Why is gas bacillus infection rare, when the causative organism has a widespread distribution and is communicable? It may be suggested that the organism is not virulent except under special conditions, of which the devitalization of carbohydrate-rich tissues—especially muscle—seems to be the most noteworthy. Under ordinary circumstances, then, the organism may be communicated, but not the disease. When the necessary conditions are met, it may be not only that the gas bacillus becomes virulent through mechanical or chemical action, but also that its intrinsic virulence is raised, so that the infection can be transmitted.

Of interest is the fact that a case⁸ of gangrene of the scrotum from anaerobic infection reported in the French literature of 1919 is the only other case of gas bacillus infection of this region that we could find on record.

CONCLUSIONS

1. Lesions of the gastro-intestinal tract or adjoining tissues may be the seat of gas bacillus infection.
2. Gas bacillus infection is probably communicable through fomites.
3. The gas bacillus is demonstrable in the "exploded" muscle tissue of the local focus.
4. Extensive acute changes occur in the spleen, kidneys, liver and brain; but the organism is not demonstrated in these tissues.
5. Proper measures must be instituted for the protection of patients with traumatic wounds when gas bacillus infection is present or suspected in a hospital.

7. Bull, C. G.: Prophylactic and Therapeutic Properties of Antitoxin for *B. Welchii*, *J. Exper. Med.* **26**: 603 (Oct.) 1917.

8. Thibault, Albert; and Schulmann, Ernest: Gangrene foudroyante des bourses par infection anaerobie, *Bull. et mém. Soc. méd. d hóp. de Paris* **43**: 70 (Jan. 31) 1919.

Hybridization.—Kolreuter made the first systematic investigation of hybridization, which is the first stage resulting from the crossing of parents with different inheritable characters.—Buchanan, *Am. J. M. Sc.*, May, 1923.

2. Stitt, E. R.: Practical Bacteriology, Blood Work and Animal Parasitology, Ed. 6, 1920, p. 109.

3. Greeley, Horace: Idiopathic Bacillus Aerogenes Capsulatus Infection, *Bull. Johns Hopkins Hosp.* **29**: 231 (Oct.) 1918.

4. Bull, C. G., and Pritchett, Ida W.: Toxin and Antitoxin of and Protective Inoculation Against Bacillus Welchii, *J. Exper. Med.* **26**: 19 (July) 1917.

5. Taylor, Kenneth: Gas Gangrene—Its Course and Treatment, *Bull. Johns Hopkins Hosp.* **26**: 297 (Oct.) 1916.

6. Taylor, Kenneth: Gas Gangrene, p. 297.

Clinical Notes, Suggestions, and New Instruments

A CASE OF RUPTURED ANEURYSM OF THE SPLENIC ARTERY

WILLIAM RANDOLPH SMITH, A.B., M.D., ATLANTA, GA.
Resident Surgeon, Emory Division, Grady Hospital; Instructor in Surgery, Emory University Medical School

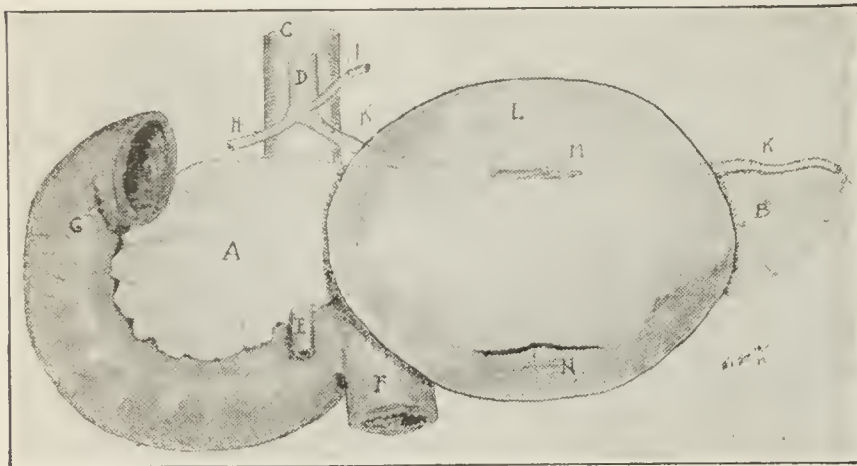
The rarity of a ruptured aneurysm of the splenic artery, coupled with several interesting features presented by this case, prompts me to report it.

History.—A colored woman, aged 38, had been in fairly good health up to the day of admission to the hospital, but for several years had been troubled with "indigestion," and had obtained some relief at times by using large amounts of soda. Menstruation had always been regular and normal in every way; the last period occurred one week prior to admission. While walking along the street, she was seized with a sudden sharp pain in the epigastrium, and immediately thereafter lost consciousness. She was brought directly to the hospital, and by the time she was placed in bed, consciousness had returned. She vomited just after admission.

Examination.—The patient was of moderate size, and was in a condition of severe shock. Her extremities were cold;

A striking feature of the case, noted at this point, was the presence of hemorrhage between the layers of the great omentum. This suggested the lesser sac as the seat of the trouble. A rapid exploration of the abdomen was then made, and a mass was felt in the lesser sac, through the gastrocolic omentum. This mass was then exposed. It was roughly oval, and about 3 inches (7.5 cm.) in its longest diameter. It seemed to arise from the midportion of the pancreas. Along its outer surface was a ragged tear about 1 inch (2.5 cm.) in length, plugged by a blood clot. This mass felt cystic, and through its wall could be felt plaques of firm, calcific-like material. The first impression of this mass was of an aneurysm that had ruptured and later become plugged with a portion of organized clot. An attempt to invert a portion of the sac and suture it over was made. The tissue, however, was too friable. It therefore was opened widely. The sac contained blood clots and some fresh arterial blood, but did not bleed after evacuation. This led to the belief that it was possibly a ruptured hemorrhagic cyst of the pancreas. The patient's condition did not warrant a very careful examination of the mass, which was therefore packed with gauze and marsupialized. The abdomen was rapidly closed. The patient lived about two hours.

Necropsy.—The cyst proved to be a ruptured aneurysm of the splenic artery. The aneurysm arose from the splenic artery opposite the midportion of the pancreas, and the wall of the aneurysm had become firmly attached to the anterior surface of the pancreas. Pressure from the aneurysm had produced a marked thinning of that portion of the pancreas to which it was attached.



Schematic drawing of aneurysm: A, head of pancreas; B, tail of pancreas; C, aorta; D, celiac axis; E, superior mesenteric artery; F, jejunum; G, duodenum; H, hepatic artery; I, left gastric artery; K, splenic artery; L, aneurysmal sac; M, opening of aneurysm from artery to sac; N, ruptured portion of sac.

the pulse was imperceptible at the wrists; the heart rate was 130 beats a minute by auscultation; and the respirations, about 28 a minute. The mucous membranes were very pale and slightly cyanotic; the rectal temperature was 99 F.; the chest was normal. The abdomen seemed slightly full, symmetrical, and soft; no spasm was found anywhere; there was moderate tenderness all over the abdomen, but most marked in the left epigastric and umbilical regions; no masses were felt; the abdomen was dull to percussion everywhere except over the cecum anteriorly, where it was tympanic; there was a definite fluid wave. Pelvic examination showed a pale vaginal mucous membrane, with no evidence of bleeding; the cervix was slightly soft, and was displaced toward the symphysis. The cervix admitted the finger tip. The posterior fornix was bulged downward by a mass that seemed to be continuous with the cervix and had the outline, consistency and size of a uterus from six to eight weeks pregnant; the lateral fornices were soft; the pelvis was moderately tender throughout. In view of these findings, a diagnosis of severe intra-abdominal hemorrhage was made; a ruptured left ectopic pregnancy was suspected.

Operation and Result.—Under light ether anesthesia the abdomen was opened through a long, left split rectus incision. It was filled with fluid blood and clots. The uterus was small, firm, retroverted, and bound in the pelvis by adhesions, presumably from an old pelvic infection. Both tubes were the site of a hydrosalpinx, and both ovaries were cystic, the left one being about 4 inches (10 cm.) in diameter. There was no evidence of any bleeding point in the pelvis.

CERVICAL SYMPATHECTOMY FOR ANGINA PECTORIS: REPORT OF A CASE WITH DEXTAL RADIATIONS OF PAIN

PHILIP KING BROWN, M.D., SAN FRANCISCO

History.—J. D., a special officer, entered the Southern Pacific Hospital, Dec. 11, 1922, in a state of collapse with marked cardiac decompensation, auricular fibrillation and dyspnea. Aug. 29, 1922, at 8 p. m., he came home worn out from a long day's work. He had been on a twelve-hour shift since July 1, with gradually increasing weakness and shortness of breath. He would have to stand outside his front door after climbing eleven stairs and get himself in hand before entering the house. He felt that he could not keep on much longer. At 9 p. m., August 29, after going to bed without supper, he had a sudden pain in the region of the heart and out to the right shoulder, vicelike and piercing. In a few minutes the pain radiated to the left shoulder, down the right arm to the elbow and across the lower chest. The daughter poulticed the chest with mustard, and a physician gave digitalis. The pain lasted five or six hours, and was severe. The patient could not move, and screamed for relief. For three days the pain continued, but by the morning of the first day, eleven hours after the onset of severe pain, he had relief enough to allow him to doze. The chief pain during the latter part of the attack was in the heart region, radiating to the right shoulder. These pains came and went without being very severe.

Three weeks later, he took short walks of one block, but not without pain; and nine weeks after the first attack he had a sudden attack of shortness of breath and a period of choking, with the same pain he had been having, only more severe. There was a spasm-like attitude for thirty or forty seconds before he could breathe and then he began to breathe rapidly (Cheyne-Stokes?). Eight breaths would then be taken, whereupon there was another half minute without breath. From this time on he never was able to lie down until he entered the Southern Pacific Hospital, December 11. There were, in all, three severe attacks during the fourteen weeks, but from eight to ten minor ones a day. His main complaint on entering the hospital was his waking suddenly, gasping for breath; this had happened nearly every night since August. In his past history there were only two factors of interest. He had typhoid fever forty-five years before, and during his waking hours he used tobacco constantly.

Examination.—The patient had a clear skin and good color, and was well nourished. His respiration was labored. The pulse was 72, full and regular. The systolic blood pressure was 160; diastolic, 98. The reflexes were all normal except or absent knee jerks. The arteries were palpable everywhere and tortuous in the forehead. There were crackles at the bases of both lungs behind. The heart was enlarged laterally. The apex beat in the fifth space was 12 cm. to the left of the median line. The rate and rhythm were normal. There was a coarse systolic murmur heard chiefly at the base, but heard clearly everywhere. The liver was not enlarged, and there was nothing else of moment about the patient except the evidence of an enlarged aorta with high substernal

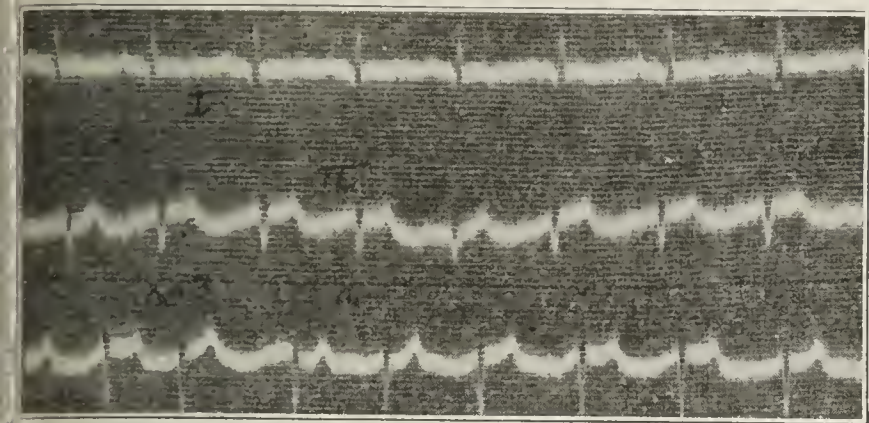


Fig. 1.—Before operation: inverted T in Lead I, with evidence of left ventricular preponderance.

fulness. The amount of urine eliminated in twenty-four hours was nearly 750 c.c., with a few hyaline casts and a trace of albumin. The Wassermann test was negative.

There was a disposition on the part of the patient to remain absolutely quiet on his back in bed, which he explained by saying that it caused him pain if he moved at all. He was very restless and unable to sleep.

Treatment and Course.—The general care of the patient was directed toward making his heart action more efficient with digitalis, and giving him an exceedingly light diet with $\frac{1}{24}$ grain (0.0027 gm.) of morphin by hypodermic to make him sleep.

His pulse was found to show a tendency to be quite irregular at times, there being periods of extrasystoles after eating. He was at his best with small doses of sodium nitrite with the digitalis. He was gradually persuaded to get up from bed. The urine elimination was brought to between 1,000 and 1,500 c.c. in twenty-four hours. The pains he experienced in making any physical effort were all in the upper heart region and in the right shoulder.

A roentgen-ray examination showed a marked congestion of both bases of the lungs. The heart outline was difficult to make out on account of this congestion, but the transverse diameter was figured at 22 cm., and the diagonal diameter, 20 cm. The aorta was thickened and broadened, and measured 9 cm. in width. There was a slight residue in the stomach six hours after a barium meal.

The last of December, an examination by Dr. A. W. Hewlett of Stanford University School of Medicine disclosed a very large heart and many extrasystoles. The electrocardiogram showed an inverted T in Lead I, with evidence of left ventricular preponderance. One premature beat was an atricular extrasystole (Fig. 1). The vital capacity was 2,150 c.c., which was about 49 per cent. of the normal average, according to the standard employed. It seemed to Dr. Hewlett that, August 29, there was a blocking of one of the coronary branches, and that the second attack, which occurred six weeks later, was probably due to a pulmonary infarct. Dr. Hewlett did not think him a very good surgical risk.

As the patient was having only a few minor attacks a day, controlled easily by nitroglycerin, he was put on the pension list, and was to be discharged from the hospital. Then, at his own request, in spite of the severity of the heart and aortic condition, I obtained the consent of Dr. W. B. Coffey to remove the right superior cervical sympathetic ganglion.

My reason for this was that all the mild attacks and the chief pain in the severe ones was right-sided, and I was convinced by previous experience¹ that spasm of the aorta in angina was controlled by the cervical sympathetic system and that it was safer to remove the ganglion than to try to cut the main trunk and the superior cardiac branch below the ganglion. It is certainly necessary to use the ganglion as a landmark in the operation, and the eye symptoms in the cases in which Dr. Coffey had removed it before were not in the least disturbing. The pupils contracted each time, but there was no such receding of the eyeball as described by Jonnesco.²

The operation was done under gas oxygen with a small amount of ether. The ganglion was exceedingly large and easily removed. Convalescence was uneventful, and the patient left the hospital two weeks later. Dr. Hewlett thus interpreted the second electrocardiogram (Fig. 2).

The electrocardiogram of the patient two and one-half weeks after operation shows some left ventricular preponderance. The negative T reported on the first examination is not visible on the present records. It is possible that a normal T would be due to the administration of digitalis, and this point should be cleared up. If one cannot account for the negative T of the first occasion in this manner, I should say that the disappearance of this feature of the electrocardiogram is a matter of considerable interest in itself, indicating either an improvement in the heart muscle or a direct effect of the removal of the sympathetic ganglion. The vital capacity is 2,500—57 per cent.

Following his discharge from the hospital, the patient continued free from distress of any kind, and had no subjective symptoms referable to his heart. He continued well until February 23, when he had an attack of influenza, beginning with signs of bronchitis in the lungs, a severe sore throat and general aching. As was characteristic of the epidemic then at its height, he was very apathetic. He developed a double bronchopneumonia, but was afebrile on the fifth day, although markedly prostrated, and the bases of both lungs behind were full of râles. The blood pressure remained about normal (systolic, 140; diastolic, 80), and the pulse was of good quality, with a rate of about 90. The signs in the lungs remained stationary. The patient was given stimulation with caffeine by hypodermic injection because the kidney condition was not satisfactory. After two days of normal temperature, he was still without appetite and very listless. The

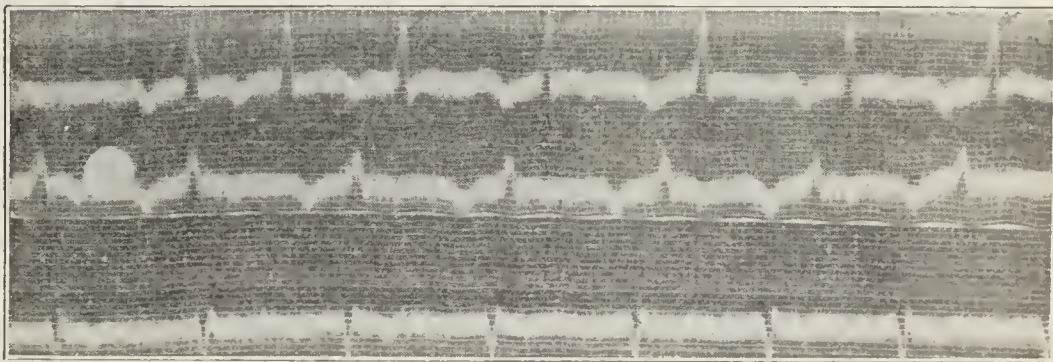


Fig. 2.—After operation: some left ventricular preponderance; negative T no longer visible.

kidney secretion grew less, and the pulse weaker in spite of further stimulation. Suddenly, the pulse rate dropped to 45 and 55, and was almost imperceptible. The heart tones were so feeble that they could not be heard above the noise of the râles, and in spite of medication every two hours, with caffeine, strychnin and camphorated oil, there was no heart response, and the patient died two days later. Only two doses of digitalis were given during the weakness, because of the fear of heart block. A diagnosis of advanced coronary sclerosis was made. A necropsy was refused.

Prior to this illness, the patient had been exceedingly comfortable, walking four or five blocks a day with neither shortness of breath nor pain. He said that he felt like a young man, but his daughter's watchful care prevented his over-exerting himself at any time.

1. Coffey, W. B., and Brown, P. K.: The Surgical Treatment of Angina Pectoris, *Arch. Int. Med.* **31**: 200 (Feb.) 1923.

2. Jonnesco, T.: *Bull. de l'Acad. de méd.* **84**: 93 (Oct. 5), 1920; *Presse méd.* **29**: 193 (March 9) 1921.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JUNE 9, 1923

SIMPLE GOITER AS A PREVENTABLE DISEASE

"The old notion of 'diathetic diseases' is now giving place to the more definite concept of disorders of metabolism, many, perhaps all, of which are bound up with some *bouleversement* of hormonal equilibrium or some disturbance of function in the ductless glands."¹ Laboratory research and experimentation are making this pronouncement of Dr. Fielding H. Garrison, medical historian, more evident each day; but the regrettable fact remains that our prophylaxis does not altogether keep step with our knowledge. The studies of Marine and Kimball with regard to simple goiter, which were made possible under research grants from the American Medical Association, emphasize the prevalence of simple goiter and point to a method of prevention. Hypertrophy of the thyroid has been recognized from early centuries as a definite disease. Aëtius of Amida, who lived in Byzantium in the sixth century A. D., gives an interesting chapter on goiter in his book the "Tetrabiblion," and it was discussed by Ruggiero Frugardi of the Salernian school.² Moreover, that very brilliant charlatan Paracelsus was the first to establish a correlation between cretinism and endemic goiter.

While simple goiter may develop sporadically in almost any locality, even at sea, as it did during one of Cook's voyages, its strongholds have been in the plateaus and mountain regions, as in contradistinction to seacoast countries. McCarrison³ reports, for the year 1912, 4,869 cases in the district of Monghyr and 3,142 in Bhagalpur in India, both of which districts lie in the Himalayan altitudes. In France alone there were 500,000 cases of goiter in 1874; in Switzerland, 12,207 men were exempted from military duty for this cause in the period from 1875 to 1881, and in Italy, from 1859 to 1864, 3 per cent. of the conscripts were excused from service on account of this affection.⁴ In

spite of the recognition of the prevalence of goiter, it is only recently that any systematic attempt has been made toward its prevention. As early as 1820, Dumas and Coindet⁵ demonstrated the value of iodine treatment; in 1896, iodothyron was isolated by Baumann, who indicated its relation to iodine metabolism, and in 1916 Kendall definitely determined this content as tri-iodo-indol-propionic acid. Kimball,⁶ in his report, assembles collected data to show that there is truth in Marine's dictum that "simple goiter is the easiest known disease to prevent." He thus summarizes the conclusions of Marine and Lenhart: 1. Iodine is necessary for normal thyroid function. 2. The iodine content varies inversely with the degree of hyperplasia. 3. The percentage of iodine present in individual thyroids is variable, but there is a quite constant minimum percentage which is necessary for the maintenance of normal or colloid gland structure. If the iodine content falls below 0.1 per cent., active hyperplasia begins.

In a series of experiments from 1909 to 1911, Marine and Lenhart showed that goiter, which had virtually ruined the fish hatcheries at Shady Grove, Pa., could be eliminated by the addition of a small amount of iodine to the food. This was the basis of Marine's dictum, referred to above.

In the work of Marine and Kimball, which has been referred to repeatedly in THE JOURNAL, nearly 10,000 girls in Akron, Ohio, were examined in the course of three years. In the first examination, 56 per cent. were found to have goiters. The method of prevention was the administration of 3 grains of sodium iodide in the drinking water once a day for two weeks each spring and fall. Of those taking this prophylactic dose, no normal girl developed goiter, while 27.6 per cent. of those not taking it, and who had been without goiter at the beginning, developed either goiter or enlargement of the thyroid. The goiter disappeared in 60 per cent. of those who had goiter at the beginning and took the prophylactic doses. Kimball says, in comment on these experiments, "From our experience in Akron we know that if a girl's thyroid is kept saturated with iodine during the years of adolescence, a goiter will not develop; and when we remember that the total storage capacity of the normal thyroid is approximately three fourths of 1 grain of iodine, we appreciate that a small fraction of a grain of iodine at weekly intervals is sufficient to assure the full normal iodine content of the gland."

The findings of Marine and Kimball as to this method of prevention of goiter were forwarded to Switzerland in 1917, where they were employed with some slight modification as to the form of iodine. A report of the health commission of the canton of St. Gall shows that in January, 1918, the incidence of goiter among school children of that canton was 87.6

1. Garrison, F. H.: History of Medicine, W. B. Saunders Company, 1921, p. 732.

2. Garrison: History of Medicine, pp. 112 and 141.

3. McCarrison: The Distribution of Goiter in India, Indian J. M. Res. 2: 778, 1914-1915.

4. Clark, T., and Pierce, C. C.: Endemic Goiter: Its Possible Relation to Water Supply, Reprint 184, U. S. P. H. S., May, 1921.

5. Coindet: Ann. de chim. et phys. 15: 49-50, 1820.

6. Kimball, O. P.: Pub. Health Rep., April 27, 1923.

per cent., and in January, 1922, after iodine administration, 13.1 per cent.

This prophylactic administration of iodine has been extended in Ohio and has also been taken up in Michigan, but has not as yet found the extended application that it seems to merit. Kimball states that the possible harm from the dosage of iodine employed is absolutely negligible; that in the work in Akron a mild rash appeared in one per thousand cases treated, and that neither in this country nor in Switzerland has a single case of exophthalmic goiter been produced. His report ends with a plea for the administration of iodine as a routine prophylactic to girls during adolescence, and, in endemic goiter districts, to women during pregnancy. Since girls are six times as susceptible as boys, he believes that cases among the latter may be treated as they arise, especially since it is demonstrated that in them it disappears if treated promptly and properly.

SOME ASPECTS OF VITAMINS AND RADIANT ENERGY

The discovery by Osborne and Mendel, some years ago, that cod liver oil is rich in one of those essentials of nutrition now designated as vitamins, has given a new scientific dignity to a product long used in an empiric way for therapeutic ends. This interesting finding has naturally led to more intensive investigation, not only of cod liver oil itself, but also of many other animal and vegetable oils since demonstrated to be carriers of such physiologic potencies. There is considerable evidence already accumulated to show that the property currently designated as vitamin A is not entirely destroyed by saponification of the oils, whereby the fats lose their identity as such. Several investigators have already separated from cod liver oil nonsaponifiable fractions in which some, at least, of the effective component is concentrated in very small bulk. The sources of potent fish oils and the factors that affect the potency through their origin or modifications by commercial processes are being considered in various laboratories, so that one may confidently expect a helpful accumulation of knowledge in respect to a substance recently designated as a veritable specific against rickets.

Meanwhile there are growing indications that cod liver oil is even something more than is expressed by a wholesome nutrient fat and an antirachitic food. Its vitamin potencies are beginning to appear manifold in character. Experiments have made clear that cod liver oil will help to avert the nutritive disaster that comes about on diets devoid of vitamin A; that it will help to cure the experimental xerophthalmia which various species develop on such defective diets, and that it will protect against the onset of rickets, or cure the latter under certain dietary conditions. It was, of course, easily conceivable that all beneficial results might be the outcome of supplying a single missing food factor present characteristically in cod liver oil. Clinical

observation and investigation have disclosed that radiant energy, as it occurs in sunlight and certain artificial forms, is also capable of preventing rickets from developing, or from continuing, if it is already established.¹ Neither the potent food factors in cod liver oil nor the light appear to bring new processes into operation, rather permitting the organism to have full use of processes that were natural to it all the time, but were not effective. Park has remarked that radiant energy is a powerful oxidizing and reducing agent in the case of the simpler chemical compounds, and probably exerts an influence of some such general nature in man and in animals. It communicates to the organism energy in some form that is apparently essential for normal metabolic activity, in particular in the growing organism. Park adds that cod liver oil operates in some such general way.

Of late, however, it has also become clear that, apart from their influence on rickets, cod liver oil and sunlight cannot be considered to have an equivalent action. The recent studies of Powers, Park and Simmonds² indicate that, whereas cod liver oil prevents the appearance of xerophthalmia in animals even more easily than it helps to avert rickets, the same cannot be said of either sunlight or the ultraviolet radiations from the mercury vapor quartz lamp. The latter seems to have little effect on the eye disorder. In other words, cod liver oil completely prevents the development of both rickets and xerophthalmia; light prevents completely the development of rickets, but does not always prevent the development of xerophthalmia. Radiant energy seems to contain the equivalent of the unknown factor in cod liver oil that prevents the development of rickets, but not to contain at all or only to a very slight degree the equivalent of the other factor in cod liver oil that prevents the development of xerophthalmia. The observations of Powers, Park and Simmonds thus suggest by analogy that there are in cod liver oil at least two distinct factors: one preventive and curative of rickets, and the other preventive and curative of xerophthalmia. Sunlight can compensate for the absence of the one, but not completely for the absence of the other.

The physiologic potency of direct sunlight and of various types of radiant energy has been made the subject of much speculation in recent years, and it has secured a practical application in therapy to a degree almost unwarranted by the present limitations of our knowledge. Under such circumstances, there is always danger of quackery. Sometimes medical charlatanism is comparatively harmless, except to the purse of the person who is duped. Not infrequently, as in the unintelligent use of radium or the roentgen rays, it may be seriously menacing. It is interesting to be

1. The subject is reviewed by Hess, A. F.: Influence of Light in Prevention and Cure of Rickets, *Lancet* **2**: 367 (Aug. 19) 1922. Park, A. E.: The Etiology of Rickets, *Physiol. Rev.* **3**: 106 (Jan.) 1923.

2. Powers, G. F.; Park, E. A., and Simmonds, Nina: The Influence of Radiant Energy upon the Development of Xerophthalmia in Rats: A Remarkable Demonstration of the Beneficial Influence of Sunlight and Out-of-Door Air upon the Organism, *J. Biol. Chem.* **55**: 575 (April) 1923.

reminded by Powers, Park and Simmonds, therefore, that no experiments involving sunlight have demonstrated that the effective agent has been sunlight alone. It is possible that the factors associated with exposure to direct sunlight outdoors have been responsible in whole or in part for the results usually attributed to the influence of the sun's rays. In their experiments there are no available data as to the exact nature of the operative factors. For the present, we should remember that exposure to sunlight outdoors makes the person subject to possible change—chemical, physical or both—by solar radiation and perhaps other unsuspected agencies that could not be operative in the laboratory. Whether these or unknown factors (acting singly or in combination with one another or with sunlight) or sunlight alone brought about the striking results remains to be ascertained.

As these investigators² have indicated, there is evidence that cod liver oil includes at least two distinct factors, one antirachitic and the other antixerophthalmic. Sunlight and fresh air can compensate for the absence of the one, but not completely for the absence of the other. However, to quote their words, these imperfections in our knowledge do not detract from the remarkable fact brought out in bold relief by their experiments, namely, that sunlight and outdoor air, with such factors as may be associated with them, have wonderful health and life giving powers which enable the animal to adapt itself with a considerable degree of success to adverse environmental conditions. Some day, let us hope, light and radiant energy in general will have been evaluated at their correct worth and in their proper meaning with respect to the problems of heliotherapy and health.

THE ORIGIN OF SERUM PROTEINS IN THE BODY

The recent development of the physiology of nutrition has placed the significance of the blood proteins in a new light. Before the period when the amino-acids acquired their dominance as the primary nitrogenous nutrients of the organism, a comparable importance was assigned to the blood proteins. It was assumed—for, assuredly, it was not proved—that the products of the digestion of protein were somehow converted during their passage through the alimentary wall into serum proteins. Thus it seemed as if the tissues drew on the blood proteins for their nitrogenous nutrients and that the supply of serum proteins became replenished after each meal containing albuminous substances. All of this edifice of hypotheses was shattered by the demonstration that the amino-acids are apparently not immediately synthesized into blood proteins after their absorption from the gastro-enteric tract. The physiologist, furthermore, has now found himself face to face with the problem of ascertaining the real function of the blood proteins. As Macleod has recently sum-

marized the existing knowledge, the blood proteins are radically different from the tissue proteins. Substances that retard or accelerate nitrogen metabolism do not alter the relationship existing between the protein bodies of the blood. This fact, he adds, indicates that the serum proteins have a function quite independent of the nitrogenous metabolism of the body. They undoubtedly maintain the viscosity of the blood, and assist in preserving its neutrality. Attempts to localize the site of formation of the blood proteins have not been successful.

Extensive investigations in recent years¹ at the Hooper Foundation for Medical Research at the University of California have substantiated the conclusion that plasma proteins do not necessarily represent a transition stage between food protein and body tissue protein. When the content of serum protein is depleted by large hemorrhages with restoration of the withdrawn erythrocytes—so called plasmapheresis—regeneration seems to be a slow and difficult matter. It has been shown that this depletion presumably is the maximal stimulus for body production of serum protein, yet there is a marked delay in regeneration. It seems that the body can produce serum proteins only in small amounts, even in an emergency. Serum proteins can be regenerated when there is no protein intake in the food; therefore, the serum proteins must be formed from the body proteins under such circumstances. The California investigators found that regeneration of blood protein following plasma depletion may be delayed by simultaneous liver injury, such as is produced by intoxication with phosphorus or chloroform. This, they believe, points to the liver as being concerned in the maintenance of a normal level of blood serum proteins. The evidence here, they add, is not so convincing and striking as is the case in the plasma protein fibrinogen, which has such an intimate relationship to liver injury and disappears almost completely with acute liver injury.

Recently, however, German investigators² at Wurzburg have questioned to what extent the genesis of the serum proteins should be identified with the liver. In experiments on lower animals, regeneration has followed hemorrhage even in cases in which the liver was extirpated and part of the musculature excluded from possible participation in the new formation of circulating protein. Consequently, it is assumed that restitution of the latter is not characteristic of or associated with a single organ, even one of the physiologic dignity of the liver. Regeneration of serum proteins, in the view of these students of the problem, is a property of many rather than a few specific types of cells. The

1. Kerr, W. J.; Hurwitz, S. H., and Whipple, G. H.: Regeneration of Blood Serum Proteins, I, Influence of Fasting upon Curve of Protein Regeneration Following Plasma Depletion, *Am. J. Physiol.* **47**: 356 (Dec.) 1918; II, Influence of Diet upon Curve of Protein Regeneration Following Plasma Depletion, *ibid.*, p. 370; III, Liver Injury Alone, Liver Injury and Plasma Depletion: The Eck Fistula Combined with Plasma Depletion, *ibid.*, p. 379.

2. Gottschalk, A., and Nonnenbruch, W.: Untersuchungen über den intermediären Eiweissstoffwechsel, I Mitteilung: Die Bedeutung der Leber und Muskulatur für den Wiedersatz zu Verlust gegangener Serumproteine, *Arch. f. exper. Path. u. Pharmacol.* **96**: 115, 1923.

correct answer is, therefore, still debatable. So long as severe hemorrhage constitutes a menace to human life, the importance of the question at issue should not be overlooked.

CANADIAN CHIROPRACTIC LEGISLATION: A PARADOX

By an act to regulate the practice of chiropractic, assented to, April 21, 1923, the legislative assembly of the province of Alberta provided for the licensing of chiropractors, and for that purpose defined chiropractic as "the method of treatment of human beings for disease and the causes of disease by means of adjustments by hand of the articulations of the spinal column and other adjustments by hand incidental thereto." But in thus putting its seal of approval on the chiropractic cult, the assembly seems to have been seized with some misgiving as to the wisdom of its course, for it proceeded to hedge, and enacted that "no registered chiropractor shall prescribe or administer drugs or medicinal preparations or treat any venereal disease, or any communicable disease, as defined by the *Public Health Act*, nor shall he perform any surgical operation, or practice obstetrics or any branch of medicine or osteopathy." The definition of chiropractic adopted is that of the school of so-called "straight" chiropractors, who teach that communicable diseases, in common with all others, are the result of displacements of vertebrae; that the germs and other living organisms found in connection with such diseases are merely scavengers, removing tissue dead because of such displacements, and that the reduction of the displacements in any case will cure the disease. The Alberta legislature clearly recognizes that the chiropractic claim is unsound and dangerous to the public health; for it refuses to allow patients suffering from syphilis or gonorrhea or from other communicable diseases—such as tuberculosis, typhoid fever and smallpox—to jeopardize their future welfare and the future welfare of their families and of the public, by trusting to the chiropractor for the cure of the disease. Why the legislature blinds itself to the jeopardy to the individual and to the social and economic loss to the community that result from the treatment, according to the chiropractic formula, of patients suffering from noncommunicable diseases, such as cancer, appendicitis, heart disease and even poplexy, is beyond understanding. The pretensions of the chiropractor are as unsound and as fraudulent in the one case as in the other, and no legislative enactment can alter the fact.

In considering the limitations imposed on the chiropractor by the act with respect to surgery and obstetrics, one's mind is led into further mazes of logic and of sophistry. The chiropractor may treat a depressed fracture of the skull, by manipulation of the spine and other manipulations incident thereto, but he must not operate. He may treat a patient already badly septic

from appendicitis, but unless by manual adjustments of the articulations of the spine and other incidental adjustments he can prevent rupture of the appendix, the patient has slight chance of recovery. He may treat, according to chiropractic doctrine, hemorrhage resulting from duodenal ulcer, but not the hemorrhage that sometimes complicates childbirth. The convulsions incident to pregnancy he may not treat, but the convulsions incident to diseases of the kidneys are within his field. This legislative attempt to define and limit the field of chiropractic activities seems at first glance to be without any clearly conceived purpose. It looks like an attempt on the part of the legislature to yield to the chiropractic demand, while limiting as much as possible his opportunities to do harm. But no one knows better than the chiropractors the end aimed at. The nose of the camel has wedged its way under the wall of the tent, and if the people of Alberta are not on the alert they may soon find the entire beast within, treating venereal and other communicable diseases and surgical and obstetric cases, and using drugs, just as if the chiropractor had the knowledge necessary to enable him to do so.

Posterity, as it reads this act—and the similar acts, no better and no worse, in force in the United States—will probably see in the background an ill concealed chiropractic lobby directing the actions of the legislature, while the legislators struggle to convince themselves that they are acting solely in the interest of the people and have at heart only the public health. Is it not possible for the present generation to do as much and to protect itself against the fraud?

Current Comment

STATE UNIVERSITIES AND POLITICS

Educators will view with much apprehension the statement that Governor Walton of Oklahoma has ousted several of the regents of the state university of Oklahoma, and also made conditions so uncomfortable that President Stratton D. Brooks, under whose administration the university has made excellent progress for several years, has resigned and accepted the presidency of the University of Missouri—an offer which he had recently rejected because of his deep interest in the University of Oklahoma. President Brooks had accepted the presidency of this institution, it is stated, under the definite understanding that it would be exempt from political influences, and without such freedom no state university can make satisfactory advancement. When it is subject to upheavals with each change of administration, there is bound to be a constant unrest in all departments, and instead of having a constant and steady growth from the educational point of view, the institution from necessity becomes a political machine in which the merits of its faculty will depend more on their work and influence as politicians than as educators. It is difficult to secure and retain competent and self-respecting

teachers under such circumstances. So far, little protest has been noted from the people of Oklahoma against the governor's action, and perhaps they do not realize the serious position in which their state university is now placed. In Texas, several years ago,¹ when former Governor Ferguson attempted to remove President Vinson and certain regents and teachers of the University of Texas, the result to himself was disastrous. So great was the furor that arose from educators throughout the state that he was promptly impeached by the legislature and suspended from office. So prompt and decisive was the reaction that any future governor of Texas will indeed be brave who makes a similar attempt. It is high time that all our state universities should be left free to develop as educational institutions, unhampered by interference from politicians.

A CLINICAL STUDY OF ECTOPIC PREGNANCY

Since Lawson Tait operated on a patient with ruptured tubal pregnancy in 1883, our knowledge of ectopic gestation has advanced almost to completion. The successful application of that knowledge, however, in making a diagnosis still varies with the number of atypical cases encountered. It appears to be impossible to diagnose correctly a considerable percentage of ectopic pregnancies. Fortunately, operative interference is indicated by the erroneous diagnoses as strongly as it is by the real pathologic condition. Under ideal hospital conditions, therefore, these errors are not necessarily serious. In the gynecologic clinic of the Johns Hopkins Hospital and University,² fifty cases of ectopic pregnancy came to operation between 1917 and 1922. Correct diagnoses were made in 72 per cent. of these cases. No pathognomonic symptom was present. A pelvic mass was not palpable in six cases, pelvic tenderness was absent in seven, there was no history of pain in two. There was a history of missed menstrual periods in only twenty-four of the cases, and of irregular menstrual bleeding in thirty-seven. The cervix was normal in thirty-eight, the fundus enlarged in only five, and in no instance was a bluish discoloration of the umbilicus noted; in view of many reports as to the value of this sign, its absence in such a series seems significant. The average hemoglobin content was 61 per cent. That a maximum quantity of blood had been lost by some patients in this series is evident. There were, in all, twelve infusions and seven transfusions. Convalescence was uneventful in forty cases, and stormy in ten. All of the patients made a complete recovery.

1. Politics Endangers a Great University, Current Comment, J. A. M. A. 68: 1916 (June 23) 1917; University of Texas Freed from Politics, *ibid.* 69: 1086 (Sept. 29) 1917.

2. Brady, Leo: A Clinical Study of Ectopic Pregnancy, Bull. Johns Hopkins Hosp. 34: 152 (May) 1923.

Rheumatism and Heart Disease.—Rheumatism ranks with tuberculosis in its mortality and disabling effects, and from the economic aspect alone the problem is not receiving the attention it deserves. The early recognition of rheumatism in young life and full and thorough treatment of its effects in convalescent hospitals would be of far-reaching importance in the amelioration of heart disease.—I. J. Davies, *Clin. Jour.* 52:166 (April 4) 1923.

Association News

THE SAN FRANCISCO SESSION

Hotel Reservations for Delegates

All members of the House of Delegates who wish to have accommodations at the Palace Hotel at San Francisco and who have not already made reservations should write *immediately* to the Palace. As has been repeatedly stated in THE JOURNAL, 150 rooms have been tentatively reserved for members of the House of Delegates, in order that every delegate might be assured of hotel accommodation. These rooms cannot be held until the very last moment. Those not wanted or not needed must be released in order that they may be available for members.

THE "M.D. SPECIAL" TRAIN

Reservations on the "M.D. Special" of the Northern Pacific Railway returning from San Francisco are rapidly being made. This trip with the various stop-overs, including four days spent in Yellowstone Park, is one that will long be remembered. Dr. A. W. Ide of St. Paul will personally conduct the tour and any information relative to the plans made will be gladly supplied by addressing him at 914 Northern Pacific Building, St. Paul.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALASKA

Influenza Epidemic.—Officers of the U. S. Coast Guard cutter *Haida* reported recently an epidemic of influenza among natives on the western Alaskan coast. They stated that several natives on Sannak Island had died from the disease, that at Morzhovs, practically every person was sick and that the food supply was very low. The *Haida* landed food, medicine and coffins, and assisted in burying the dead. A medical officer was left in charge.

CALIFORNIA

Physician Wins Malpractice Suit.—In the suit brought by Effie and Hugo Peterson against Dr. Fred H. Williams of Selma for \$54,000, alleging malpractice, the jury, March 24, brought in a verdict for the defendant.

Personal.—Dr. Ralph W. Homer and Dr. Thomas E. Cunnane, both of Ventura, were elected president and secretary, respectively, of the Ventura County Medical Society at the annual meeting, May 14, at Oxnard.—Dr. Walter Lenker, county health officer and superintendent of the San Bernardino General Hospital, will resign, July 1, and be succeeded by Dr. Emmet L. Tisinger, assistant superintendent at the county institution.—Dr. Stuart Z. Peoples, Petaluma, has been appointed chairman of the newly organized board of directors of the Sonoma County Public Health Association.—Dr. George C. Sabichi, Bakersfield, has been elected president of the Kern County Medical Society.

Hospital News.—The new Shriners' Hospital for Crippled Children, San Francisco, was dedicated, May 26.—The capacity of the Jewish Consumptive Relief Sanatorium, Duarte, will be increased by about fifty beds. The present capacity is ninety-two. Several new cottages, a new infirmary and a medical building will be erected.—The new five-story San Jose Hospital, San Jose, was formally opened, June 1. H. J. Bostwick, for many years superintendent of the Clifton Springs (N. Y.) Sanatorium, is manager of the institution.—A four-story hospital will be erected at Santa Ana for Orange County at a cost of approximately \$300,000. The new institution will be erected on a 7-acre site on Grand and East Washington avenues.—The Los Angeles County Hospital, Los Angeles, has changed its name and will in the future be known as the Los Angeles General Hospital.

CONNECTICUT

Sheppard-Towner Law Refused.—The Connecticut legislature passed an act in April directing the state department of public health to refuse the federal aid provided for under the Sheppard-Towner Law. This act was signed by the governor.

License Declared Illegal.—Dr. Stanley H. Osborn, commissioner of health of Connecticut, writes that through an oversight a certificate of license to practice medicine was issued to a Francis P. Trapani even though the college from which he claims graduation was not on the approved list. Trapani "was promptly notified within a week that he had been illegally licensed and that his license was not valid in this state." The attention of secretaries of other state licensing boards is called to this fact. The license was number E-682 and was issued April 19, 1923.

DISTRICT OF COLUMBIA

Dr. Cumming Arrives at Geneva.—Dr. Hugh S. Cumming, Surgeon General of the U. S. Public Health Service, arrived in Geneva, Switzerland, May 30, to arrange collaboration of the League of Nations' international health work with the United States.

School Medical Inspection Scored.—At a meeting of the board of education, Washington, May 2, it was decided that provisions for more extensive medical inspection in the public schools will be sought in next year's budget, if the board can obtain the support of local social service agencies interested in the work. Prof. Frank W. Ballou, Ph.D., superintendent of schools, stated that the present school medical inspection service is medical inspection in name only.

FLORIDA

State Medical Meetings.—At the fiftieth annual meeting of the Florida Medical Association in Jacksonville, May 15-16, the following officers were elected for the ensuing year: president, Dr. Herman Marshall Taylor, Jacksonville; vice presidents, Drs. John C. Vinson, Tampa, Robert F. Godard, Quincy, and Robert B. McIver, Jacksonville. Dr. Graham E. Henson was reelected secretary-treasurer. The next annual meeting will be held in Orlando, May 1924.—At the fourth annual convention of members of the Florida Railway Surgeons' Association, in Jacksonville, May 14, Dr. Henry C. Dozier, Ocala, was elected president; Dr. Julius C. Davis, Quincy, vice president, and Dr. Edmund W. Warren, Palatka, secretary (reelected).

GEORGIA

Personal.—Dr. Victor H. Bassett, acting health officer of Savannah, has been elected health officer of Tybee.—Dr. T. L. Anderson, Dalton, celebrated his one hundredth birthday, recently.—Drs. Albert L. Crittenden, Shellman, and Frederick D. Petterson, Culbert, have been appointed members of the state board of health for six year terms.—Dr. Elijah L. Connally, Atlanta, celebrated his eighty-sixth birthday, May 6. He was chairman of the first board of health of Atlanta.

ILLINOIS

Illegal Practitioner Arrested.—According to reports, Clifton G. Stone, River Forest, with offices in Chicago, was arrested, June 4, on a charge of practicing surgery without a license.

Personal.—The Decatur Medical Society presented Dr. Ellen F. T. Grimes of that city with a purse of gold, May 15, in recognition of nearly fifty years' practice of medicine.—Dr. Samuel C. Crispin, Danville, has been appointed county physician.

Legislature Would Cripple Health Service.—The lower house last week adopted an amendment to the omnibus bill which lowers the health department budget by \$80,000 a year. If the senate sustains the amendment, the result will be a disorganization of the medical field service, and a crippling of the department's plans for constructive work during the next biennium, according to Dr. I. D. Rawlings, state director of public health. The funds contemplated under the item stricken from the bill were to employ district health superintendents. The budget provided for a maximum of twenty-five superintendents, while the amendment, which allows \$20,000 annually, would provide for five.

Chiropractor Recalled from Board of Health.—A field physician of the state department of public health recently

persuaded a newly elected mayor of a down-state municipality to recall a chiropractor appointed on the local board of health. Two physicians who had been appointed on the same board declined to serve with the chiropractor. The state department of public health took the position that it neither had nor sought to secure the power of dictating the color of local boards of health but that it looked with distinct ill favor on the official participation of chiropractors in public health matters and that in case of untoward communicable disease development under the administration of chiropractic boards of health the department would promptly exercise its legal power to take charge of the situation at local expense.

Physicians Fined.—It is reported that Drs. Charles S. Mellen, Lewis A. Whipple, Charles S. Zeigler, Charles M. Noble, Perry F. Jones and W. G. Bonny of Peoria; Warren T. Heaps, Kewanee, and Hubert Miller, Wyoming, were fined \$500 and costs, each, by Federal Judge Fitzhenry at Peoria, May 17, when they pleaded guilty to violating the national prohibition law.—Dr. Henry L. Davis, West Frankfort, was fined \$200, on a charge of violation of the Volstead act, by Judge English, in East St. Louis, May 17. Dr. Mac H. D. McInnes, also of West Frankfort, according to report, was fined \$150 on the same charge.—Dr. Joseph D. Vertin, Oak Park, was fined \$1,000, May 28, by Federal Judge Cliffe, according to reports, when he pleaded guilty to violation of the Harrison Narcotic Law.

Chicago

Dr. Springer Resigns.—Dr. Joseph Springer, coroner's physician for twenty-six years, resigned, June 1. Dr. Irving Porges will succeed Dr. Springer.

"The Battle of Cook County."—It is reported that since January 1 there have been 284 deaths due to automobiles in Cook County, ninety-seven due to "moonshine," and ninety-five due to gun-shot wounds.

Chicago Society of Internal Medicine.—At the eighth annual meeting of the society at the City Club, May 28, the following officers were elected for the ensuing year: president, Dr. Robert H. Babcock; vice president, Dr. Solomon Strouse, and secretary-treasurer, Dr. Newell C. Gilbert.

Annual Baby Week.—The annual "Baby Week" occurs this year, June 3-10, during which time a drive for funds will be conducted. In addition to twenty-eight infant welfare stations in the city maintained by the Infant Welfare Society, the department of health has twenty-one devoted to infant welfare work. Last year, it is said, the welfare society cared for 12,000 babies at its stations.

Chicago Medical Society "on Vacation."—No further meetings of the society will be held until October, but the official bulletin of the society will be published as usual during the summer months. The society has agreed to operate a bureau for the purpose of informing physicians in advance of the financial reliability and pay propensities of a new patient before he renders expensive or extensive services.

New Court to Examine Druggists.—A second whisky permit revocation court was created in Chicago, May 28, at the prohibition office by a special staff of inquiry from Washington, D. C. The duties of the new court will be to examine druggists charged with filling bogus liquor prescriptions and to investigate illegal withdrawals of liquor. Judge Elmer Little has been ordered to Chicago from Washington to establish this second revocation court.

American Association for Thoracic Surgery.—The sixth annual meeting of the association was held in Chicago, May 29-30. Dr. Ralph Boerne Bettman, Chicago; Dr. Rudolph Matas, New Orleans, and Dr. William Lerche, St. Paul, were among the physicians who gave addresses. The following officers were elected for the ensuing year: president, Dr. Carl A. Hedblom, Rochester, Minn.; vice president, Dr. Nathan W. Green, New York, and secretary-treasurer, Dr. Charles Gordon Heyd, New York (reelected).

Plans at the University.—At the annual alumni banquet of the University of Chicago, President E. DeWitt Burton stated that he hoped to see a group of eight or ten colleges after the manner of Oxford and Cambridge universities, England, in the near future; also a great medical school growing out of the affiliation with Rush Medical College. Dr. Burton said that work on the new medical school, which has been delayed on account of high building costs, will soon be started; \$5,000,000 has been raised for this purpose; it is said the medical school will eventually have behind it nearly \$25,000,000.

INDIANA

General Vaccination at South Bend.—In the face of a smallpox epidemic, the board of health of South Bend has ordered all factory executives, school principals, and heads of all institutions, municipal, industrial and commercial, to see that all persons in their employ are vaccinated, within ten days, unless they have been successfully vaccinated within the last seven years. The isolation hospital is filled with smallpox patients; tents are being used to house the overflow of new arrivals. Vaccination will be without charge for persons unable to pay.

IOWA

Physicians Win Malpractice Suit.—The suit brought by Lillian Skelton against the Park Hospital Clinic, Mason City, to recover \$7,500 for alleged malpractice in the treatment of a fractured clavicle, closed, May 23. Judge Kepler directed the jury to find for the defendant. Dr. George M. Crabb and Mathew J. Fitzpatrick are in charge of the clinic.

Hospital News.—Contracts have been awarded and work will start at once on a hospital building for epileptic children at Woodward, which will house 200 children from the state colony. The building will cost \$124,000.—A home for the Sisters of St. Joseph's Mercy Hospital, Dubuque, is nearly completed. The building is three stories high and was erected at a cost of \$90,000.

KANSAS

Child Welfare Conferences.—A series of seventeen child health conferences have been arranged by the Ottawa County Health Department for children of preschool age. These conferences will be held in strictly rural communities.

Medical Laboratory Association.—At the annual meeting of the Kansas Medical Laboratory Association, in Lawrence, Prof. L. D. Bushnell, Manhattan, was elected president; L. C. Hill, Emporia, vice president, and Dr. William Levin, Topeka, secretary-treasurer.

MASSACHUSETTS

Appointments at Harvard University.—John H. Mueller, Ph.D., associate professor at Columbia University, New York, has been appointed assistant professor of bacteriology at the Medical School of Harvard University, Boston, and Dr. Hilding Berglund has been appointed assistant professor of medicine.

Boston Roentgenologist Receives Medal.—The Sir James MacKenzie Davidson medal was presented to Dr. Ariel W. George of Boston, at a joint meeting of the Roentgen Society of London and the electrotherapeutic section of the Royal Society of Medicine, in London, England, May 17. Sir Humphry Rolleston, president of the Royal College of Physicians, presided. Dr. George, the first American to receive this medal, addressed the meeting on "The Pathological Gallbladder."

Gift for Cancer Research.—The Hancock Life Insurance Company, Boston, has made an additional gift of \$20,000 to the Harvard Cancer Commission; \$5,000 to be used for purchase and installation of a diagnostic apparatus and \$15,000 to be placed in the permanent fund. The insurance company previously gave \$30,000 toward the building of the Huntington Hospital, which is devoted exclusively to cancer cases. The new gift will be used in the biophysical laboratory, which is also under the direction of the commission.

MICHIGAN

Wayne County Medical Society.—At the annual meeting of the organization in Detroit, May 21, Dr. Frank A. Kelly was elected president; Dr. George E. Frothingham, vice president, and Dr. Bruce C. Lockwood, secretary.

Dr. Novy at "Old Bart's."—Dr. Frederick G. Novy, professor of bacteriology, University of Michigan Medical School, Ann Arbor, presented an address of congratulation to the Prince of Wales at the celebration of the eight hundredth anniversary of St. Bartholomew's Hospital, in London, June 7-9.

Chiropractor on Probation.—According to reports, Miss Erma F. Parker, chiropractor of Hillsdale, was convicted of practicing medicine without a license, recently, and put on one year's probation on condition that she refrain from practicing her profession. The judge said "as I understand your profession of chiropractic, it is held in the decisions of the supreme court to be the practice of medicine; but that

the law does not preclude you from taking such studies as will enable you to pass the examination and then practice your chiropractic profession. And the prosecution here is only for the purpose of requiring people who do practice medicine in the state of Michigan, whether that practice is drugless or otherwise, to take such a course of studies as equips them to be able to distinguish the difference between diseases and ailments."

NEBRASKA

New Hospital Opened.—St. Catherine's Hospital of Sienna, recently completed at McCook, was formally opened to the public, May 16. The building was erected at a cost of \$100,000.

State Radiological Society Organized.—The Nebraska Radiological Society was organized, May 14, at a banquet of physicians held in Lincoln. Dr. Roscoe L. Smith, Lincoln, was elected president; Dr. Rolland C. Woodruff, Grand Island, vice president, and Dr. Roy W. Fouts, Omaha, secretary-treasurer.

NEW HAMPSHIRE

Personal.—Dr. William Holt, assistant superintendent of the Providence City Hospital, Providence, R. I., has been appointed director of the Lamont Infirmary, Exeter.

New Hampshire Medical Society.—At the one hundred and thirty-second annual meeting of the society at Concord, May 23-24, the following officers were elected for the ensuing year: president, Dr. Howard N. Kingsford, Hanover; vice president, Dr. Louis W. Flanders, Dover, and secretary-treasurer, Dr. Dennis E. Sullivan, Concord. The 1924 meeting will be held at Manchester. Resolutions protesting against the government paying for the training of ex-service men as chiropractors and in favor of the establishment of a four-year medical course in a New Hampshire medical school were adopted at the closing sessions. Dr. Herbert L. Smith, Nashua, presided.

NEW JERSEY

Health Exposition Succeeds.—More than 200,000 tickets were issued for the health exposition held in Newark, June 4-9. The city community and industrial welfare organizations occupied twenty-two of the sixty-seven "booths" assigned to the city. A parade through the streets of Newark opened the exhibition.

Illegal Practitioners Fined.—The following fines have been reported by the state board of medical examiners for individuals guilty of practicing medicine without a license: Alfred C. Pedrick, Passaic, whose license was revoked, Feb. 15, 1921, \$200; Michael Lisena, druggist of Newark, \$200 and costs; Thomas and Emma Di Santi, unlicensed chiropractors, of Newark, \$200 and \$500, respectively. This was Thomas Di Santi's second offense.

NEW MEXICO

Memorial to a Physician.—Plans have been practically completed for the Gilbert Memorial Hospital, which is to be erected at Alamogordo, in memory of the late Dr. Jesse R. Gilbert. The project is being financed by the citizens of the community and will cost approximately \$15,000.

NEW YORK

Memorials to Physicians.—The medical staff of the Hospital for Joint Diseases, New York, will erect a tablet to the late Dr. David Heine Levy, because of his services on behalf of crippled children. Dr. Levy was assistant surgeon at that institution.—A statue of the late Dr. John A. Wyeth has just been completed by the sculptor, Gutzon Borglum, "the gift of a grateful patient of the lamented surgeon."

New York City

Medical Alumnus Meeting.—The Association of the Alumni of the College of Physicians and Surgeons in the City of New York held a meeting, May 21. Dr. Karl M. Vogel, assistant professor of clinical pathology of Columbia University, spoke on "Around the World in a Sailing Ship."

Memorial to War Dead.—The Jewish Memorial Hospital at Dyckman Street and River Road was formally dedicated on May 27 to the memory of soldiers, sailors and marines who died in the World War. A bronze tablet was unveiled, which bears a bas-relief of a battlefield, and the names of the officers and directors of the hospital and the ladies' auxiliary. The hospital has 100 beds.

Weekly Journal Project Fails.—At the recent annual meeting of the state medical society a plan for a weekly journal for the organization was presented to the house of delegates by a committee, headed by Dr. Orris S. Wightman. The necessity for such a journal was conceded, but the matter was laid on the table to be taken up at some future time because of lack of funds to finance the proposition at the present time.

OHIO

From Ohio to California.—B. E. Swem and Glenn L. Potter, chiropractors of Lima, were found guilty of practicing medicine without a license by Justice Guyton, May 18, according to reports. Swem was fined \$25. Sentence was suspended on condition that he discontinue practice in Ohio. He stated that he would move to California.

OKLAHOMA

State Association Requests Investigation of Prices.—The Oklahoma State Medical Association at its thirty-first annual meeting, held at Tulsa, recently, called on Governor Walton to make an investigation of the prices of vaccines and serums in their state. It was shown that the people of Oklahoma pay almost twice as much for such products as do the people of Tennessee. A package of typhoid vaccine, for example, that sells in Oklahoma for \$1.20, sells in Tennessee for 80 cents; antitetanic serum selling in Oklahoma for \$2.50 sells in Tennessee for \$1.67. The association directed its secretary to place before the governor all available evidence in this matter. It is said the secretary was able to show that a certain wholesale serum house sent monthly, to the office of the state commissioner of health, a check for \$50. The governor, as well as the public, was advised that the present commissioner, Dr. A. E. Davenport, was in no way involved, since checks were received prior to his administration, and since he, on taking office, returned "the present" with the advice that all checks pertaining to his department should be made payable to the state of Oklahoma.

OREGON

Southern Oregon Medical Association.—At the annual meeting of the association in Ashland, May 8, the following officers were elected for the ensuing year: president, Dr. Charles B. Wade, Roseburg; vice president, Dr. Bertram R. Shoemaker, and Dr. William W. P. Holt, Medford, secretary, to succeed Dr. Alvane C. Seely who had served in that capacity since 1908. Roseburg was selected for the 1924 convention of the association.

PENNSYLVANIA

Chiropractic Licensing Bill Defeated.—For the second time this session, the house voted down the Dunn bill which would require licensing chiropractors and providing them a board of examiners.

Children's Hospital Burns.—The Children's Hospital of Pittsburgh was destroyed by fire, May 31. More than 100 patients, most of them crippled, were moved to the Magee Maternity Hospital nearby. There was no loss of life. The main building, many years old, was the center of a number of wings. The fire started in one of the wings and spread rapidly.

Philadelphia

Jefferson Medical College Commencement.—The ninety-eighth annual commencement was held at the Academy of Music, June 1. Dr. Edward H. Hume, dean of the Hunan-Yale College of Medicine in China, who received the honorary degree of doctor of laws, delivered the address. One hundred and forty-seven men graduated, and twenty-three members of the class received commissions as first lieutenants in the Medical Officers' Reserve Corps of the army. This is the first group of students to receive army commissions from Jefferson Medical College, as the result of having satisfactorily completed a course in military science and tactics.

RHODE ISLAND

State Medical Meeting.—The annual meeting of the Rhode Island Medical Society was held in Providence, June 7. Dr. Arthur T. Jones was elected president for the year 1923-1924; Drs. William F. Barry and Halsey DeWolf, vice presidents; Dr. Jesse E. Mowry, treasurer, and Dr. James W. Leech, secretary.

Making Veterans Chiropractors Opposed.—The Rhode Island Medical Society has adopted resolutions pointing out

that the training of veterans at public expense as chiropractors is not for the best interest of the veteran or of the public, and commending the director of the Veterans' Bureau for action taken by him looking toward its discontinuance. (Note.—Unfortunately, the U. S. Veterans' Bureau seems to have reinstated chiropractic as an approved calling for disabled veterans.)

TEXAS

Cornerstone of Rice Laboratory Laid.—Dr. Edgar Fahs Smith, emeritus professor of chemistry at the University of Pennsylvania Medical School, Philadelphia, laid the cornerstone of the new chemical laboratory of the Rice Institute, Houston, June 4. The laboratory, which will be erected at an approximate cost of \$1,000,000, will be ready for occupancy by the opening of the school in September, 1924, it is stated.

Hospital News.—The new Homan Sanatorium which will be erected on Mount Franklin, El Paso, several blocks above the present institution, will be five stories high and have 128 rooms. There will be departments for roentgen-ray, Alpine lamp and pneumothorax treatments, and a solarium for heliotherapy. It will cost approximately \$150,000, and be ready for occupancy about November 1.

VIRGINIA

County Medical Meeting.—At the first meeting held since 1919 of the Accomac County Medical Society, May 3, at Onley, Dr. Joseph L. DeCormis was elected president; Dr. William M. Burwell, vice president, and Dr. John W. Robertson, secretary-treasurer.

WASHINGTON

Prisoner a Leper.—All prisoners in the federal penitentiary at McNeil's Island, Seattle, were examined for leprosy, May 22, following the discovery that one of them was an advanced case of that disease.

WISCONSIN

Physician Fined.—It is reported that Dr. Friedrich C. Liefert, West Allis, was fined \$50 in the district court recently for failure to report a birth.

Diabetes Clinic.—A diabetic clinic was held by the Five County Medical Society, consisting of physicians from Barron, Polk, Sawyer, Burnett and Washburn counties, at Rice Lake, May 22. Dr. Harold E. Marsh, Madison, was the principal speaker.

Licenses Revoked.—Appeal to the Supreme Court has been taken by Dr. Argo M. Foster, Racine, whose license was recently revoked. The court also revoked the licenses of Drs. Frank L. Fancher and William G. Wheeler, of Racine, on charges of unprofessional conduct, it is reported.

Tuberculosis Sanatoriums.—The state board of control is now issuing a weekly report giving the number of patients in the various state and county tuberculosis sanatoriums, and the waiting list and number of entrants. There are at present 405 males and 352 females in the various institutions. There are forty-six on the waiting list and there are 100 vacancies. Some of the sanatoriums are filled but some are not and this accounts for the vacancies.

CANADA

Ontario Health Officers Association.—At the ninth annual conference of the association, held in Toronto, May 21-23, the following officers were elected: president, Dr. Theodore A. Lomer, Ottawa, Ont.; vice presidents, Drs. Charles N. Laurie, Port Arthur, Ont., and Fred Adams, Windsor, Ont., and secretary, Dr. J. J. Middleton. Dr. Frederick G. Banting read a paper on insulin.

Society News.—The Western Ontario Academy of Medicine held its final general session for the term of 1922-1923, May 25, in London. Dr. William Goldie, Toronto, spoke on "Hypertension"; Dr. Hugh Cabot, Ann Arbor, Mich., on "Small Renal and Urethral Calculi," and Dr. Thomas H. Morgan, New York, on "The Anatomy of the Pelvic Floor in Relation to Gynecology and Obstetrics."

GENERAL

American Otological Society.—At the annual meeting of the society in Atlantic City, N. J., May 23, Dr. John B. Rae, New York, was elected president; Dr. David Harold Walker, Boston, vice president, and Dr. Thomas J. Harris, New York, secretary-treasurer.

American Urological Association.—At the annual meeting of the association in Rochester, Minn., May 21-23, the following officers were elected for 1923-1924: president, Dr. James A. Gardner, Buffalo; vice president, Dr. Herman L. Kretschmer, Chicago; treasurer, Dr. James B. Cross, Buffalo, and secretary, Dr. Homer G. Hamer, Indianapolis.

American Pediatric Society Elects.—At its thirty-fifth annual meeting held in French Lick Springs, Ind., May 31-June 2, the American Pediatric Society elected the following officers for the ensuing year: president, Dr. David Murray Cowie, Ann Arbor, Mich.; vice president, Dr. Charles A. Fife, Philadelphia, and secretary-treasurer, Dr. Howard Childs Carpenter, Philadelphia.

Laryngologists Elect Officers.—At the annual meeting of the American Laryngological Association in Atlantic City, N. J., May 16-18, the following officers were elected: president, Dr. Joseph Payson Clark, Boston; vice presidents, Drs. Hubert Arrowsmith, Brooklyn, and Joseph B. Greene, Asheville, N. C.; secretary, Dr. George M. Coates, Philadelphia, and treasurer, Dr. George Fetterolf, Philadelphia.

Directory of Full-Time County Health Officers.—The U. S. Public Health Service has compiled a directory of all the whole-time county health officers of the United States from data furnished by state health officers. In the questionnaire sent for the purpose of obtaining the necessary information a "whole-time" county health officer was defined as "one who does not engage in the practice of medicine or any other business, but devotes his whole time to official duties." There are 233 health officers in all listed.

Society News.—The twenty-eighth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology will be held in Washington, D. C., October 16-18. Sir William Lister, London, England, will be the guest of honor. Fellows are invited to contribute papers for the scientific sessions.—The annual meeting of the Association of Women in Public Health will be held in Boston, June 18.—The annual New York State Conference of Health Officers and Public Health Nurses will be held in Saratoga Springs, N. Y., June 26-28.

Health Statements Discontinued.—The bi-weekly statements on national health legislation have been discontinued until after the present recess of Congress, it is announced from the Washington, D. C., office of the National Health Council. Mr. James A. Tobey, formerly Washington representative, has been appointed administrative secretary, with headquarters at Three Hundred and Seventy-Seventh Avenue, New York, after June 1. Through an arrangement with the American Child Health Association, Miss Lyne of that organization will temporarily serve as Washington representative of the council.

"Storm" at International Opium Conference.—At the opium conference in Geneva, Switzerland, May 30, the British delegate Sir Malcolm de Levigne introduced a resolution recommending that the League of Nations adopt the American plan to restrict the production of opium to strictly medicinal needs. A league council was decided on to work out the details to carry out the American proposals. It is expected that an international commission will be summoned to meet during the league assembly. A later report, however, stated that on June 1 the four members of the American delegation left the meeting, when the delegate from India insisted that the American proposal be made more precise.

Supreme Court Declines to Pass Judgment on Sheppard-Towner Maternity Act.—Neither of the two cases brought before the U. S. Supreme Court to determine the constitutionality of the Sheppard-Towner Maternity Act were properly before the court, and the court, therefore, dismissed them for want of jurisdiction. This leaves the constitutionality or unconstitutionality of the act undetermined and undeterminable until a case is presented in which there is evidence that constitutional rights of a citizen have been impaired, so as to present a direct issue under the act. When such circumstances arise, a citizen may appeal to the court on his own behalf. The right of a state to appeal on behalf of its entire body of citizenry was denied.

Veterans' Bureau Modifies Rule on Chiropractic Training.—Reference was made in THE JOURNAL, May 5, p. 1323, to an order of the U. S. Veterans' Bureau to the effect that ex-service men undergoing rehabilitation would not be permitted to take vocational training in chiropractic. This position has been reversed by an order issued May 18, which permits beneficiaries to be entered on a course of training in chiropractic, but only when, prior to original induction, they had the "educational preparation and qualifications as shown

by satisfactory credits and evidence required for entrance into a Class A medical college." Even then they can be entered in only those chiropractic schools located in states where the practice of chiropractic is legal, and shall be required to sign a statement of intent to practice only in a state or states where such practice is legal.

"Have a Health Examination on Your Birthday."—A nationwide movement for yearly health examinations for everybody has been launched by the National Health Council. The campaign slogan is "Have a health examination on your birthday." The goal of the council is the examination of 10,000,000 persons in the year which starts July 4. Dr. Donald B. Armstrong, executive officer of the council, states that more than \$3,000,000,000 is the annual loss to this country from preventable diseases and deaths. It is believed that the carrying out of the proposed plan will be a factor in increasing the span of life, that if the attention of these 10,000,000 people is called to preventable physical defects and they profit by hygienic advice and medical attention given them, there is no reason why the average length of life in this country cannot be increased at least five years in the next decade.

Annual Report of Rockefeller Foundation.—The activities of the Rockefeller Foundation during 1922 are stated as follows in the president's report:

Pledged \$1,125,000 toward new buildings for the College of Medicine of the State University of Iowa.

Contributed to the current maintenance of two medical schools in Canada.

Endowed chairs of medicine and of surgery in Hongkong University.

Completed the buildings, strengthened the faculty, and wholly financed the Peking Union Medical College.

Agreed to appropriate \$300,000 toward laboratories and premedical teaching in two Chinese institutions and in one missionary university in Peking.

Helped nineteen hospitals in China to increase their efficiency in the care of patients and in the further training of physicians and nurses.

Promised to cooperate in the rebuilding and reorganization of the medical school of Sao Paulo, Brazil, and of the medical school of Siam, in Bangkok.

Made a survey of medical schools in Austria, Czechoslovakia, Germany, Hungary, Poland and Switzerland, and studied English and Scotch methods of clinical teaching.

Sent medical men as visiting professors or consulting officers to China, the Philippines, Brazil and Salvador.

Arranged for a commission of medical scientists from Strasbourg to visit the United States and England.

Gave emergency aid in the form of medical literature, laboratory supplies and apparatus, fellowships and stipends to promising investigators and teachers in the Pasteur Institute of Paris and in many other European centers.

Pledged \$2,000,000 toward the site, building and equipment of a school of hygiene in London.

Cooperated with state boards of health in maintaining institutes and instruction for health workers.

Shared in malaria control in thirty-four county and thirty-two town demonstrations in ten southern states, and continued field studies and surveys in the United States, Porto Rico, Nicaragua, Brazil, Palestine, Australia and the Philippines.

Cooperated with the Mexican and other governments in steadily restricting the prevalence of yellow fever.

Resurveyed centers of hookworm infection in four southern states, and carried on control work in twenty-one foreign governmental areas.

Took part in promoting full-time health service in 163 counties in eighteen states of the United States, and in several counties in Brazil.

Agreed to support for five years the disease-reporting service, and for three years the international exchange of health personnel program of the health section of the League of Nations.

Provided fellowships in public health, medicine, nursing, chemistry and physics to 237 advanced students from twenty-three countries.

By consultation and the providing of personnel aided public health administration in the United States, Australia, Brazil, Canada, Central America, Czechoslovakia, France and the Philippines.

Contributed to mental hygiene projects, demonstrations in dispensary service, hospital information service, surveys of nursing education and hospital management, the organization of tuberculosis work in France, the training of French health visitors, and other undertakings in the fields of public health and medical education.

LATIN AMERICA

Society Elections.—The Sociedad Argentina de Pediatría recently elected Drs. M. Santas, president; J. M. Obarrio, vice president; A. Casaubón, secretary; E. A. Beretervide, recording secretary; R. Iribarne, librarian; C. S. Cometto, treasurer, and A. Segers and J. P. Garrahan, members of the board.

Personal.—The government has appointed, as official delegates to represent Argentina at the scientific congresses to be held at Paris and Strasbourg between May and October, Drs. Fernando Pérez, N. Lozano and J. A. Gabastou, all of Buenos Aires.—The medical students of San Salvador recently presented the gold medal of their society to Dr. J. Llerena on his retirement from his connection with the medical school. It was stated that more than twenty generations of students had been trained by him in obstetrics. *El Salvador Médico* for April reproduces the addresses at the

presentation celebration.—Prof. E. Rabello of Rio de Janeiro has been appointed the representative of the medical faculty at the scientific congresses and exposition of hygiene at Strasbourg. The government has sent by Prof. Borges de Costa a collection of radio-active minerals, films, casts and other data to represent the public health service of Brazil at the Strasbourg exposition.—Dr. A. da Cunha of the Brazilian delegation to the recent Pan-American Conference at Santiago, described with moving pictures the work of the public health service in Brazil and of the state serum institute.

FOREIGN

First Graduates of Keio College.—The first sixty-nine medical students of the Keio University Medical College, Tokyo, graduated in April. The college was established four years ago by Dr. S. Kitasato, the bacteriologist.

Antipium Pills Forbidden in Shanghai.—The city magistrate of Shanghai has forbidden the importation and sale of "red pills" (antipium pills) on the ground that they contain various drugs and are worse, in their effects, than morphin.

Insanity in Holland.—According to the official statistics, the thirty-three psychiatric institutions in the Netherlands had 15,811 inmates, Jan. 1, 1921 (7,842 men and 7,969 women), against 15,080 (7,583 men and 4,797 women) on the corresponding date in 1919. The population of the Netherlands is said to be 6,831,231.

German Physicians in New Danish Provinces.—Our exchanges state that the Danish government has granted permission to practice medicine in North Schleswig to duly qualified German physicians who were born in Schleswig or had lived there before 1918 and been admitted to practice in Germany before 1923.

Prize for Anthropologic Research.—Dr. Kleiweg de Zwaan, of the University of Amsterdam, has instituted a triennial prize of 2,500 francs to be awarded to the man or woman irrespective of nationality, who, in the course of three years, publishes the results of meritorious research in anthropology, prehistoric or otherwise.

Death from Thyroid Tablets.—The *Hygienisk Revy* relates that a child, aged 3 years, died, and another, aged 2, is seriously ill from eating thyroid tablets at Domsjö. The children were brought to the hospital immediately, but one died the same day. This is said to be the first direct fatality from thyroid tablets known in Sweden.

Centennial of the Geneva Medical Society.—The Société médicale de Genève was founded in 1823, and its centennial was celebrated, May 12, with much ceremony. The organized pediatricists and radiologists of Switzerland held their annual meetings there the same week, besides the inauguration of the national photography exposition with its special section devoted to medicine and surgery.

Union of Chinese Medical Schools.—The North China Union Medical College for Women and the School of Medicine of the Shantung Christian University have merged. Ground has been purchased and funds are already in hand for new buildings to be erected at Tsinanfu. The Shantung Christian University is contemplating opening the premedical departments to women students also.

Renting the Home of the Berlin Medical Society.—The Langenbeck-Virchow Haus was built for the headquarters of the German Surgical Society and the Berlin Medical Society. Its upkeep has been such a burden that the officials have rented the building to the Siemens and Halske firm for a period of ten years, with the provision that the societies shall continue to have the use of the building for meetings.

Special Classes for Feeble-minded in Japan.—Following investigation by a committee appointed by the department of education, special classes for feeble-minded children in all primary schools of Japan will be established. Among nearly 5,000,000 primary school children, 150,000 are said to be mentally deficient. As they show improvement in the special classes, these children will be transferred to the regular grades.

Gullstrand Prize Endowment.—To further ophthalmologic research and honor Professor Gullstrand, the Swedish Medical Association in 1922 founded a prize fund to award a gold medal. It is to be called the "Gullstrand Medal" in honor of Dr. Alvar Gullstrand, professor in physiologic and physical optics at the Upsala University. This prize will be awarded for the first time in 1932 and thereafter each tenth year, without regard to nationality.

Venereal Disease in Iceland.—Up to 1890 there were, according to official reports, no venereal diseases in Iceland. Gonorrhea became endemic soon thereafter, and syphilis followed in 1900. The period 1911 to 1920 shows a yearly average of from 130 to 160 cases of gonorrhea, and about twenty-three cases of syphilis and seven or eight of soft chancre. Puerperal fever is common, attributable to the fact that physicians assist at only 4 per cent. of all births. The population was 47,000 in 1800, but is now 98,000; the general death rate has averaged 14 per thousand since 1910.

The Law Against Quackery in Sweden.—The law of 1688, which was in force in Sweden up to 1916, ordered fines of from 12.50 to 25 kronor (about \$3 to \$6) for persons convicted of quackery. The fines being so small, the quacks paid and continued their business. By the law of 1916 the fines were raised to from 50 to 1,000 kronor, or one year's imprisonment in certain cases for not duly licensed physicians undertaking to cure any of a certain specified list of diseases, if the treatment is dangerous to the life and health of the patient. But there is nothing to prevent any one from administering sugar, for instance, for a period during which the diseases may become incurable. An editorial in the *Hygienisk Revy* protests against this law which aims at regulating, rather than abolishing, quackery.

Course on Medical Hydrology.—The University Extension Board of the University of London has arranged a course of lectures for medical practitioners and senior students on medical hydrology in cooperation with a joint committee of the International Society of Medical Hydrology and the Section of Balneology and Climatology of the Royal Society of Medicine. The course will begin May 29 and end June 4. It is intended for those who are engaged, or propose to engage, in spa practice, for medical officers of hydrotherapeutic institutions and sanatoriums and for others interested in the subject. Demonstrations of various forms of bath will be given at the Special Surgical Hospital, May 29, and of the recording kata-thermometer and other methods of controlling open-air treatment, at the National Institute for Medical Research, May 30.

Society News.—The French Association of Pediatrics will hold its next congress in Brussels in September, under the presidency of Dr. M. Péchère. Pneumococcal infections in infancy; diagnosis and treatment of intestinal obstruction, and the treatment of abnormal children, are the subjects that will be discussed.—The congress of the Association of French Gynecologists and Obstetricians will be held in Geneva, August 9-11.—The National Association for the Prevention of Tuberculosis will hold its ninth annual meeting in Birmingham, England, in July.—The National Association for the Prevention of Infant Mortality and the National Baby Week Council will hold a joint conference on infant welfare, July 2-4, in London. The Right Hon. Neville Chamberlain, minister of health, will preside.—The annual session of the Sectional Congress of Medicine was held in Tokyo, March 31-April 4. The societies for tuberculosis and roentgenology, recently established, held their first meeting during the session. About 1,200 papers were read before the sections.—The third annual congress of German otorhinolaryngologists was held at Kissingen, May 17-19.—The twenty-fifth anniversary of the Dutch Orthopedic Society was held at the University of Amsterdam, May 25-26, under the presidency of Dr. Murk Jansen.

Personal.—Dr. Polybius N. Coryllos, Athens, Greece, has accepted the appointment as professor of clinical surgery at Cornell University Medical College, New York. Dr. Coryllos was formerly a chief surgeon of the Greek army.—Dr. Arnold Chaplin has been nominated president of the section of the history of medicine of the Royal Society of Medicine.—Dr. S. J. Clegg, deputy health officer of Newcastle-on-Tyne, England, has been appointed medical officer of health for Durban, South Africa.—The Swedish Medical Association has recently elected to foreign membership Profs. L. Bianchi of Naples, G. Miugazzini of Rome, F. Samberger of Prague, and Dr. K. Hübschman of Prague.—A fund is being collected for the purpose of presenting a medal to Professor Menetrier of Paris. A bronze replica of the medal will be given to each person subscribing 50 francs. Subscriptions are being received by the publishing firm of Baillière et Fils, 19, rue Hautefeuille, Paris.—Prof. J. Teissier of Lyon having recently been elected to membership in the Rome Academy of Medicine, went in person to be installed, and tell of his latest research on nephritis.—Professor Lafora of Madrid has left for Buenos Aires, where he has been invited to deliver a course of lectures in the med-

ical school.—Eighteen physicians left Copenhagen in May for a two weeks' trip to the Czechoslovakian watering places. Eight of the party are the guests of the Czechoslovakian government.

Deaths in Other Countries

Sir Shirley F. Murphy, first medical officer of health for London, England; aged 74; died, April 27, of influenza. Dr. Murphy was awarded the Jenner medal by the Royal Society of Medicine, and the Bisset Hawkins medal by the Royal College of Physicians.—Dr. Charles J. S. Hancock, surgeon major, Indian Medical Service, at Leytonstone, England, May 8.—Dr. Charles Niven, professor of natural philosophy, Aberdeen University, Scotland, May 11.—Dr. George H. Hume, at Newcastle-on-Tyne, aged 77.—Dr. H. Luce, director of the internal medicine department of the General Hospital at Hamburg, aged 56.—Dr. Mewes, director of the Anatomy Institute at Königsberg, aged 54.—Dr. E. F. Polito, a dermatologist and urologist of Buenos Aires.—Dr. V. Remedi, professor of surgery at the University of Siena, author of works on hernia and the surgery of the pancreas.—Dr. J. Fein, professor of laryngology at the University of Vienna.—Dr. J. Furth, an officer of the Vienna Medical Society.—Dr. Dumoulin, a medical officer of the Belgian army in the occupied region in Germany.—Dr. Repelin, formerly professor of gynecology at Lyon.

Government Services

Bandits Release Major Allen

Major Robert A. Allen, M. C., U. S. Army, who was captured by Chinese bandits and held for ransom on Paotzuku Mountain for several weeks, was released, May 30, it is reported.

Citizens' Military Training Camp

The Secretary of War and the Citizens' Military Training Camps Association of the United States announce that from August 1 to September 1 the Red, White and Blue Courses of the Sixth Corps Area (Illinois, Michigan and Wisconsin) will camp at Camp Custer, Mich. Employers are requested to select five picked men in their employ between the ages of 17 and 24, and give them two weeks' additional vacation with pay, on condition that they take the month's training at Camp Custer. Every man is required to be vaccinated against smallpox and typhoid fever before reporting at camp. Vaccine will be sent, on request, to the family physician.

Assistant Director of Veterans' Bureau Appointed

Capt. O. W. Clark, Cincinnati, has been named assistant director in charge of the Rehabilitation Division of the Veterans' Bureau. The position was formerly occupied by Col. R. I. Rees, detailed from the War Department; but has been vacant nearly five months. Captain Clark will assume his duties immediately and will aim to effect many changes in this division. Accompanying the announcement was a message that there will be a saving of approximately \$7,500,000, as a result of the activity of the new director in reorganizing the rehabilitation work.

Veterans' Bureau Tuberculosis Course Repeated

A second course in tuberculosis, at New Haven, Conn. (THE JOURNAL, June 2, p. 1627), began, June 1, and was attended by a large number of physicians of the Veteran's Bureau staff. It is expected that this course will be repeated from time to time until all physicians in the bureau have received tuberculosis training. A similar course has heretofore been in operation at the Fitzsimons Hospital, Denver.

To Be Commissioned in the Navy

The following physicians have been examined and found qualified for commission as lieutenant (junior grade) in the Medical Corps of the U. S. Navy: Rob Roy Doss, South Boston, Va.; Claude S. Mumma, Chicago; Frederick C. Greaves, Duluth, Minn.; H. L. Pugh, Charlottesville, Va.; Caldwell J. Stuart, University, Va.; Oliver A. Smith, Atlanta, Ga.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 14, 1923.

International Congress of Refrigeration

The fourth International Congress of Refrigeration will be held in London about June, 1924. The subjects to be discussed will be verification of experiments undertaken before the war by the Russian scientist, Bakhmetieff, relating to the action of cold on living organisms; cryotherapy in the treatment of certain skin diseases; use of refrigeration in anatomy; biologic study of milk preservation by refrigeration; bacteriology of ice cream; biologic study of chilled and frozen foods; use of frozen eggs in food preparation; refrigeration by the circulation of defibrinated blood; refrigerating installations in hospitals and dwelling houses; operation and maintenance of refrigerating installations from the point of view of health and hygiene; handling of frozen produce; molds in cold stores, and the means of combating them; and molds in meat and other frozen produce. D'Arsonval proposes to contribute a report on the preservation of serums and vaccines by refrigeration. As will be seen, many of the subjects are of medical interest. The organizers of the congress desire to get in touch with members of the medical profession who would be willing to contribute papers on the uses of artificially produced cold with regard to medical research and practice. The secretary is Mr. John D. Farmer, Dartford Iron Works, Dartford, Kent, England.

The Mental Treatment Bill

As the result of a conference between administrative authorities, medical superintendents of mental hospitals and specialists, a bill has been read a second time in the House of Lords permitting, without certification, mental treatment in institutions. The bill was introduced by the Earl of Onslow, who pointed out that the present law was defective, as scientific knowledge as to treatment was not sufficiently advanced when it was passed. The importance of the subject was shown by the fact that there are now 120,000 certified lunatics costing \$30,000,000 a year. To these are added 22,000 fresh cases every year, of whom 32 per cent. are discharged as recovered. Besides certified lunatics there are 150,000 feeble-minded persons, and a portion of the population (which some have estimated as high as 10 per cent.) are dull and backward mentally. Lastly, there are the cases of neurasthenia and psychoneurosis. Much of this might be prevented by early treatment. As the law stands, it is very difficult to provide for treatment of incipient mental disease without certification, and there is a strong feeling against certification. At present, voluntary boarders can be received in private licensed houses but not in public institutions. The present bill is surrounded with every safeguard against misuse: 1. The institution in which the patient is received must be approved by the board of control (the body appointed by the government to supervise lunacy administration) and under frequent inspection by that body. 2. There must be a recommendation from two physicians. 3. The patient must be admitted only at his own request, unless he is incapable of volition. Then the recommendation of the two physicians must be countersigned by a magistrate or clergyman personally acquainted with the patient. The patient will be admitted for a maximum period of six months, which may be extended for the same period. If he has not recovered within a year, the ordinary provisions of the law as to lunacy can be applied, but at any time during the year he can leave the institution by giving forty-eight hours' notice, or he may

be discharged by the superintendent or the board of control. Patients may be admitted into either mental hospitals or general hospitals. The latter have the great advantage of keeping them from contact with the certified insane.

Regulations for the Sale of Condensed Milk

The ministry of health has issued regulations providing for a uniform method of labeling all tins containing condensed milk or condensed skimmed milk, whether sweetened or unsweetened, and for specifying the composition in terms of milk solids. All condensed milk must be labeled with one of four declarations:

- Condensed full cream milk, unsweetened. This tin contains the equivalent of (a) pints of milk.
- Condensed full cream milk, sweetened. This tin contains the equivalent of (a) pints of milk, with sugar added.
- Condensed machine-skimmed milk (or condensed skimmed milk), unsweetened. Unfit for babies. This tin contains the equivalent of (a) pints of skimmed milk.
- Condensed machine-skimmed milk (or condensed skimmed milk), sweetened. Unfit for babies. This tin contains the equivalent of (a) pints of skimmed milk, with sugar added.

The declaration must be printed in dark block type of prescribed size on a light ground with a surrounding line, and must bear no other printed matter. The label must also bear the name and address of the manufacturer or the dealer in the United Kingdom for whom the milk is manufactured. It is forbidden to place on the tin any comment, explanation or reference in regard to the statement of equivalence, or to the words "machine-skimmed," "skimmed" or "unfit for babies," or any instructions as to dilution unless they clearly specify that the resultant milk is not of equivalent composition to milk or skimmed milk, or unless the resultant fluid correspond in milk solids to milk of the standard set by the regulations. Whenever the word "milk" appears on a tin containing condensed skimmed milk, it must be qualified with the words "machine-skimmed" or "skimmed." The regulations prescribe these standards:

Description of Condensed Milk	Percentage of Milk Fat	Percentage of All Milk Solids, Including Fat
Full cream, unsweetened.....	9.0	31.0
Full cream, sweetened.....	9.0	31.0
Skimmed, unsweetened .....	...	20.0
Skimmed, sweetened .....	...	26.0

Humane Slaughtering: The Jewish Method

A movement is on foot for the enforcing of humane methods of slaughtering animals, and incidentally the Jewish method of slaughter has come under the denunciation of the reformers as anything but humane. The evidence is quoted of two eminent physiologists, the late Sir Michael Foster and Professor Starling, that cattle may remain conscious for a short time after the cutting of the carotid arteries. In a letter to the *Times*, Prof. Leonard Hill states that this view was based on a mistaken supposition that the vertebral arteries supplied the brain of these animals as they do in man, and that these arterics, shielded by the bone and not severed by the cut, might convey blood to the brain for a few seconds after the cutting of the carotids. But Professor Hill has pointed out, in a report which he made on methods of slaughter, that the vertebral arteries in cattle supply the muscles of the neck and not the brain. He holds that the evidence that stoppage of the carotid arteries causes loss of consciousness is overwhelming; and also that a big injury is not felt at the moment of infliction. The casting of the animal before the severing of the carotids has also been described as inhumane, but Professor Hill says that it is no more inhumane than the roping down before the application of the "humane killer."

Recent Advances in Medical Education in England

Sir George Newman, chief medical officer of the board of education, and also chief medical officer of the ministry of health, has addressed an important report to the minister of health on recent advances in medical education in England. He insists on the importance of the preliminary sciences, and says that, as the center of knowledge is forever shifting, we are in need of a closer association between physics and chemistry, on the one hand, and biology and medicine on the other. When the student enters the professional part of his course, physics and chemistry must be deeply integrated into physiology, pharmacology and pathology, and practically applied in his clinical studies. Anatomy is the foundation of the science and art of medicine, but it became a restricted subject neither biologic in setting, nor physiologic in purpose. The student was overburdened with detail and could pass examinations only by cramming. The anatomy was that of the dead, not the living, body. The subject should be taught from the point of view of its applications. Lecturing on physiology has been overdone, but now has been much reduced, and the student needs less if previously well grounded in biology, physics and chemistry. Physiology is now being taught more adequately, and the student is learning to think of disease as disordered physiology. In some schools, he is being taught in his second year to study cases in the hospital as illustrative of physiologic principles. Professor Dixon of Cambridge says: "To state that the future of medicine lies in pharmacology may sound fanciful, but the most hopeful of all signs of the progress of medicine is the progress of the science of treatment." In this country, synthetic chemistry has not been widely developed, and we have relied on the continent for new anesthetics, hypnotics, vasodilators, anti-pyretics, diuretics and synthetic purgatives. As a remedy, there is urged the establishment of an institute of experimental therapeutics, which should comprise all branches of pharmacology—chemical, experimental and clinical. The British method of the clinical study of medicine and surgery is described in the new regulations as consisting of (a) clerks and dressers, (b) bedside teaching, (c) clinical lecture demonstrations, (d) clinical teaching in the outpatient department, (e) clinical work in the special hospitals and (f) junior house appointments. Sir George Newman holds that this system has made English medical education the most practical in the world. Much importance is attached to the recent introduction into our hospitals of university clinics (clinical units). On the question of whole-time staffing, the view is expressed that the head of the clinic should be permitted to undertake such outside practice as would not interfere with his official duties. For the rest of the staff, the object should be not only the setting apart of one or more whole-time clinicians for educational work, but the creating of a team of clinicians who are also laboratory workers under the control of a professor, so that the education of the student may be conducted on lines that will produce the best treatment for patients and advance knowledge. In conclusion, four requirements are emphasized: 1. Integration is needed in the medical course to avoid overburdening the student with details, so that he may "reflect, comprehend and grow." 2. Clinical study must remain the sheet anchor of education; instruments and apparatus should be only supplementary to observations by the organs of sense. 3. The load of examinations must be lightened; the present system remains a shackle on education. 4. Postgraduate courses are necessary to keep the practitioner informed of new medical knowledge and its applications. In London, a central scheme is necessary for the graduates of the twelve schools, and for physicians from the colonies and foreign countries.

PARIS

(From Our Regular Correspondent)

May 11, 1923.

Laying the Corner Stone of the
"University City"

The corner stone of the "University City" was laid, May 9, in the presence of M. Léon Bérard, minister of public instruction; M. Paul Strauss, minister of public health; Prof. Paul Appell, rector of the University of Paris; the deans of all the faculties of the University of Paris; Dr. de Lobinière-Harwood, dean of the Faculty of Medicine of Montreal; Dr. Rousseau, dean of the Faculty of Medicine of Quebec, and many university professors. The men and the women students were represented by the respective presidents of the general associations. A student, M. Kauck, read an account of the origin of the University City, which had been engrossed on parchment and which was afterward enclosed in the corner stone of the edifice, together with a number of coins of this year's mintage, to perpetuate the memory of the establishment.

This is the first of a group of buildings intended to provide healthy and economical lodgings for 350 men and women students of limited means. They are to be erected on the leveled fortifications of Paris, at the southern extremity of the Latin Quarter, on a plot of ground deeded by the city to the University of Paris. The funds for the buildings themselves were secured through the liberality of M. Emile Deutsch de la Meurthe, who made for this purpose a gift of 10 million francs. The hope is entertained that the foundation established by M. Deutsch de la Meurthe will be followed by others, all destined to provide for the needs of students and due to the initiative of generous minded persons, whether they be French or foreigners, who are friends of France. This group of buildings will form the University City so called, and will constitute a suburb for students, located between the Montsouris Park and another park to be specially laid out for them through the solicitude of the city of Paris. As is impressively stated in the parchment roll deposited in the corner stone, "Thus will have been established a new focus of French and human culture, where three thousand students, coming from all countries of the world, provided with books, sunlight and fresh air, brought together in affectionate emulation and reflecting honor on the oldest university of Europe [founded in the second half of the twelfth century], will work together in concert to bring about a harmonious development of their minds and bodies, which will redound to the progress of science and to an understanding among the nations they represent."

Progress of Physical Education in France

The law of Dec. 21, 1922, assigned to the budget of public instruction an appropriation of 700,000 francs to provide for the expense of physical education in the school curriculum. A considerable sum was appropriated for the organization in the several departments of short courses in physical education intended for the training of personnel to give instruction in the primary public schools. To assure the carrying out of these measures, the minister of public instruction has issued an order the purpose of which is to prepare the teachers for the task that has been imposed on them by organizing short courses of intensive training for the men and women teachers already on duty, thus completing their preparation and giving them the necessary instruction to secure unity of method and action.

Respects Paid by Japanese Scholars to Pasteur

Count Matsuda, ambassador from Japan, accompanied by the high officials of the Japanese embassy, came recently to deposit two beautiful vases, representing Japanese art, in the

crypt of the tomb of Pasteur, at the Institut de la rue Dutot. The ambassador has also turned over to Dr. Roux, director of the Pasteur Institute, the sum of 108,000 francs, collected by the scholars and scientists of Japan. In a short presentation address, Count Matsuda gave expression to the admiration and gratitude felt by his compatriots for the work of Pasteur. Dr. Roux, in turn, expressed his thanks in the name of his colleagues and emphasized the fact that Japan was one of the nations which had understood how best to apply the discoveries of Pasteur, not only for the protection of public health but also for the progress of their industries, especially the raising of silkworms, which is of such great economic importance for the country. He also referred to the valuable contributions to science made by Japanese scientists, several of whom had worked in the laboratories of the Pasteur Institute at Paris.

The League Against Cancer

The Franco-Anglo-American League against cancer has just held its annual general assembly under the chairmanship of M. Paul Strauss, minister of public health, assisted by M. Justin Godart, president of the league; the duchess of Uzès; Professors Hartman and J. L. Faure, and others. Minister Strauss delivered the first address, in which he emphasized that in this combat which we must wage with energy against cancer, the ravages of which are on the increase, there is room for various types of activity, but that it was important that all good endeavors be directed by one idea and a common program. M. Justin Godart announced the creation in Spain of an organization similar to the Franco-Anglo-American League, and expressed his satisfaction at seeing evidence of an awakened international interest in the movement. The final address of the conference was given by Professor J. L. Faure, who spoke on the surgical treatment of cancer.

BELGIUM

(From Our Regular Correspondent)

May 3, 1923.

Reorganization of Public Health Service on the Congo

With a view to securing a larger number of physicians for the Congo colony, the minister for the colonies has recently completely reorganized the public health service on the Congo. In accordance with the new royal decree, the direction of the public health service has been placed in the hands of the governor general, and in the several provinces the responsibility rests on the vice governor generals. The personnel of the public health service comprises the physicians, pharmacists and the native and European assistant physicians. The physicians are divided into three classes: the directing physicians, public health physicians and laboratory physicians, some of the physicians having a fixed residence, others being itinerant. As the essential condition of appointment, candidates must have successfully passed the final examination of the Ecole de médecine tropicale or must hold a diploma of a school of tropical medicine. In order to be in line for advancement, a physician must give evidence of special knowledge in matters pertaining to public health in the tropics. Medical assistants are, in part, Europeans and, in part, native physicians. In order to secure an appointment, a native must be the holder of a diploma issued by a medical school in the colony.

Industrial Diseases

I have on several occasions called attention to the activities of public health and labor organizations in the campaign against industrial diseases, which, up to the present time, have not received the same official recognition as industrial accidents.

Before the Society of Legal Medicine of Belgium, Dr. de Laet has developed a plan that he recommends for the study of industrial diseases and for the organization of the campaign to combat them: (1) the institution of observations on the ground, which may be entrusted to the factory physician; (2) the creation of institutions for thorough examinations, treatment and the centralization of studies, which will give rise to the clinic of industrial diseases, and (3) the establishment by legal enactment of the factory physician and the clinic for industrial diseases, the provision of modes of indemnification, and a division of the burden, which would result in legislation protecting workmen against industrial diseases.

An advance draft of a law, published in 1920, provides for the indemnification of the workman who is the victim of a recognized industrial disease, according to the degree to which he is temporarily or permanently incapacitated from work. It regulates the details of payment, and states the conditions that give rise to a claim. It provides for the creation, under the name of Caisse d'assurance contre les risques de maladie professionnelle, of a fund for the purpose of providing for the payment of allocations due in connection with cases of recognized industrial disease. The fund, according to the draft, will derive its resources in part from the state and in part from the heads of the establishments in whose industries recognized industrial diseases are wont to arise.

Unfortunately, in these times of financial stress this proposed law runs the risk of being deferred indefinitely. For this reason, Dr. de Laet, in face of the danger which is becoming more and more threatening, has a proposal that he thinks will effect a prompt solution of the problem. Since the workmen cannot hope, within the immediate future, to obtain any considerable aid from the public authorities, they might possibly do well to establish a mutual aid system. Their large unions have preferred to establish *cliniques de travail* (industrial clinics) themselves rather than wait for the authorities to create them. In the same manner, why cannot the *caisse d'assurance* (the insurance fund), provided for in the proposed law, derive its resources from the labor unions and the employers, together with a very moderate subvention from the state? Even though this solution were only temporary, it would have at least the great advantage of furnishing adequate care and compensation to sufferers from industrial diseases.

Belgium as a Radium Center

Since Belgium has become one of the foremost radium-producing countries, it was only natural that the Société médicale du radium should be formed. This society was founded for the purpose of supplying its members with radium in the most up-to-date form of applicators and in sufficient quantities so that it can be applied according to the actual indications.

Since the handling of radium requires special scientific training, with the view to contributing by mutual instruction to the avoidance of all mishaps that are liable to occur in the application of this new method of treatment, and, for the purpose of demonstrating what this new therapeutic weapon can accomplish, the society has organized a series of lectures, and it proposes also to collect and to publish from time to time the various articles written by its members. The first number of this publication, the *Annales de la société médicale belge*, has just appeared in excellent format, as put out by the Imprimerie médicale et scientifique.

The Treatment of Trypanosomiasis on the Congo

From previous accounts, it is well known that trypanosomiasis is the principal scourge with which the people living

in the Belgian Congo region have to contend. This affection, which is not only of human but also of animal origin, plays a considerable part in the progress of colonization. The campaign undertaken against the disease, to which frequent reference has been made, continues to be carried on in a methodical manner and with increased success as experience grows. Speaking before the Société des sciences médicales at Brussels, Dr. Broden gave recently some interesting details in regard to this campaign on the Belgian Congo. It consists primarily in mechanical prophylaxis directed against the agent of transmission, *Glossina* and other hematophagous flies, and in chemical prophylaxis: sterilization of virus carriers, both man and animal.

Under present conditions, the fight against *Glossina* can be only indirect and strictly local. All efforts must be directed toward chemical prophylaxis: sterilization at one sitting is not possible as yet, but sterilization in several stages can be carried out.

Attempts at active vaccination have not as yet given practical results. However, in certain cases, a natural or acquired resistance to certain trypanosomes may be noted in certain animals and in some persons.

Pulmonary Collapse Therapy in Tuberculosis

Recent discussions which had their origin more especially in Germany, as the result of communications by Sauerbruch on the subject of extrapleural rib resection, have found an echo in Belgium, where M. Olbrecht has made a special study of "pulmonary collapse therapy." Comparing it with the pneumothorax method of Forlanini, he holds that it is indicated in (1) cases of tuberculosis sufficiently grave to justify the assumption that a cure will not be effected by the usual treatment, and (2) cases of unilateral tuberculosis with cavitation, with torpid lesions progressing slowly. Certain writers consider the caseation as a contraindication. One begins by performing a pneumothorax. If the pneumothorax does not bring about the desired compression, thoracoplasty is indicated; it is also indicated when, in pursuing a waiting policy, one has put off the institution of a pneumothorax or has neglected to maintain it. In such cases the pleura is adherent, and nothing short of thoracoplasty can effect a collapse of the lung. The same is true in case there are cavities and a purulent discharge following pneumothorax, for, in that case, the pleural wall of the cavity may ulcerate and a communication may be established between the cavity and the empyema. The results of this method are still characterized by uncertainty, and it would be well to note carefully that by means of this intervention one may secure approximately 30 per cent. of successful results, 30 per cent. of ameliorations, 25 per cent. of negative results and 25 per cent. of aggravations.

Nonmedical Productions of Physicians

The Cercle médical of Antwerp, of which Dr. Tricot Royer is president, took an original step recently, on the occasion of the conference of the Société internationale d'histoire et de médecine, when it collected an exhibit of works of art and of literary and musical productions of which Belgian physicians were the authors. All these works are exhibited in the salons of the Maison des Médecins at Antwerp.

The Red Cross Society of Belgium

The activities of the Red Cross Society have not died down since the war, but, on the contrary, through the energy of its president, Dr. Depage, it is multiplying its efforts in all the branches of public health work and hospital organization. As evidence of its vitality, it has just begun the publication of a new review which is to serve as a connecting link between the various local and provincial branches

throughout the country. This monthly review bears the title *La Croix-Rouge de Belgique*. Various interesting articles show the different branches of its activity. The program of the society in time of peace is discussed by Dr. Depage himself. The Union internationale de secours aux enfants gives an account of the efforts put forth in Russia in combating the famine. The bulletin also enumerates the different services of the Red Cross that are functioning at the present time: (1) the excellently equipped surgical clinic at Brussels; (2) the radium institute reserved exclusively for the indigent and for persons of moderate means who would be unable to stand the expense of radium treatment; (3) a manufacturing establishment for prosthetic apparatus for the benefit of disabled soldiers and those who meet with industrial accidents; (4) a *laiterie* (dairy) containing a complete equipment for the sterilization of milk by steam; (5) training courses for nurses and ambulance assistants; (6) an auto-ambulance service for the transportation of patients and wounded, and finally (7) a lingerie shop where refugee Russian women are given employment.

The White Lead Menace

The conference organized by the Belgian Red Cross Society with a view to supporting the universal adoption of the resolutions proposed by the third international conference of labor at Geneva for the protection of workmen against the grave dangers presented by the use of white lead has just adjourned. The conference was honored by the presence of the king, the minister from Switzerland and several other ministers. All the speakers expressed themselves energetically, and demonstrated the absolute necessity of prohibiting the industrial use of this poison.

BERLIN

(From Our Regular Correspondent)

April 28, 1923.

German Surgical Congress

The Deutsche Gesellschaft für Chirurgie held its forty-seventh annual meeting in April. In spite of the very unfavorable economic conditions, the attendance at the congress was good—almost up to normal. The speakers on anatomicopathologic problems were Professor Aschoff, Freiburg; Professor Enderlen, Heidelberg, and Professor Hotz, Basel. According to Aschoff, cholelithiasis is an affection of the extrahepatic biliary passages—mainly of the gallbladder. To understand the pathogenesis, a knowledge of the anatomy and the function of the gallbladder is essential. We must distinguish carefully between the gallbladder proper, whose function it is to inspissate the bile by resorption, and the conduction system, which begins at the neck of the gallbladder. The gallbladder, as compared with the bile ducts, is characterized by its abundance of muscle tissue and its lack of elastic tissue. The cystic duct, which leads from the neck of the gallbladder, may be divided into a proximal narrow portion and a distal wider portion. Similarly, the common bile duct, formed from a union of the hepatic duct and the cystic duct, may be divided into an antrum and the sphincter proper. The passage of the bile from the gallbladder into the cystic duct takes place solely through reduction of pressure. The influence of the nerves on the biliary system must be taken into account. Stimulation of the vagus nerve causes, at first, an increased flow of bile; further excitation of the vagus causes bile stasis. Stimulation of the sympathetic system lessens the tonus of the gallbladder, and causes, therefore, no flow of bile. The essential cause of bile stasis doubtless lies in congenital anomalies of the biliary system, whereas the conditions that are usually incriminated as the cause are only chance causes. Pseudo-

cholelithiasis is without doubt more frequent than true gallstone disease. In the absence of the Stockholm pathologist Berg, Aschoff presented Berg's theory in regard to the purely dysfunctional origin of cholelithiasis, which he himself, however, refuses to accept, inclining rather to Naunyn's theory of the infectious nature of the disease. Enderlen, professor of surgery at the University of Heidelberg, discussed the indications and the technic of the operation for gallstone, and Professor Hotz of Basel recounted the results of this operation. According to the principles that both speakers have agreed upon, the internal treatment of cholelithiasis, extending over a long period, is ordinarily ill advised. For patients in their younger years, an early operation (cholecystectomy) is indicated. An operation should be resorted to after the first attacks. In patients of more advanced years, an operation is indicated only after conservative treatment has failed. An early operation for younger patients is based partly on the fact that a patient has more resistance at the beginning of the disease, and also on the circumstance that the disease process is then confined to the gallbladder, without additional complications. The course of healing takes place under favorable conditions, and the results are correspondingly good. The mortality from the operation is only 4 per cent. As far as possible, the operation should be performed in the interval between attacks; that is, after an acute attack has subsided, unless earlier urgent indications for intervention are noted. During the interval, the mortality is lower and there is a better assurance of complete removal of the gallbladder and the stones. Hydrops of the gallbladder, chronic cholecystitis and gallbladder bile stasis should always be treated surgically, as the apparently benign picture may change suddenly. The loss of the diseased gallbladder is, moreover, not very keenly felt. On the other hand, in the case of patients in advanced years, especially in men, surgical intervention should be based on some urgent indication. After internal treatment has been continued for years, the mortality in cholelithiasis that has begun to affect the deeper tissues is two or three times as great as at the start. As to the operative methods, the speakers held that cystendesis is only rarely indicated; for example, for the occasional removal of lodged stones. Cystotomy is, in general, insufficient on account of the fistulas and the frequency of recurrences, which make a difficult radical operation necessary later. It is, therefore, to be regarded generally as an emergency operation, but, in the presence of difficult anatomic conditions and in the case of weakened patients, it may sometimes be indicated, as it saves some patients from the baneful effects of a forced cystectomy. Cystectomy, however, is sometimes indicated. In cholecystitis and cholelithiasis, the earlier cystectomy can be carried out, the better the results. Choledochotomy is indicated if the diagnosis "stone occlusion of the common bile duct" is made, or if at cystectomy concretions are demonstrated in the choledochus. One should never wait longer than three weeks for the spontaneous passage of the stones. The common bile duct should be opened, if possible, in the supraduodenal portion; only when access to this part is difficult may entrance be gained through the cystic duct. Transduodenal choledochotomy is advisable only in the case of incarcerated stones in the region of the papilla. Unfortunately, the mortality is rather high. Drainage of the hepatic duct is no longer considered as important as it was. Under satisfactory conditions, primary closure of the bile ducts may be used to advantage; but if the walls of the bile ducts are weak and unsound and an ichorous, crumbly mass is found therein, drainage may still be needed. Choledochoduodenostomy, though frequently recommended, is superfluous if the common bile duct is patent. In case of stenoses in the lower portions and at the papilla, choledoch-

duodenostomy may be resorted to. However, it does not protect the patient against recurrences any more than does drainage of the hepatic duct. As Enderlen and Hotz view the matter, the bad results or failures of gallbladder surgery are caused by (1) disturbances that are referred to under the general term "recurrence"; as such we may designate stone recurrence and repeated attacks of cholangitis; complications of the gastro-intestinal tract and carcinoma are the results of a metastatic stone affection; (2) peritonitis as the most frequently fatal complication; to avert this, it is advisable, as already stated, to perform the operation during the interval between attacks; subserous cystectomy; cystotomy in place of cystectomy in case of difficult removal of the gallbladder, and ample evacuation of the secretion or tamponing in cases in which infection is suspected, and (3) postoperative insufficiency of the vital organs in an organism that is impaired by a long continued infection or through old age.

Professor Küttner of Breslau gave his observations on a peculiar type of disease, hepatargia, or hepatic autointoxication. Prominent symptoms are somnolence and high temperature, occasionally the occurrence of anuria. The manifestations seldom appear as a postoperative clinical picture, provided care is taken. The ingestion of an ample fluid intake and a 3 per cent. infusion of glycogen have been shown to have therapeutic value.

Several speakers recommended anastomosis of the bile ducts with the duodenum, in order to prevent recurrences of cholangitis. Walzel of Vienna recommends, for the location of stone in the common bile duct, primary suturation of the choledochus with dilation of the papilla. Kirschner of Königsberg emphasized that in every case of operation for gallstone it was important not merely to palpate the common bile duct but to pass the sound through it as well. Floercken reported that he had examined subsequently fourteen patients on whom an operation for stenosis of the duodenal orifice had been performed and had found most of them capable of earning a living.

Medical Films

At the recent congress of the Deutsche Röntgengesellschaft, held in Munich, Groedel of Frankfort-on-the-Main exhibited a film in which the contraction of the human heart was demonstrated in excellent fashion with roentgen rays. Another film that attracted considerable attention was shown at the German surgical congress by which Fedor Krause of Berlin demonstrated an operation on the cerebrum. The operation was performed under local anesthesia on a man, aged 39, suffering from epilepsy, and resulted in complete recovery. The film was taken in the Institute for Medical Cinematography, which is located in the Berlin Charité Hospital and is equipped according to the method introduced by the Berlin surgeon Rothe. In the film could be seen the details of the operation by which the surgeon removed with the chisel that portion of the skull over the left central region of the brain. Then the dura mater was incised, faradic stimulation was applied to the brain, whereby the seat of the affection was exactly determined. The diseased portions were then excised. After the operation, the patient's right arm, right leg and right side of the face were paralyzed, but after four weeks all disturbances had subsided. The film that was taken four months after the operation showed that the general condition of the patient was excellent. As general anesthesia was not employed for the intervention, the patient could note and report his observations during the operation. According to his statement, he felt no pain during the operation on the brain; all he noticed was that something was the matter with his fingers—that they moved without any voluntary action on his part.

Marriages

CHARLES YOUNG BIDGOOD, Baltimore, to Miss Mary Taylor Carrington, of Danville, Va., April 21.

WILLIAM M. JERMAIN, Milwaukee, to Miss Catherine Schmitt of Fox Point, Wis., April 22.

HOWARD A. LA MOURE to Miss Josephine Mary Fortier, both of Pueblo, Colo., recently.

ROBERT S. HARWOOD, Oak Park, Ill., to Miss Lillian Feurlicht of Chicago, May 23.

LESTER W. McDEVITT to Miss Doris Tietig, both of Cincinnati, May 17.

Deaths

Richard Hall Johnston, Wilson, N. C.; University of Maryland School of Medicine, Baltimore, 1894; formerly clinical professor of laryngology at his alma mater; member of the Medical Society of the State of North Carolina, and the Medical and Chirurgical Faculty of Maryland; at one time on the staffs of the University of Maryland, St. Joseph's, South Baltimore Eye, Ear, Nose and Throat, Children's, and James Kernan hospitals, Baltimore, and Havre de Grace Hospital, Havre de Grace; aged 52; died, May 13, of chronic nephritis, at a local hospital.

Sidney Johnston Meyers ⊕ Louisville, Ky.; Kentucky School of Medicine, Louisville, 1898; professor of medicine and clinical medicine, University of Louisville Medical Department; veteran of the Spanish-American War; served during the World War as lieutenant-colonel, M. C., U. S. Army, in France; on the staffs of the Louisville City, St. Anthony's and Jewish hospitals, and Norton Infirmary; aged 50; died, May 28, at St. Joseph's Infirmary, following an operation.

Frederick William Smith ⊕ New York; Syracuse University College of Medicine, Syracuse, 1903; member of the American Urological Association; on the staffs of the New York, New York City and St. Bartholomew's hospitals, New York, Northern Westchester Hospital, Mount Kisco, and the New Jersey State Hospital, Trenton; aged 46; died suddenly, May 24, at Sulphur Springs, W. Va., of pneumonia.

George Vincent Voorhees, Royal Oak, Mich.; Bellevue Hospital Medical College, New York, 1870; formerly vice president of the Michigan State Medical Society, and a member of the judicial council of the American Medical Association, 1892-1895; at one time corresponding member of the Detroit Medical and Library Association; aged 77; died, May 12.

William Harris Cook, Los Angeles; Rush Medical College, Chicago, 1876; served in the Philippine Islands during the Spanish-American War and later as deputy health officer; established boards of health throughout the provinces; formerly surgeon to the National Home for Disabled Volunteer Soldiers, Sawtelle; aged 68; died, May 9.

Joseph Smith Pigall ⊕ Chicago; Rush Medical College, Chicago, 1891; Jefferson Medical College of Philadelphia, 1892; formerly professor of internal medicine, Illinois Post-Graduate Medical School, Chicago; for fifteen years on the staff of the West Side Hospital; aged 54; died, May 30, of cerebral thrombosis and arteriosclerosis.

Rufus S. Rice, Rogers, Ark.; St. Louis College of Physicians and Surgeons, St. Louis, 1901; member and at one time vice president of the Arkansas Medical Society; past president of the Benton County Medical Society; for many years served as local health officer; aged 60; died, March 21, of uremia and chronic nephritis.

James Alfred Rawley ⊕ Brazil, Ind.; Illinois Medical College, Chicago, 1904; served in the M. C., U. S. Army, during the World War; member of the school board; aged 53; proprietor of the Rawley Hospital, where he died, May 17, of injuries received when struck by a train.

William Henry Coleman, Louisville, Ky.; University of Louisville Medical Department, 1896; member of the Kentucky State Medical Association; formerly adjunct professor and lecturer of materia medica at his alma mater; aged 53; died, May 17, of cerebral hemorrhage.

Arthur Hazelwood, Plainwell, Mich.; St. Louis Medical College, St. Louis, 1866; Civil War veteran; for eighteen years member of the board of health; formerly on the staff of the Butterworth Hospital, Grand Rapids; aged 84; died, May 22, of senility.

William P. Whery, Fort Wayne, Ind.; L.R.C.P.S., Ireland, 1860; formerly emeritus professor of hygiene, state medicine, and gynecology at the Fort Wayne College of Medicine; aged 83; died, May 13, at the Hope Methodist Hospital, of senility.

James Samuel McClellan ☉ Bellaire, Ohio; Medical College of Ohio, Cincinnati, 1880; for twenty years served as secretary of the Belmont County Medical Society; aged 67; died, May 16, at the City Hospital, of chronic nephritis.

Michael Joseph Ready, Washington, D. C.; Georgetown University School of Medicine, Washington, 1905; formerly on the staff of the Georgetown University Hospital; aged 44; died, May 19, following a long illness.

Alfred Poirier ☉ Woonsocket, R. I.; Montreal School of Medicine and Surgery, Montreal, Que., Canada, 1898; formerly on the staff of the Woonsocket Hospital; aged 52; died, May 13, at St. Gabriel, Canada.

Louis Weinstock, Brooklyn; University and Bellevue Hospital Medical College, New York, 1920; aged 25; died, at the Coney Island Hospital, May 23, of a skull fracture, received when trampled by a horse.

Arthur B. Ancker ☉ St. Paul; Medical College of Ohio, Cincinnati, 1882; for forty years served as superintendent of the City and County Hospital, where he died, May 15, of heart disease, aged 72.

James Roane ☉ Yankton, S. D.; Georgetown University School of Medicine, Washington, D. C., 1882; city health officer; aged 63; was found dead in his office, May 17, of heart disease.

John Adam Gault, Lancaster, Wis.; Rush Medical College, Chicago, 1898; member of the State Medical Society of Wisconsin; aged 60; died, May 15, of cerebral hemorrhage, at Milwaukee.

Robert Warren Colquite Green, College Park, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1884; aged 72; died, March 20, of chronic nephritis.

Joseph De Stefano, Chicago; Rush Medical College, Chicago, 1889; aged 58; died, May 31, from the effects of carbolic acid, presumably self-administered.

Benjamin Dobson Rupp, Wahoo, Neb.; Bellevue Hospital Medical College, New York, 1881; also a druggist; aged 64; died, May 18, of cerebral hemorrhage.

A. A. Eddy, Coalcreek, Colo.; Chicago Medical College, Chicago, 1880; aged 80; died, May 13, at a hospital in Canon City, of hemorrhage of the stomach.

Laban Lindley, Paoli, Ind.; Detroit (Mich.) Medical College, 1870; Civil War veteran; also a druggist; aged 77; died, May 5, of heart disease.

Frank Jeter, Indianapolis; Eclectic College of Physicians and Surgeons, Indianapolis, 1891; aged 56; died suddenly, May 20, of heart disease.

R. B. Dodson, Cherry Valley, Ark. (licensed, Arkansas, 1903); aged 67; died, May 19, of heart disease, at St. Joseph's Hospital, Memphis, Tenn.

George Russell Clarke, Atlantic City, N. J.; Temple University Department of Medicine, Philadelphia, 1921; aged 34; died, April 23.

Neva Grosch Mott, Rawlins, Wyo.; Loyola University School of Medicine, Chicago, 1918; aged 30; was shot and killed, May 13.

Albert P. Mitchell ☉ Bolivar, Mo.; Missouri Medical College, St. Louis, 1884; aged 62; died, May 16, at a hospital in Springfield.

Eli Snow Hannaford, Readfield, Me.; Medical School of Maine, Portland, 1869; aged 75; died, May 15, in Springfield, Mass.

Philip H. Leibrock, Mascoutah, Ill.; St. Louis Medical College, St. Louis, 1883; aged 63; died, May 13, of heart disease.

Edmund P. Banning, Dayton, Ohio; Homeopathic Hospital College, Cleveland, 1892; aged 78; died, May 18.

Ulysses Hutson, Christopher, Ill.; American Medical College, St. Louis, 1878; aged 75; died, May 13.

John W. Huffaker, Denver; Pulte Medical College, Cincinnati, 1898; aged 71; died, May 15.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Woods V. Tabules.—A number of boxes of "Woods V. Tabules" were shipped by Edward J. Woods of New York City to Louisiana in March, 1919. Many physicians will remember Edward J. Woods as the quack who exploited an alleged cure for alcoholism and another alleged cure for the tobacco habit, both sold on the mail-order plan. Both of these frauds were exposed in THE JOURNAL in 1912 and in 1921 the "tobacco habit cure" fraud was denied the use of the United States mails. Even as long ago as 1912 Woods also had a line of nostrums for rheumatism, catarrh and asthma and a "cure" for blushing, some complexion wafers, wrinkle removers and pile remedies. The government seized a quan-

Wonderful Strengtheners Woods' Vigor Tabules



"WORTH THEIR
WEIGHT IN
GOLD"

See What a Box of Woods' Vigor Tabules May Do!

There are mighty few men in this hustling, progressive age who are not sometimes strained or even overstrained, mentally or physically. This may come through study, business details, worry, "burning the candle at both ends," excitement, bereavement, illness, tobacco, alcohol, coffee, tea, coca cola, too many social

tity of "Woods V. Tabules" on the ground that they were misbranded. Analysis by the federal chemists showed that the tablets contained zinc phosphid, strychnin and plant extractives, including a laxative drug. The claims made for the tablets were those common to the "weak men" nostrums. For example:

"When there is inability to think clearly . . . use Woods V. Tabules. For nervous debility . . . lack of enthusiasm . . . inability to look others in the eyes, feeling of being conspired against or followed and hounded by enemies, enervation of mind or body, inability to conduct oneself cleverly enough to gain and maintain the affection of one of the opposite sex . . . for these or any other mental or physical condition where real stimulation and energy are required—try Woods V. Tabules."

"An effective aphrodisiac and general stimulant."

These and similar claims were declared false and fraudulent and in May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 10990; issued Jan. 13, 1923.]

Lukosine.—The National Drug Company of New York City shipped in May, 1921, a quantity of "Lukosine" which government officials declared misbranded. Analysis of a sample of the article by the Bureau of Chemistry showed that it consisted of a powder containing approximately 80 per cent. of boric acid and small proportions of zinc sulphate, alum, and a salicylate, and with traces of alkaloid, phenol, thymol and menthol, the entire material colored pink. It was labeled as a remedy for gonorrhea, leucorrhea, etc. These claims the government declared were false and fraudulent since the article contained no ingredient or combination of ingredients-capable of producing such an effect. In Decem-

ber, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10972; issued Jan. 13, 1923.*]

Eckman's Alterative.—In August, 1922, the United States attorney for the Northern District of Illinois filed a libel for the seizure and condemnation of 150 dozen large-sized bottles and 120 dozen small-sized bottles of "Eckman's Alterative" that had been shipped in April by the Burrows-Little-White Co., of Philadelphia. The government chemists reported that analysis of "Eckman's Alterative" showed that it consisted essentially of 94.4 per cent. water, flavored with clove oil, 3.3 per cent. of calcium chlorid and 2.3 per cent. of plant extracts. The product was falsely and fraudulently labeled so as to create in the minds of the purchasers the belief that it was an effective remedy for bronchial asthma, catarrhal bronchitis and pulmonary troubles, stubborn coughs and colds, etc., whereas "in truth and in fact it contained no ingredients or combination of ingredients capable of producing the effects claimed." In October, 1922, the Burrows-Little-White Co. admitted the allegation of the libel and judgment of condemnation and forfeiture was entered. The court then ordered that the product be released on the payment of the costs and the execution of a \$1,000 bond requiring the product to be relabeled under the supervision and to the satisfaction of the Department of Agriculture.—[*Notice of Judgment No. 11049; issued January, 1923.*]

"Eckman's Alterative" may be remembered as a fraudulent "consumption cure" that was exposed in THE JOURNAL, April 27, 1912. It may also be remembered as the nostrum whose exploiters attacked the constitutionality of the federal Food and Drugs Act after they had been found guilty of making false and fraudulent claims. The Eckman concern declared that they wanted "to call in question the power of Congress to prevent a person from making statements or claims concerning the virtue of drugs, whether modest or extravagant" and they expressed the opinion that "an owner, when advertising his drugs, has a right to exploit them and advance opinions concerning the curative properties thereof, notwithstanding the fact that such opinions may be objected to by others, and that he may make claims . . . which to some may appear unreasonable. . . ." The Eckman concern carried its contention up to the Supreme Court of the United States which august body made short shrift of the pernicious doctrine put forward by the "consumption cure" outfit.

Gombault's Caustic Balsam.—The Lawrence-Williams Co., Cleveland, Ohio, shipped in March, 1919, a quantity of "Gombault's Caustic Balsam" which was misbranded. The government chemists reported that analysis showed the product to be a mixture of a fatty oil with approximately 20 per cent. by volume of oil of turpentine. It was falsely and fraudulently represented as an effective treatment, remedy and cure for diphtheria, cancer, corns and bunions in humans and for spavin, founder, broken wind and various other ailments of horses. In December, 1922, the defendant entered a plea of *nolo contendere* and was fined \$100 and costs.—[*Notice of Judgment No. 11182; issued April 20, 1923.*]

McGraw's Oil of Life.—A quantity of "McGraw's Oil of Life," shipped by the McGraw Remedy Co., of Little Rock, Ark., in February, 1922, was declared misbranded. The federal chemists reported that analysis showed the product to consist approximately of 95 per cent. kerosene ("coal-oil") and small proportions of turpentine oil, tar oil and camphor, the mixture being colored. The product was falsely and fraudulently advertised as a remedy for kidney and bladder disease, diphtheria, piles, headache, colic, asthma and a number of other conditions. In June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11059; issued Feb. 21, 1923.*]

Vital Sparks.—In April, 1920, and May and July, 1921, the Hollander-Koshland Co. of Baltimore, Md., shipped a quantity of "Vital Sparks" which were misbranded. The Bureau of Chemistry reported that analysis showed the

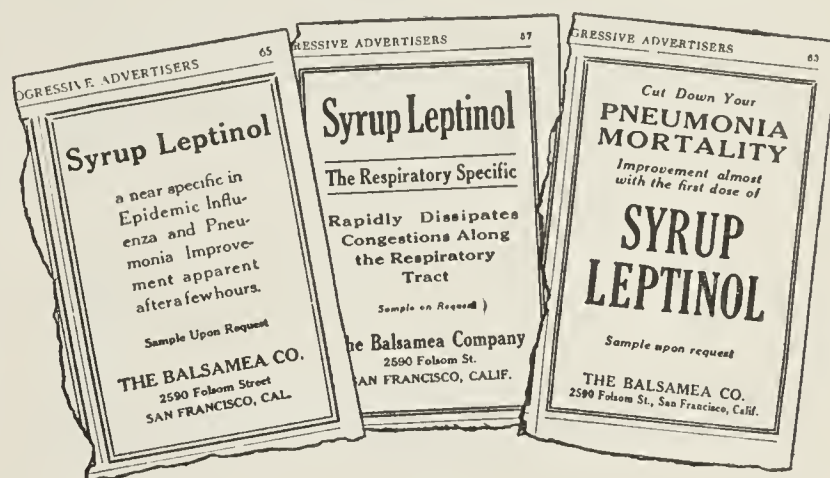
preparation to consist of gelatin capsules, each containing a fatty oil, colored red, and a sugar-coated pill of zinc phosphid, damiana and strychnin. Vital Sparks were falsely and fraudulently advertised as a powerful nerve stimulant of value in producing normal functioning of the sexual organs. In May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11183; issued April 20, 1923.*]

Mydyl Antiseptic Wafers.—Charles S. Ruckstuhl, St. Louis, Mo., shipped in January, 1922, a quantity of "Mydyl Antiseptic Wafers" which were declared misbranded. The Bureau of Chemistry analyzed the sample and reported that the wafers were composed of borax and starch. Claims made on the trade package were:

" . . . of great value in the treatment of Vaginitis, Urethritis, Menorrhagia, Endometritis, Parametritis, Cervicitis and Gonorrhea."

These and similar claims were declared false and fraudulent and in November, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11105; issued March, 1923.*]

Syrup Leptinol.—The Balsamea Co., of San Francisco, shipped in July, 1920, from California to Missouri a quantity of "Syrup Leptinol" which the federal authorities declared misbranded. When analyzed by the Bureau of Chemistry the product was found to consist of *Leptotaenia dissecta* (a plant belonging to the parsnip family), sugar,



glycerin, alcohol and water. The nostrum was labeled in part:

"Indicated In Epidemic Influenza . . . Bronchial Asthma, Whooping Cough;"

"Indicated in Pulmonary Tuberculosis, Influenza, Pneumonia, Bronchial Asthma . . . Whooping Cough, Laryngitis."

These claims were declared false and fraudulent since the product contained no ingredient or combination of ingredients capable of producing the effects claimed. In January, 1923, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11193; issued April 20, 1923.*]

Readers of THE JOURNAL will remember that "Syrup Leptinol" was the subject of a report of the Council on Pharmacy and Chemistry that appeared in this department, June 5, 1920—nearly three years before the publication of the government's report.

Sangvin.—Dr. M. Spiegel & Sons, Albany, N. Y., shipped in January and June, 1922, a quantity of "Sangvin" which was misbranded. Analysis of a sample of the article by the Bureau of Chemistry showed that Sangvin was composed essentially of plant drugs including a laxative drug, sugar, alcohol, glycerin and water. The claims made for Sangvin were many and various and falsehoods regarding its alleged virtues ranged from the vicious to the picturesque. Sangvin was said to purify the blood, strengthen the nerves, overcome lack of ambition and loss of appetite, cure eczema and pimples, overcome sleeplessness, la grippe, kidney disorders and carbuncles and, altogether, "makes you well and strong." Because of the false and fraudulent claims, judg-

ment of condemnation and forfeiture was entered in November, 1922, and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11119; issued March, 1923.*]

Peterson's Ointment.—Peterson's Ointment Co., Inc., Buffalo, shipped in September, 1920, a quantity of "Peterson's Ointment" which was misbranded. Analysis by the Bureau of Chemistry showed this preparation to be a vaseline ointment containing zinc oxid, tannin, carbolic acid and camphor. It was falsely and fraudulently recommended as an effective remedy and cure for eczema, ringworm, broken breasts, scald heads, old sores, ingrowing nails, frostbites, catarrh, ulcers, croup, chilblains, poison ivy, piles and all scalp disease. In November, 1922, the defendant entered a plea of guilty and was fined \$25.—[*Notice of Judgment No. 11214; issued May 8, 1923.*]

Correspondence

ETHYLENE AND ACETYLENE AS ANESTHETICS

To the Editor:—In the editorial on the use of ethylene and acetylene as general anesthetics (*THE JOURNAL*, May 12), mention is made of the early works of Lewin, Rosemann and others, who reported marked anesthetic effects obtained by using acetylene on animals. It would be well to point out, however, that these men were working with impure acetylene from crude carbid, which now is known to contain poisonous impurities, particularly phosphin and hydrogen sulphid. In fact, Chuard (*Bull. Soc. chim.* **17**:678, 1897) attributes its effectiveness as an insecticide in certain cases to the phosphin it contains. In view of these facts, we cannot look on the work of these men as a reliable test of acetylene as an anesthetic.

For some months, work has been carried on in the laboratories of physiologic chemistry at the Kansas State Agricultural College on the effects of purified acetylene as a general anesthetic for animals. This work was based on some observations I made about two years ago while preparing purified acetylene in order to study some of its derivatives. As our work here was begun before any announcements had been made of the work of Gauss, and as it bears out his statements in most respects, but differs in some, I wish to call attention to our results.

In the first place, we have used acetylene from calcium carbid only after it has been thoroughly purified by being passed through a sufficient train of wash flasks containing chromic acid and copper sulphate solutions to remove phosphin and hydrogen sulphid. Acetylene from the compressed cylinders also was used, in this case precautions being taken to remove acetone. The oxygen employed was the commercial product obtained by the Linde process.

Mixtures of oxygen acetylene were administered to the animals through a gas-mask arrangement. Our mixture contained from 10 to 25 per cent. of oxygen, the intention being to let the animal have the normal amount of oxygen. In this respect our mixture differs from that of Gauss, who uses 40 per cent. oxygen. In fact, we have positively shown that this high percentage of oxygen cannot be used effectively with some ordinary animals. Most animals quickly show sensitiveness when the percentage of oxygen goes much above 25. This is particularly true of the dog. Animals show varying degrees of insensibility during operations on them, depending on the percentage of oxygen administered with the acetylene. For a prolonged effect, a steady stream of the oxygen-acetylene mixture is administered. As noted by Gauss, breathing is more rapid than usual.

One unusual property of this anesthetic has been noted, and that is the rapid recovery when an animal has been removed to the air. Seldom does it take five minutes for an animal to

gain its complete equilibrium, and more often in less than two minutes an animal will be up and around.

The most striking result, however, that we obtained was the entire absence of any after-effects, and it is on this point alone that acetylene most likely will gain ground. After months of work along this line, we have never yet found a case in which even prolonged exposure to the mixture has affected animals of any age. An animal recovers after being under four hours with the same ease as if it had been under four minutes, and with no signs of injurious effects that can be detected.

To those who desire to experiment in this field, it can be said that it seems promising. Some precautions are in order, however. In the first place, the acetylene must be purified. Should the demand call for it, manufacturers would place a pure acetylene on the market. It is hardly necessary to add that, in administering the acetylene mixture, the rate of flow of gas should be fast enough to sweep out the products of respiration. Also, that fire (either spark or flame) must be kept away from the mixture of oxygen and acetylene, as it is more dangerous than ether.

CHARLES N. JORDAN, M.S., Manhattan, Kan.

IDIOSYNCRASY AND ANAPHYLAXIS

To the Editor:—Is idiosyncrasy the same as anaphylaxis? This question is asked often in consultation or by students in the lecture room. Can we interchange these words, using one when we mean the other whether we speak of food, drugs, animal emanations or hypersensitiveness in general? Richet writes:

Since the effect of a given poison on different individuals cannot be the same, the real difference between individual susceptibility and true anaphylaxis cannot be strictly defined, but there are certain instances of exceptionally marked individual susceptibility or a state of increased sensitivity, which we have no right, as yet, to include in the term of anaphylaxis. Indeed, it is possible by physiologic methods to modify the reaction of an animal in such a way that immediately after the injection of a poison it reacts like an anaphylactized animal.

Dr. Robert A. Cooke writes (*THE JOURNAL*, Sept. 6, 1919, p. 759):

Given a normal person, any drug exhibited in therapeutic doses manifests a certain normal action, a side action and, in larger amounts, a toxic action, both the normal and the toxic action being more or less definitely fixed, symptomatically, for all individuals of the same species. On the other hand, there are individuals within any species that manifest exaggerated normal and side action for many such reasons as alterations, in rate of absorption, excretion or destruction within the organism, or instability of the mechanism through which some drugs act. . . . These exaggerated normal and side actions and lessened action (or tolerance) should be included under the general heading "idiosyncrasy."

Concluding his article, Cooke insists that "idiosyncrasy" should be distinguished from the word "allergy."

Widal (*Presse méd.* **30**:189 [March 4] 1922; abstr., *THE JOURNAL*, April 22, 1922, p. 1235) also differentiates between anaphylaxis and idiosyncrasy. He describes a few cases, and one case in particular that he had under long observation in which a woman had paroxysmal itching, eruptions, urticaria, febrile periods, spasmodic coryza, hay-fever and asthma, which developed from exposure to pollen, chilling of the skin, ingestion of antipyrin or acetylsalicylic acid, or from an irritation of a polyp in the nose. The chilling of the skin on stepping out of a warm bath was enough to bring on the whole set of symptoms to which she was susceptible. These cases, Widal thinks, demonstrate and prove that the underlying cause of both anaphylaxis and idiosyncrasy is the instability of the colloid balance in the plasma; but he further remarks that while anaphylaxis may be incriminated for some of the manifestations, we must ascribe the others to idiosyncrasy.

It may be that anaphylaxis and idiosyncrasy can be present in the same individual but still, the phenomena which these

terms imply should be distinctly differentiated. The following may serve as an illustration: The physiologic effect of digitalis is to slow down the pulse by its action on the heart muscle, etc. All clinicians of wide experience have undoubtedly noticed that the total amount of digitalis required to produce its effect in some cases is much less than in others; let us say that, on an average, it may take from 2 to 4 drams (7.5 to 15 c.c.). If one encounters a subject whose pulse will slacken at the first dram of the digitalis administration; or if one encounters a reverse case in which the ingestion of even 6 drams (15 to 23 c.c.) will not bring the pulse down, other things being equal, we consider such types as having an idiosyncrasy toward digitalis, there being no anaphylaxis about it.

Similar differences are seen with belladonna, magnesium sulphate, strychnin and calomel. In general, we have the effect of each drug for every individual to a normal action, enhanced or exaggerated normal, a retarded normal and a toxic action. The quickened normal and the retarded normal physiologic effect when observed would best be expressed by the term idiosyncrasy, while an anaphylactic reaction is altogether an abnormal or a foreign action.

I would like to hear the opinion of our medical authorities on this subject. In the medical literature for the last few years the words anaphylaxis and idiosyncrasy, or allergy and idiosyncrasy have been used synonymously.

It should not be understood that we have no drug anaphylaxis or allergy. Anaphylactic reactions have been produced in animals with different drugs, such as the reports of Bruck with iodoform and antipyrin; of Naniloff with sodium bromid and quinin, and of others with iodids, copaiba and atropin. All the laboratory investigators have proved that a great variety of substances, not only protein, but also alkaloids, as mentioned above, are capable of producing anaphylactic phenomena.

ALEXANDER STERLING, M.D., Philadelphia.

METHOD OF STATING BLOOD SUGAR DETERMINATIONS

To the Editor:—I should like to suggest that an effort be made to change the method commonly used of expressing blood sugar as percentage values.

In discussion with several men, I find that the tendency has been to change into the form used for other blood chemical determinations, milligrams per hundred cubic centimeters. This would make the matter easier to write out and would make blood sugar conform with blood urea and other nitrogenous constituents of the blood.

SOLOMON STROUSE, M.D., Chicago.

"THE SIZE OF DROPS"

To the Editor:—In prescribing tincture of digitalis, a simple way of getting around the drop difficulty is to order a 30-minim vial so that each dose, if large, may be measured, or a day's dosage may be bottled in the vial by the patient, and divided as directed.

H. B. AITKENS, M.D., LeSueur Center, Minn.

State Boards of Health.—New Orleans having lost 8,000 victims by cholera in 1832 and in 1849-1850, out of a population of about 55,000, and anxious to maintain a quarantine, secured the enactment of a law in 1855 for the establishment of a state board of health. In 1869 a more comprehensive board was established in Massachusetts, followed in 1870 by California. Now nearly all the states have followed the example.—Kober: *Pub. Health Rep.* 38:725 (April 6) 1923.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PREPARATION OF ANTIGEN

To the Editor:—I am anxious to know the method for preparing the antigen used in the precipitin test for syphilis. J. E. S., China.

ANSWER.—Beef or pig hearts are freed from fat, fiber and blood vessels, and passed several times through a meat grinder. The ground muscle is spread on a platter and dried at room temperature by being placed in front of a revolving fan. The dried material is broken up into small pieces and passed several times through a coffee grinder, or ground in a mortar until very fine. A given quantity of this material (about 50 gm.) is placed in a 500 c.c. Erlenmeyer flask, and sufficient ether is added to make a layer of about 1 inch above the dried muscle. Extraction is permitted for about twenty-four hours at icebox temperature, when the supernatant ether is poured off and replaced with fresh ether. This process is repeated several times, until the supernatant ether is water clear. The ether is then filtered off and the heart muscle dried at room temperature (by being spread on a paper) until free from the odor of ether. The ether is discarded. Twenty-five grams of dried material is placed in a 250 c.c. Erlenmeyer flask, and 125 c.c. of 95 per cent. alcohol is added. This is extracted nine days in icebox, and one day at room temperature. The alcohol is filtered off, and 25 c.c. is cholesterinized by the addition of 100 mg. of cholesterin. It is dissolved by being warmed in a water bath and shaken. The cholesterinized antigen is allowed to stand twenty-four hours before being used. The noncholesterinized antigen may be used at once.

The cholesterinized antigen is highly sensitive; the noncholesterinized one is less sensitive, particularly in treated cases.

IRRADIATION IN ACNE ROSACEA

To the Editor:—What is the present status of light or ray therapy in the treatment of acne rosacea? How effective is it and how best applied? M.D.

ANSWER.—One can get rid of the folliculitis of acne rosacea with roentgen rays, but not of the hyperemia. The agent is not nearly so useful in acne rosacea as it is in ordinary acne. Light therapy is of little or no use in acne rosacea, and roentgen rays are not to be particularly recommended in it. It is better treated by measures described in the textbooks for its treatment. If roentgen rays are used, small doses should be given at intervals of several days, depending on the dose, until one or two erythema doses have been given, the number depending on the time of exposure. For example: Using the MacKee and Remer measurement, a safe treatment would be by giving $\frac{1}{4}$ skin unit once in five days or a week until 2 units are given; or $\frac{1}{2}$ skin unit once in two weeks until 2 units are given. This should not be undertaken unless a man knows how safely to give small doses of roentgen rays.

SENSITIZATION TO ARSPHENAMIN

To the Editor:—Why is it that after eighteen injections of neo-arsphenamin without a reaction, a patient broke out with large red blotches on the chest, back and thighs, swelling of the hands, and itching at the site of eruption? This all took place twenty-four hours after the giving of the nineteenth, twentieth and twenty-first injections. The eruption usually lasted from four to seven days, but it persisted for fifteen days after the twenty-first injection. The appetite was markedly increased for two days following, and then dropped to normal. The itching lasted only for a day; there was no nausea or vomiting. The patient felt well throughout the eruption stage. The urine, blood pressure and heart were normal. Q. T. O.

ANSWER.—The reason is that the patient had acquired a sensitization to arsphenamin or neo-arsphenamin and was getting a toxic dermatitis from it, as occasionally happens. This is a warning of danger. These attacks of erythema are not infrequently followed by a general exfoliative dermatitis, and by a general intoxication which may prove fatal. Unless the necessity for the use of arsphenamin is very insistent, symptoms of this sort should cause the discontinuance of the drug; and its use later, if at all, should be only with great caution. It is safer in such cases to make further treatment consist of mercury and the iodids.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chrm., Dr. Samuel W. Welch, Montgomery.
ARIZONA: Phoenix, July 3. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: San Francisco, July 9-12. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.
COLORADO: Denver, July 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: New Haven, July 10. Sec. Eclectic Board, Dr. James E. Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. E. C. M. Hall, 82 Grand Ave., New Haven.
CONNECTICUT: Hartford, July 10-11. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford.
DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.
DISTRICT OF COLUMBIA: Washington, July 10-12. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.
FLORIDA: Daytona Beach, June 11-12. Sec., Dr. W. M. Rowlett, Tampa.
ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.
INDIANA: Indianapolis, July 10. Sec., Dr. Wm. T. Gott, Crawfordsville.
KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, State Board of Health Bldg., Louisville.
MAINE: Augusta, July 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.
MARYLAND: Baltimore, June 19-22. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.
MARYLAND: Baltimore, June 12-13. Sec. Homeo. Bd., Dr. E. H. Wilsey, Chesapeake City.
MICHIGAN: Ann Arbor, June 12. Sec., Dr. Beverly D. Harison, 601 Stroh Bldg., Detroit.
MISSISSIPPI: Jackson, June 13-14. Sec., Dr. W. S. Leathers, University.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW MEXICO: Santa Fe, June 18. Sec., Dr. R. E. McBride, Las Cruces.
NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.
NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.
OKLAHOMA: Oklahoma City, July 10-11. Sec., Dr. J. M. Byrum, Shawnee.
OREGON: Portland, July 3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Preliminary Examiner, Mr. C. D. Koch, 422 Perry Bldg., Philadelphia.
RHODE ISLAND: Providence, July 5-6. Sec., Dr. B. U. Richards, State House, Providence.
SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
SOUTH DAKOTA: Deadwood, July 17. Dir., Dr. H. R. Kenaston, Bonesteel.
TENNESSEE: Memphis, Nashville and Knoxville, June 15-16. Sec., Dr. Alfred B. DeLoach, 1230 Exchange Bldg., Memphis.
TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg., Dallas.
UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.
VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.
WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.
WEST VIRGINIA: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.
WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

THE NORTH CAROLINA EXTENSION PLAN

An Experiment in Postgraduate Medical Teaching

F. DENNETTE ADAMS, M.D.

Lecturer in Medicine, University of North Carolina Extension Division
WASHINGTON, D. C.

In an effort to determine whether it might be of any value to the medical profession in the state to make it possible for a large number of physicians to obtain postgraduate instruction without leaving their own communities, the state of North Carolina, in the summer of 1916, conducted postgraduate courses in pediatrics in twelve of its larger centers. The plan was devised by Dr. W. S. Rankin, the state health officer, and was carried out through the combined efforts of the state board of health and the medical department and extension division of the University of North Carolina. Pediatrics was the field chosen, because at that time there were but few trained pediatricians in the state, the infants and children being mostly under the care of general practitioners, and it was felt that instruction of these men in the refinements of diagnosis and treatment of diseases peculiar to the young

might be of assistance in the board of health's state-wide campaign for the reduction of infant mortality. In addition, since the project was an innovation and an experiment, it was believed that just how much benefit had been derived from the work could be more readily determined from the physicians themselves than would have been the case had a more generalized subject been chosen; for practically all were admittedly weak in pediatrics, whereas there were all degrees of ability and training in the general fields of medicine and surgery.

DETAILS AND DEVELOPMENT OF THE PLAN

Two instructors were appointed. Each was assigned to a circuit of six centers, which he covered in rotation every week for four months, a class thus being held in each city once a week. The classes were composed of physicians residing in these centers and their surrounding rural communities. The work in the eastern part of the state was conducted by Dr. Lewis Webb Hill of Boston, and in the western section, by Dr. J. R. Gerstley of Chicago. The first part of an exercise was devoted to a talk on some phase of pediatrics, the second part to clinical teaching, the subjects being patients who were brought in by members of the classes for suggestions as to diagnosis and treatment.

From the standpoint of the physicians who had attended the meetings, the state authorities and the instructors, the results of the experiment seemed to justify its repetition, and, at the close of the summer, plans were under way for renewal of the work elsewhere in the state the following year. The war intervened, however, and it was not until the fall of 1921 that definite steps were taken toward further experimentation along similar lines. Since the problem was one primarily of education and only secondarily of public health, it was considered to be more the concern of the state university than of the board of health, and, as a result, it was undertaken entirely by the university. The actual organization of the classes, and the planning of the instructors' routes and other executive work was carried out by the university extension division, while the more strictly medical problems, notably the selection of the instructors and the outline of the work, were in the hands of the dean of the medical school, Dr. I. H. Manning.

In a state in which the population is largely rural, or in relatively small communities, as is the case in North Carolina, it is obvious that by far the greater number of physicians are general practitioners, and that, of necessity, with the exception of one or two of the larger cities, medicine has not reached the degree of specialization that obtains in the states farther north. At present, there is no school of clinical medicine in the state. There has been none since 1914, when the Charlotte Medical School closed its doors. Students of medicine can obtain the first two years of the accepted four-year course at the medical school of the state university, or at Wake Forest College, and, although plans are being formulated for the installation of a four-year course at the former institution, students from both schools are now forced to seek their last two or clinical years outside the state. General public hospitals are rare, making the teaching of clinical medicine difficult. As a result, clinical teaching centers do not exist. There has been no stimulus for their development—and there have been no funds. Medical progress has suffered accordingly. The practicing physicians have no large clinic within reach to which they can refer their more complex cases for study and treatment, and they themselves have no center toward which they can readily migrate for postgraduate instruction. It is next to impossible for them, under such circumstances, to keep pace with the trend of medical thought.

Of course, those who are fortunate enough to be able to leave their practices find it to their advantage to devote a few weeks each year to visiting clinics or taking postgraduate

courses elsewhere in the country. These men are able to keep well posted. But for the majority, particularly those in the rural communities, such a practice is well-nigh out of the question. It is the aim of the University of North Carolina to reach these men—to bring to them instruction which they cannot go out and seek; and it was with this purpose in mind that the postgraduate extension work was reinstituted last summer.

The opinion prevailed that a general subject would have a wider appeal and would be a more logical choice for a renewal of the experiment than would one of the specialties, and internal medicine was consequently selected. The plan of work was similar to that used in 1916. Two circuits of six cities each, one in the eastern and one in the western part of the state, were selected, and an instructor was assigned to each. The towns composing a circuit naturally had to be within a relatively small area in order to minimize travel time for the instructor. The first group, comprising Durham, Selma, Goldsboro, Wilson, Rocky Mount and Tarboro, was in charge of Dr. Frank A. Chapman of Chicago; the second, composed of Ashboro, Greensboro, High Point, Lexington, Salisbury and Charlotte, was assigned to me. The instructors were brought on from distant cities (I was residing at the time in Boston), because of the fact that the university was unwilling to expose itself to charges of exploiting an individual by bringing in as a teacher a man from a nearby center who, conceivably, might later be in a position to attract patients away from their own physicians.

The organization of the classes, as stated above, was undertaken by the University Extension Division. Although this type of work represented a new departure in medical teaching, it might nevertheless be supposed that there would have been a ready response on the part of physicians to avail themselves of the opportunity offered. As the university wished to reach as many men as possible, and had to consider finances, it was decided to hold classes only in localities in which an enrolment of at least twelve could be guaranteed in advance.

The expense incurred in organizing the courses—approximately \$300—was met by the University Extension Division, and not charged to the physicians, whose tuition fees were used only to cover actual salaries and traveling expenses of the instructors. This was made clear in advance. Nevertheless, difficulty was experienced in some quarters in obtaining enrolments sufficiently large to make the work possible. The idea was new; the field was unexplored, and the members of the profession seemed unwilling to invest in an unknown quantity. I am indebted to Mr. Chester D. Snell, director of the University Extension Division, who personally organized the classes, for the following outline of his part in the work:

"In the fall of 1921, I sent a letter outlining our scheme to the secretaries of all the county medical societies in the state, with the request that they bring our proposition up for discussion at their meetings, and report back to me. The best responses came from the societies which had taken the work in 1916. In the spring of 1922, I obtained a list of all the doctors within 50 miles of the six selected cities, in the two sections, and sent to each an explanatory letter and an application blank. About forty were enrolled in this way. Next, I interviewed personally a large number at the annual convention of the state medical society, which occurred later in the spring, and, following this, I made a personal office-to-office canvass, eventually signing up enough to make the total for the two circuits 180. Just before the first meeting, I sent letters to all of the doctors who had been on the former mailing list, reminding them of the dates on which the first meetings were to be held and again soliciting their cooperation. Exactly 198 physicians enrolled, out of a total of about 450 approached. About 85 per cent. of the general practitioners could be classified as interested or enthusiastic when first seen. The main difficulty in getting an early response was due to the fact that when I made my field trip, I could not announce the names of the instructors, as they had yet to be selected. Difficulty

was occasionally experienced in overcoming, on the part of the more skeptical, a tendency to believe that the university was attempting to 'put something over'; but we were usually able to meet this attitude successfully by a thorough explanation of our plan. As further evidence of good faith, we promised a refund to those enrolled, in case our receipts more than covered the instructors' expenses. Each physician paid \$30 for the series and later received a refund of over \$3. I believe that, in the future, less difficulty will be experienced in organizing similar classes, for the work is now so firmly established that it should sell itself."

CHOICE OF SUBJECTS

The university stipulated that each exercise should approximate two hours in length and that it should comprise a lecture and a clinical demonstration. It was suggested that "practical, every-day medicine" would be most acceptable, but otherwise the instructors were given absolute freedom in the conduct of their courses. The problem, therefore, which confronted me on my arrival in North Carolina was not simple. I was to attempt to carry out a type of postgraduate instruction as yet almost untried. I was to have in my classes physicians of all ages, of all grades of training and varying degrees of experience, from those recently graduated from some of the best schools in the country, to those whose actual medical education had been received in schools of less exacting standards, or who, since graduation, had had but little opportunity of obtaining further instruction. I was to meet, in the larger communities, men who were devoting themselves to some particular field and doing highly specialized work and, at the same time, in both larger and smaller places, general practitioners, the exacting requirements of whose practices had cost them the opportunity of keeping pace with present-day medicine. Quite obviously, lectures which might be of value to one group would be well-nigh worthless to another. Instruction in the fundamentals of history-taking and physical examination was needed by some; to others, time spent in listening to discussions of this nature would be wasted. The men doing specialized medicine, most of whom make frequent trips to the best clinics and otherwise keep pace with advances in medicine, would prefer discussions of recent investigative work and its relation to diagnosis and treatment. But instruction along such lines would be of little value to the average practitioner, whose laboratory and hospital facilities are limited. Anything more than a mere outline of the uses of basal metabolism determination, of blood chemical findings or pneumococcus typing, for example, would be of interest to but few listeners. Certain physicians would prefer to have most of the time devoted to diagnosis, others to therapeutics. In other words, the problem which presented itself was that of addressing six classes, totaling more than a hundred physicians, of diversified interests and varying degrees of ability and skill, and having each individual, at the end of the course, feel that his time had not been ill-spent.

Under such circumstances, it seemed to me that the best results could be obtained by selecting a number of common medical conditions and discussing them from the standpoint of etiology, pathology, diagnosis and treatment. In this way a certain amount of time could be devoted to the fundamentals of history, physical examination and laboratory diagnosis, and the more intricate diagnostic methods and special forms of treatment could be worked in as occasion demanded. The greater part of each talk was devoted to fundamentals, for the course was planned, as has been previously pointed out, especially for the benefit of those who had been unable to keep in touch with medical centers and consequently felt the need of "brushing up."

The subjects selected and the order in which they were presented were: (1) Lobar pneumonia; (2) chronic non-tuberculous lung diseases; (3) epidemic (lethargic) enceph-

litis; (4) endocarditis and allied conditions; (5) angina pectoris and syphilitic aortitis; (6) cardiac irregularities and effort syndrome; (7) gastric ulcer and carcinoma; (8) constipation and visceroptosis; (9) nephritis; (10) diseases of the blood; (11) diseases of the endocrine glands, and (12) empyema and other complications of pneumonia.

This program, no doubt, is open to criticism, but it must be borne in mind that only a fraction of medicine can be touched on in a series of twelve talks, and that an effort was made to pick out subjects in which mistakes in diagnosis not infrequently occur. Furthermore, other common diseases were discussed incidentally in connection with the differential diagnosis of some of those listed. Typhoid fever, for example, came up for discussion in connection with lobar pneumonia, encephalitis, endocarditis and empyema; tuberculosis in connection with the same diseases, and the various types of meningitis in connection with pneumonia and encephalitis. It might be suggested that empyema should have been omitted, as it is primarily a surgical condition; but it was introduced into the series because the diagnosis usually lies with the medical man and because, while resident physician in charge of the pneumonia service at the Boston City Hospital, I had been impressed by the frequent failure of practitioners to recognize this common complication of pneumonia.

As time went on and I had the opportunity, by means of the clinics, to observe the work of the physicians in the groups, I found that I was automatically devoting more of each lecture to pathology and diagnosis at the expense of treatment. There was a weakness in pathologic training, or, at least, in the application of knowledge of pathology, and in the ability to arrive at a diagnosis by deduction based on knowledge of this subject, once the important features in history and physical examination had been worked out. Stress was laid on the importance of obtaining a careful history, of following out leads which on the surface seemed of little significance, of bringing to light recollections of past symptoms, long since forgotten, and of seeking out facts which might have a bearing on the solution of the problem at hand. The same held true with regard to physical examination, the advantage being constantly pointed out of searching for signs of a condition which, on the basis of history, might conceivably be present, as, for example, the small area of dulness and diminished breathing in early lobar pneumonia, or the short diastolic murmur in early aortitis. There also arose the necessity of frequently laying stress on the fact that disease often varies in its manifestations and is seldom in exact accord with the so-called "typical textbook picture." Efforts were made to focus attention not on the typical, but on the atypical; not on the obvious, but on the obscure. And, finally, there was the endeavor to rationalize the conception of the value of roentgenologic and laboratory examinations by showing how they should be taken into consideration along with history and physical findings and by pointing out that their results are rarely adequate unless interpreted in the light of information acquired by the other methods.

CLINICAL WORK

The original plan outlined by the university for the clinical part of the program was that cases should be shown, after each lecture, which would demonstrate points under discussion. The subject of each week's talk having been announced in advance, certain physicians would be called on to bring in, for clinical purposes, patients suffering from the disease under consideration. With the end in view of having the clinics well supplied, the physicians, when first enrolled, were requested to sign agreements to supply clinical material for at least two exercises. Most of them did so, but this system failed to work out satisfactorily. Many of the physicians came from distances which made it impracticable for them to

bring patients; frequently no patient suffering from the disease under consideration was available, and finally the members of the classes seemed more anxious to bring to the clinics cases concerning which they were in doubt rather than those that presented no diagnostic or therapeutic problems.

The failure of this specific plan to materialize did not, however, cause the clinical part of the work to be abandoned. A wealth of material was supplied, but the patients were brought in for suggestions as to diagnosis or treatment, irrespective of their relation to the subject of the day. Since the study of these cases was of more value to classes and instructor alike, this system worked out to the satisfaction of all concerned. The number of patients seen during a clinic varied from one to as high as ten, with an average of three or four. Unfortunately, no records were kept of the number of cases or their ailments. As a general rule, all who were brought in, were seen, but occasionally an unusually large clinic, or one or two patients whose examinations were lengthy, made it necessary to postpone a few until the following exercise. In several instances, persons presented themselves for examination without having first consulted one of the local physicians. They had heard that a free clinic was in town and were anxious to avail themselves of the services of the visiting physician. These individuals were not examined for two reasons: First, such a procedure, once started, would have swamped the clinic with undesirables; second (and more important), the university took the stand that the course was for the benefit of the profession, and consequently those in charge were particularly careful to avoid having the university subjected to charges of having its representatives in competition with the local physicians. In addition to the patients studied in the clinics, a few were seen in consultation in their homes, when, for some adequate reason—usually physical condition—it was impossible for them to reach one of the clinic centers. Where indicated, all cases were followed up and reports of their progress given out from time to time.

This system kept the clinics well supplied with difficult and obscure cases, and as a result there was greater interest on the part of all concerned. In no instance did the instructor see a case prior to the initial appearance of the patient at the clinic, each being studied, as far as possible, in the presence of the class. Consequently, the members had the opportunity of observing the instructor's method of approaching a case, of noting the emphasis which he placed on a careful, complete history and painstaking physical examination, and of following him through the mental process of piecing together the facts and the line of reasoning by which he arrived (or failed to arrive) at a diagnosis.

DISADVANTAGES

The disadvantages of this type of work are quite apparent. Attempts to obtain adequate histories from patients in the presence of audiences not infrequently proved futile. Patients were naturally nervously upset at being interviewed by a stranger and the presence of audiences only intensified their mental discomfort. It caused a tendency on the part of many to supply answers which they believed the instructor was seeking, and thus made it unusually difficult to work out obscure and forgotten details in their stories. When a history was long and tedious, as so many are, the difficulty was further increased by a natural and quite excusable restlessness on the part of the listeners.

Many present needed no lessons in history-taking; those who did found repetition irksome. The same held true with regard to physical examination, especially since the size of the classes rendered individual demonstrations of abnormal findings quite impracticable. Lack of time was another handicap. Scrupulous work is seldom possible when more than two patients must be seen within an hour. Under ordinary

circumstances, shortcuts are rarely justifiable; in the classroom never. Yet instances arose when it was impossible to avoid them if all patients were to be seen. In the future, if the work is continued, arrangements must be made to limit the number of cases admitted to each exercise.

Difficulty was encountered because of lack of laboratory facilities. Urine and hemocytologic examinations were usually available, but it was sometimes difficult or impossible to obtain chemical examinations of the blood, adequate bacteriologic examinations or roentgenologic examinations.

Among the members of the classes, the attitude prevailed (and with justification) that the instructor should commit himself to a diagnosis on the evidence at hand and not attempt to bring into play diagnostic methods not available to the physicians in the community in which the cases were presented (excellent training for the instructor). There was also the disadvantage of usually seeing a patient but once and of not having at hand information relative to the previous course of his ailment. But in the cases in which a definite diagnosis seemed impossible, the instructor was sometimes able to point out and discuss further methods of study which, if carried out, should enable the physicians in charge to solve the problem.

SUCCESS OF THE EXPERIMENT

Since this method of postgraduate instruction was undertaken by the university as an experiment, the question of import at present is that of its success. Was it of value to the physicians who attended the classes and, through them, to the communities in which they practice? Do these physicians feel repaid for their expenditure of time and money? Do they believe that a course of this nature is in any way comparable, relative to results obtained, to a course in one of the postgraduate schools? What are the relative merits of these two types of instruction, when differences in expense are considered? Do the results of the experiment indicate that, if carried further and made state-wide, this extension teaching might become a factor in improving the general health of the state? Is the university justified in assuming that the work proved of sufficient value to warrant continuation and expansion in the future?

It is not my purpose to attempt to answer these questions. It lies with the physicians who took part in the exercises, the authorities in the university who followed the work, and the profession generally in the state to determine, on the basis of results obtained, whether continuance is justifiable or advisable.

The most effective way of determining the attitude of those who subscribed to the course is by means of a questionnaire. The university has already distributed a series of questions to the physicians who were enrolled, in order that their frank opinions may be obtained. It is hoped that their answers will form the basis of a later paper.

Apart from these officially expressed opinions, the results can be estimated from the attendance records and from the instructor's impressions of the physicians' reactions toward the work. Unfortunately, on only one circuit was an attendance record kept. This showed, for the twelve weeks' work, an average attendance in the six cities of 84.2 per cent. The center with the highest average for the course showed an attendance of 93.5 per cent.; the lowest was 72.7 per cent. It must be borne in mind, when these figures are considered, that the majority of the physicians attending the classes were general practitioners, always on call for emergencies; that many of them consumed a good half day in traveling to and from the clinics, and that summer vacations cut down the attendance to some extent. Furthermore, in some of the cities where the attendance was lowest, a few men, most of them specialists in branches quite remote from internal medicine, enrolled purely for the purpose of lending impetus to the

project and were present at only one or two of the earlier meetings.

Open discussion predominated at all of the gatherings, and it was interesting to note that practically every member took part. The most encouraging feature, from the standpoint of the instructor, was the frequency with which patients suffering from a given condition were brought in for confirmation of diagnosis, not on the day on which that subject was discussed, but at the exercise following. Three cases of angina pectoris, for example, were seen during the week following the lecture on that ailment; not one during the week in which it was discussed.

In my opinion, this method of instruction, representing, as it does, a field virtually unexplored, presents promising possibilities for the future. The system outlined was far from perfect, but as a starter it was encouraging. It has the distinct advantage that its cost to the individual is small and that no physician is forced to leave his practice for a protracted period. If the work is continued in the future, organization difficulties will be reduced as it becomes better established; and once it becomes a thoroughly proved success, physicians will expect it and seek it. If it does become more thoroughly established, the scope of the work should expand hand in hand with the field of operations and one should see each summer an increasing number of instructors scattered throughout the state, presenting courses in a wide variety of subjects. One cannot but wonder if, for those members of the profession who cannot readily migrate to the large teaching centers, this system does not offer the eventual solution of the problem of postgraduate medical instruction.

SUMMARY

In an effort to work out a plan whereby a large number of physicians in the state can be supplied with postgraduate instruction without leaving their own communities, the University of North Carolina, in the summer of 1916 and again in 1922, instituted as experiments extension courses in postgraduate medicine. Classes were organized on two circuits of six centers each, with an instructor from outside the state assigned to each circuit. The instructors rotated about their respective circuits, meeting each group once a week and giving each a lecture and clinical demonstration.

The chief advantage of this system is that it supplies the opportunity for obtaining instruction to the physicians who, usually because of the difficulty of providing substitutes to take charge of their patients and the expenditure of time and money involved, are unable to visit large clinics outside the state. Since the only expense, exclusive of organization, is for salary and traveling expenses of the instructors, the cost of the course per physician is relatively small.

The chief disadvantage lies in the fact that physicians of varying degrees of training and skill are enrolled and it is no simple task for the instructor to arrange the work to the satisfaction of all the members of a class.

The attendance records and the interest shown were sufficiently encouraging to warrant further experimentation along the same line. It is my belief that this system should be developed further and that, if properly expanded, it might eventually be of great value to the medical profession, particularly in regions where there is a lack of medical centers.

The Rochambeau.

New York January and February Examination

Mr. Herbert J. Hamilton, assistant professional examiner, Board of Medical Examiners of the State of New York, reports the written examinations held at Albany, Buffalo, New York and Syracuse, Jan. 29-Feb. 1, 1923. The examination covered 8 subjects and included 10 questions. An average of 75 per cent. was required to pass. Of the 115 candi-

dates examined, 81 passed, and 34, including 1 osteopath, failed. Two candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Yale University		(1922)	1
Georgetown University		(1922)	1
George Washington University		(1909), (1916), (1922)	3
Rush Medical College		(1919)	1
State University of Iowa College of Medicine		(1921)	1
University of Louisville		(1921)	1
Bowdoin Medical School		(1921)	1
John Hopkins University		(1903), (1918), (1921), (1922)	4
Harvard University		(1921)	4
Tufts College Medical School		(1920)	1
University of Michigan Medical School		(1919, 2), (1921)	3
University of Michigan Homeo. Med. School		(1922)	1
University of Minnesota Medical School		(1921)	1
St. Louis University School of Medicine		(1922)	1
Columbia University College of Phys. and Surg.		(1920), (1921), 1922, 6)	8
Cornell University		(1915), (1921), (1922, 2)	4
Long Island College Hospital		(1922)	1
New York Homeo. Med. College and Flower Hospital		(1922)	1
Syracuse University College of Medicine		(1921), (1922, 3)	4
University and Bellevue Hospital Medical College		(1920)	1
Eclectic Medical College of Cincinnati		(1921), (1922, 3)	4
University of Oregon		(1914)	1
Hahnemann Medical Coll. and Hosp. of Philadelphia		(1921)	2
University of Pennsylvania		(1917)	1
Woman's Medical College of Pennsylvania		(1922)	1
Baylor University		(1921)	1
McGill University		(1918), (1921, 2), (1922, 3)	6
Queen's Univ. Faculty of Medicine		(1915), (1918), (1921)	3
University of Toronto		(1917), (1921, 2)	3
University of Vienna, Austria		(1913)*	1
University of Montpellier, France		(1920)*	1
National University of Athens, Greece†		(1921)*	1
Univ. of Budapest, Hungary		(1912), (1915),* (1917),* (1918)*	4
Univ. of Naples, Italy		(1912),* (1914),* (1919),* (1920, 2)*	5
University of Palermo, Italy		(1894), (1920)*	2
University of Berne, Switzerland		(1918)*	1
Syrian Protestant College of Beirut, Syria		(1922)*	1
FAILED			
Yale University		(1902)	1
College of Physicians and Surgeons, Chicago		(1902)	1
University of Maryland		(1918)	1
Boston University		(1921)	1
Harvard University		(1898)	1
Columbia University College of Phys. and Surg.		(1922)	1
Long Island College Hospital		(1922)	1
New York Homeo. Med. Coll. and Flower Hospital		(1917)	1
Jefferson Medical College of Philadelphia		(1912)	1
Woman's Medical College of Pennsylvania		(1894)	1
University of Vermont		(1921)	1
Queen's University Faculty of Medicine		(1919), (1920)	2
McGill University		(1912), (1921)	2
National University of Athens, Greece		(1908)*	1
University of Budapest, Hungary		(1912, 2),* (1914),* (1915),* (1918)*	5
University of Florence, Italy		(1922)*	1
University of Padua, Italy		(1917)*	1
University of Palermo, Italy		(1921)*	2
University of Naples, Italy		(1907),* (1910),* (1911),* (1917),* (1919),* (1920),* (1921)*	7
University of St. Joseph, Beirut, France		(1910)	1
Osteopath		(1922)	1

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Tulane University		(1906)	Louisiana
Vanderbilt University		(1909)	Alabama
* Graduation not verified.			
† License will be issued on receipt of M.D. degree from Greece.			

Hawaii January Report

Dr. G. C. Milnor, secretary, Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Jan. 8, 1923. The examination covered 10 subjects and included 65 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical School		(1922)	85
Tufts College Medical School		(1918)	90
Cliba Special Medical School		(1919)*	80
Tokyo Charity Hospital and Special Medical School		(1916)*	75
* Graduation not verified.			

Colorado January Examination

Dr. David A. Strickler, secretary, Colorado State Board of Medical Examiners, reports the written examination held at Denver, Jan. 2, 1923. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 8 candidates who took the physicians' and surgeons' examination, 3 passed, and 5, including

2 osteopaths, failed. Eleven candidates were licensed by reciprocity and 1 candidate was granted a reregistration license. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists		(1920)	82.6
Northwestern University		(1922)	83.8
University of Pennsylvania		(1921)	83.4
FAILED			
Kansas City University of Physicians and Surgeons		(1922)	*
St. Louis Coll. of Phys. and Surgs.		(1919) 56.6, (1922)	68.8
Osteopaths			*, 47.2
LICENSED BY RECIPROCITY			
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1888)	Missouri
Barnes Medical College		(1908) Illinois, (1909)	Missouri
Washington University		(1913)	Missouri
University of Nebraska, College of Med.		(1921), (1922)	Nebraska
Jefferson Medical College		(1900)	Penna.
University of Tennessee		(1913) Tennessee, (1914)	Arkansas
Queens University		(1887)	S. Dakota
Trinity Medical College		(1902)	Michigan
* No grade given.			

Book Notices

ALLGEMEINE PROGNOSTIK. ODER DIE LEHRE VON DER ÄRZTLICHEN BEURTEILUNG DES GESUNDEN UND KRANKEN MENSCHEN. Von Prof. Dr. Theodor Brugsch. Second edition. Paper. Price, 3,240 marks. Pp. 622, with 29 illustrations. Berlin: Urban & Schwarzenberg, 1922.

The author has collected statistics of measurements of a large number of normal individuals from various sources. From these data he attempts to establish a definite relationship between the viscera and body measurement. The use of mathematical formulas in this work is perhaps carried to an extreme. This attempt of correlation is, as the author states, not new with him. A chapter is devoted to normal and abnormal function of the endocrine glands. The second part of the book takes up specifically the various influences which bear on disturbances in function of circulation, respiration, metabolism and the endocrine glands. Contrary to what might be expected in a book on prognosis, there is no discussion of any single disease in which favorable or unfavorable symptoms are pointed out; instead, various conditions are grouped together and considered in a general way. The underlying objections to this exposition are the large amount of theory and too many excursions into the field of mathematics. The latter make it too complicated for the practitioner.

OBSTETRICS FOR NURSES. By Everett Dudley Plass, M.D., Obstetrician-in-Chief, Henry Ford Hospital, Detroit. Cloth. Price, \$3.50. Pp. 410, with 162 illustrations. New York: D. Appleton and Company, 1922.

This is an admirably concise textbook. The author frankly states that association with his former chief, J. Whitridge Williams, has been of signal value in the preparation of his work; the text and illustrations clearly reflect this valuable impress on his mind and the product of his endeavor. And in no manner does this detract from the value of the book; in fact, this influence of his teacher enhances the worth of the volume. Obstetricians will be pleased with the clearness of presentation of the subjects discussed: from beginning to end it appeals to one as a real contribution to obstetrics, and is what the older authors were wont to call a hand book. The title of the book shows that it was intended for nurses, but its general scope suggests that it might more aptly be dedicated to medical students: perhaps it does not cover in detail all that might be adequate for student purposes, but it is far more comprehensive than serves the needs of a nurse getting her training, or even one who has dedicated herself to obstetric nursing. The nurses' duties and knowledge should be supplemental, not complementary, to those of the physician: the specific details are more in consonance with the teaching of a prospective medical man than a nurse. However, times were when a nurse was educated to do those things for the comfort and safety of the patient under the guidance of the physician. If we must change our conception of a nurse's duties, then the present book has its place: if we continue to hold the older views of her functions, then the book is

too elaborate for her needs. For a nursing textbook on obstetrics we should like to see somewhat less of the medical man's obstetrics, and more definite and extended information on the duties of the nurse, and the methods for carrying out these details. It is sufficient to state that there is no specific mention of the giving of enemas, and the technic, which if faultily applied may be fraught with dire consequences to the obstetric woman. Nor do we find a text, or illustrations, directing a nurse how to catheterize the same woman—in a textbook of this nature the author cannot presume that the nurse has learned these procedures correctly elsewhere. It would be needless to comment in detail on all the chapters. Those on the anatomy and physiology of the pregnant woman, and the description of the mechanisms of labor are valuable in their terseness and lucidity, so that they are not alone valuable but entertaining. We would be loath to see this volume abridged to conform to our conception of what a nurse's textbook on obstetrics should be: rather we trust that Dr. Plass, in bringing out subsequent editions, will amplify the scope of the book, making it a real treatise on obstetrics for students.

THE ANATOMY OF THE HUMAN EYE AND ORBIT. By William W. Goldhamer, M.D. Cloth. Price, \$7.50. Pp. 224, with 65 illustrations. Chicago: The Professional Press, Inc., 1923.

There is a well-defined place in American ophthalmologic literature for a work of this character, but, unfortunately, this book does not fill the cavity completely. In fifteen chapters, the anatomy of the eye, the orbit, and the accessory ocular apparatus is simply and concisely described. The physiology of the parts under description is too often discussed in detail, and with a positiveness that does not bear scrutiny. For example, ciliary glands are described as a positive structure "whose function it is to secrete part, at least, of the aqueous humor." Again, on page 58, it is stated that "the aqueous is a secretion of the glands of the ciliary processes and the ciliary body." In view of the investigations by Hagen, Hamburger and others, such a statement cannot pass unchallenged. Similar misstatements appear at only too frequent intervals; but, as a rule, they have to deal with the physiology and not the anatomy. Multiple mistakes in spelling abound, which seem to be due primarily to careless proof-reading. There is a chapter on development, treated in an extremely stepmotherly manner. The chapter on anomalies is well written, but could have been improved with simple illustrations easy to obtain. As a whole, the illustrations are good, but they would be of more value if they were placed nearer the matter to which they refer. One of the chapters is devoted to original measurements of about 200 prehistoric skulls, and is supplemented by a final chapter containing tables of measurements of the structures described. A good glossary and a fairly comprehensive bibliography fill the closing pages. The book is well worth study despite mistakes in spelling, and the indifferent printing and binding. It is to be hoped that a second edition will appear in which these mistakes have been eliminated and that there will result a book of which American ophthalmologic literature may be proud.

DIE PHYSIKALISCHEN GRUNDLAGEN DES BETRIEBES VON RÖNTGEN-RÖHREN MIT DEM INDUKTORIUM. Von Professor Dr. P. Ludewig. Paper. Price, 7 marks, 5 pfennigs. Pp. 130, with 151 illustrations. Berlin: Urban & Schwarzenberg, 1923.

This monograph intends to present the physical principles on which induction apparatus are built and operated, while special stress is laid on their use in connection with roentgen-ray apparatus. Particular attention is paid to the theory of the electric oscillations. The author predicts that a full understanding of the peculiarities of these oscillations will eventually make it possible to produce roentgen rays that are regulated at will in their composition. Starting from the fundamentals of electromagnetism, the power field of an electric current, he explains the magnetic circle, the magnetic qualities of the metals, especially of iron, and the various electric currents produced primarily and in the inductors. Then follows a description of the various apparatus used for determining and measuring these electric manifestations.

The third chapter is devoted to electric oscillations, and to the open and closed circle of electric vibrations. A short history of the development of the interruptors is given, leading up to a complete understanding of the most modern contrivances serving this purpose. In the same way the proposition of the inductors is handled, particular attention being paid to the interpolation of inductors for the production of electric currents of high tension, which hold such an important place in modern deep roentgen-ray therapy. The collaboration of inductor and interruptor, whether the straight or the alternating currents is used, finds full consideration. In order to make plain the reciprocity between source of current and the production of roentgen rays, the author explains the principal features of roentgen tubes. The next chapter deals with the action of the roentgen tube under the influence of the electric currents, and the methods of controlling it, with an elaborate presentation of the factors influencing the production of extremely hard rays. While the whole pamphlet is primarily written for the roentgen specialist, the text is so arranged that the mere technical and physical parts of each chapter are followed by a more popular presentation of the pertinent topics, so that any reader with only ordinary information in physics is enabled to acquire a sufficient understanding of the present status of the production of roentgen rays and of the problems involved.

ORTHOPEDIC SURGERY. By Sir Robert Jones, K.B.E., C.B., Director of Orthopedic Surgery, St. Thomas's Hospital, and Robert W. Lovett, M.D., F.A.C.S., John B. and Buckminster Brown Professor of Orthopedic Surgery in Harvard University. Cloth. Price, \$9. Pp. 699, with 712 illustrations. New York: William Wood & Company, 1923.

This is a very readable and valuable work by two of the best known orthopedic surgeons of two great countries. With no intent to be facetious, we might remark that the text is truly a joint affair, the opinions of one and then the other running along smoothly throughout its pages, commonly agreeing in their ideas—else they would not have undertaken the work—but differing honestly in some things in which the opinions of each are given proper expression. The text is particularly pleasing in that the reader is given credit for knowing something about the subject, thus relieving him of much detail in nonessentials and particularly in differential diagnosis, in which no attempt is made to differentiate all the possible known pathologic conditions that might in some way vaguely suggest the condition under discussion. A few of the usual related conditions are considered, and the mind is left fresh to consider them without the diverting factors of a dozen or more rare conditions which only serve to burden the brain and confuse the judgment. Under the term of orthopedic surgery they include subjects which group themselves under the six headings: (1) joints and their affections; (2) bones and their affections (including ununited and malunited fractures); (3) disturbances of the neuromuscular mechanism; (4) congenital deformities; (5) static and other acquired deformities, and (6) the principles and details of apparatus. Sane views on all subjects characterize the pages. Fads are disposed of with brief mention or authoritative silence. Illustrations are profuse and almost always instructive. Volumes of discussion on favorite controversial points are often condensed into a single poignant statement, as in the treatment of older cases of congenital dislocation of the hip, "there is no surgical triumph in the reduction of a case 16 years old if irreparable damage is done, or if life is hazarded by shock"; or, again, under "static deformities of the feet," "the flat foot, even rigid flat foot, the low arch, the everted foot, and the foot with the short tendo Achillis should not be interfered with or treated mechanically in adults unless they are a source of trouble and discomfort." While the reader's favorite formula may receive scant attention or be left out entirely, still he will find enough good things with which he does agree to more than compensate him for the little private disappointment. A word of criticism of the proof reading may not be amiss. Dozens of examples of improperly placed letters, misspelled words and other typographic errors are unfortunately present in this edition, a reflection on the bookmaker, rather than on the authors. Another edition should clear these all up.

Miscellany

A LAY EDITOR SPEAKS OF HYGEIA

From many sources *Hygeia* has received an enthusiastic welcome. Particularly encouraging is the following statement by Llewellyn Jones, literary editor of the *Chicago Post*:

HYGEIA

Chicago is the headquarters of a new magazine, *Hygeia*, published by the American Medical Association, but intended for perusal by the layman, and a most interesting magazine it is. The subtitle, "A Journal of Individual and Community Health," shows its scope, and, needless to say, the new journal has nothing in common with the usual type of health or physical culture magazine—which is too often edited from a cranky point of view or unduly commercialized.

The editors of *Hygeia* are producing a magazine which in its make-up and lavish use of illustration stands comparison with anything issued from the offices of the national popular magazines, and in addition to this, the character of the articles they print combines popularity and dependable authority. If the editors will forgive us, we will say that their magazine has one point in common with the patent medicine: it is intended for the consumption of well people—for every one who is interested in the progress of man's battle against nature. That battle, of course, is far from won. The enemy's big battalions are on the run, perhaps, but the mosquito and the germ can still give us plenty of annoyance. In *Hygeia* we find plans of campaign against these evils. We read, too, of community campaigns for better health in the schools. And, on the side of personal hygiene, we have two classes of article, the article which reassures the more or less well man who is suffering from his own ignorance, who is under the spell of the quack or of the crank notion—there is an article, for instance, on the supposed relationship between meat-eating and cancer, and a number of warnings against certain patent medicines—and, on the other hand, the article which will appeal to the man who is not well, aiding him not by advising any attempts at self-cure, but aiding him by putting his ailment in a clear light and dispelling his superstitions about it. And of course the magazine caters, too, to our sheer desire for knowledge for its own sake—as in Julian Huxley's fine article on the chromosomes.

It is evident that the basic idea under this publication is the idea that medical service of any sort, individual or community, therapeutic or prophylactic, can only achieve the best results when the patient as well as the doctor is intelligent, when they meet on something in the nature of common ground. In that, although the public does not see it and some old-fashioned doctors have not always emphasized it sufficiently, lies the difference between scientific medicine and quackery. The quack thrives on ignorance, the medical scientist is handicapped by it. And how grotesque that ignorance may be, and how widespread! Perhaps one slight index to it is the universal habit of cartoonists of representing microbes as creatures with limbs and claws. Only a convention, perhaps, like that convention which represents a lightning flash as a zig-zag, although a zig-zag course is the one of all that a flash of lightning could not take, but undoubtedly the convention is taken seriously in many quarters. And how many otherwise intelligent people think of every disease as a distinct entity, specifically curable by some other distinct entity.

Well, *Hygeia* should be able to do much to banish such notions, and in doing so it will be performing a great service to the public and to the medical profession.

THE INDIGENT MIGRATORY CONSUMPTIVE

A study was made by J. S. Whitney of the indigent, migratory consumptive in Colorado Springs, Denver, El Paso, San Antonio, Phoenix and Los Angeles (*Pub. Health Rep.* 38:587 [March 23] 1923). In the six cities there was a total of 7,319 tuberculous persons cared for, wholly or in part, by the municipal agencies. This means, on an average, one indigent tuberculous person to every 155 of the entire population of those cities. The proportions according to cities vary greatly, those cities having the smallest population bearing the greatest burden. Phoenix, with the smallest popu-

lation, has the greatest proportionate number of indigent tuberculous persons, namely, one to every fifty-eight of the population; San Antonio has one to 264. A similar study was made in Cleveland, as a control city. There, 3,443 tuberculous persons were cared for during 1921, or one tuberculous person to every 231 of the population. In the six cities studied, 63 per cent. of all the tuberculous persons for whom length of residence was known had resided in the city less than two years at the time they applied to the agency. The proportion of nonresidents varied from 83 per cent. in Phoenix to 36 per cent. in San Antonio. Los Angeles and Denver were about even with 64 and 68 per cent., respectively. El Paso was low, with 47 per cent. In Cleveland, with its facilities for caring for tuberculous persons, only 11 per cent. of all such persons reached by social agencies were nonresidents. About one sixth of all cases occurred in the age period 25 to 29 years.

In the six cities together, one tenth of the subjects were children under 14, and 10 per cent. of these were under 4 years of age. In San Antonio and Los Angeles, nearly 15 per cent. were children under 14, whereas in El Paso only about 1 per cent. were under this age. In Denver and Phoenix, 4 per cent. were children. In the Cleveland study, 20 per cent. of all cases were in children. Only 51 per cent. of all the cases recorded were in American born, about 7 per cent. being in negroes. Twenty per cent. of the patients were Mexicans. Nearly every country of the world was represented among the remaining 29 per cent., the Russian Jews (9 per cent.) constituting the only large group. The men outnumbered the women 3:1. About 3 per cent. had tuberculosis other than pulmonary. Of the pulmonary cases, nearly one fifth were of the third stage. These were evidently those cases which were so far advanced as to be obvious at the first clinical call.

What becomes of these persons? Fifty-four per cent. were lost sight of, 13 per cent. died, 10 per cent. moved out of the city, and 23 per cent. were still in the city at the end of the year studied. The financial burden borne by these various cities cannot be exactly measured. In Phoenix, the annual tax for each member of the community, man, woman and child, was \$1.75 for the support and relief of the tuberculous. In San Antonio it was 22 cents. None of these cities have anything like adequate provision—medical, relief, or institutional—for caring for the tuberculous persons, whether resident or nonresident. From what can be learned from the records, it would seem that there is nowhere any attempt at a coordinated policy or program of rehabilitation of the tuberculous. The material relief facilities of these cities are incapable of adequately meeting the problem of the indigent migratory consumptive.

THE TEACHING OF EVOLUTION *

The council of the American Association for the Advancement of Science adopted at its meeting on December 26, the following resolution:

Inasmuch as the attempt has been made in several states to prohibit in tax-supported institutions the teaching of evolution as applied to man, and

Since it has been asserted that there is not a fact in the universe in support of this theory, that it is a "mere guess" which leading scientists are now abandoning, and that even the American Association for the Advancement of Science at its last meeting in Toronto, Canada, approved this revolt against evolution, and

Inasmuch as such statements have been given wide publicity through the press and are misleading public opinion on this subject, therefore,

The Council of the American Association for the Advancement of Science has thought it advisable to take formal action upon this matter, in order that there may be no ground for misunderstanding of the attitude of the association, which is one of the largest scientific bodies in the world, with a membership of more than 11,000 persons, including the American authorities in all branches of science. The following

* Bull. Am. A. Univ. Prof., March, 1923.

tatements represent the position of the council with regard to the theory of evolution:

1. The council of the association affirms that, so far as the scientific evidences of the evolution of plants and animals and man are concerned, there is no ground whatever for the assertion that these evidences constitute a "mere guess." No scientific generalization is more strongly supported by thoroughly tested evidences than is that of organic evolution.

2. The council of the association affirms that the evidences in favor of the evolution of man are sufficient to convince every scientist of note in the world. These evidences are increasing in number and importance every year.

3. The council also affirms that the theory of evolution is one of the most potent of the great influences for good that have thus far entered into human experience; it has promoted the progress of knowledge, it has fostered unprejudiced inquiry, and it has served as an invaluable aid in humanity's search for truth in many fields.

4. The council of the association is convinced that any legislation attempting to limit the teaching of any scientific doctrine so well established and so widely accepted by specialists as the doctrine of evolution would be a profound mistake, which could not fail to injure and retard the advancement of knowledge and of human welfare, by denying the freedom of teaching and inquiry which is essential to all progress.

Medicolegal

Expert Testimony Viewed as the Weakest Kind

(*White v. Commonwealth* (Ky.), 245 S. W. R. 892)

The Court of Appeals of Kentucky, in affirming a judgment of conviction of murder, says that three expert witnesses testified that from an examination made by them some ten days after the homicide, and from an examination at or about the time of the trial, in their opinion the defendant was of unsound mind then and at the time the shooting was done. As there was no other expert testimony on this subject, it was argued that the jurors in returning a verdict to the effect that the defendant was of sound mind at the time of the homicide ignored the overwhelming evidence on the subject, and the verdict must therefore have been returned as a result of passion and prejudice.

But it has been said by this court and many other courts that expert testimony is regarded in law as the weakest kind of testimony, because it is not only a species of hearsay, but is, from necessity, based on, in a large measure, the statements of others with reference not only to the symptoms that may have appeared in the person under investigation, but is further based on the statement of facts from others which are said to have occurred in the past, and from the very necessities of the case the opinion of the expert is often based on things said to have happened in the past, which, in fact, may never have happened.

In this case, the experts, in giving their opinion as to the sanity of the defendant, must have based it on information they got from him and his family or friends with reference to his family relations and his family history, all or part of which may have been wholly inaccurate. When this court, therefore, considers the weakness of this class of testimony and considers, on the other side, the fact that the defendant appeared before the jury and testified at great length about a great many details and circumstances covering a long period of time, and admitted on the stand that he knew exactly what he was doing all the morning of the homicide, and knew perfectly what his actions were up until he pulled his pistol and fired the first shot, the court is not willing to say that the verdict of the jury in the light of these things was palpably or flagrantly against the weight of the evidence on this issue.

Nor is this court willing to say that the trial judge abused his discretion in not stopping the trial and impaneling a jury to inquire into the insanity of the defendant. The three expert witnesses did not testify until after the defendant him-

self had testified. At the time they testified, the court already knew from the demeanor of the defendant on the stand, and from his going into the minutiae of many occurrences covering a period of several months, whether he had the appearance of a man of unsound mind. The court knew that he had admitted that he knew exactly what he was doing all of that morning, and that he could and did account for every act of his during that day and for a long period of time prior thereto, and that he had admitted he had full possession of his faculties, and knew exactly what he was doing until after he had fired the first shot. Under these circumstances, it was not unreasonable or unfair to the defendant for the court to be of opinion that he was in fact then a man of sound mind, notwithstanding the introduction of the expert testimony.

Failure to Make Diagnosis of Empyema

(*Thorkildson v. Nicholson* (Minn.), 191 N. W. R. 269)

The Supreme Court of Minnesota, in affirming an order denying the plaintiff a new trial after a verdict had been directed for the defendant, says that the defendant was called, March 21, to the plaintiff's home to attend her son, who was 18 years old. On March 23 the patient was removed to a hospital. He did not improve, and, April 11, the plaintiff called another physician. Pus was then found in the pleural cavity, and on the 13th it was drained. The patient remained under the care of both physicians until April 26, when the plaintiff had him removed to another hospital where he remained, until his death, May 22, under the exclusive care of the second physician. The negligence alleged was that the defendant first treated the patient for the grip, then for typhoid fever, and then for kidney trouble, when he was not ill from any of those diseases, but from empyema, and that the defendant negligently failed to operate on and treat him for empyema. The only evidence to support these allegations of negligence was to be found, if at all, in the statement of the second physician that the defendant refused to believe that empyema was present until pus was disclosed by the use of the trocar, April 11, and the testimony of the plaintiff that some days after the funeral, when the defendant requested her to pay the remainder of the hospital bill, there was a dispute as to its having been paid, and some accusations were made; that then the defendant admitted that he did not treat the patient right and could be punished, but said that it would cost the plaintiff and him money, while she would not get the boy back, saying, "So let's be friends." The second physician expressed the opinion that empyema might have existed for about two weeks, and that proper treatment was to drain the cavity as soon as pus was suspected. A physician, who was a medical expert for the plaintiff, testified that empyema was not likely to have existed from the beginning of the illness. In answer to the question as to how long it ordinarily takes from the time empyema begins to develop until it may be detected, he said that the time varied, depending on the condition of the patient; it might take only overnight sometimes. The evidence did not give him a basis to form an opinion as to when the empyema started; but he testified that from the plaintiff's description of the patient's condition during his illness none but a "snap" diagnosis of the ailment from which he was suffering could be made.

The evidence, taken as a whole, was too uncertain and attenuated to establish that the defendant's diagnosis was negligently incorrect, or his treatment faulty from a professional standpoint. A physician is not liable for a mistake of judgment in the making of a diagnosis. There are complications in diseases to which human flesh is often subject that may for days and weeks baffle or set at variance the most skilful diagnosticians. Empyema is a secondary disease. The second attending physician testified that it frequently develops from influenza or grip or from bronchial pneumonia; "that you hardly ever find a typhoid germ causing influenza, but the symptoms may assimilate"; and that any number of infections will cause kidney trouble. Thus, even adopting the plaintiff's version of the defendant's designation of what the patient was suffering from, there was no foundation for a finding that there was negligence or want of professional skill in the diagnosis. The same held good

as to care and treatment given. But when it came to causal connection between the alleged negligence and the patient's death, there was still more patent absence of proof. From April 11, the second physician was in charge of the patient, the defendant assisting, and after April 26 for almost four weeks he was taken from the defendant's care and observation altogether. There was no opinion whatever from any medical expert that the patient could have recovered if the defendant had diagnosed or treated him differently than was done. There must be proof beyond mere conjecture that the negligence charged caused death. The evidence must warrant the conclusion that the patient would not have died from the illness the defendant was called in to treat had he not been guilty of the negligence or want of care alleged against him. People do die even under the care of the most painstaking and skilful physicians and surgeons. It is not enough that there may be an inference that some negligent act or omission was a contributing cause.

Consideration Required for Guaranty of Results

(*Wilson v. Blair (Mont.)*, 211 Pac. R. 289)

The Supreme Court of Montana, in reversing a judgment for \$5,000 damages that was rendered in favor of the plaintiff and in directing that instead thereof one should be entered for the defendant physician, says that the plaintiff, a watchmaker and engraver, sustained an injury to one of his thumbs whereby the tendons were severed and the first joint became stiff. About six weeks after the accident, the plaintiff had a conversation with the defendant, who, the plaintiff alleged, said that a surgical operation on the thumb would cost between \$25 and \$50, and said that he would guarantee that after the operation the hand would be 100 per cent. efficient. An operation was performed, but it did not restore efficiency. The plaintiff then brought this action, relying on the special contract which he alleged that he had entered into with the defendant for the operation with the guaranty of results. To prevail, the plaintiff must prove that there was an agreement enforceable at law, that the defendant violated such agreement, and that damage resulted. The defendant denied that there was any agreement guaranteeing the results of the operation.

If the contract in question was merely that the defendant was to perform a surgical operation, then the law required that he possess the skill and learning possessed by the average member of the medical profession in good standing in the community in which he resided; and to apply that skill and learning with ordinary and reasonable care. He did not become a guarantor of the results of such operation. But that plaintiff contended that the defendant entered into a special contract under the terms of which he increased his responsibility by guaranteeing the results of the operation to be performed. In order that such special contract be valid, or to make it enforceable at law, it must be supported by a consideration. The only consideration for this whole transaction, passing from the plaintiff to the defendant, was the fee of from \$25 to \$50, and the plaintiff said that this fee was for the operation. He said that he agreed to pay this to the defendant, and that afterward the defendant warranted or guaranteed the results of the operation. It could not be maintained that the guaranty was made as an inducement to the contract to operate, for the guaranty was made subsequent to the agreement to pay for the operation. It was apparent that the warranty was made after the agreement to operate and to pay therefor, that the warranty did not become a part of the contract to operate, and that there was no consideration for the warranty. Wherefore the supreme court is of the opinion that the trial court erred in denying the defendant's motion for a nonsuit, that the verdict was against the law, and that the defendant's motion for a new trial ought to have been granted.

During the trial, counsel for the plaintiff asked certain questions and made certain statements the obvious purpose of which was to get before the jury such matter as that the jury might infer therefore that some bonding company, and not the defendant, would be called on to bear the burden of meeting any judgment rendered in this cause. Such practice is not to be commended. Such matter was without the

issues, and none of it was admissible. But, having determined that this cause must be reversed on other grounds, the supreme court does not deem it necessary to determine now whether or not the action of counsel constituted, in itself, reversible error.

May Erect Residence for Physician at Hospital

(*Forward et al. v. San Diego County et al. (Calif.)*, 211 Pac. R. 458)

The Supreme Court of California says that the defendant supervisors were about to let a contract for the erection of a residence and garage at the county hospital for the county physician in charge of that hospital, when the plaintiffs, who were taxpayers, sought to enjoin the execution of the contract. A demurrer to the complaint was interposed, and sustained. Section 4041 of the Political Code of California fixes the powers and duties of boards of supervisors, and Subdivision 7 authorizes them, among other things, to construct hospitals and almshouses "and such other public buildings as may be necessary to carry out the work of the county government." There can be no doubt that, under the power to construct and maintain a county hospital, such buildings as may be reasonably necessary for that purpose may be constructed by the board of supervisors, and if, in their judgment, the proper management and control of the county hospital requires that a residence and outbuildings be constructed for the county physician, the supervisors would have the power so to do under the statute in question. Wherefore the judgment sustaining the demurrer is affirmed.

Allowance of Expert Witness Fees for Physician

(*State v. Wiebke (Minn.)*, 191 N. W. R. 249)

The Supreme Court of Minnesota holds, in this bastardy proceeding, that it was within the trial court's discretion to allow expert fees for a physician who in part of his testimony was called on to give his opinion as a medical expert. The supreme court says that complaint was made because of the allowance of expert witness fees for the physician who attended the prosecuting witness when the child in question was born. The physician did not merely testify to what he observed, but was also called on to give his opinion as an expert. The allowance of fees to an expert witness is largely within the discretion of the trial court, and the supreme court finds no abuse of that discretion here.

Damages for Conscious Pain Deadened by Opiates

(*Wasieck v. M. Carpenter Baking Company (Wis.)*, 191 N. W. R. 503)

The Supreme Court of Wisconsin says that this action was brought by the plaintiff as administratrix to recover damages for the death of her husband, a city fireman, who was killed through a collision of the defendant company's automobile with a fire truck on which he was riding. A judgment for damages was entered which allowed \$10,000 for compensation of the widow; for the estate, exclusive of pain and suffering, \$600, and for pain and suffering, \$2,625. The supreme court approves the first two items, and reduces the third one to \$500. There is no yardstick, the court explains, by which either the jury or the court can accurately measure the damages in a case of this kind. The amount awarded for pain and suffering was much more difficult of approximation than that allowed for compensation of the widow. It must be manifest that \$2,625 for three hours of conscious pain and suffering, deadened by opiates, could not stand, for, if so, there would be cases in which such damages would mount into hundreds of thousands of dollars, maybe millions. There is no accurate scale by which either court or jury can determine damages for pain and suffering. They must, however, exercise their judgment and discretion. But this court, having before it many cases in which juries have passed on damages for pain and suffering, is able, by considering these and the circumstances of each, to get a fairly balanced average, and concludes that \$500 is the utmost that can be allowed in this case for pain and suffering. The verdict of the jury was not perverse. The jury simply had no tangible evidence on which to base it.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29.
Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.

American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.

American Psychiatric Association, Detroit, June 19-22. Dr. C. Floyd Haviland, Drawer 16, Capitol Station, Albany, New York, Secretary.

American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.

American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.

American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.

American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.

Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.

Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.

Association of American Teachers of Diseases of Children, San Francisco, June 26.

California Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.

Massachusetts Medical Society, Pittsfield, June 12-13. Dr. W. L. Burrage, 182 Walnut Street, Brookline 46, Boston, Secretary.

Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.

Montana Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.

National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.

New Jersey Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.

New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.

Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.

Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.

Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.

Southern Minnesota Medical Association, Faribault, June 11. Dr. H. T. McGuigan, Redwing, Secretary.

Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.

Vest Virginia State Medical Association, Beckley, June 12-14. Dr. Robert A. Ashworth, Moundsville, Secretary.

Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.

Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Eighth Meeting, held at Atlantic City, N. J., May 1-2, 1923

The President, DR. J. B. HERRICK, Chicago, in the Chair

Chronic Valvular Disease

DR. WARREN COLEMAN, New York: When a child or adolescent is out of sorts, anemic, tires easily, or has a low grade fever, the possibility of endocarditis should be considered, as recurrent attacks play a part in producing chronic valvular disease. Treatment includes reduction of the work of the heart to a minimum, protection of the patient from exposure, and rest in bed. As healing valves are susceptible to reinfection, plenty of time should be allowed for recovery, sometimes as long as two years. If these precautions are followed, a practically normal heart can be obtained.

DISCUSSION

DR. HARLOW BROOKS, New York: To emphasize the importance of rest in known endocarditis, in the hope that favorable results may follow, rest acts in two ways: it gives the valve a chance to repair, and it conserves the diseased muscle which is unfavorably involved.

DR. HENRY KOPLIK, New York: We should be very cautious in pronouncing a child free from cardiac disease until repeated examinations have been made over long periods of time. The first president of this association, Dr. Delafield, emphasized the point that very rigid confinement by rest in bed, especially in children, should be avoided. It may favor another condition which is as bad—the accumulation of

adipose tissue. The murmur disappears, but will reappear when the patient is allowed to get up. If the period of confinement to bed is limited, it will avoid degeneration of tissues.

DR. W. S. THAYER, Baltimore: The problem is not the same in children as it is in adults. For adults, rest in bed is vital after endocarditis. The increasing amount of fat may be avoided by physical methods. The danger of allowing fat to accumulate is illustrated by the case of a young woman who was put to bed during an attack of endocarditis. She was kept in bed for three months. She gained so much weight that she developed atrophic striae all over the body. That was a catastrophe for a young and pretty woman.

Myocardial Lesions

DR. C. F. MARTIN, Montreal: Cabot has said that four out of five cases diagnosed as chronic myocarditis are incorrectly classified. We investigated sixty-five cases in which a diagnosis of myocarditis was made. Of these, twelve showed marked diffuse fibroid lesions; sixteen showed focal lesions; eleven presented fatty degeneration; fourteen showed nothing according to the pathologic reports, except that the cross striae of the muscle cells stained faintly. Two cases showed hypertrophy, but no myocardial lesion, yet the patients had died from myocardial insufficiency. Many cases showed no decompensation until shortly before death. In connection with anginal attacks: In some cases there was most severe pain with no lesion of the aorta or coronary arteries. In several cases the main lesion was near the orifice. Patients often show no disturbance on effort, although having lesions which ended fatally. A man, aged 38, with no history at all of trouble with breathing, and leading a very active life, died suddenly in his first attack. Necropsy showed very marked aneurysmal dilatation at the apex of the heart, and serpiginous dilatation of the myocardium. The functional capacity of the heart, therefore, does not depend on the lesions; it is rather an affair of dynamics than of anatomy. The efficacy of the myocardial muscle depends on the systolic discharge and on vasomotor nerve influence. Something more than anatomic change has to occur to impair the heart. The equilibrium of repletion and depletion of the cavities plays a rôle, and the muscle is adaptable in later decades to the circulatory changes by means of intraventricular anastomoses. The right preponderance shifts to the left side, and any deficiency in anastomosing mechanism might account for lack of adaptability of the heart muscle. Failure of the heart to respond to effort is caused by strain on the heart, and there is no standard to determine myocardial efficiency. Exercise tests and the electrocardiograph are not exact standards. It cannot be stated that because the electrocardiogram is abnormal the myocardium is defective, or vice versa.

Diphtheria Myocarditis

DR. A. S. WARTHIN, Ann Arbor, Mich.: I have found marked histologic changes in the heart. The patients died in from three days to three months after the onset of the disease. The heart muscle is pale, without striation, and will not take the eosin stain. There is no cloudy swelling. After the fifth day the heart muscle shows vacuolization and Zenker's necrosis of the striped muscle. The spread of degeneration follows the vascular distribution. Later, there is edema of the muscle with preponderance of hyaline cells. In from ten days to two weeks after the onset of the disease, there is mononuclear infiltration and the muscle fibers begin to liquefy. Next occurs fibroblastic proliferation throughout the heart and the bundle of His, with some evidence of regeneration changes. There seems to be much repair with myoplastic and myoblastic cells. There may be fibrosis, we do not know; but this may give rise to fibroid heart during life. The fact of muscle regeneration is of great importance, and may bear on functional improvement.

DISCUSSION

DR. K. F. WENCKEBACH, Vienna, Austria: In the study of muscle degeneration, Wieser considered that the regeneration of fibers was an important part. He found that there was

an enormous amount of muscle regeneration in tissues in which infection had been present long before. In this question of regeneration of striped muscle, it is extremely interesting to hear that the first stage of regeneration is comparable to that of smooth muscle. Large masses of smooth muscle may be regenerated in the vessel wall, but there is a difference in the structure of the regenerated portions and the original muscle structure. The whole mass of the regenerated portion appears like a foreign body when surrounded by the rest of the smooth muscle tissue, so that there is not the same arrangement of the cells as formerly, the original muscle being arranged in longitudinal layers; but the new muscle formation is active and serves very well to repair the damage done during the period of activity of the infectious disease.

DR. C. T. BUNTING, Madison, Wis.: Was there any evidence of regeneration in children?

DR. HENRY A. CHRISTIAN, Boston: In regard to the flat granules seen in two of the slides, I should like to ask what explanation Dr. Warthin has.

DR. A. S. WARTHIN, Ann Arbor, Mich.: All my cases were in young adults, from 18 to 20 years of age. In regard to the flat granules, they were due to mercuric chlorid pigment which was not entirely washed out.

Structural and Functional Involvement of the Heart, Following Acute Respiratory and Other Acute Infections

DRS. WALTER W. HAMBURGER and WALTER S. PRIEST, JR., Chicago: Three years ago a study of postinfluenzal heart lesions was begun, and these cases have been followed up to see what changes have occurred in the three year interval. The following are recorded: 1. A case of auricular extrasystoles, with bigeminal pulse on slight exercise. Present condition: regular pulse even on exercise. 2. Permanent displacement of the pacemaker. After three years: ectopic beats in Lead 1. The man feels well. 3. Originally, a case of streptococcus sore throat, then heart block, premature contractions. The man made a good recovery and is now well. 4. Influenzal myocarditis. Patient not well yet; needs frequent rest. 5. Acute streptococcus tonsillitis; gastric collapse; complete auriculoventricular dissociation and right bundle branch block. Atropin, $\frac{1}{100}$ grain, relieved all pressure in the epigastrium; return of normal rhythm; complete recovery. Analysis shows that these patients recover after a sufficient time has elapsed. The cases may be recorded in two groups: (1) structural involvement; (2) functional involvement. In the first group there is evidence of heart failure; in the second group, there is absence of positive evidence of organic involvement, but the pain, weakness and depression are characteristic of irritable heart. The structural involvement may be only transitory in character. Basal metabolism estimations disclosed that there were slight thyroid disturbances, and many times there was concomitant disease, both structural and functional.

DISCUSSION

DR. E. B. KRUMBHAR, Philadelphia: Were any preinfluenzal studies made in order to rule out infectious coincidence?

DR. K. F. WENCKEBACH, Vienna: In such cases the diagnosis of myocarditis has not been made. Some of the influenlal cases are cases of functional disorder of the heart, delayed conductivity, heart block. This functional disorder may be set up by toxic agents, or, perhaps, by fatigue. I have seen delayed conductivity in cases of influenza. MacKenzie has stated that there may be a complete dissociation between auricles and ventricles, but not with complete recovery. Such cases may be cases of myocarditis, but proof has to be given, and this cannot be obtained until the cases are terminated. We know that we can set up a heart block with digitalis or a prolongation of the auriculoventricular interval, but no one would say that digitalis will set up myocarditis.

DR. W. W. HAMBURGER, Chicago: We had no previous experience with these patients, but there was no history of cardiac disturbance before influenza developed. I do not want to say that auriculoventricular block is evidence of

structural disease. The only case which showed other symptoms was one in which there was a large, tender liver, scanty urine, dyspnea and temporary signs of heart failure. This case cleared up, but we can conceive of a true, acute, structural involvement. I believe that it may be cloudy swelling or edema, which is a tissue change of an acute nature but susceptible of being restored to normal.

Atypical Form of Verrucous Endocarditis

DRS. EMANUEL LIBMAN and BENJAMIN SACKS, New York: Various forms of verrucous endocarditis have been described but there is another type, hitherto undescribed, that is due to some unrecognized virus. We have studied four cases in which postmortem examinations were made. The course was subacute, running from four to nine months. The ages of the patients varied from 7 to 24 years. Three were females and one was a male. There was a large, plateau-like lesion extending from the mitral valve forward over the wall of the left ventricle, covering the anterior flap of the mitral valve. In two cases the right auricle was involved. In four cases the tricuspid valve was involved, and in two cases the pulmonary valve was involved. These lesions were never found in cases of rheumatic fever (i. e., fatal cases in which the Aschoff bodies were demonstrated). There are no bacteria in the vegetations. The blood cultures are negative. There is a tendency to involvement of the wall of the left ventricle. There may be previous valvular disease, and the lesions may be recurrent. In one case there was one small infarction of the spleen. There were no glomerular lesions of the kidney. In three cases there had been a recent pericarditis. The course was subacute, with irregular fever and anemia, but no leukocytosis. There was some pulmonary and joint involvement, with a very peculiar discoloration over the joints. In half of the cases there was lupus erythematosus. Convulsions occurred in three cases, pericarditis, in three cases, petechiae in four cases, and multiple skin necrosis.

DISCUSSION

DR. GEORGE BLUMER, New Haven, Conn.: Reports of a very large number of cases of lupus erythematosus have been published in which the disease has not run a typical course and has gone on to death by sepsis as in the cases mentioned by Dr. Libman.

DR. L. F. BARKER, Baltimore: I am very much interested in these cases of acute lupus erythematosus. In Baltimore we had one case, and the Mayos have published several cases. In some cases, lesions of tuberculosis were found at necropsy, and it was thought that the whole condition was due to tuberculosis; but, really, only about half the cases show tuberculous lesions. I should like to ask Dr. Libman whether he thinks that tuberculosis can be regarded as a predisposing factor in these cases.

DR. EMANUEL LIBMAN, New York: I do not think that there is a well delineated clinical picture of lupus erythematosus yet. I have seen a number of typical cases and also a great many which at the postmortem do not show this lesion. In atypical cases, a terminal endocarditis is found. As far as my own experience in fatal cases of lupus erythematosus goes, we did not find a tuberculous etiology. Tuberculosis can be said to be one of the etiologic factors of lupus erythematosus dermatosus, but I do not think that it plays a rôle in the cases we reported. One patient is alive and well. There were two attacks of fever, and a lung focus. There was pericarditis, but a negative blood culture. I believe that recurrence may take place, and there is some pathologic evidence in support of this view.

Use of the Roentgen Ray in the Diagnosis of Chronic Valvular Heart Disease

DR. J. A. E. EYSTER, Madison, Wis.: The factors that should be taken into account in adopting roentgen-ray determinations of clinical cases include: (1) possible variations in the size of the heart from time to time; (2) influence of moderate exercise, and (3) influence of meals shortly before examination. Our study showed (1) a considerable variation in the frontal and in transverse diameters; (2) a variation of 5.1 per cent. after walking for fifteen minutes, and (3)

variation of 5.1 per cent. after meals. This shows that variations of from 25 to 50 per cent. may occur from slight causes.

DISCUSSION

DR. K. F. WENCKEBACH, Vienna: The form of the orthodiagram depends on the level of the diaphragm. I compare the mass of the heart with that of a sack of peas with small horizontal diameters. If there is no base for the sack to rest on, it takes a pendant shape, but if it is supported, its base follows the shape of the base on which it is resting. It will become wider and flatter at the base with large, horizontal diameter. That occurs also with the heart. I am skeptical of the value of gaging the bulk of the heart by means of figures. I am trying to get as much as possible out of the orthodiagram, but also as much as possible out of percussion. Not everybody knows how to do percussion. Percussion may be of value in trying to gage the position of the under side of the heart, because although we may be able to trace the rest of the outline, a most important part of the figure is always lacking. I tried injecting oxygen into the abdomen to make visible this lower surface of the heart, but the attempt was not successful, although the method was a perfectly safe one as regards the patient. This led me to go back to the older method of percussion. This is difficult, especially for the apex and the left side of the heart, but by careful percussion one can follow the louder and softer sounds and make out the right side of the heart. One can get a very clear line over the liver and stomach in the normal heart. In the long heart there is a different type of line; in the high heart there is another type of line with a much more horizontal line at the base. This gives one an idea how high the heart is lying in the chest. When there is great enlargement of the left ventricle in mitral or aortic incompetence, there is an enormous increase in size of the left ventricle which cannot be detected in any other way.

DR. JOSEPH H. PRATT, Boston: I have been using the orthodiagrammatic method since 1905, and I feel convinced that there is something wrong in the conclusions drawn from the data presented. It is my experience, and that of others who have worked extensively with orthodiagrams, that it is of great value in the routine measures for diagnosis of heart disease. Perhaps, in some of these cases the change in the size of the heart was very little outside the normal. The size of the normal heart varies greatly, and the standards are not satisfactory. When we examine the heart with the orthodiascope it is in constant motion and influenced by expiration and by systole and diastole. There may be a slight amount of error, and it is impossible to determine very slight enlargements; but we are interested in determining definite enlargement which is of clinical significance, and in that the orthodiascope has given definite help. The teleroentgenogram is a substitute for the orthodiagram. Fluoroscopic methods can also be used. During the last two years, as a result of the perfecting of the machine and of the technic, it has been possible to use the orthodiagram to check up the detail of the teleroentgenogram. The teleroentgenogram does not give the long axis of the heart nor does it show whether the apex is below the dome of the diaphragm. The position of the apex must be guessed at; but by using the two methods, definite enlargement of the heart, if present, will be revealed. Percussion is not an entirely exact method, and details overlooked by percussion can be checked up by the orthodiascopic methods.

DR. W. S. THAYER, Baltimore: Only constant practice for many years in percussion of hearts can teach the value of this procedure. I am surprised to hear Dr. Pratt state that he values the orthodiagrammatic methods so much. Comparing my estimate of the size of the heart by percussion, with the measurements by orthodiagram, I have never undervalued the size of the heart. There are many diagrams that do not mean much, but the physician who cannot percuss "is not here!" One of the satisfactions of getting a few years older is learning to use the fingers better.

DR. K. F. WENCKEBACH, Vienna: Percussion certainly is the most difficult art in physical diagnosis. It took many years of practice before I could be sure of being half way exact. I object to looking at the roentgenogram before per-

cussing, because when I know its form I make a most beautiful percussion. Furthermore, it may prevent one from finding out what is the real bulk of the heart by the percussion method. The roentgenogram has undue influence on the percussion test. The percussion should be done first.

Physical Findings in Pericarditis with Effusion

DRS. ROGER S. MORRIS AND CARL F. LITTLE, Cincinnati: Large pericardial effusions, not suspected during life, have been found at necropsy. To study this question, injections were made in patients recently dead, and it was found that the cardiohepatic angle was not obtuse; it was an acute or a right angle. Also there were no roentgen-ray changes before 250 or 300 c.c. was injected into the pericardial cavity. The first change on percussion was increased dulness at the base of the heart, near the great vessels. Observations continued on patients for two and one-half years confirmed these findings on the cadaver. Percussion was done with the eyes closed, and before fluoroscopic and teleroentgenographic examination were made. Tests were made both in the recumbent and in the erect posture. In all cases we found an acute cardiohepatic angle and dulness at the base of the heart. We feel that this is useful in recognizing pericardial effusions. The roentgen ray confirmed the percussion findings in these cases.

DISCUSSION

DR. L. A. CONNOR, New York: The recognition of small amounts of liquid in the pericardium is a difficult matter. Often, even large effusions are overlooked. I want to emphasize the importance of posterior signs because they are most constant. My experience is that the cardiohepatic angle varies greatly in different cases. The roentgen ray and percussion usually show what Dr. Morris said, but there are exceptions to that rule. Another important point is that often there is preservation of the friction rub even when the effusion is very large. That is the reason frequently of failure to recognize effusion; we think that wherever there is a rub there is very little fluid.

DR. W. S. THAYER, Baltimore: One point which Dr. Morris brings out is of importance, and that is the change of dulness at the base with change of position. We have all assumed change in the shape of dulness with change of position from side to side, but the change in the amount of dulness at the base with the erect and recumbent postures is of importance.

DR. WARREN COLEMAN, New York: I think that the angle between the great vessels and the heart is one of the most important things to determine from the standpoint of percussion. If one percusses carefully over the normal heart, it can be obtained. In my experience, one of the sure signs of the presence of fluid is the straightening out of that line.

DR. F. T. LORD, Boston: Contrary to Dr. Coleman's experience, I have determined that angle with great difficulty. I think the elevation of the area of dulness of the heart above the normal position leads me to suspect effusion. Another point which Dr. Connor made is of importance; that is, compression in the back area due to atelectasis, owing to effusion. Also, in large hearts in children this sign may be present without any effusion.

Heart in Exophthalmic Goiter and in Adenomatous Goiter with Hyperthyroidism

DRS. LOUIS B. WILSON, W. M. BOOTHBY AND F. A. WILLIAMS, Rochester, Minn.: In exophthalmic goiter the heart work is so increased that the patient, lying in bed, needs four and five thousand calories a day. There is increased systolic blood pressure and slightly decreased diastolic pressure. In adenomatous goiter with hyperthyroidism, there is increase in both systolic and diastolic pressure. Cardiac murmurs occur in half the cases. Murmurs are of two kinds, the systolic blowing murmur, associated with changes in blood flow, and a systolic blowing murmur, with maximum at the apex, due to mitral regurgitation and enlarged left ventricle. Few patients die of heart failure in this disease. One death in twenty-three cases was recorded as due to cardiac failure. Difficult breathing after operation is due to anoxemia resulting from injury to the laryngeal nerve. In some patients, auricular

fibrillation develops from the stress of operation. Patients with emergency operations for other conditions have developed auricular fibrillation, owing to unsuspected thyroid conditions. In our cases, sinus auricular block occurred in one case; T-wave negativity in three cases; hypertrophy in seventeen cases, and fibrosis in two cases. Eleven of the patients were over forty-five, and in these, lipoid changes were more marked than in other women of the same age group. Our conclusions were that pronounced changes are not so frequent in goiter as is generally supposed. When they do occur, they dominate the picture; but they can be relieved greatly by proper cardiac therapy.

Insulin in the Treatment of Severe Diabetes

DRS. ALEXANDER MCPHEDRAN AND F. G. BANTING, Toronto: When we admit cases of diabetes to the Toronto General Hospital, the patients are allowed to remain for twenty-four hours on the diet they have been taking previous to admission. They are then placed on a diet requisite to satisfy their basal requirements. The next step is the taking of a careful history: complete and careful examinations are made as to the existence of foci of infection; examinations of the blood and urine are made, and the excretion of sugar is noted. The amount of sugar excreted is subtracted from the amount given to fulfil the basal requirement, and furnishes the basis for estimating the amount utilized. If the patient becomes sugar free when receiving a diet calculated according to his basal requirement, he is not at present considered a sufficiently severe case for insulin treatment. The insulin treatment consists in giving an amount sufficient to maintain a balance between the calories that cannot be metabolized by the patient's own pancreatic secretion, over and above the carbohydrates, fats and proteins that he is able to utilize. In the milder cases, insulin is administered once a day; in the more advanced cases it is given twice a day, and in the very severe cases it may be necessary three or four times a day.

The best time for the administration of insulin is from twenty to thirty minutes before meals. The insulin injected subcutaneously is absorbed by the circulation, and this tends to produce a balance between the hypoglycemia of insulin and the hyperglycemia brought about by the food intake. The patient with a very high blood sugar may stand a comparatively higher dose, because the blood sugar must be brought down to normal. Roughly speaking, one unit of insulin has the effect of utilizing 2.5 gm. of carbohydrate in the milder types of cases. In the more severe cases of diabetes one unit of insulin will take care of about 1 gm. of carbohydrate. Care must be given in studying the best time for the administration of the dose. It is sometimes necessary to give a larger dose in the morning than in the evening, because after the morning injection there is a tendency to hypoglycemia, and breakfast counteracts the downward tendency. The action of the drug lasts till noon, when another meal is taken. Some patients do better when taking 15 units in the morning and 10 units in the evening.

In the management of the case it is better to decrease the diet and increase the dosage, until the amount of food required by the patient is reached. The diet is then kept constant, and sufficient insulin is administered to keep the patient sugar free if possible. The art of treatment consists in balancing the amount of internal secretion with the amount of carbohydrate that is over and above the patient's tolerance, keeping the equilibrium between the hypoglycemia, on the one hand, and hyperglycemia, on the other. If the patient is excreting 1 or 2 gm. of glucose with a diet that is 700 calories above the requirement, one must find out the time of day at which that amount is being excreted, and administer the dosage accordingly. Insulin shock is a definite clinical entity. It is always recognizable, as the subjective sensations are pathognomonic of the lowering of blood sugar. The reactions depend on the fall of the blood sugar and the extent and rapidity of the fall. The normality of the blood sugar must be kept above the level at which the reactions occur. It has been found experimentally that the administration of calcium relieves the hypoglycemia convulsions that occur in rabbits, although without raising the blood sugar. This fact has been made use of clinically at the Children's Hospital. The patients

are less likely to hypoglycemic reactions when receiving 3 gm. of calcium lactate, three times a day.

One type of diabetes that does not respond well to insulin treatment is that with diarrhea, but one patient with a severe case accompanied by diarrhea is now having fewer reactions under calcium chlorid administration, than previously. Insulin dosage means that the patient is permitted to metabolize more calories. The increase of caloric intake and maintenance of normal blood sugar relieve the symptoms of the disease.

In regard to the continuous use of insulin indefinitely, it does seem that by adding the necessary amount of pancreatic secretion, the patient's own gland is relieved of the strain and has some chance to recover. Patients showing 50 gm. excretion, can after three months' treatment take 300 additional calories and remain sugar free. The other patients who were acetone free despite starvation will get an increased tolerance after a time. The formation of acetone is prevented in patients who showed acetone from starvation, because they are now able to handle sufficient calories.

Insulin is not a cure for diabetes, it is a treatment. It allows the patient to combat infections, to keep free of acidosis and to avoid coma. It enables the diabetic patient to burn sufficient carbohydrate, so that protein and fats can be added to the diet in sufficient quantities to give him energy to carry on his work and maintain the ordinary economic burden of life.

Insulin in the Routine Treatment of Diabetes

DR. E. P. JOSLIN, Boston: In the treatment of diabetes, we must conserve all the measures that have proved useful without the use of insulin. Insulin is a powerful drug and calls for careful usage. Recovery from insulin shock is prompt when remedial measures are instituted. The juice of an orange, or two teaspoonfuls of sugar, immediately relieve the patient. Insulin dosage needs supervision and limitation, but its use can be taught the general practitioner. I have sent the drug to 127 different general practitioners, who had patients to be treated. The physician should spend two or three hours in learning how to manage the diet and how to use insulin.

The diet should be what the patient has been taking, with some modification, in the direction of reduction of calories. The protein should be 1 gm. per kilogram of body weight. The carbohydrate should be rather less than what has been taken. The first doses should be 1 unit. Proper balancing of the ration will help to cut down the amount of insulin needed. Insulin is best given in the morning, and the dosage depends on the rate of absorption from the intestinal tract and from the skin. It is better to play safe and to give too small rather than too large a dose. In the first 5,000 doses given there were only thirty-five reactions. Insulin seems to enable the pancreas to respond better, so that in very severe cases in which at first as much as 35 units is needed, the blood sugar can be kept normal with 10 units. Gain in weight is very marked. If patients have to omit insulin for lack of supply, they must go to bed and reduce the diet one third. Neglect to do this will produce coma. Now that we understand treatment by insulin, it must be said that deaths from diabetic coma are an unnecessary accident that can be avoided by sensible treatment. If the patients die from coma at the present time, it is a disgrace to the medical profession.

Insulin in the Surgical Complications of Diabetes

DR. R. T. WOODYATT, Chicago: The most common surgical complications in diabetes are infections of the extremities. Usually these are emergency cases, and there is no time for metabolic investigations. There is usually a low alkali reserve and acid intoxication, but the surgical condition will not permit of delay. To operate on the patient courts shock and risks increasing the acidosis, but allowing infection to progress means greater injury. If we can bring the alkali reserve to a safe level, the damage stops. This should be brought up to 40 on the Van Slyke scale. Three measures are useful in bringing about this result: (1) dietary control; (2) administration of alkalis, and (3) insulin dosage. In uncomplicated cases, 1 gm. of fat, 0.5 gm. of protein and practically no carbohydrate is a safe ration and will stop acidosis and restore alkali reserve. The fat can be given

1 pint (500 c.c.) of cream: two eggs for protein, and 5 gm. of bread. In the complicated cases, however, tissue breakdown continues without reference to diet. Restoration of the alkali reserve by means of insulin may take from ten to twenty-four hours. If, however, acid continues its damage to the organs, the loss of one hour may mean death. Another point is that one does not know how much carbohydrate there is for the insulin to work on. Under these circumstances the administration of 20 gm. of sodium bicarbonate, by mouth, with sufficient water, every hour, till the alkali reserve returns to normal, is a safe measure. After this the administration of 5 gm. an hour is enough to hold the cases until further examinations have been made, or until sufficient time has been given to estimate the insulin dosage.

(To be continued)

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., April 30, 1923

Concluded from page 1644

The Respiratory Center in Acidosis

DRS. J. H. AUSTIN, G. E. CULLEN and LEON JONAS, Philadelphia: In our studies on the acidosis occurring in ether anesthesia, we obtained evidence of extremely rapid fluctuations in the alkali reserve as well as in other factors concerned in the acid base equilibrium. The larger part of the fall in alkali reserve that occurs with ether, chloroform and nitrous oxid anesthesia occurs during the first few minutes of the anesthesia. The fall in alkali reserve with nitrous oxid anesthesia is less than with ether and chloroform anesthesia. A fall of the same degree and rate of development can be produced by using nitrogen instead of nitrous oxid at the same concentration. Exertion, psychic disturbance and repeated bleedings, as occurring in these experiments, do not of themselves produce a fall in alkali reserve. Anoxemia alone, without exertion, lowers the alkali reserve, but less than does the administration of the anesthetics. The importance of the combination of anoxemia and exertion is suggested by these experiments. They are probably not the only factors responsible for the fall in alkali reserve in these experiments. The immediate fall in p_H associated with the fall in alkali reserve indicates that we are dealing with an uncompensated acidosis and not a compensated alkalosis.

Modification of the Folin and Wu Blood Sugar Determination

DRS. F. A. EVANS, V. E. ROTHBERG and T. M. MABON, Pittsburgh: We dilute the unknown in the test tube in which the reduction has been carried out and the color developed, to match the color of the standard as closely as possible, instead of to the same amount as the standard solution, 25 c.c. The unknown is then read against the standard in the colorimeter as usual, and the amount of dilution of the unknown is made a factor in the final calculation. For this calculation the formula

$$\text{Dextrose in unknown} = 80 \times \frac{\text{dilution}}{\text{colorimeter reading}}$$

has been derived. By this modification, correct values may be obtained for known sugar solutions, and a rather large error eliminated from the Folin and Wu blood sugar determination.

Studies on the Sweat and the Response of the Body to External Heat

DRS. RALPH PEMBERTON, F. A. CAJORI and C. Y. CROUTER, Philadelphia: The physiologic response of the body following from thirty to fifty minute therapeutic exposure to an electric light bake of fourteen arthritis patients and two normal persons consisted of increased alkalinity of the blood, fall in the total carbon dioxide content of the blood and a small rise in alkali reserve. An alkaline swing of the urine, decreased hourly ammonia excretion, and an increased alkalinity of the sweat were also observed, which are interpreted as reflecting the changes in reaction of the blood. This change in reaction of the blood would seem to be

largely due to a carbon dioxide deficit resulting from a loss of carbon dioxide from the body by way of the lungs and skin. Part of the value of such bakes in nephritis may be in combating the acidosis which sometimes exists. The tendency for an alkalosis as a result of exposure to heat should be mentioned as a possible baneful effect of the extreme use of this form of treatment.

Reaction and Gas Content of the Blood in Lobar Pneumonia

DRS. C. A. L. BINGER, A. B. HASTINGS, J. NEILL and H. J. MORGAN, New York: It may be concluded from our investigations that the occurrence of an abnormal acid-base balance in pneumonia patients, in the sense of an acidosis, is rarely, if ever, encountered; nor are the changes accompanying recovery greater than those occurring as the result of normal physiologic processes. In no case of our series was the administration of sodium bicarbonate indicated.

Arborization of the Right and Left Branches of the Bundle of His in the Human Heart

DR. M. A. ROTHSCHILD, New York: The opportunity afforded itself in securing the heart of a patient dying from suppurative pancreatitis with a marked hyperglycemia. In general, it was found that the arrangements and distribution of the conducting mechanism correspond very closely to the dog's. Practically all parts of the ventricular musculature investigated showed the endocardium lined by arborization.

Infrequency of the Association of Fibrillation of the Auricles and Subacute Bacterial Endocarditis

DRS. EMANUEL LIBMAN and M. A. ROTHSCHILD, New York: It has been noted that in a series of approximately 200 cases of subacute bacterial endocarditis in the active stage, fibrillation of the auricle practically never occurs. In the healed stage of the disease, fibrillation may occur. It has also been noted that patients with fibrillation of the auricle practically never develop bacterial endocarditis. In a general way, disorders of cardiac mechanism are the exception rather than the rule in bacterial endocarditis, while in rheumatic infections disorders of mechanism are exceedingly common. These facts are of diagnostic and prognostic interest.

Basal Metabolic Rate in Untreated Exophthalmic Goiter

DR. LEO KESSEL, New York: A study of the basal metabolism in fifty unselected cases of clear-cut exophthalmic goiter is reported. Forty-six records are complete and show an average initial reading of plus 44 per cent. At the end of three months, six months and twelve months, respectively, the readings are: three months, 28; six months, 22; twelve months, 19. There is, therefore, a tendency in these patients, managed without the institution of specific therapy (spontaneous course), to a rapid, marked and progressive fall in the basal metabolism, which is accompanied by a corresponding fall in the symptoms score, in the exophthalmometer reading, in the neck circumference and by a gain in weight. Coincidentally, there is a return to economic and social utility in these patients, all of whom were confronted with great economic strain. The course of the basal metabolism should serve as a normal standard by which specific therapy may be objectively evaluated.

Changes in Shape and Size of Hearts During Progress of Compensation

DRS. J. C. FRIEDMAN and SIDNEY STRAUSS, Chicago: Cardiac compensation may occur without any changes in heart dimensions, with changes only in the great vessels, especially the superior vena cava; with changes in either the right or the left border; or with changes in all diameters. Many of these changes are so slight or so situated as to escape entirely ordinary methods of examination.

Levulose and the Diabetic Metabolism

DRS. E. P. JOSLIN and HOWARD F. ROOT, Boston: Highly purified levulose in amounts proportional to body weight was given to diabetic patients. Levulose ingestion produced a less marked hyperglycemia than dextrose, and a marked rise in respiratory quotient and metabolism followed. Even in severe diabetes, only a small amount of sugar appeared in

the urine after as much as from 75 to 100 gm. of levulose was taken. Pure levulose, 15 gm. in portions of 5 gm., three times daily, or insulin, 15 gm., in the form of artichokes, when added to the diet of a diabetic patient for periods of from one to four weeks did not produce glycosuria.

Copper as a Constituent of Mother's and Cow's Milk: Its Absorption and Excretion by the Infant

DRS. A. F. HESS and G. C. SUPPLEE, New York: The milk of the cow, as well as mother's milk, regularly contains copper. The amount varies somewhat according to the dietary. The copper is absorbed by the infant and partly excreted in the urine. When the dietary includes cereal, larger amounts of copper are excreted.

Cardiodynamic and Electrocardiographic Studies During Various Stages of Heart Failure

DRS. W. W. HAMBURGER and STEPHEN D'IRSA, Chicago: Measurements of the isometric and isotonic phases of the cardiac cycle were attempted by simultaneous electrocardiographic and phonocardiographic records. For the most part, cases of moderately advanced and advanced heart failure were studied from the time of admission into the hospital until compensation had been restored through rest and digitalis. Variations in heart muscle tonus paralleling variations in cardiac compensation can be detected by such measurements.

Treatment of Migraine with Peptone, and Evidence of Its Anaphylactic Origin

DRS. J. L. MILLER and B. O. RAULSTON, Chicago: Pagniez reports good results in the treatment of migraine by the intravenous injection of peptone. The results of our treatment of twenty-five patients were: nine, much improved; twelve, moderately improved, and four, not benefited.

Blood Volume Studies in Obesity

DRS. N. M. KEITH and G. E. BROWN, Rochester, Minn.: In fourteen definitely obese patients the blood volume was found to vary from the average normal to distinctly low values. Later determinations showed that loss of weight was not always associated with the same changes in blood volume.

Catabolism of Amino-Acids in the Human Organism

DR. K. K. KOESSLER, Chicago: Histidin and tyrosin are decarboxylated almost consistently in the intestinal tract to histamin and tyramin, respectively; or, in other words, histamin and tyramin are normally present in the human intestinal tract.

The Electrocardiogram in Uremia and Severe Chronic Nephritis with Nitrogen Retention

DRS. P. D. WHITE and J. E. WOOD, JR., Boston: Of thirty-seven cases of uremia and severe chronic nephritis with an increased blood nitrogen, all presenting symptoms and signs of coma or impending coma, all except three had nonprotein nitrogen amounting to 60 mg., or over, per hundred cubic centimeters. Nineteen cases showed definite variations from the normal electrocardiogram (other than axis deviation, sinus arrhythmia or tachycardia) which could not be accounted for except by the consideration of a toxic effect of the products of uremia on the heart muscle. These variations were sino-audicular, auriculoventricular and intra-ventricular block and abnormal T wave changes. It was not determined why these changes occur in some cases of uremia and not in others. Of four of the positive cases coming to necropsy, two presented evidence of glomerulonephritis and two of the arteriosclerotic type of nephritis. Clinically demonstrable edema was present in eight of the positive instances, and albuminuric retinitis in seven. Age and sex were not factors.

Infectious (Catarrhal) Jaundice

DRS. G. R. MINOT and C. M. JONES, Boston: A detailed study of twenty-five cases has been made. The duodenal sediment showed bile-stained pus and epithelium, mucus and inspissated bile, during the early stages of the disease. The duodenal bile pigment output was at first absent or diminished, but later rose to a level of from 100 to 500 per cent.

above normal. Abnormal pigments were observed—urobilinogen frequently, cholecyanin rarely. Subsequently the duodenal pigments returned gradually to normal. Rapid clinical improvement immediately followed the peak of the pigment curve. Clinical jaundice disappeared before a normal pigment level was reached. The concentration of the serum bile pigments was practically a direct reciprocal of that in the duodenal contents. Our observations and necropsy findings lead to the assumption that in infectious jaundice there occurs a functional disturbance of the liver cells not unlike that resulting from certain chemical poisons. Such a process explains the persistence of jaundice in the severe cases. The extent of liver damage may be judged by following the pigment output. Blood studies indicate a typical leukocytosis reaction characterized by a slight initial polymorphonuclear neutrophilic leukocytosis, followed by a leukopenia, with gradual return to normal. With the leukopenia occurs an absolute rise in the lymphocytes and large mononuclears. These are most numerous during the period of most marked clinical improvement, with a moderate increase persisting for weeks thereafter. Immature forms of lymphocytes are frequent, and vacuolization of the white cells is a feature, most marked in the mononuclears. A reduction of the red cell is usually found, but the platelets definitely increase with decrease of the jaundice.

Acute Tonsillitis

DRS. A. L. BLOOMFIELD and A. R. FELTY, Baltimore: A study made of 200 persons among whom tonsillitis is prevalent each winter has shown that acute tonsillitis is almost always an exogenous infection, and that those who are streptococcus carriers are relatively insusceptible.

Toxic Nephritis in Pyloric and Duodenal Obstruction: Renal Insufficiency Complicating Gastric Tetany

DRS. L. G. ROWNTREE and G. E. BROWN, Rochester, Minn.: Eleven patients suffering from a toxemia associated with an anatomic or physiologic stasis in the duodenum have been studied. This duodenal toxemia is characterized by a rather definite clinical picture—urinary changes, changes in the blood chemistry, decreased renal functional capacity, and pathologic changes in the kidney. The clinical picture consists of: (1) the vomiting of large amounts of thin, serous bile-stained fluid; (2) evidence of dehydration, red, florid complexion, high hemoglobin, low blood pressure and asthenia; (3) tetany-like manifestations, and (4) features of a superimposed uremia; (5) at times evidences of shock. The blood shows (1) a low level of chlorids; (2) a high carbon dioxide capacity, and (3) a high level of blood urea and creatinin. Urinalysis reveals albuminuria and casts. Renal functional studies show high values for urea and creatinin and a decreased excretion of phenolsulphonephthalein. In six cases, necropsy revealed a nephrosis with characteristic changes in the tubular epithelium or a diffuse nephritis. The chemical findings of the blood are of definite diagnostic and prognostic significance. The treatment is primarily surgical to establish gastrojejunal continuity. When clinical and laboratory findings indicate a poor surgical risk, medical measures are employed, drainage by stomach tube, administration of fluids, chlorids, dietary control and drug therapy.

Observations in a Case of Paroxysmal Auricular Fibrillation Over a Period of Seventeen Years

DR. F. T. FULTON, Providence, R. I.: A man, aged 80, has had these paroxysms for more than twenty years and has been observed carefully for seventeen years. He is free from any evidence of cardiovascular disease and has retained his mental faculties to an unusual degree. The paroxysms, however, have been at times so frequent as to interfere seriously with his activities, and greatly with his mental poise. The electrocardiogram verifies the diagnosis of fibrillation. Two years ago he was given 3 grains of quinidin daily in the morning. During the last eighteen months he has had only three paroxysms, and they have not been of much significance. He had previously been having them on an average of about six or eight a month. He continues to take the quinidin daily.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

64: 203-404 (April) 1923

- Effect of a Restricted Diet. IV. On Age of Greatest Productivity. J. R. Slonaker and T. A. Card, Stanford University, Calif.—p. 203.
- Studies on Mixture of Air in Lungs with Various Gases. C. Lundsgaard and K. Schierbeck, Copenhagen, Denmark.—p. 210.
- Studies on Mixtures of Air in Lungs with Various Gases. II. Quantitative Influence of Certain Factors in Producing Full Mixture of Hydrogen with Air in Lungs. C. Lundsgaard and K. Schierbeck, Copenhagen, Denmark.—p. 231.
- Influence of Gonad Hormones on Seminal Vesicles. N. F. Fisher, Chicago.—p. 244.
- Blood Pressures and Heart Rate, in Girls, During Adolescence. S. R. Burlage, Ithaca, N. Y.—p. 252.
- Physiologic Assay of Insulin Based on Its Effects on Hyperglycemia Following Glucose Injections and Epinephrin. G. S. Eadie and J. J. R. Macleod, Toronto.—p. 285.
- Effect of a Restricted Diet. V. On Mortality, Cannibalism and Sex Ratio. J. R. Slonaker and T. A. Card, Stanford University, Calif.—p. 297.
- Vasodilator Mechanisms. IV. Intra-Arterial Injection of Histamin. S. W. Ranson, L. R. Faubion and C. J. Ross, Chicago.—p. 311.
- Id. V. Intra-Arterial Injection of Ether. S. W. Ranson, W. F. Windle and L. R. Faubion, Chicago.—p. 320.
- Extraction of Antidiabetic Substance (Insulin) by Perfusion of Pancreas. I. Influence of Neutral or Alkaline Perfusates on Respiratory Metabolism of Depancreatized Animals. J. R. Murlin, H. D. Clough and A. M. Stokes, Rochester, N. Y.—p. 330.
- Id. II. Influence of Acid Perfusates on Blood Sugar, D:N Ratio and Respiratory Metabolism of Depancreatized Dogs. J. R. Murlin, H. D. Clough, C. B. F. Gibbs and N. C. Stone, Rochester, N. Y.—p. 348.
- Relative Stimulating Efficiency of Continuous and Intermittent Light in Tachina Fly, Archytas Aterrima. W. L. Dolley, Jr., Ashland, Va.—p. 364.
- Relations Between Gastric and Duodenal Persistalsis. W. C. Alvarez and L. J. Mahoney, San Francisco.—p. 371.
- Influence of Temporary Closure of Renal Artery on Amount and Composition of Urine. E. K. Marshall, Jr., and M. M. Crane, Baltimore.—p. 387.

Effect of Insulin on Glucose Hyperglycemia.—A study of the effect of insulin on the postprandial glucose curve of the rabbit made by Eadie and Macleod showed that the hyperglycemia due to injections of glucose is affected by insulin both in degree and duration. A method for the physiologic assay of insulin based on the results is suggested. Figures are given showing the extent of the hyperglycemia produced by epinephrin administered an hour and a quarter after varying doses of insulin.

Extraction of Insulin by Perfusion of Pancreas.—Perfusates of the pancreas of cat, dog and pig were made by Murlin et al. by the method of Clark, employing Ringer's or Locke's solution containing 0.2 per cent. sodium bicarbonate and, at times glucose to 0.5 or 1.0 per cent. In several instances, which are presented in detail, there was a very perceptible increase in the respiratory quotient in animals which just previously had been wholly incapable of oxidizing glucose. This method of extraction (by perfusion with a weakly alkaline fluid) is, however, said to be incapable of withdrawing a sufficient amount of the antidiabetic substance to be of any practical importance. Acid fluids are much more efficacious.

Influence of Perfused Insulin on Blood Sugar.—Insulin is extracted by perfusion of the pancreas with acidulated Ringer's solution more readily than with the same fluid made slightly alkaline. Sufficient concentration of the antidiabetic substance is obtained in this way to show, without further treatment of the material than mere neutralization (to mus), a precipitate fall in both the blood sugar and D:N ratio of depancreatized dogs, following a single injection of from 25 to 50 c.c. subcutaneously. Following a liberal feeding of glucose and a single injection of perfusate the respiratory quotient has been raised several times from the diabetic level to 0.81-0.85.

Influence of Temporary Closure of Renal Artery on Urine. Marshall and Crane state that the widespread belief that anemia of the kidney of short duration produces a pro-

longed anuria has been found to be untrue. Arguments that have been used against glomerular filtration based on this belief, consequently, do not hold. Certain explanations are suggested from their experiments to explain the discrepancies observed by previous workers. A cessation of the blood flow through the kidney for a short period (one to three minutes) produces no effect on the excretion of the kidney when the circulation is reestablished, except the appearance of protein in the urine. Anemia of longer duration (twenty to twenty-five minutes) produces definite changes in the urine eliminated by the kidney. These changes may be summed up as follows: The elimination of water, chlorid and bicarbonate is unchanged or may be increased, while that of urea, phosphate, sulphate, creatinin and ammonia is distinctly decreased. These results, in conjunction with other data on renal secretion, appear to be best explained by the theory of urinary secretion which embraces glomerular filtration, reabsorption of fluid and certain substances by the tubules, and the secretion of various bodies by the tubular epithelium.

Annals of Clinical Medicine, Baltimore

1: 61-139 (September) 1922

- Present Status of Renal Functional Tests. N. M. Keith, Rochester, Minn.—p. 61.
- Clinical Study of Cholesterinemia in Patients with Nitrogen Retention. H. B. Schmidt, Detroit.—p. 66.
- *Capillary Observations in Cardiovascular-Renal Disease. G. E. Brown, Rochester, Minn.—p. 69.
- Diabetes. R. M. Wilder, Rochester, Minn.—p. 80.
- *Hemoclastic Shock as Test of Liver Function. T. R. Brown, Baltimore.—p. 89.
- Congenital Hemolytic Jaundice. Report of Case. J. Friedenwald and W. H. Gantt, Baltimore.—p. 95.
- Diseases of Biliary System. H. R. Hartman, Rochester, Minn.—p. 107.
- *Left-Handedness as Educational Problem. A. Caillé, New York.—p. 111.
- *Food Allergy as Cause of Bladder Pain. W. W. Duke, Kansas City, Mo.—p. 117.
- Therapeutic Value of Roentgen Ray. A. U. Desjardins, Rochester, Minn.—p. 127.
- Esophageal Obstructions. P. P. Vinson, Rochester, Minn.—p. 138.

Capillaries in Cardiovascular-Renal Disease.—The more severe cases of cardiovascular-renal disease, in a series of fifty, studied by Brown revealed marked variation in cutaneous capillaries. The most constant changes noted were: (1) contraction or narrowing of the arterial and venous limbs, producing a small contracted type of capillary; (2) frequent invisibility of the arterial limb, producing a hook-shaped capillary loop; (3) marked disturbance of the capillary flow, with frequent disappearance of single or multiple loops.

Hemoclastic Shock as Test of Liver Function.—This test, first described by Widal in 1913, has been used by Brown in twenty-five cases of headaches of the so-called "bilious" type, as well as certain cases of migraine and other forms of periodic headache, cases with vague digestive symptoms as, for example, somnolence after meals, anorexia, lack of energy, chronic constipation often spoken of as "biliousness," in which the general and gastro-intestinal findings were not sufficient to account for the symptoms. Ten cases gave positive reactions; five gave what might be regarded as a suggestive reaction; the remaining cases were negative. The most disappointing result was that it was impossible to differentiate clinically those cases that gave positive from those that gave negative reactions. Thus, in the headache group, certain cases with negative findings presented exactly the same clinical picture in every detail as certain of the positive cases. Brown urges greater use of the test in order to establish its real value.

Left-Handedness as Educational Problem.—In view of the probability that left-handedness has a structural, atavistic basis and is not merely an acquired faulty habit, Caillé insists that the disciplinary attitude of parent and teacher toward left-handedness should be adjusted to the degree and character of its manifestations. Mild types in which the stimulus for preferential action is weak, are readily overcome by educational efforts. Conversely, it is not difficult to train the left hand when the use of the right hand is lost through injury or disease. In persistent sinistrality, particularly if combined with speech defects, right-handedness should be encouraged but never forced. Unreasonable discipline creates

an unbalanced condition akin to mental chaos. The correction of eye-strain and of nasopharyngeal obstruction must not be overlooked and hygienic living in its broadest sense is of importance.

Food Allergy as Cause of Bladder Pain.—In patients who have frequent, painful urination or constant pain over the bladder, and the severity of symptoms is frequently out of all proportion to the lesion found after careful examination, the bladder symptoms, in Duke's opinion, are frequently the result of the ingestion of foods to which the patient is sensitive.

Annals of Otology, Rhinology and Laryngology, St. Louis

32: 1-320 (March) 1923

- Combined Intranasal and External Operation on Lacrimal Sac. (Mosher-Toti). H. P. Mosher, Boston.—p. 1.
Dacryorhinocystotomy; Combined Method. W. E. Sauer, St. Louis.—p. 25.
Study of Reinforcement of Sound by Means of Schaefer Resonators. J. P. Minton and R. Sonnenschein, Chicago.—p. 45.
Regional Anatomy of Tear Sac. J. M. Patton, Omaha.—p. 58.
Indications, Contraindications and Preparation for Dacryocystorhinotomy. R. A. Fenton, Portland.—p. 67.
Use of Tuning Fork Stem for Both Air and Bone Conduction in Rinne Test. R. Sonnenschein and J. P. Minton, Chicago.—p. 85.
Aural Exostosis. F. A. Burton, Denver.—p. 97.
Consideration of Radical Mastoid. C. M. Sautter, New York.—p. 118.
Case of Polyarthritis Complicating Mastoiditis. Operation. Recovery. D. Roy, Atlanta.—p. 129.
End Results of Radical Operations on Accessory Sinuses. R. H. Skillern, Philadelphia.—p. 139.
Treatment of Otitis Media with Tuberculin. G. T. Von Colditz, Chicago.—p. 149.
Practical Diagnostic Value of Tests of Vestibular Mechanism. F. L. Dennis, Colorado Springs.—p. 160.
Simple Knot for Intranasal Sutures. W. Johnston, Portland, Ore.—p. 201.
Compensatory Nasal Growth. J. A. Pratt, Minneapolis.—p. 211.
Case of Tonsillar Cyst which Protruded from Tonsil as Pedunculated Tumor. A. W. Proetz, St. Louis.—p. 223.
Case of Codein Poisoning. A. W. Proetz, St. Louis.—p. 231.
Two Cases of Salivary Calculus. A. W. Proetz, St. Louis.—p. 233.
Traumatic Facial Diplegia, with Involvement of Sixth Nerves, Portion of Left Third Nerve, Also Fifth and Eighth Nerves, with Dislocation of Atlas, Etc. F. F. Keiper, Lafayette, Ind.—p. 236.
Two Cases of Empyema of Maxillary Sinus of Dental Origin. Alveolar Fistula. Radical and Plastic Operation. J. L. Maybaum, New York.—p. 273.
Chronic Suppurative Otitis Media. H. E. Bozer, Rochester, Minn.—p. 277.
Complications of Paranasal Sinus Disease in Infants and Young Children. L. W. Dean, Iowa City.—p. 285.
Art and Technic of Bronchoscopy and Esophagoscopy. T. Hubbard, Toledo.—p. 298.
Radical Frontal Sinus Operation. Report of Cases. F. O. Lewis, Philadelphia.—p. 305.

Atlantic Medical Journal, Harrisburg, Pa.

26: 429-500 (April) 1923

- Goiter: Basal Metabolism. C. E. Ervin, Danville, Pa.—p. 429.
Basal Metabolism: Its Application to Disorders of Thyroid. S. D. Conklin, Sayre.—p. 431.
Adenomatous Goiter. C. B. Noecker, Scranton.—p. 434.
Exophthalmic Goiter. L. A. Sheridan, Wilkes-Barre.—p. 435.
Colloid Goiter. M. J. Noon, Scranton.—p. 436.
Prevention and Treatment of Simple Goiter. D. Marine, New York.—p. 437.
Clinical Determination of Heart Size. J. W. Boyce, Pittsburgh.—p. 443.
*Pulmonary Tuberculosis and Appendicitis. A. Armstrong, White Haven.—p. 446.
*Nasal Diphtheria. J. D. Iams, Pittsburgh.—p. 448.
Mistaken Diagnosis in Cases of Syphilis. J. R. Elliott, Laurel, Del.—p. 451.
Some Comments on Radium Technic. W. H. Guy and F. M. Jacob, Pittsburgh.—p. 453.
Pregnancy and Labor in Very Young and Elderly Primiparas. P. F. Williams, Philadelphia.—p. 456.
Proper Depth of Ether Anesthesia. F. R. Widdowson, Philadelphia.—p. 459.
Retrograde Esophageal Bougie. G. Tucker, Philadelphia.—p. 461.

Pulmonary Tuberculosis and Appendicitis.—In looking up the records of 200 cases of pulmonary tuberculosis admitted to private sanatoriums, Armstrong found that twenty-five of these patients had had appendectomies performed, an incidence of 12.5 per cent. In some there occurred definite attacks, which did not lead to operation. Armstrong pleads for prolonging the convalescence after appendectomy, when the lung condition is not satisfactory, to avoid subsequent activation of the lung lesions if present.

Nasal Diphtheria.—Iams is of the opinion that primary infection of the nasal mucosa with the diphtheria bacillus is not infrequent. It is often exceedingly mild and is not diagnosed because the possibility of its presence is not considered. The symptoms outlined in the average textbook, with the exception of nasal discharge, either do not appear at all or are late symptoms and are evident only after some days. The theory as to the extreme toxicity of this type was derived largely from the fact that only advanced and serious cases were diagnosed. The mortality is at least no higher than in the faucial type if sufficient antitoxin be given. All cases of severe rhinitis, particularly if unilateral, should be cultured. Until importance is given to nasal culture equal to that now given to throat culture, many unexplained infections are bound to occur. Since many cases are undiagnosed, epidemics will not be controlled until more intensive nasal culturing is done and its importance recognized.

Boston Medical and Surgical Journal

188: 567-616 (April 19) 1923

- *Student Form of Respiration Apparatus. F. G. Benedict and C. G. Benedict.—p. 567.
Etiology and Clinical Features of Lung Abscess. J. Homans, Boston.—p. 577.
Clinical Importance of Chronic Changes in Appendix Which Are Discovered by Roentgen Ray. F. W. White, Boston.—p. 587.
*Eventration of Diaphragm. Report of Case. A. E. Jaffin, Jersey City, N. J., and J. A. Honeij, Boston.—p. 593.
Chronic Urethritis in Women. C. R. Cote and G. G. Smith, Boston.—p. 596.

Student Form of Respiration Apparatus.—To aid in introducing to medical students the fundamentals of gaseous metabolism measurements, a simple type of apparatus is described by the Benedicts involving the breathing of a confined volume of oxygen-rich air and measuring exactly the amount of oxygen absorbed by the lungs of the subject. A can, two-thirds filled with soda-lime, a bathing cap for expansion, two "Sadd" valves and housings, with rubber hose and mouthpiece, comprise the respiration system. Dry room air is forced quantitatively by an automobile grease gun, acting as an air pump, into the can as the oxygen is absorbed. From the volume of six full strokes of the air pump, the temperature of the pump, the barometer, and the time in minutes, the actual oxygen consumption is rapidly computed. The apparatus is said to lend itself also to the determination, by students, of vital capacity.

Eventration of Diaphragm.—A patient with objective symptoms pointing to inactive upper lobe lesions in both lungs with marked pleural changes at the left base, suddenly presented tympanitic resonance from the left lung base to the second rib, with absence of vocal resonance and breath sounds from the base to the third rib. Over this area many gurgling, musical and tinkling sounds could be heard, some resembling peristaltic noises. Succussion was audible and palpable. The signs suggested a hydropneumothorax, but there was complete absence of any clinical history that might account for its development. The roentgen-ray examination disclosed a congenital deformity and displacement of the left side of the diaphragm with adherent and displaced stomach. In further support of the theory of congenital origin, Jaffin and Honeij state there was a noticeable facial asymmetry due to a greater prominence of the left malar bone, and a strikingly increased development of the left trapezius muscle. There was a slight scoliosis from the seventh cervical to the fourth dorsal spines which was probably secondary.

188: 617-664 (April 26) 1923

- *Obesity: Observations on One Thousand Cases. W. E. Preble, Boston.—p. 617.
Cancer of Prostate. G. G. Smith, Boston.—p. 621.
Convalescence: III. Chronological Review, from 1877 to 1917. J. Bryant, Boston.—p. 625.
Fracture Table and Fluoroscopy in Difficult Fractures. H. M. Clute, Boston.—p. 630.
Cholesterol Content of Bile in Health and Disease. I. Methods for Collection and Estimation in Duodenal Contents of Man. C. W. McClure and E. Mortimer, Boston.—p. 633.
Value of Treatment in General Paresis. H. C. Solomon, Boston.—p. 635.
Percentile Charts of Height and Weight of Boston School Children. W. T. Porter, Boston.—p. 639.

Heels of Boston School Children. W. T. Porter, Boston.—p. 644.
Progress in Cardiovascular Disease. Part III. P. D. White, Boston.—p. 644.

Etiology of Obesity.—Preble is convinced that obesity is almost invariably due to bad dietary habits, and not to errors in metabolism or to heredity. Overweight of 15 or more pounds is an increasingly serious condition with advancing years, conducive to heart, arterial and kidney disease, diabetes and hypertension. Obesity is easily curable, and it is the duty of the physician to acquaint his patient and the community with the gravity of the condition, and the ease with which it can be controlled. Regulation of the diet is the important thing. Only in rare cases is glandular or other drug therapy indicated. The cause of obesity may be simply too much food, but it is more apt to be an excess of carbohydrate or fat, or both, in the diet. The diet and daily habits as regards work, exercise, sleep, etc., of the individual patient must be scrutinized carefully, and excesses corrected. Care should be taken that the patient receives enough proteid, otherwise weakness will result. A rather high proteid diet, from 90 to 110 gm., is prescribed, except for nephritics, in which class the amount is regulated according to kidney function.

188: 665-710 (May 3) 1923

*The Silent Kidney. J. D. Barney, Boston.—p. 665.
*Importance of Pycelography in Recognizing the Causes of Obscure Abdominal Symptoms. R. F. O'Neil, Boston.—p. 671.
*Kinks of Ureter Due to Aberrant Vessels. A. H. Crosbie, Boston.—p. 678.

The Silent Kidney.—Barney discusses the comparative "silence" of the kidney, even in the presence of extensive and long-standing disease. The most important lesson to be derived from this study is that cystitis, hematuria and pyuria are symptoms, and not diseases. While what is apparently primary cystitis may occasionally be seen, it is probable that the underlying cause has gone unobserved owing to careless or faulty methods of examination. The same is true of pyuria and hematuria. Another important observation is that pain, and even tenderness, is often complained of only in the sound kidney, its diseased mate giving no subjective symptoms whatever. Almost any disease of the kidney may begin and end without once calling attention to the organ involved; on the other hand, localizing symptoms may be of extremely short duration.

Pycelography in Abdominal Conditions.—Pycelography is regarded by O'Neil as a very reliable diagnostic procedure and one which should be employed in all doubtful cases of abdominal tumor, or of chronic or paroxysmal abdominal pain before resorting to exploratory operations.

Ureteral Kinks Due to Aberrant Vessels.—According to Crosbie, various types of the obstruction produced by aberrant kidney vessels should always be suspected until proved not to exist. There is no cardinal symptom, except in the very acute cases. The best way to detect kinks is by taking pycelograms with the catheter partially withdrawn. Judgment must be used in cutting large vessels going to the lower pole of the kidney. A very large vessel should not be cut unless very definite obstruction can be demonstrated.

Florida Medical Association Journal, St. Augustine and Jacksonville

9: 144-159 (March) 1923

Vertigo and Ear. A. K. Wilson, Jacksonville.—p. 144.
Practical Suggestions to Health Officers in Malarial Control. A. C. Hamblin, Tampa.—p. 145.

Illinois Medical Journal, Oak Park

43: 253-332 (April) 1923

Major Infections. W. J. Mayo, Rochester, Minn.—p. 283.
*New Operation for Femoral Hernia. E. Andrews, Chicago.—p. 290.
Lipoids. H. Isovesco, Paris, France.—p. 292.
*Early Diagnosis of Chronic Cardiac Conditions. J. A. E. Eyster, Madison, Wis.—p. 297.
Intracranial Complications of Suppurative Sphenoid Sinus Disease. With Report of Seven Cases. C. F. Yerger, Chicago.—p. 304.
Perforative Appendicitis. O. L. Pelton, Jr., Elgin, Ill.—p. 308.
*Atypical Exophthalmic Goiter. I. Bram, Philadelphia.—p. 311.
Interpretation and Diagnosis of Gross Lesions Within Lungs. R. H. Hayes, Chicago.—p. 314.
Where Field of Oculist Meets That of Practitioner. B. Y. Alvis, St. Louis.—p. 319.

Salient Points in Diagnosis and Treatment of Cancer of Uterus. A. H. Curtis, Chicago.—p. 323.

Operation for Femoral Hernia.—When the ring is very large and rigid or when it has to be enlarged at operation in order to reduce the hernia, leaving a defect very difficult to close by the ordinary methods, Andrews closes the upper end of the femoral canal with a strip of the aponeurosis of the external oblique muscle, by turning it into this space and attaching it to the periosteum of the pubic bone just above the pectineal line. The upper fragment of the external oblique is sewed to Poupart's ligament. The advantages of this method are said to be: (1) the closure of the canal is made at the upper end, leaving no pouch; (2) a stronger membrane is used than in any other operation; (3) the rigid and inelastic walls of the ring are not used, but instead structures that can be sutured together without the slightest tension being put on them.

Early Diagnosis of Heart Lesions.—Eyster emphasizes, first, the importance of careful evaluation of etiology and symptomatology; second, the necessity of a general systematic routine physical examination; third, the importance of accurate percussion; fourth, the value of a comprehensive roentgen-ray examination in doubtful cases, and finally the significance of the electrocardiogram in diagnosis. The most generally neglected of the aids to diagnosis, he believes, is the roentgen ray. It is the one method which gives, imperfect as it is at present, the most accurate knowledge of the form and contour of the organ, the type of information which is of most value in leading to a correct diagnosis.

Atypical Exophthalmic Goiter.—The following definition is offered by Bram for exophthalmic goiter: Exophthalmic goiter (Graves' disease; Basedow's disease; Parry's disease, Flajani's disease) is a chronic (rarely acute) affection, apparently due to a dysfunction of the endocrine organs and of the vegetative nervous system, characterized by increased catabolism, weakness, wasting, emotional disturbances, and frequently by a varying degree of exophthalmos and thyroid swelling. From this definition it can be seen that (1) the constant evidences of the clinical picture are plus basal metabolism, weakness, wasting, emotional disturbances, afebrile heart hurry, tremor, and dermatographia; and (2) the inconstant evidences are exophthalmos and goiter.

Indiana State Medical Association Journal, Ft. Wayne

16: 115-156 (April) 1923

Heart Disease: Its Modern Conception and Treatment. G. W. McCaskey, Ft. Wayne.—p. 115.
Occiput Posterior. A. M. Mendenhall, Indianapolis.—p. 121.
Thyroid Disease. A. C. Roope, Columbus.—p. 125.
*Fracture Hazards. M. A. Austin, Anderson.—p. 129.
Brief Review of Otology to Beginning of Nineteenth Century. C. H. McCaskey, Indianapolis.—p. 132.
Medical Practitioner and American Society for Control of Cancer. J. E. Rush.—p. 135.

Treatment of Fracture of Upper End of Humerus.—Austin reports three cases. One of these was a case of fracture of the right humerus, 2 inches from its upper end, with abduction of the upper fragment and upward displacement of the lower fragment. Three attempts were made to secure apposition of the bone ends, and only after the arm was placed in complete extension was approximation secured. To hold the fragments in this position and keep the arm in extension, Austin immobilized the patient in bed with the arm in complete abduction. A long straight splint was made and padded to extend from the tips of the fingers, under the back, as far as his elbow on the opposite side. The arm was bandaged snugly to the splint from fingers to axilla. In order to keep traction on the extended arm a sling was placed around the chest at the axilla and fastened to the end of the board on the side opposite to the fracture. When this sling was tightened up, it pushed the injured arm away from the body and prevented the fragments from overriding. The boy was kept flat on his back for four weeks, without any special discomfort, and the final picture, taken seven months after the accident, showed an apposition so perfect that even the fracture line could not be seen. Scudder states it is practically impossible to reduce and retain this type of fracture of the humerus without an open operation and wiring of the bone ends. Austin believes that this crucifixion splint and

putting the patient to bed, reduces the treatment of fractures of the humerus to the minimum of simplicity, and gives the certainty of a better result than any ambulatory immobilization that can be devised.

Iowa State Medical Society Journal, Des Moines

13: 121-176 (April) 1923

- Diminishing Accommodation, Artificially Produced. R. F. French, Marshalltown.—p. 135.
Abscess of Lung. W. W. Bowen, Dodge.—p. 142.
Bacterial Relationship to Stone Formation. O. C. Morrison, Carroll.—p. 145.
Points in Diagnosis of Chronic Gallbladder Disease. C. D. Enfield, Louisville, Ky.—p. 148.
Traumatic Valgus with Dislocation in Lisfranc's Joint. A. F. O'Donoghue, Sioux City.—p. 151.
Doctrine of Prepared Soil: Neglected Factor in Surgical Infections. H. Cabot, Ann Arbor, Mich.—p. 153.
Physicians Who Located in Iowa in Period Between 1850 and 1860. D. S. Fairchild, Clinton.—p. 158.

Kansas Medical Society Journal, Topeka

23: 85-112 (April) 1923

- Glucose Tolerance Test in Diabetes. C. F. Menninger, Topeka.—p. 85.
Goiter. J. T. Axtell, Newton.—p. 90.
Extra-Genital Chancres. H. G. Collins, Topeka.—p. 92.

New York Medical Journal and Medical Record

117: 453-516 (April 18) 1923

- *Radium in Carcinoma of Breast. Necessary Preoperative Routine. G. S. Willis, New York.—p. 453.
Toxic Aspect of Ocular Disease. P. Dunn, London.—p. 457.
Epidemic Encephalitis. Mental Symptoms, Loss of Abdominal Reflexes and Myoclonus. I. S. Wechsler, New York.—p. 458.
Etiology of Neuroses. A. Polon, New York.—p. 460.
Clinical Significance of Eosinophilic Cells of Blood. A. J. Hinkleman, Oklahoma City, Okla.—p. 465.
Influence of Local Blood Supply on Crisis and Lysis in Pneumonia. G. G. Ornstein and A. Braunstein, New York.—p. 466.
Etiology and Pathogenesis of Anal Pruritus and Pruritus Ani. J. F. Montague, New York.—p. 469.
Fracture of Head and Neck of Radius. J. Grossman, New York.—p. 472.
Indications for Transfusion of Blood. I. S. Ravdin, Philadelphia.—p. 475.
*Improved Method for Diagnosis and Localization of Duodenal and Gastric Ulcers. S. L. Cash, New York.—p. 478.
New Frontal Sinus Instrument. J. A. Hagemann, Pittsburgh.—p. 480.
Bacterial Vaccine Immunization Under Bacterial Intoxication. G. H. Sherman, Detroit.—p. 481.
Dawn of Surgery. J. Wright, Pleasantville, N. Y.—p. 483.
John Owen's Epigrams on Medicine and Medical Men. W. R. Riddell, Toronto, Can.—p. 487.
Medical Germany. M. R. Robinson, New York.—p. 491.
W. E. McGuire. B. R. Tucker, Richmond.—p. 495.

Radium Therapy of Breast Carcinoma.—Willis points out that radium, postoperatively and in recurrences, has given such results in these cases as to justify its use, but that the most successful results will be obtained when radium is used as a routine measure, preoperatively. The preoperative use of radium disintegrates the tumor mass and cell nests and forms fibrous tissue masses which block off the lymphatics and prevent the dissemination of the tumor cells. Willis uses what he terms a transfixion needle, 15 cm. long, containing 33.33 mg. of radium.

Better Diagnosis of Gastric and Duodenal Ulcers.—Cash's method is based on the Einhorn string test. To remove the objections to that test, he uses a thread made from a loosely knitted tubular silk braid. It is white, flexible, compressible and half an inch in diameter. The test consists of two parts; the upper, extending from the teeth, is a silk string, preferably No. 15 twisted silk. The lower part of the test is a section of the braid. The features of the braid are: (1) a large surface for contact, with large stains for gross, chemical, and microscopic examination; (2) size and compressibility permit contact with irregular surfaces; (3) size and texture prevent cutting of the tissues; (4) compression of the braid by the pylorus localizes this part and thereby the lesion, whether duodenal, gastric or pyloric; (5) passage through is also shown by bile stain, in conjunction with the pyloric and other markings on the braid; (6) it is useful in testing the progress of healing and for post-treatment observation; (7) elimination of the cup and bulb which, in aggravated ulceration at least, are objectionable; when the roentgen rays reveal the lesion, the braid determines whether it is acute or chronic; (8) the braid, proportioned for the

stomach, has free play in contrast to the string test that extends into the duodenum with a bead or cup attached.

Northwest Medicine, Seattle

22: 115-150 (April) 1923

- Recent Progress in Treatment of Chronic Empyema. C. A. Hedblom, Rochester, Minn.—p. 115.
Pleural Effusions. J. D. Sternberg and W. H. Watson, Portland.—p. 119.
Duodenal Ulcer. M. F. Dwyer, Seattle.—p. 122.
Gastric and Duodenal Ulcer, Medical and Surgical Aspects Preoperative and Postoperative Treatment. J. R. Turner, Jr., Tacoma.—p. 126.
Prostatic Obstructions. H. W. Howard, Portland.—p. 129.
Complications and Mortality Causes Following Prostatectomy. W. G. Schulte, Salt Lake City.—p. 132.
Megacolon: Two Cases. A. A. Matthews, Spokane.—p. 135.
Trachoma (Granular Conjunctivitis, Chronic Ophthalmia) Among Ute-Indians. F. C. Myers, White Rocks, Utah.—p. 138.
Resuscitation of Asphyxiated Infants. New Use for Politzer Bag. H. Feagles, Chehalis, Wash.—p. 139.
Twin Feti Papyracei with Third Living Child. C. C. Wallin, Lewiston, Mont.—p. 140.

Philippine Journal of Science, Manila

22: 219-344 (March) 1923

- Investigations Concerning Yaws. A. W. Sellards and E. W. Goodpasture and W. de Leon.—p. 219.
*Effect of Treatment on Wassermann Reaction in Yaws. E. W. Goodpasture and W. de Leon.—p. 221.
*Immunity in Yaws. A. W. Sellards and E. W. Goodpasture.—p. 233.
Public Health Aspects of Yaws. A. W. Sellards.—p. 251.
*Histology of Healing Yaws. E. W. Goodpasture.—p. 263.
Control of Yaws. A. W. Sellards and E. W. Goodpasture.—p. 285.
Woods of Philippine Dipterocarps. L. J. Reyes.—p. 291.

Effect of Treatment on Wassermann Reaction in Yaws.—Goodpasture and de Leon found the Wassermann test strongly positive in 100 per cent. of forty-five patients presenting active cutaneous lesions of yaws. Following the clinical cure of yaws by means of intravenous injection of neo-arsphenamin, the Wassermann reaction remained positive for many months, gradually weakened, and became negative in seven of twelve cases within six months after treatment. Treatment of yaws in the early secondary stage with mercury caused no noticeable improvement in the lesions. The Wassermann reaction showed an initial slight weakening in the titer, then remained constant and strongly positive. An antigen prepared from an early case of yaws containing treponemata did not fix complement with serum from yaws patients that was strongly positive with the usual cholesterinized antigen.

Immunity in Yaws.—A patient, in the well developed secondary stage of yaws, was successfully reinoculated with yaws; the lesion soon regressed spontaneously. Two patients in the stage of clavos were reinoculated with yaws. The lesions that developed disappeared very rapidly. Sellards and Goodpasture believe that the reinoculation of untreated patients suggests that a long standing infection with yaws produces a definite, though not complete resistance to reinfection. Four patients in the secondary stage of yaws were treated with neo-arsphenamin and reinoculated with yaws several months later. In one, a typical granuloma was produced; in the other, three atypical reactions resulted. The results of reinoculation of patients cured with neo-arsphenamin indicate the development of a measurable degree of active immunity in yaws. No evidence was obtained to suggest that the serum of yaws cases under treatment with neo-arsphenamin has any curative action when injected into yaws patients.

Histology of Yaws.—Goodpasture has demonstrated *Treponema pertenue* in abundance by Levaditi's method in early yaws, not only within the thickened epidermis as heretofore observed, but also within perivascular connective tissue of the papillae. The lesions studied indicate that the secondary yaw begins with a localization of treponemata, from the blood, in certain papillae, and from such points the organisms infect the epidermis, where conditions become more favorable for their growth. Within forty hours after the injection of a therapeutic dose of neo-arsphenamin all treponemes demonstrable by Levaditi's method had disappeared from early yaws. The older secondary nodular lesions have a more permanent architecture, heal less rapidly, and probably offer greater protection to treponemes; consequently, they require more care in effecting a complete cure.

Public Health Journal, Toronto

14: 147-194 (April) 1923

- Pasteur and Science of Bacteriology. J. G. Fitzgerald.—p. 147.
Hydrophobia: Four Centuries Ago. W. R. Riddell.—p. 155.
Schick Campaign and Its Lessons. H. G. Rowell.—p. 168.
Some Clinical Aspects of Industrial Poisoning. N. C. Sharpe.—p. 172.
Venereal Diseases in Industry. J. J. Heagerty.—p. 175.

Surgery, Gynecology and Obstetrics, Chicago

36: 447-588 (April) 1923

- *Radical Operations on Stomach with Especial Reference to Mobilization of Lesser Curvature. W. J. Mayo, Rochester, Minn.—p. 447.
*Surgical Treatment of Ulcer of Stomach and Duodenum. H. Finsterer, Vienna, Austria.—p. 454.
*Mortality in Surgery of Exophthalmic Goiter. J. de J. Pemberton, Rochester, Minn.—p. 458.
*Operative Treatment of Embolism of Large Arteries. Report of Two Cases. L. Buerger, New York.—p. 463.
*Diverticulitis of Gallbladder. G. K. Abbott, Sanitarium, Calif.—p. 466.
Angiomyoma of Urinary Bladder. F. Kidd and H. M. Turnbull, London, England.—p. 467.
Primary Carcinoma of Urethra. Report of Three Cases. H. Culver, and N. K. Forster, Chicago.—p. 473.
*Primary Retroperitoneal Sarcoma. Report of Twenty-Eight Cases. C. L. Andrews, Rochester, Minn.—p. 480.
Clinical Picture of Dilated Ducts Beneath Nipple Frequently to be Palpated as Doughy Worm-Like Mass—Varicocele Tumor of Breast. J. C. Bloodgood, Baltimore.—p. 486.
Pseudohermaphroditism or Complete Hypospadias. F. R. Hagner and H. B. Kneale, Washington.—p. 495.
*Complication of Purpura with Gestation. G. C. Mosher, Kansas City, Mo.—p. 502.
Germicides and Presentation of a New Germicide—Meroxyl. H. H. Young, E. C. White, J. H. Hill and D. M. Davis, Baltimore.—p. 508.
Cholecystitis and Its Complications. M. G. Peterman, Rochester, Minn.—p. 522.
*Traumatic Shock; Some Experimental Work on Crossed Circulation. M. A. McIver and W. W. Haggart, Boston.—p. 542.
Pathologic Study of Case of Cirroid Aneurism. F. L. Meleney, Peking, China.—p. 547.
Compensatory Hypertrophy of Fibula. A. Gibson, Winnipeg, Man.—p. 554.
*Traction Fracture of Lesser Trochanter. J. F. Langdon, Omaha.—p. 556.
Two Kineplastic Problems Solved. G. B. Arana, D. D. Valle, Buenos Aires, Argentine, and F. Wildermuth, Frankfurt, Germany.—p. 559.
Utilization of Rubber Catheter in Intestinal Anastomosis. E. J. Horgan, Washington, D. C.—p. 565.
Device for Hemostasis and Drainage Following Suprapubic Prostatectomy. J. H. Cunningham, Boston.—p. 569.
Modification of Rubin Technic for Transuterine Inflation of Fallopian Tubes. A. Jacoby, New York.—p. 571.
Treatment of Postoperative Nausea, Vomiting and Distention in Certain Abdominal Sections by Use of Modified Duodenal Tube. C. L. A. Oden, Chicago.—p. 572.

Radical Operations on Stomach.—Proper mobilization of the lesser curvature of the stomach, Mayo says, is the most important single step in radical operations on the stomach. Experience has led him to the acceptance of the Billroth I operation as a primary procedure to be used in cases of ulcer and carcinoma situated on the lesser curvature and pyloric end of the stomach in such a manner as to permit the application of the method. After the application of the Billroth I method, there is a tendency for the stomach to drop to the left of the spine, its weight exerting an injurious strain on the suture line uniting the end of the duodenum to the gastric stump. This difficulty has been overcome in these cases and also in cases in which, following excision of gastric ulcers or a Finney pyloroplasty, there is tension due to the dropping of the stomach as a whole to the left of the spine. A point on the anterior wall of the stomach, sufficiently far to the left, is chosen, the stomach is drawn to the right and attached to the suspensory ligament of the liver by several catgut sutures in a manner to bring the entire anastomosis to the right of the spine. There has been no suture leakage and gastroduodenal drainage is greatly improved.

Surgical Treatment of Ulcer of Stomach and Duodenum.—In the last seven years Finsterer has performed gastro-enterostomy only exceptionally in the treatment of gastric and duodenal ulcer, as, for instance, in the case of an acute perforation with peritonitis, or in certain cases of acute hemorrhage in a duodenal ulcer. While, up to 1914, he had performed ninety-eight gastro-enterostomies and only nineteen resections, the latter chiefly for suspected cancer, he has since performed only forty gastro-enterostomies as against 427 resections. Acute ulcer will heal spontaneously or by medicinal treatment and, Finsterer says, should be

treated that way, the stomach ulcer as well as the duodenal ulcer. He operates on the chronic ulcer when repeated medical treatment fails to cure it, and when the recurring attacks with accompanying pain invalidate the patient. He has never observed malignancy in a duodenal ulcer. The mortality in resections is not larger than after gastro-enterostomy. Finsterer has now, in 407 cases, a mortality of 4.4 per cent., of which the greater portion was due to insufficient asepsis. Since 1919, he has operated in 296 cases, with a mortality of 2.3 per cent. In the gastro-enterostomy of the posterior type with a short loop, the mortality was 11.8 per cent. in 144 cases. Excluding the cases of operation for acute hemorrhage, there remain 113 cases with 4.4 per cent. mortality.

Mortality in Surgery of Exophthalmic Goiter.—The mortality rate following surgical procedures on patients with exophthalmic goiter, Pemberton states, has been reduced to 1.005 per cent. in terms of operation and 1.73 per cent. in terms of patients. The patients with visceral degenerative changes form the largest part of the mortality list in the surgery of exophthalmic goiter. The operative risk is less and the benefits derived are greatest when the patient comes to surgery early in the course of the disease before degenerative changes have occurred. The avoidance of operative and postoperative complications by painstaking care of details in the management of surgical cases is essential to a low mortality rate in cases of exophthalmic goiter.

Operative Treatment of Embolism of Large Arteries.—Buerger reports a case of successful removal of an embolus from the brachial artery about five or six hours after its lodgment, with complete restoration of the circulation through the normal vascular paths, until death, which occurred nine days after the operation. In a second similar case the patency of the arterial channels situated at some distance from the site of the removed embolus could not be restored.

Diverticulitis of Gallbladder.—The remarkable feature in Abbott's case was the presence of a markedly inflamed diverticulum arising from the neck of the gallbladder—the entire gallbladder otherwise being normal in appearance.

Primary Retroperitoneal Sarcoma.—Retroperitoneal sarcoma is seen so often, in Andrews' opinion, that the condition should be kept in mind in the diagnosis of abdominal disorders. Trauma is apparently not a factor in the cause of retroperitoneal sarcoma. Metastasis occurs in about 33 per cent. of cases; it is most often found in the liver and lungs. The most characteristic physical finding is the colon in a groove on the anterior surface of the tumor. The small round cell sarcoma or lymphosarcoma is the most common and most malignant type. The prognosis is always unfavorable. A combination of radium and roentgen-ray treatment seems to be the most satisfactory treatment thus far instituted.

Complication of Purpura with Gestation.—Purpura is a very rare complication of pregnancy; the fortieth case in the literature is recorded by Mosher. The fetal mortality is 50 per cent. Nearly all cases of purpura hemorrhagica which go to term end fatally at delivery, or soon after labor, from hemorrhage. No drug therapy is of the slightest avail. Direct transfusion of blood, keeping the platelet count over 10,000, is the only remedy. Repeated transfusion may be necessary to tide the patient over the period in which her platelet count is reduced.

Nature of Traumatic Shock.—The experimental evidence obtained by McIver and Haggart—which is fully reported here—suggests that some substance capable of producing shock is taken up by the circulation from a traumatized area.

Traction Fracture of Lesser Trochanter of Femur.—The case reported by Langdon differs in some respects from other cases hitherto published. Marked pain was conspicuous by its absence. At no time did it occupy the foreground in the clinical picture. Three days after the injury, though loss of flexion was absolute, the patient nevertheless could bear his weight on the injured limb without any evidence of pain. Passive motions were possible in all directions and not painful. Loss of flexion in this case seemed to be more marked than in the cases previously published. The probabilities are that the complete attachment of the muscle to

the shaft was torn away, together with the trochanter, resulting in total loss of flexion.

Virginia Medical Monthly, Richmond

50: 1-70 (April) 1923

- Transduodenal Drainage of Gall Tract. W. B. Martin, Norfolk.—p. 1.
Factors Often Overlooked in Treatment of Disease. T. A. Williams, Washington, D. C.—p. 6.
Early Recognition of Gallbladder Disease. E. L. Kendig, Victoria, Va.—p. 15.
Vascular Occlusion of Mesenteric Vessels. Three Cases. J. W. Tankersley, Greensboro, N. C.—p. 20.
*Mesenteric Thrombosis. Report of Two Cases. S. McGuire, Richmond.—p. 23.
Diagnosis of Intestinal Parasitic Infection. T. D. Davis, Richmond.—p. 26.
Stricture of Ureter. A. I. Dodson, Richmond.—p. 28.
Urological Diagnosis from Standpoint of General Practitioner. L. T. Price, Richmond.—p. 30.
Roentgen Ray as an Adjuvant in Treatment in Advanced Cases of Carcinoma of Stomach. C. R. Robins, Richmond.—p. 33.
Progress of Malaria Control in Virginia. L. L. Williams, Jr., and C. A. Kane.—p. 34.
Case of Acute Exophthalmic Goiter Treated Successfully by Use of Roentgen Ray. M. D'Arcy Magee, Washington, D. C.—p. 37.
Case of Secondary Carcinoma of Lung with Pulmonary Tuberculosis. J. T. Scott, Colorado Springs, Colo.—p. 39.
Studies in Hay-Fever: Dates of Pollination of Anemophilous Plants in District of Columbia and Vicinity, Observed in 1922. H. S. Bernton, Washington, D. C.—p. 41.
Clinical Significance of Reductions in White Cells of Human Blood. W. B. Blanton, Richmond.—p. 43.
Eye Pathology of Dental Origin. W. W. Gill, Richmond.—p. 48.
Abscess of Temporoparietal Lobe Complicating Acute Mastoiditis: Operation: Recovery. E. G. Gill, Roanoke.—p. 51.

Mesenteric Thrombosis.—The diagnosis of mesenteric thrombosis, McGuire says, is extremely difficult. There is no symptom-complex of the disease, and it is rarely recognized before operation or necropsy. Fortunately, the condition is so acute and urgent that an exploratory operation is plainly indicated. When the peritoneum is opened, there is usually an escape of a considerable quantity of dark colored or bloody fluid which makes it evident that the disease is not appendicitis, cholecystitis or a gastrojejunal perforation. The distended black coils of gangrenous bowel are most commonly found in the pelvis or lower abdomen. The operation of choice is resection of the diseased bowel, followed by the restoration of the continuity of the intestinal canal by an anastomosis of the divided ends. If the general condition of the patient renders this impracticable, then the gangrenous portion of the bowel should be excised and the two cut ends drawn out of the abdomen and fastened to the edges of the wound, with the hope that a secondary anastomosis may be done later. In doing the resection, great care should be taken to divide the intestines well outside the infected area in tissue with good blood supply.

Wisconsin Medical Journal, Milwaukee

21: 483-534 (April) 1923

- *Myocardial Deficiency from Surgical Standpoint. J. L. Yates, M. F. Rogers and R. E. Morter, Milwaukee.—p. 483.
Special Features of Radium Therapy in Gynecology. A. H. Curtis, Chicago.—p. 498.
*Unusual Fetal Monstrosity. M. H. Clark, Ripon.—p. 500.

State of Myocardium Is Index of Age.—Yates and his associates question the truth of the old dictum that a man is as old as his arteries without considering the more significant fact that age itself is of little moment. The real issue is total accomplishment, which is commensurate with the length and character of life and is determined largely by the functional capacity of heart muscle. The causes of cardiac incompetence or myocardial deficiency are heart muscle lesions. Their deleterious effects on function are commensurate with the acuteness and diffuseness of the process, or, when focalized, with the significance of the rôle played in cardiac function by the part affected. Influences inimical to normal heart muscle structure are: overacidity, inadequate nourishment and intoxication. They frequently operate in conjunction and are likely to initiate or aggravate progressive anatomic lesions and, therefore, to promote increasing cardiac handicaps. The requirements to be met in practice are two: (1) diagnostic means to determine the presence and degree of myocardial injuries and (2) a simplification of preoperative, operative and postoperative meth-

ods designed to safeguard the more severe lesions and to be at least harmless for the less severe. Protective methods now available are to postpone operation if possible until competence is regained, to reduce the amount of narcotics given and to administer fluids intravenously and generously and at times give digitalis before there is any evident necessity. Fluids suitable for intravenous injection are blood, hypertonic glucose and glucose and gum acacia solutions. The amount and rapidity of administration are determined by circumstances which also indicate the need of digitalis and the amount to be given. Preparation for operation cannot be made a routine. Patients with weak hearts should be given necessary rest in bed, cajoled into complacency and assured the proper quantity and quality of blood. Too little preparation, particularly of those who recently have had a severe intoxication, as from tonsillitis, or too prolonged preparation of those having chronic obstructive intestinal lesions, are to be avoided. The average patient does not need catharsis. Sleep is so desirable that soporific drugs are indicated. There is no excuse for making the morning of operation hideous by early awakening for shaving, enemas and other forms of avoidable cruelty. Quiet is to be secured after the preliminary drugs are given, and, above all, patients should, so far as possible, be made physically and mentally inactive. Postoperative care is more effective if conducted prophylactically rather than curatively. Blood, glucose, gum-glucose, with or without digitalis, provide the best means to prevent serious tachycardia. Preferably, the after-care should be permanently under the direction of a competent internist.

Fetal Monstrosity.—There were present in Clark's specimen the following abnormalities: (1) complete hydrancephalocoele; (2) spina bifida, without tumor; (3) umbilical hernia of the abdominal contents—enterocoele; (4) double talipes equinovarus; (5) left knee without joint structures.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 617-666 (April 14) 1923

- New Midwifery: Preventive and Reporative Obstetrics. The Late J. W. Ballantyne.—p. 617.
Sinuses and Swellings in Necks of Children. G. Morgan.—p. 621.
Man's Posture: Its Evolution and Disorders. A. Keith.—p. 624.
Venous Pulsations and Venous Tracings in General; Special Reference to "V" Wave of Polygraphic Tracing. H. Sainsbury.—p. 626.
*Chronic Intussusception Due to Carcinoma of Sigmoid. G. A. Ewart.—p. 629.
Quinine Idiosyncrasy and Cinchonin. W. Fletcher and E. A. O. Travers.—p. 629.
*Pulse Pressure in Exophthalmic Goiter. I. Harris.—p. 630.

Chronic Intussusception Due to Carcinoma of Sigmoid.—In Ewart's case, intussusception had existed for more than a year without any evidence of carcinoma other than the subjective symptom of "something inside the rectum" constantly. Ewart suggests the advisability of suspecting the presence of a growth in all cases of large intestine intussusceptions in adults.

Pulse Pressure in Exophthalmic Goiter.—In the twelve cases reported on by Harris the pulse pressure varied from 40 to 80. The lowest diastolic pressure was 50; the highest, 95. The highest systolic pressure was 170; the lowest, 120. Increase in pulse rate and at the same time a high pulse pressure, Harris says, is characteristic of these cases.

1: 667-704 (April 21) 1923

- Chronic Abdomen. R. Hutchison.—p. 667.
Man's Posture: Its Evolution and Disorders. A. Keith.—p. 669.
Case of Hyperpiesia. D. C. L. Vey.—p. 672.
*Cutaneous Tuberculin Test (Pirquet): With Reference to Its Failure in Advanced Tuberculous Disease in Childhood. C. McNeil.—p. 673.
*Therapeutic Use of Tuberculin. W. C. Wilkinson.—p. 674.
Treatment of Pneumonia. A. G. Newell.—p. 676.
*Pernicious Anemia with Foci of Infection in Alimentary Tract. V. Coates.—p. 677.
Constricting Action of Histamin on Veins: Method of Differential Perfusion: Nitrites in Prevention of Histamin Shock. O. Inchley.—p. 679.
Simple Diet Table. H. S. Pemberton.—p. 679.

*Adenocarcinoma of Appendix. A. O'D. Thomas.—p. 680.
Ebonite Poisoning. M. W. Geffen.—p. 680.
Rupture of Spleen. L. R. Lempriere.—p. 681.

Improvement in Cutaneous Tuberculin Test.—McNeil describes a technique for the performance and reading of the Pirquet test with which, he says, he has not failed to obtain a positive reaction in any case of severe tuberculous disease proved to be such by the discovery of the bacillus or by postmortem examination. He uses undiluted old tuberculin (O. T. Koch). A small circular area of skin on the front of the forearm is chafed with the sharp point of a darning needle until the epidermis is removed and the pink cutis vera is exposed. Care is taken to avoid bleeding. The eye of the needle is charged with undiluted old tuberculin, and pressed into the prepared vascular surface with a rotary motion. A small bruised pit is thus formed from which the tuberculin is rapidly absorbed. This procedure is similar to that advised by Pirquet; but it differs in the careful preliminary excoriation of the skin, and thus renders more certain the contact of tuberculin with the skin capillaries. This difference is enough to secure success in cases in which the tuberculin reaction is feeble. In seven cases in which both methods were tried side by side the reaction was positive in five with the method just recommended, and in only two cases with Pirquet's method.

Therapeutic Use of Tuberculin.—Wilkinson states that his records give him unswerving faith in large doses of tuberculin, given subcutaneously, as the best remedy for tuberculosis in all its forms.

Intestinal Lesions Precede Pernicious Anemia.—Coates cites three cases in which he believes that previous intestinal lesions were related etiologically to the later developing pernicious anemia. These lesions were: colitis, sprue and ulcers.

Adenocarcinoma of Appendix.—Thomas' patient was only 14 years of age. The first symptom manifested was abdominal pain, coming on suddenly. It was at first referred to the umbilicus, and later to the right iliac region, and was unaccompanied by vomiting or constipation. Over McBurney's point a cordlike thickening about 2 inches long was palpable. A diagnosis of tuberculous appendix was made. At operation the appendix was found to be 5 inches long, kinked, lying in the "4 o'clock" position, and bound down by adhesions. It showed signs of recent inflammation. On being removed and slit up along the lumen, which was patent, it was found to contain two small fecal concretions at the tip, and in the wall at the point where the kinking occurred were two small yellow masses, very hard, and cutting like an unripe pear. These masses proved to be adenocarcinoma.

Journal of Biochemistry, Tokyo

2: 1-180 (Oct.) 1922

Studies of Autolysis. S. Shima.—p. 1.
Chemical Studies of Corn Pollen. I. Isolation of Phytosterol and Inositol. S. Miyake.—p. 27.
Studies in Gastric Juice. IV. Pyloric Juice. M. Takata.—p. 33.
Investigations of Electromotility of Frog's Skin. III. Researches on Effect of Narcotics on Behavior of Frog's Skin Under Electromotor Stimulation. K. Hashida.—p. 43.
Labor and Nutrition. IV. General Metabolism of Several Japanese Workwomen. J. Sakamoto.—p. 73.
Protein Combinations with Acids and Alkalies. M. Takeda.—p. 103.
Inhibitory Action of Salts of Silver and Some Other Heavy Metals on Amylase. G. Mori.—p. 117.
Glycolytic Properties of Blood. Y. Kawashima.—p. 131.
Studies on Hemoglobin. I. Advantage of Alkaline Solutions for Colorimetric Determination of Hemoglobin. H. Wu.—p. 173.

2: 181-365 (Jan.) 1923

Studies on Hemoglobin: II. Peroxidase Content of Blood. Hsien Wu.—p. 181.
Id. III. An Ultramicro-method for Determination of Hemoglobin as a Peroxidase. Hsien Wu.—p. 189.
Id. IV. Catalase Activity of Hemoglobin and Derivatives. Hsien Wu.—p. 195.
Studies on Pepsin Digestion. S. Shima.—p. 207.
Effect of Various Salts on Trypsin and Erepsin Activity. K. Nagai.—p. 229.
Difference Between Adsorptive Powers of Charcoal from Common and Glutinous Starch. T. Tadokoro and Y. Nakamura.—p. 239.
Formation of Anthra-Anilinic Acid from L-tryptophan by Bacillus Subtilis. T. Sasaki.—p. 251.
Lethal Temperature of Koji-Diastase in Aqueous Solution and Recovery of Action After Heating. K. Miyake and M. Ito.—p. 255.

Variable Relationship Between Organic Phosphorus Combinations and Inorganic Phosphates in Animal Organism. Y. Masai and T. Fukutomi.—p. 271.

Formation of Urazil from Putrefaction of Zytosin. R. Iwatsuru and M. Chikano.—p. 279.

Purin Metabolism. II. Influence of Kidney and Tissues on Urinary Purin. M. Kikuchi.—p. 283.

Biochemical Study of Ripening of Kaki-Fruit. S. Komatsu and H. Ueda.—p. 291.

Id. III. Chemical Composition of Cured Fruit. S. Komatsu, H. Ueda and M. Ishimasa.—p. 301.

Id. IV. Chemistry of Curing Process. S. Komatsu and H. Ueda.—p. 309.

Serologic Investigations of Hemoglobin, Especially the Practicability of "Hemoglobino Precipitin." S. Higashi.—p. 315.

Influence of Albumin-Fat Diet on Carbohydrate Metabolism. N. Kageura.—p. 341.

Examination of Urine of Pregnant Women. M. Honda.—p. 351.

Antagonistic Action Between Salts on Surface Tension of Organic Colloidal Solution. T. Tadokoro.—p. 361.

Lancet, London

1: 833-882 (April 28) 1923

Cultivation of Tissues and Tumors in Vitro. A. H. Drew.—p. 833.

*Hemorrhages of New-Born. J. N. Cruickshank.—p. 836.

*Tuberculosis of Sacro-Iliac Joint. H. C. W. Nuttall.—p. 839.

Open Ether for Occasional Anesthetist. A. Waters.—p. 843.

*Case of Persistent Jaundice in Infant. B. Myers.—p. 844.

Hemorrhages of New-Born.—In a series of 200 mature infants reported on by Cruickshank, hemorrhage of greater or less degree was present in 154 cases—a percentage incidence of 77. If allowance be made for certain craniotomy cases, the incidence rate of hemorrhage in this group of infants becomes approximately 80 per cent. In fifty-five instances, however, the hemorrhage consisted of capillary oozings or petechiae only, and if these be neglected, there was gross hemorrhage in ninety-nine cases—approximately 50 per cent. of the series. There were sixty-five which showed meningeal hemorrhage of a gross character. In forty-four of these cases meningeal hemorrhage was the only gross hemorrhage present—though capillary oozings or petechiae were noted in most instances—while in the remaining twenty-one cases the meningeal hemorrhage was associated with gross hemorrhage into the viscera. In thirty-four cases, approximately one sixth of the whole series, there was hemorrhage into the viscera without meningeal hemorrhage. This group contained eight cases of craniotomy, however, so that it would be more correctly estimated at twenty-six, an eighth of the series. Two hundred premature infants which were born during the eighth or ninth lunar months of pregnancy were examined, and it was found that in 133 cases hemorrhage was present, an incidence of 66.5 per cent. In fifty-two cases bleeding did not amount to more than capillary oozings or petechiae, so that there was gross hemorrhage in eighty-one cases, approximately 40 per cent. of the whole series. Meningeal hemorrhage, apart from other gross bleeding, was found in thirty cases, and in twenty-five cases there was meningeal hemorrhage associated with hemorrhage into the viscera. In another twenty-six cases, there was gross visceral hemorrhage without meningeal hemorrhage.

Tuberculosis of Sacro-Iliac Joint.—Nuttall does not approve of the old operations of trephining and scraping in this condition, asserting that they are not based on a sound conception of the anatomy and pathology of the joint, and the results are poor. Much better results are to be expected from more radical treatment. Nuttall commends Picquet's method, which is based on the following principles: (1) an approach to the joint by cutting away the posterior overlapping portion of the ilium; (2) the resection of more or less of the sacrum, as may be necessary, for the complete evacuation of any intrapelvic abscess; (3) the methodical following up of the disease by means of the gouge or curet, so that a smooth granulating surface may be formed without pockets or sinuses.

Persistent Jaundice in Infant.—A case of persistent jaundice in an infant, aged 7 weeks, with atresia of the common bile duct and biliary cirrhosis of the liver, is cited by Myers. The jaundice had commenced two days after birth, becoming more intense during the second week, and persisted. The motions were whitish. The urine was very distinctly bile colored. The child had been taking its food (breast milk and prepared food) well. The child died, aged 14 weeks.

Bulletin de l'Académie de Médecine, Paris

87: 358-369 (March 20) 1923

Pyelotomy for Calculus in Kidney. P. Bazy.—p. 359.

The Bordet-Wassermann Test in Parturients. A. Brindcau.—p. 362.

*Determination of Sex. Alich.—p. 363.

Determination of Sex.—Reviewed editorially, May 12, page 1382.

Bulletins de la Société Médicale des Hôpitaux, Paris

47: 239-282 (Feb. 16) 1923

Subglottic Injection into Bronchi. Caussade et al.—p. 239.

Hemotherapy in Whooping Cough. H. Méry and L. Girard.—p. 243.

*Ophthalmoplegia in Pneumonia. J. Thiroloix and M. Harmelin.—p. 244.

Comparative Tests in Syphilis. Lortat-Jacob and P. Legrain.—p. 248.

*Radioscopy of Frank Pneumonia. Paiseau and Iser-Solomon.—p. 252.

*Peptone Shock Treatment in Purpura. Paiseau and Alecheck.—p. 258.

Sero-Fibrinous Pericarditis. J. Troisier et al.—p. 263.

*Tyrosin Reaction in Sputum. N. Fiessinger and G. Blum.—p. 274.

*Gastric Cancer with Erosion. Ramond and Hirschberg.—p. 278.

*Lockjaw Arrested by Blocking Nerve. Vincent and Bernard.—p. 281.

Ophthalmoplegia in Pneumonia.—Thiroloix and Harmelin recall that ocular affections are rare in pneumonia and in the course of all pneumococcus infections. They report a case of bilateral ophthalmoplegia in a young woman in the course of atypical pneumonia, with complete recovery.

Radioscopy of Frank Pneumonia.—Paiseau and Iser-Solomon confirm the adverse prognosis of Weill and Mouriquand in cases of early hepatization which shows a shadow in the radiogram immediately. They believe there may be perfect synchronism between the appearance of the general signs of pneumonia and hepatization, without leaving time for a phase of previous septicemia. The absence of the shadow in the radiogram in the early stage of pneumonia does not prove the absence of local congestion in the lungs at that time.

Peptone Shock Treatment in Hemorrhagic Purpura.—Paiseau and Alecheck used with success the peptone shock treatment in a case of purpura, with serious intestinal hemorrhage, after injections of horse serum had failed. Fourteen days of hemorrhages had produced anemia so pronounced that an early fatal termination seemed inevitable. The first intravenous injection of 2.5 c.c. of a 10 per cent. peptone solution, given slowly, at the end of an hour produced a sudden severe chill. At the appearance of this chill a subcutaneous injection of 1 mg. of epinephrin was given and this, within five minutes, relieved the shock without producing a thermic reaction. The peptone injection seems to provoke a more violent shock than that from colloidal metals, but less serious than those that may be produced by serum in anaphylactic subjects. They endorse Renaud's suggestion to add 0.25 mg. of epinephrin to the peptone solution or give 1 mg. subcutaneously. The epinephrin must be given at the onset of the chill in order to arrest the secondary shock unless anaphylaxis is feared.

Tyrosin Reaction in the Sputum, and the Leukocyte Proteases.—Fiessinger and Blum found positive reactions to tests for tyrosin in the sputum in pulmonary tuberculosis with tubercle bacilli in the sputum, but they also obtained positive reactions in cases where there were no certain tuberculous lesions and no tubercle bacilli in the sputum. For obtaining a proteolysis carried up to the point of amino-acids, it is sufficient to incubate the normal polymorphonuclears of the blood in a casein solution. The tyrosin reaction will be considerably intensified if an emulsion of purulent sputum is incubated on chloroform for twenty-four hours. Any mechanical condition promoting stagnation of sputum enhances proteolysis, but mucin checks it.

Gastric Cancer with Erosion.—Ramond and Hirschberg say that symptoms of what they call "erosive cancer" resemble those of ulcers, and it is inaccurately diagnosed in four cases out of five. In the last two years, they have treated five cases, all males between the ages of 36-56 years, in three of whom the cancer started suddenly, while in two it developed from chronic dyspepsia. The patients had cramps, with burning and tearing sensations, in from one to three hours after meals, which disappeared if an alkali or food was ingested. There was no hematemesis or melena, but in three of the cases there was a marked tendency to anemia. On

radiograms the stomach appeared dilated, with pyloric spasm. Gastrectomy was performed on all five cases, four surviving.

Alcohol Treatment of Trismus from Charcot's Disease.—Vincent and Bernard treated a case of incipient Charcot's disease with severe trismus by injecting alcohol into the two inferior maxillary nerves. The patient opened her mouth immediately after the injection; she could take food, masticate and perform all normal acts. They had diagnosed the case as trismus, accompanied by clonus, from the symptoms of paralysis of the lips, tongue and palate.

47: 283-322 (Feb. 23) 1923

Tumor of Nervous Origin in Gastric Wall. De Massary and Walser.—p. 284.

Meningeal Syphilis Treated by Bismuth. Vialard.—p. 288.

Gastric Cancer of Intestinal Structure. F. Ramond et al.—p. 294.

*Intratracheal Injection of Iodized Oil. Forestier and Leroux.—p. 299.

*Tuberculous Meningitis Cured. A. Pissavy and Terris.—p. 304.

*Hemorrhages in Lethargic Encephalitis. J. Tinel and R. Dupouy.—p. 306.

*Iodized Oil in Treatment. Sicard and Forestier.—p. 309.

Elimination of Iodin in Urine. Sicard et al.—p. 315.

Arsenic-Acetyl Acid Preparation in Syphilis. Sézary and Pomaret.—p. 318.

Radiographic Study of Intratracheal Injections of Iodized Oil.—Forestier and Leroux think that the principal merit of intratracheal injection is that the fluid used, whether iodine, antiserum or vaccine, acts directly on the lesions. These should be located previously, clinically and radioscopically. Their injections have been both preceded and followed by radiography. Gravity influences the distribution of the fluid in the bronchi. They have found it impossible to place the fluid anywhere, except in the base, even with injection of from 15 to 20 c.c., when the patient was in a sitting position. Only when the patient is reclining is it possible for the iodized oil to reach other zones than the base of the lung. He is instructed to breathe calmly and the larynx must be anesthetized, as reflex coughing must be absolutely avoided.

Tuberculous Meningitis Apparently Cured for Five Months to Date.—Pissavy and Terris describe a case of tuberculous meningitis in a man, aged 24, under treatment for tuberculosis in one lung. Spinal puncture yielded a clear fluid, under high pressure, rich in lymphocytes, and with excess of albumin. It contained acid-resisting bacilli, seemingly identical with tubercle bacilli. The meningitic symptoms began to subside on the tenth day and by the fifteenth clinical recovery was practically complete. They call attention to the low degree and rapid disappearance of the excess of albumin, and also to the feeble virulence of the cerebrospinal fluid. Though the bacilli were plainly visible on the slides, intraperitoneal injection of 1 c.c. in guinea-pigs did not cause tuberculous lesions. A similar harmlessness of the cerebrospinal fluid was also found in a curious case reported by Rist and Boudet in 1908, which also referred to curable meningitis and acid-fast bacilli. They were morphologically identical with tubercle bacilli. But the bacilli, which were present in large numbers at certain times, disappeared at others, and alternated with lymphocytosis, which also was intermittent.

Hemorrhagic Syndrome in Epidemic Encephalitis.—Tinel and Dupouy report two cases of lethargic encephalitis that ran a rapidly fatal course within two days, with the clinical picture of intense infectious delirium and a terminal syndrome of profuse gastro-intestinal and other hemorrhages, in two men, aged about 35. The indication of the encephalitic origin was furnished only by the existence of diaphragmatic and abdominal myoclonus and, in one of the cases, intermittent cervicobrachial neuralgia.

Iodized Oil in Diagnosis and Therapeutics.—Sicard and Forestier are the first to succeed in radiographing a sufficiently tolerated substance in the subarachnoid sac as well as in the epidural cavity. They found the most accessible regions for radioscopy to be between the first and fifth dorsal vertebrae and between the tenth dorsal and fifth sacral; 4 or 5 c.c. of the iodized oil, at room temperature, may be injected without pain. If the patient is erect, or semi-seated, the oil, obedient to the law of gravity, will have reached the lowest level in eighteen or twenty hours. In a normal patient, radiography will show the course of the iodine as a continuous dark stream. In about twenty hours it has

become attached to the epidural tissues. If the spinal cord is compressed or the epidural passage is blocked, the lower boundary of the iodized oil is more or less transverse, with accumulation of dark particles. The barrier of compression may be overcome by making an injection above and below, with a two day interval. Exploration of the subarachnoid cavity by injection of 1 c.c. into the cerebrospinal fluid can be made through a puncture at the fourth or fifth dorsal vertebra, after a little of the cerebrospinal fluid has been drained off. The iodine shadow will be about the same whether the patient is sitting or lying on his back, but different if he is lying on his side, the fluid passing along the posterior subarachnoid region. By this method they have located tumors in three cases. The injection of iodized oil not only helps in locating tumors by radiography, but it also has a healing effect on cold abscesses.

Paris Médical

13: 129-144 (Feb. 10) 1923

- *Prognosis of Traumatic Shock. G. Jeanneney.—p. 129.
- *Seroreaction in Syphilis. Rubinstein.—p. 134.
- Osteoarticular Tuberculosis as Dry Caries. P. Wilmoth.—p. 135.
- The Luteum Apparatus of the Ovary. D. Schil.—p. 138.

Prognosis of Traumatic Shock.—Jeanneney's paper deals especially with the prognostic significance of changes in the systolic and diastolic blood pressure.

Seroreactions in Syphilis.—Rubinstein reviews his twelve years of experience with the seroreactions in syphilis. He found that the flocculation (Sachs-Georgi) is neither sensitive, nor specific. The Wassermann, Hecht and Jacobsthal methods performed simultaneously give the most reliable results.

13: 145-176 (Feb. 17) 1923

- *Local Causes of Cancer. P. Menetrier.—p. 145.
- Slye's and Murphy's Research on Experimental Cancer. Dubois-Roquebert.—p. 152.
- Neoplasms in Plants. G. Mangenot.—p. 159.
- *The Body Fluids with Cancer. Loeper, Forestier and Tonnet.—p. 166.

Local Causes of Cancer.—Menetrier remarks that repeated irritation as a cause of cancer was proclaimed by Broussais long before Virchow. The cancers that follow a single severe trauma are of the sarcoma type. Instances have been published involving bones, the eye, the breast and elsewhere. Clunet witnessed the development of a sarcoma in two rats exposed to intense roentgen irradiation. With epitheliomas, there is generally a long intermediate period of chronic inflammation. Precancerous skin affections are all of the keratosis type. The influence of local irritation is particularly manifest in cancer of the biliary and urinary apparatus. A history of colic is common. Papillomatous or adenomatous hyperplasia forms the bridge between the chronic irritation and the cancer, or a metaplasia as in the epithelium lining the air passages, which assumes the pavement type. He remarks that the experience of ages is crystallized in the lay term for nevi, *noli me tangere*, citing a recent case in which a sarcoma developed in a small angioma on the tongue, exposed to excoriation. The resistance of guinea-pigs to tar cancer shows that the soil is one of the determining factors.

Modifications in Body Fluids in Malignant Disease.—The urine may reflect denutrition and cachexia but, Loeper says, study of the blood is more instructive as this reveals organic vitiation. He discusses the sugar, salts, globulin and albumin, and the hemolytic action of cancer blood. The hemolytic action may affect the subject's own erythrocytes or those of others or of animals, but cancer serum, according to Freund and Kaminer, lacks the destructive action on cancer cells which is displayed by normal serum. In the general toxic action liable to follow intense roentgen irradiation, the sugar of the blood may increase to 0.2 per cent. or more. The value of the "micro-Abderhalden" reaction is still uncertain, as also of precipitin and intradermal reactions to cancer cell extracts. The above tests are instructive only in advanced stages of cancer, but the outlook is promising with further study of the electric resistance and polarization of cancer, the catalytic power, the variations in the colloidal state, the ion concentration in the serum, and other phases of physical chemistry. The hope of diagnosing incipient cancer by any of these means is still far from realization.

13: 177-192 (Feb. 24) 1923

- *Treatment of Epidemic Encephalitis. Carnot and Blamoutier.—p. 177.
- *Splenomegaly in Heart Disease. M. Creyx and F. Piéchaud.—p. 179.
- *Acute Peritonitis Traced to Adnexa. Bloch and Soupault.—p. 183.
- *Pseudomeningococcus Meningitis in a Syphilitic. Audouard.—p. 185.
- Formaldehyd Preparation in Tuberculosis. Hamant and Méry.—p. 188.

Sodium Salicylate in Treatment of Epidemic Encephalitis.—Carnot and Blamoutier gave 4.5 gm. of sodium salicylate daily, by the vein, to a total of 22 gm. in a grave case of encephalitis of choreic type in a young woman. The benefit was prompt and pronounced, as also in a second case, of lethargic type, in a boy of 16. He was given a total of 50 gm. in eight days. In a 4 per cent. solution, the intravenous injection has no local irritating action, they say, and is not painful. In their first case they used such a concentrated solution that the vein became obliterated, and they did not dare to resume this treatment during a relapse eight days later, which proved fatal.

The Enlarged Spleen in Heart Disease.—The spleen enlarges when any of its functions becomes exaggerated. Congestion alone is not enough to induce splenomegaly; it requires some factor inducing hemolysis, and this can be realized by almost any infection or intoxication. The liver is always gravely affected in severe asystolia, and this entails anemia from the toxic action of bile salts.

Acute Peritonitis of Genital Origin.—This clinical picture is rare, but Bloch and Soupault report three cases, with recovery after removal of the primary focus in the adnexa. They ascribe the infection to the abdominal opening of the tube.

Presse Médicale, Paris

31: 77-88 (Jan. 27) 1923

- Mechanism of Digestive Leukocytosis. Pagniez and Plichet.—p. 77.
- *Vessel-Blood Shock from Ligation of Limb. J. Le Calvé.—p. 78.
- New Trypanosomicidal Drugs. L. Cheinisse.—p. 81.

Vessel-Blood Shock from Ligation of Limb.—Le Calvé has been studying the phase of colloidoclasia which follows tying a cord around the upper third of the thigh or arm for ten minutes. The blood shows at once modifications suggesting an upset in the colloidal balance, even in the healthy. In persons with an unstable autonomic nervous system, the reaction is quite pronounced. The *crise vasculo-sanguine* induced in this group seems to be identical with the hemoclastic crisis which precedes the manifestations of colloidal shock, and he has been experimenting with ligation as a means to ward off shock of this kind and to desensitize in cases of angioneurosis, alimentary anaphylaxis and other manifestations of the colloidal shock. He tabulates the findings in twelve cases, and compares them with Sicard's method of injecting a very small dose of arsphenamin below a tourniquet, when he has reason to expect by-effects. He then waits four or five minutes, and then injects the rest of the drug, after slowly releasing the constricting band. Le Calvé thinks that the benefit from this topophylaxis is probably due to the vessel-blood shock which it induces.

31: 165-172 (Feb. 21) 1923

- Screw Treatment of Dupuytren's Fracture. Leclerc.—p. 165.
- *Urticaria and Hemiplegia. Lermoyez and Alajouanine.—p. 167.

Urticaria and Hemiplegia.—In the case reported, the woman aged 62, suddenly developed right hemiplegia with pronounced sensory disturbances on that side. The third month, urticaria developed after eating fish, but it was strictly limited to the paralyzed side. Pinching the skin at the back of the neck induced the pilomotor reflex only on the sound side, while sweating was profuse only on the paralyzed side, and the systolic blood pressure was lower on this side. Test injection of horse serum induced the appearance of the urticaria on several occasions, but it was always restricted to the paralyzed side. The shock produced by the parenteral protein thus manifested itself exclusively in the region in which other tests had demonstrated exceptionally intense disturbance in the vegetative nervous system.

31: 309-340 (April 4-11) 1923

- *Sequelae of Phlebitis. R. Leriche.—p. 309.
- *Diagnosis of Inherited Syphilis. E. Leredde.—p. 310.
- *Valve Tracheotomy. G. Zorraquin.—p. 313.
- *Atypical Forms of Acute Gout. F. Bezançon et al.—p. 317.

- Peripheral Venous Tension. Villaret et al.—p. 318.
 *The Vagus-Sympathetic Balance. Garrelon et al.—p. 323.
 *Ponndorf's Scarification Tuberculin Treatment. L. Cheinisse.—p. 325.
 Curable Uremias. M. Chevassu.—p. 329.
 Pigmentary Cirrhosis. F. Gallart Monés.—p. 334.
 *Hemotherapy of Scarlet Fever. A. Daniel.—p. 336.
 Suprapubic Retromuscular Abscess. Morlet and Rajat.—p. 337.

Treatment of Tardy Results of Phlebitis.—Leriche recently operated fifteen years after phlebitis in the femoral vein. There had been no disturbances for fifteen years, and then atypical intermittent claudication developed, with intense pains, relieved only by repose. This syndrome has been apparently permanently cured by resection of a segment of the vein and periarterial sympathectomy.

Diagnosis of Inherited Syphilis.—Leredde remarks that it would be a boon if we could be told exactly what are the affections in which it is useless to look for syphilis. To date he does not know of any such, and he declares that search for syphilis is imperative in every child that is not in normal health, since its life and, if it survives, its health throughout life may depend on an etiologic diagnosis, made in time. Aside from the superficial lesions and a few stigmas, there are no specific signs of the disease except those furnished by the laboratory and investigation of the family. But whatever the chronic disease in a syphilitic, it is liable to improve under specific treatment. When the number of red corpuscles and the hemoglobin increase under specific treatment, while the mononucleosis grows less, the presumption of syphilis is confirmed. This is even more certain when lymphocytosis in the cerebrospinal fluid declines. Tentative treatment, however, must be pushed as vigorously and perseveringly, he says, as in known syphilis: mercury every day and an arsenical every week; treatment may have to be continued for months before absolute certainty.

Acute Laryngeal Asphyxia.—Zorraquin explains that the tracheal cannula he has devised allows free inspiration, but a valve prevents expiration, and the air has to be expelled through the natural route. The advantages of maintaining the permeability of the larynx are obvious: it does away with the dangerous complications of tracheotomy and retention of secretions in the lower air passages. The valve cannula is illustrated.

Atypical Forms of Acute Gout.—Bezançon, Weil and de Gennes describe a pseudophlegmonous form of acute gout. In the dorsum of the foot it gave the impression of fluctuation, and the inguinal glands were swollen and painful, but there was a history of recurring gout in the big toe, and under colchicum the "phlegmon" vanished in three days. Another form simulates extensive phlebitis. Hydrarthrosis is an episode of acute gout liable to be misinterpreted, as also acute arthritis of the large joints simulating febrile rheumatism or white swelling. A history of an attack of gout in the big toe is often the only thing to give the clue to the prompt and effectual cure under colchicum.

The Vagus-Sympathetic Balance.—Garrelon, Santenoise and Tinel comment on the new horizons opening as we study the involuntary nervous system more closely. An upset in the balance between the vagus and sympathetic seems to be the indispensable condition for all reactions of the anaphylaxis type and intoxications. They have worked out several biologic laws governing the type of these reactions.

Ponndorf's Tuberculin Treatment.—Ponndorf introduces the tuberculin through the skin in deep long scarifications that draw blood, as he ascribes an important rôle to the skin in the method. The general verdict to date is far from favorable.

Hemotherapy in Scarlet Fever.—Daniel injects convalescents' whole blood in treatment, and reports favorable results in thirty-three cases, all but six exceptionally grave. There were five deaths.

Schweizerische medizinische Wochenschrift, Basel

53: 185-208 (Feb. 22) 1923.

- Importance of Study of the History of Biology. J. Strohl.—p. 185.
 *Heredity of Ocular Anomalies. A. Vogt.—p. 188. Conc'n.
 *Acute Perforation of Stomach. A. Suter.—p. 193.
 *Intracardiac Injection of Epinephrin. E. Baumann.—p. 198.

Heredity of Certain Ocular Anomalies.—Vogt's charts show that a consanguineous marriage in a stock with a hereditary taint, such as color blindness, does not increase the number of those affected with the anomaly except in the single family involved. Inbreeding does not produce new gens; it only affords greater opportunities for two gens of the same kind to come together. Conditions are more complex with hereditary myopia, as the length of the axis and the curvature of the cornea and possibly other factors are involved. Concomitant strabismus is another eye affection of pronounced hereditary type with numerous factors involved some perhaps mendelian, some coupled. This article supplements one which was summarized in these columns, March 18, 1922, p. 850, the whole forming a comprehensive monograph on hereditary anomalies and sex-linked affections and the light they have thrown on biology in general, especially sex determination.

Acute Perforation of Stomach.—Suter gives a table of thirty recorded cases of acute perforation with prompt radical operation. The mortality in fifty cases he has compiled was only 16.3 per cent. He reports further a case in which he resected the stomach for supposed perforation of a simple ulcer, and removed the gallbladder on account of gallstones. The course of the case revealed the malignant nature of the lesion, the tumor recurring by the end of a year. Baumann has reported the case of a woman, aged 65, who had had gallstone colic repeatedly for ten years and finally acute perforation of the stomach, which he resected. He found it the seat of a small cancer. The gallbladder was removed at the same time, and the woman has been in good health since. The colic had probably induced the perforation. Suter discusses the reciprocal action of gallstones and stomach affections.

Intracardiac Injection of Epinephrin.—Baumann resuscitated two children recently with intracardiac injection of epinephrin. One was an infant, aged 6 months, whose heart stopped beating as chloroform was being given for herniotomy. After an interval of four minutes, 0.75 c.c. of a 1:1,000 solution of epinephrin was injected directly into the heart through the fourth intercostal space, 3 cm. from the left margin of the sternum. In seven seconds the heart contracted and again two seconds later, and the skin of the whole body turned as red as in scarlet fever. The child began to breathe about the twelfth second. The other child had suffocated in a whooping cough spasm, and was rushed to the hospital in four minutes. Four minutes after respiration had ceased and three and a quarter after the heart had stopped beating, 1 c.c. of the epinephrin solution was injected into the heart muscle. It began to contract the twenty-third second and inspiration followed the twenty-sixth. The injection was made intramuscularly in the left ventricle. This Baumann regards as the preferable technic, as he worked it out on cadavers immediately after death, trying needles of different lengths at various points. Those close to the sternum, in the fourth and fifth interspaces were all in the right ventricle. He gives the exact details in eight cadavers of different ages, all the data testifying to the advantages of making the puncture in the fourth intercostal space, at the upper rim of the fifth rib, about 5.5 cm. from the left margin of the sternum in adults. The depth is determined by the sensation as the needle enters the muscle; it is then pushed in for a few millimeters more. He advises not to inject more than 0.5 c.c. in young infants, and up to 1.5 c.c. in adults. The dose of 0.75 c.c. given the infant caused a severe general reaction, vomiting, epileptiform spasms and fever. The temperature was not normal till the seventh day.

Pediatria, Naples

31: 169-224 (Feb. 15) 1923

- *Hereditary Syphilis. I. Nasso.—p. 169.
 Defect in Femur: Missing Head and Neck. Scaduto.—p. 194.
 Arterial Pressure in the New-Born. S. Fabris.—p. 198.
 Ether in Pneumonia and Bronchitis in Children. F. L. Presti-Seminario.—p. 206.

Hereditary Syphilis in Italy.—Nasso, basing his observations on statistics at Naples, 1914-1921, says that hereditary syphilis in children predisposes them to tuberculosis. While scarcely 14.6 per cent. of all the 26,584 children examined

were tuberculous, 24.5 per cent. of the syphilitic children were infected with tuberculosis. About 52 per cent. of the congenital malformations were in children with inherited tuberculosis, and 50 per cent. of the endocrine lesions were coexistent with this disease. It was found in 76.8 per cent. of the cases of spastic hemiplegia, and in about 80 per cent. of the bilateral cases. Of 160 cases of splenic anemia, 135 were syphilitic. In the certainly syphilitic newborn, the Wassermann reaction is not always positive. The newly born may not present syphilitic symptoms or react positively to the Wassermann test, but after a period of latency they may show such symptoms and reactions. Children of syphilitic mothers should be treated early and intensively whether they show clinical symptoms or not.

Policlinico, Rome

30: 101-164 (March 1) 1923. Medical Section

- Mastix Reaction in Cerebrospinal Fluid. D. Pisani.—p. 101.
Benzoin Reaction in Cerebrospinal Fluid. A. Ferraro.—p. 127.
A Flocculation Reaction in Syphilis. A. Dalla Volta and P. Benedetti.—p. 135.
Treatment of General Paresis and Other Spirochetoses by Induced Fever and Infections. G. Santangelo.—p. 143.

Riforma Medica, Naples

39: 193-216 (Feb. 26) 1923

- Treatment of Tabes. G. Arata.—p. 193.
Injury of Bundle of His in Malaria. C. Cantieri.—p. 196.
Rare Complications and Sequelae of Influenza. G. Belloni.—p. 198.
Gangrene After Piercing Ears of Young Infant. Gioseffi.—p. 201.
*Calcium Chlorid in Treatment of Eczema. G. Lampronti.—p. 202.
Combined Serotherapy, Silver Salt and Hexamethylenamin in Treatment of Typhoid. G. Pansini.—p. 202.

Calcium Chlorid in Treatment of Eczema.—Lampronti has been giving calcium chlorid a thorough trial in the treatment of eczema, according to Netter's suggestion, and has been impressed with its value. He found it extremely effectual, often after failure of all other measures, and even in the anemic and scrofulous. He applied it in a 6 per cent. ointment, and frequently many of the crusts dropped off in twenty-four or forty-eight hours after the first application, leaving a dry surface; the epidermis rapidly resumed its normal aspect. Wright has recommended calcium chlorid also in treatment of urticaria and pruritus.

Brazil-Medico, Rio de Janeiro

1: 141-158 (March 17) 1923

- Hemangioma on Vocal Cord. Oswino Penna.—p. 141.
Spontaneous Luxation of Lens. Two Operative Cases. Abreu Fialho.—p. 143.
*Dermatomycoses in Bello Horizonte. Arocira Neves.—p. 144.

Dermatomycoses in Brazil.—Arocira Neves states that the microsporon of the cat is responsible for numerous cases of dermatomycosis at Bello Horizonte. It occurs in small familial epidemics, and he describes ten typical cases. The parasite, *Microsporon felinum*, was found in more than 81 per cent. of the cases; the scalp was involved in less than 28 per cent. Children are affected more often than adults. There were from six to eleven lesions scattered over the face and body, and the family cat and dog as a rule presented similar lesions with the children. There was more or less itching.

1: 159-172 (March 24) 1923

- Staphylococcus Ciliary Folliculitis. Abreu Fialho.—p. 159.
*Dose of Antivenom Serums. R. Kraus and Rocha Botelho.—p. 160.
*Pulsating Exophthalmos from Aneurysm. J. Santa Cecilia.—p. 161.
French Otorhinolaryngology in 1922. Ramadier.—p. 163.

Standardization of Snake Venom Antisera.—In this fifth communication on this subject, Kraus and Rocha Botelho state their conclusion that the best method for determining the proper dose is with Vital Brazil's technic, incubating for an hour. This is an index of the maximal neutralizing potency in vitro. On the other hand, Calmette's method, injecting the venom and the antiserum separately, by the vein, is the best index of the maximal avidity of the antiserum, and of the greatest curative value. They urge international agreement to decide on some such standardizing procedure.

Pulsating Exophthalmos.—The aneurysm causing the exophthalmos involved the carotid and the cavernous sinus, and was safely operated on.

Prensa Médica Argentina, Buenos Aires

9: 797-824 (Feb. 28) 1923

- *Stretching of Round Ligament of Liver. Delfor del Valle, Jr.—p. 797.
Pseudomyxoma of Appendiceal Origin. Mazzini.—p. 802. Conc'n p. 825.
*Contracture of Fingers from Syphilis. Zinny and Vivaldo.—p. 806.
Percussion of the Liver. A. Navarro.—p. 809.

Pyloric Syndrome from Traumatic Stretching of Round Ligament of the Liver.—The young athlete experienced a sudden pain in the epigastrium as he was casting a quoit, and the symptoms during the following year seemed to indicate a traumatic epigastric hernia. The pyloric syndrome at the slightest effort and the complete relief when reclining were explained by the exploratory operation which revealed that the round ligament of the liver had been stretched and torn. The pyloric symptoms were reproduced by pulling on this ligament, and a permanent cure was realized by resection of the ligament. A second case is cited, the patient a physician. In both cases, raising the right arm increased the pain and brought on vomiting unless the stomach was empty at the moment. A colored plate accompanies the article. The second patient was treated medically for dyspepsia without benefit, but the symptoms finally spontaneously subsided after many months.

Contracture of the Fingers from Inherited Syphilis.—The girl's hands presented the clinical aspect of chronic rheumatism, with retraction of tendons. But under treatment for syphilis begun four months after the first pains in the hands, the pains subsided and the tendons relaxed so that by exercising them the normal play of the fingers was restored. If treatment had been delayed, the girl's hands would soon have been permanently crippled.

9: 853-880 (March 20) 1923

- *The Radiologic Triad of Inherited Syphilis. J. A. Saralegui.—p. 853.
Metastasis in Choroid of Pleural Cancer. E. Adrogué.—p. 862.
Technic and Interpretation of Biopsy. S. Mazza and M. Balado.—p. 865. Cont'n.
Interpretation of Reducing Power of Carbohydrates. M. P. Raurich.—p. 868. Conc'n.

The Radiologic Triad of Inherited Syphilis.—Saralegui reproduces three roentgenograms from each of nine persons with inherited syphilis, all showing the same three anomalies. He has found them so constantly in inherited syphilis that he calls the triad the "radiologic Wassermann." The abnormal outlines of the heart in connection with the aorta, of the stomach in connection with the duodenum and cecum, and of the periosteum of the long bones, form a triad which strongly suggests inherited syphilis. The organs may be apparently normal but not quite in their normal place, with or without adhesions, especially at the cecum. The anomalies in the periosteum are found in the radius, ulna, tibia and fibula in order of frequency. They are most pronounced at the middle third of the bone and nearest the head. The abnormal outline can sometimes be felt by palpation. There is probably excessive production of fibrous connective tissue at these points, and this is not influenced by specific treatment. The epiphyses are normal.

Revista de la Asoc. Médica Argentina, Buenos Aires

35: 869-1023 (Dec.) 1922

- The Antimosquito Campaign at Famaillá. Bachmann.—p. 869.
Chronic Diarrhea from Blastocystis Hominis. S. Mazza.—p. 889.
Endemic Typhoid. Causes and Prophylaxis. Bachmann.—p. 896.
Arsphenamine by Mouth in Treatment of Intestinal Affections Caused by Flagellates. Mazza and Merlo.—p. 905.
*Inherited Syphilis in Argentina. A. Casaubon.—p. 915.
Electrodialysis for Study of Antitoxin. Wernicke.—p. 927.
Triplet Trophoblasts without Embryo Found in Cow's Uterus. Widakowich.—p. 936.
*Changes in Blood During Exercise. A. Bergman.—p. 939.
*Smallpox and Vaccinia. Bachmann and Biglieri.—p. 947.
Research with Curare on Frogs. G. Pacella.—p. 950.
*Hypertension from Splanchnic Nerve. Houssay and Marconi.—p. 953.
Antiserum for Gangrene. A. Sordelli.—p. 958.
*Action of Leukocytes on Koch Bacilli. Howard.—p. 961.
*Hemoclastic Crisis in Parturients. Mazza and Iraeta.—p. 963.
Cysto-Adenoma in Parotid Region. Mazza and Cassinelli.—p. 967.
*Splenoectomy. M. Torres Boonen.—p. 973. Id. Gutiérrez.—p. 981.
Remote Results of Craniectomy. Allende.—p. 988. Idem. Jáuregui.—p. 993.

Inherited Syphilis in Argentina.—Casaubon relates that inherited syphilis was unmistakable in 6 per cent. of the 6,678

children with various diseases in the pediatric clinic at Buenos Aires since April, 1919. There was coincident active tuberculosis in 2.45 per cent.

Effects of Exercise on the Circulation.—Bergman recorded the blood pressure, the pulse and the leukocyte count before and after the exercise of raising each leg alternately to a height of 30 cm. from the level of the bed, the patient reclining half an hour beforehand, and repeating the movement about forty-five times a minute for four minutes and then for ten minutes. This test was applied to patients with various diseases but with a clinically sound cardiovascular system. A second group comprised patients with grave heart disease; the third group was the same as the second after a course of digitalis. The fourth group included tuberculous patients who had recovered from 70 to 100 per cent. of their former earning capacity under the influence of artificial pneumothorax. Among the data thus recorded he notes that the greater the insufficiency of the heart, the longer the interval before the hyperleukocytosis appeared, even when the blood pressure and the pulse seemed to indicate normal conditions.

Smallpox and Vaccinia.—Bachmann and Biglieri report experiences with rabbits which confirm that the protection conferred by vaccination with one strain of vaccine virus is not always complete against vaccine virus of another strain.

Share of Epinephrin in the Hypertension Induced by Irritation of the Splanchnic Nerve.—Houssay and Marconi relate that stimulation of the splanchnic nerve in dogs induces a discharge of epinephrin sufficient to raise the blood pressure and contract the vessels of a denervated leg. These effects are observed even when the circulation has been reduced to the head, thorax, suprarenals and one hind leg. They are not observed when the suprarenal vein is clamped, but appear anew when the clamp is removed. The same effects are noted if the animal is being continuously injected with epinephrin in physiologic doses.

Action on Tubercle Bacilli of Leukocytes from Immunized Horses.—Howard witnessed phagocytosis, lysis and the loss of the acid-resisting properties of the tubercle bacilli when the latter were brought into contact with leukocytes from horses immunized by supersaturation for production of tuberculosis antiserum. His research in this line was mentioned in these columns, Dec. 18, 1920, page 1751.

Widal's Hemoclastic Crisis in Parturients.—Mazza and Iraeta recorded the blood pressure in thirty-four parturients after ingestion of 200 c.c. of milk. In 38 per cent. the blood pressure dropped, but there was leukopenia only in 38.5 per cent. in this group. Only 14.7 per cent. of the total presented a typical hemoclastic crisis.

Splenectomy.—Torres Boonen drew more than 5 liters of fluid from the hydatid cyst in the spleen of a man, aged 40, and removed the spleen, restoring the patient to complete health at once. In a second case the spleen was removed under intraspinal anesthesia on the diagnosis of Banti's disease, with equally favorable results. The man, aged 32, had had symptoms for twelve years.

Semana Médica, Buenos Aires

1: 525-576 (March 22) 1923

- *Suppuration in Urinary Tract in Infants. A. Casaubón.—p. 525.
- Retrovesical Hydatid Cyst. J. Nin Posadas.—p. 530.
- *Specific Viscosity of the Serum. Neuschloss.—p. 532.
- De Martel Clamp in Resection of Stomach. P. Jáuregui.—p. 537.
- Evolution and Degeneration. L. K. Wimmer.—p. 540.
- Case of Obstructing Endarteritis. Balado and Selva.—p. 548.
- Alleged Instances of Grafting of Eyes. A. d'Alessandro.—p. 553.
- Roentgen Treatment in Leukemia. C. Heuser.—p. 554.
- Replies to Questionnaire on Syphilis. T. Padilla.—p. 555.
- Annual Report on the Institute for Minors. V. Delfino.—p. 559.
- Organization to Combat the Spread of Leprosy.—p. 566.
- Measures Advised for Protection of Radiologists.—p. 567.

Suppuration in Urinary Passages in Infants.—Casaubón urges routine examination of the urine whenever an infant presents signs of infection that is not definitely localized. The urine can be collected by wringing out a diaper if not possible otherwise; it is best to collect the urine of several hours. The mother tells that the child cries as it urinates, or that it passes very little urine, or there is a history of

chills. There is often secondary gastro-intestinal disturbance. In two of the four cases described in detail, the pyelitis recurred later. In prophylaxis, the infant should be given water abundantly, with strict hygiene of the anus and genital organs. He advises hexamethylenamin and salol, with autogenous vaccines promptly if benefit is not soon apparent. He regards breast milk as imperative in these conditions, although this was not available in one of his cases in which the pyelitis had developed in the course of whooping cough. The infant was 6 months old, recovered and passed safely through a mild recurrence later.

Specific Viscosity of the Blood Serum.—Neuschloss gives a table showing the viscosity that corresponds normally to a given quantity of protein in the blood serum. He worked out these standards on 100 healthy subjects. He gives two other tables showing how the viscosity is increased with hypothyroidism and reduced with hyperthyroidism.

Archiv für Gynäkologie, Berlin

118: 229-444 (April 16) 1923

- *Splenectomy in Treatment of Menorrhagia. J. Halban.—p. 229.
- *Cellular Immunity and Cancer. A. Theilhaber.—p. 237.
- Epithelium in Cancer of Body of Uterus. R. Zimmermann.—p. 273.
- Mechanics of Torsion of Internal Organs. H. Sellheim.—p. 296.
- The Kielland Forceps Represents Progress. H. Heidler.—p. 334.
- *Hyperplastic Ulcerating Vulvitis. C. Schoenhof.—p. 363.
- Branching of Umbilical Cord on Placenta. B. Ottow.—p. 378.
- *Pituitary Extract in Relation to Pregnancy. Anderes and Wächter.—p. 383.
- *Microscopy of the Capillaries. Linzenmeier and Hagge.—p. 398.
- Idem. A. Stern. p. 410.
- *Sedimentation Test for Cancer. O. Gragert.—p. 421.
- *Treatment of Beginning Cancer. F. Neuhaus.—p. 436.

Splenectomy in Thrombopenic Menorrhagia.—Halban's remarkable success in the case reported justifies high hopes from treatment of excessive uterine hemorrhage on the basis of the principles that have been found effectual in hemorrhagic jaundice. In hemorrhagic jaundice, removal of the spleen seems to stop the excessive destruction of thrombocytes and the resulting fragility of the smallest blood vessels. This tendency is rendered evident by the minute hemorrhages in the skin of the forearm when a tourniquet is applied to the arm above, and by the thrombopenia in the blood. The excessive and rebellious menstrual hemorrhages of adolescents have been ascribed to chlorosis hitherto, and given only palliative treatment; but Halban, as a last resort in the case described, removed the spleen. The thrombocytes numbered only 30,000 or less, the hemoglobin was very low and the girl, aged 17, was weak from the excessive menorrhagia and epistaxis for two years.

Roentgen exposures of the spleen had no effect, but in three days after the splenectomy the thrombocytes had increased to 133,000, and during the ensuing six months, menstruation has been normal and the girl in florid health. Roentgen exposure of the ovaries has too many drawbacks for young girls, and it acts only on the genital sphere, not warding off hemorrhages elsewhere. In Halban's case, nearly every other known measure had been applied during the two years.

Cellular Immunity in the Cure of Cancer.—Theilhaber cites new experiences that sustain the views he has been proclaiming since 1909 in regard to the cancer developing only in anemic tissue, and the infiltration with blood cells, especially lymphocytes, as necessary for the cure of cancer. For this reason he insists on measures to induce infiltration as an indispensable adjuvant to removal or radiotherapy of a cancer. Sun baths and air baths, diathermy and venesection increase the lymphocyte content of the tissues and thus induce immunity to cancer, helping to cure existing cancer and ward off recurrence. He suggests that arrangements should be made in sanatoriums for a few weeks' course every year of this infiltration treatment for patients supposedly cured of cancer. He has been applying these principles for thirteen years, and the cure has been complete to date in 32 of his 44 operative cases of cancer. The interval has been over eight years in 7 and over five in 11. This latter group includes 3 in which the parametrium was known to be involved in the cancer, but it was left in place.

Chronic Vulvitis.—The three cases reported by Schoenhof confirm the value of roentgen-ray treatment. It is almost

certain to cure when applied before the stage of fibrous degeneration has been reached. Even in this stage, after excision of the redundant tissue, the almost inevitable recurrences yield promptly to roentgen exposures.

Pituitary Extract in the Pregnant.—Anderes and Wächter conclude from their research on cats and rabbits, that the pituitary function is physiologically exaggerated in gravid animals. There is a marked difference between the gravid and nongravid animals in their reaction to the first injection of pituitary extract. The gravid respond to the first injection in the same way as the nongravid respond to the second injection.

The Capillary Circulation.—Linzenmeier and Hagge noted a remarkable parallelism between stasis in the capillaries and accelerated speed of sedimentation of the blood corpuscles. They think this explains conditions in eclampsia better than the assumption of spasm of the capillaries.

Sedimentation of Blood Corpuscles in Malignant Disease.—Gragert tabulates the findings in seventy cases of operable and inoperable cancer of the female genital organs. The speed of sedimentation was recorded 258 times, before and after treatment. Sedimentation was always accelerated with malignant disease, and normal conditions were not restored for more than a year after removal of the growth. The acceleration of sedimentation does not seem to be proportional to the size of the cancer, but reflects the toxic action on the system. In combination with other blood findings, it may turn the scale in the dubious diagnosis of cancer.

Treatment of Incipient Cancer of the Cervix.—In four of Neuhaus' six cases, intensive deep roentgen-ray treatment was given the beginning cancer. It seemed to speed up the malignant disease to a fulminating course. In another case the incipient carcinoma was charred with the actual cautery, and the clinical cure has been complete during the year since. In the sixth case the malignant disease was apparently arrested by infravaginal amputation of the cervix in 1919.

Deutsche medizinische Wochenschrift, Berlin

49: 241-268 (Feb. 23) 1923

- Present Conception of Inflammation. W. Gross.—p. 241.
*Vagotonia in Functional Neuroses. Glaser and Buschmann.—p. 243.
*Treatment of Tabes and Contractures. H. Lippmann.—p. 245.
Sugar Content of Cerebrospinal Fluid. A. Wittgenstein.—p. 246.
Leukocyte Count in Prognosis of Pulmonary Tuberculosis. K. Rosenthal.—p. 249.
Experiences with the Colloidal Gold Test. F. Blank and W. Restemeier.—p. 250.
Experiences with Meinicke Test in Syphilis. K. Klein.—p. 252.
Improved Gastroscope. H. Elsner.—p. 253.
Pulmonary Disease from Practitioner's Standpoint. Goldscheider.—p. 255. Conc'n.
Examination of the Throat. G. Finder.—p. 257.

Vagotonic Leukopenia in Functional Neuroses.—Glaser and Buschmann do not agree with Widal's interpretation of the hemoclastic crisis as sign of derangement of the protein-binding function of the liver. The sudden drop in the number of leukocytes after drinking 200 gm. of milk when fasting was found constantly only in patients with vagotonic functional neuroses (and in urticaria) in their tests of 160 patients. The response varied from day to day in the same patient; no reliance can be placed on it unless the sudden alimentary leukopenia occurs on at least three different days. The reaction is merely a different distribution of the blood corpuscles. The differential count is not modified.

Intraspinal Treatment of Contracture in the Legs and the Lancinating Pains of Tabes.—Lippmann has applied to the diagnosis of spinal cord tumors the injection of sodium bromid as used in pyelography, and as used by Kramer in the treatment of delirium tremens. In his forty applications of the method, he found that the reaction was not proportional to the amount injected but was determined by the local condition. In one case of tabes, 20 c.c. of a 5 per cent. solution (maximum dose) was borne without the slightest reaction. In other conditions there were symptoms indicating acute chemical meningitis, but they had always subsided by the second day. After three injections of a 1 per cent. solution, at intervals of two and three weeks, one tabetic patient has had no return of the lancinating pains which had been

tormenting him daily for eight years, rebellious to all measures. The results were excellent in three of the five tabetics treated by this means; one proved refractory and one succumbed to coronary sclerosis. Great improvement was observed in three of four cases of crippling from multiple sclerosis. The fourth reacted with a severe chill to a single injection and no benefit was observed. In these cases he used a 1.6 per cent. solution. The amount at each dose in all was 10 c.c., withdrawing an equal amount of the spinal fluid. He advocates this treatment as a lesser evil than morphin addiction or a Förster operation.

49: 269-302 (March 2) 1923

- Theories as to Action of Rays. W. Caspari.—p. 269.
*Hypertrophy of the Prostate. Voelcker.—p. 271.
Mesenteric and Peritoneal Appendicitis. D. Kulenkampff.—p. 274. Cont'd.
Subacute Mastitis with Nodules. E. Glass.—p. 275.
*Tuberculin Tests. A. Neustadt and E. Stadelmann.—p. 277.
*Tests for Syphilis Applied to Tuberculous Children. E. Rüscher.—p. 278.
Eosinophilia in Vincent's Angina. F. Peter.—p. 279.
Surgical-Physical Treatment of Keloids. Kromayer.—p. 280.
Lecithin and Bile Acid in Treatment of Cholelithiasis. Apel.—p. 281.
Nonabsorbent Gauze for Dressings. K. Propping.—p. 284.
Local Treatment of Throat. G. Finder.—p. 285.

Hypertrophy of the Prostate.—In the course of this post-graduate lecture, Voelcker warned that the practitioner discovering retention of residual urine, from enlargement of the prostate, must not yield to the temptation to evacuate it all at once. He must wait a few days, giving a disinfectant to sterilize the urine. When the urine has thus acquired antiseptic properties, he draws off a small amount of the residual urine, not more than 200 or 300 c.c., and repeats this on alternate days. By this means the bladder will be completely emptied in a week or two. Then a retention catheter can be introduced, or the ordinary catheter several times during the twenty-four hours. The intense thirst declines, the blood pressure becomes reduced, the appetite returns and the irritable patient becomes tranquil although it may be several weeks or months before he feels well.

Tuberculin Tests.—Neustadt and Stadelmann reiterate their warning to practitioners as to the unreliability of and the possible injury from subcutaneous tuberculin tests.

Serologic Tests in Tuberculosis in Children.—Rüscher applied the Wassermann and flocculation tests for syphilis in two series of 120 and ninety tuberculous children apparently free from syphilis. A constant positive reaction was obtained only in 1 per cent. In four other cases the reaction varied from time to time and was evidently not specific.

Deutsche Zeitschrift für Chirurgie, Leipzig

177: 289-405 (March 5) 1923

- Dislocation of Semilunar Bone; Operative Correction. Sonntag.—p. 289.
*Treatment of Carbuncle. W. Rieder.—p. 300.
Inlay Graft in Tuberculous Spondylitis. R. Sträter.—p. 313.
Experimental Research on Certain Local Disinfectants. Schnitzer and Rosenberg.—p. 325.
*Treatment of Goiter with Ultraviolet Rays. Langemak.—p. 343.
Etiology of Dupuytren's Contracture. A. Schubert.—p. 362.
Abortive Form of Fetal Chondrodystrophia. M. Budde.—p. 378.
*Spinal Cord Tumor. J. Alksnis.—p. 385.
Case of Prolapse of Intestine from Contusion. G. Fischer.—p. 389.
Nephrectomy with Aplasia of Second Kidney. E. Liek.—p. 393.

Treatment of Carbuncle.—Rieder makes the usual ample crucial incision and loosens up the edges a little, but leaves the depths unmolested, and tampons the whole infiltrated area with a strip of gauze impregnated with diphtheria antitoxin or horse serum. The process is arrested at once. The necrotic mass is generally spontaneously expelled in twenty-four hours, and granulations form in the depths on the second or third day. The skin sinks down on the young cells. With a furuncle, a single subcutaneous injection of 1 c.c. of horse serum in the center, without an incision, generally induces the spontaneous expulsion of the "core." He has treated with this combined method twenty-three carbuncles, including five on lip or cheek. The action of the horse serum in loosening up and promoting expulsion of the core is still a mystery. As no vessels in the depths are opened, the micro-organisms are not forced into the circulation.

Treatment of Goiter.—Langemak reviews the experience at Erfurt with ultraviolet ray treatment in 128 cases of goiter,

with or without local or internal iodine treatment or phosphorus treatment. Not a trace of the goiter could be found on reexamination in 74.3 per cent., and in the others only the closest scrutiny showed any traces of it. He takes a photograph of the patient before treatment is begun.

Spinal Cord Tumor.—The fibrosarcoma in the cervical spinal cord had been developing for four years in the young woman. It was about 4 cm. long by 1.3 cm. broad, and there was an artery in the threadlike pedicle. By the twenty-fifth day after its removal the patient was able to sew and dance.

Jahrbuch für Kinderheilkunde, Berlin

101: 1-126 (Feb.) 1923

- *Vitamins and Endocrine Glands. E. Glanzmann.—p. 1.
- *Heart Disturbances in Diphtheria. W. Blacher.—p. 13.
- Blood Picture in Scarlet Fever. J. v. Ambrus.—p. 81.
- Acetonuria in Children Poisoned by Lye. J. v. Gaizler.—p. 87.
- Calcium Treatment in Pediatrics. J. v. Petheö.—p. 93.
- Osteogenesis Imperfecta (Vrolik). T. Hoffa.—p. 101.
- Two Rare Malformations of Bones. T. Hoffa.—p. 105.

Vitamins of Growth (A and B) and Endocrine Glands.—Glanzmann kept rats on a vitamin-free diet until the growth stopped. Daily addition of 1 gm. of dried thymus from calves started the growth again, but it stopped as soon as the thymus was discontinued. Other glands—except the sexual—have no effect in such doses. He believes that thymus is the central organ for metabolism of vitamins in young animals. After puberty, vitamins are stored in the sexual glands and provide thus the first endowment of the progeny.

Rôle of Nervous System in the Heart Disturbances in Diphtheria.—Blacher finds increased irritability and fatigue of the whole neuromuscular cardiac apparatus in diphtheria. In the first two or three weeks progressive vagotonia is evident. Fatigue of the pneumogastric nerve becomes more apparent after this stage, and may be accompanied by irritability of the accelerans. Nevertheless the irritability of the pneumogastric may appear even in this stage, especially in attacks following very small exogenous and endogenous stimuli. This lowering of the threshold of stimulation of the vagus and accelerans is the reason why cardiac remedies should be used with great care.

Medizinische Klinik, Berlin

19: 231-264 (Feb. 25) 1923

- Diagnosis of Peptic Ulcer. H. Zoepffel.—p. 231.
- *Gonorrhea in the Seminal Vesicles. H. Junker.—p. 233.
- *Actual Menstruation Period. H. Mühsam.—p. 236.
- Paratuberculous Inflammation. Aufrecht.—p. 236.
- *Suture of Nerves for War Wounds. Dieterich.—p. 237.
- Plastic Correction of Nose Deformities. E. Eitner.—p. 238.
- Electric Treatment of Disease of Nasal Sinuses. Nürnberg.—p. 240.
- Benzyl Benzoate in Treatment of Dysmenorrhea. Quack.—p. 241.
- Apparatus for Measurement of Pelvis. J. Turmann.—p. 244.
- *Oxygen Insufflation in Tuberculous Meningitis. A. Reiche.—p. 244.
- Test of Liver Function by Methylene Blue. Kirch and Maslowski.—p. 245.
- Death from Exertion in Heart Disease. A. Wilde.—p. 247.
- Recent Literature on Modern Therapeutics. C. Bachem.—p. 247.
- Gynecology for the Practitioner. E. Runge.—p. 248.
- Deformities of the Trunk. S. Peltesohn.—p. 249.
- Recent Works on Infectious Diseases. H. Zoepffel.—p. 251.
- Cone'n.
- The Classical Greek Works on Ophthalmology. J. Hirschberg.—p. 261.

Recognition of Gonorrheal Disease of the Seminal Vesicles and Its Importance in the Course of Gonorrhea.—Junker takes the position that in the majority of cases, gonorrhea in men, if sufficiently treated, is not infectious in subsequent marriage. For gonorrhea in women, his prognosis is less favorable. He calls attention to the fact that of seventy-six cases examined, 22 per cent. of the patients showed the gonococcus in the seminal vesicles. From his experience, he draws the conclusion that if gonorrhea in men, after supposed cure, proves infectious it is because sufficient attention has not been given to the seminal vesicles or the posterior portion of the urethra and its adnexa, and that many of those who have been considered incurable before may be cured, with due regard thereto.

The Actual Menstruation Period.—Mühsam has made observations on the basis of which he believes that most healthy and genitally sound women and girls menstruate on about the same days in the month. A week and a half or two weeks from this period there are a few days on which

a smaller number of women menstruate. In order to obtain the necessary statistics to settle this matter, he asks the physicians in Germany and other countries will secure data which answer the following questions: (1) How many women begin menstruation on the first, second, third, etc. day of each month; (2) how many of these women are constitutionally and genitally sound; (3) how many menstruate irregularly; (4) how many are genitally diseased; (5) how many are constitutionally diseased? The statistics should be sent to him at Berlin, Maassenstr. 11.

Ultimate Outcome of Suture of Nerves.—Dieterich says that of 7,000 wounded soldiers, forty-six required suture of a severed nerve. Of these, seven were fully cured by the suture, and three were improved. The injuries cured were in the radial nerve, and those improved in the external popliteal and the median nerves.

Oxygen Insufflation in Tuberculous Meningitis.—Reiche has used oxygen insufflation in the treatment of tuberculous meningitis in infants and young children, always with negative results.

Zeitschrift für klinische Medizin, Berlin

96: 279-526 (Feb. 28) 1923

- *Hydration of Tissues. Schade and Menschel.—p. 279.
- *Liver Function in Epidemic Encephalitis. Meyer-Bisch and F. Stern.—p. 328.
- Local Reaction of Vessels. Kauffmann and Kalk.—p. 349.
- Action of Protein Therapy on the Blood. Weicksel.—p. 372.
- Agglutination and Electric Charge of Red Corpuscles. J. Vorschütz.—p. 383.
- *Differential Cell Count in Puerperium. E. M. Fuss.—p. 391.
- Constitution and Pneumonia. J. Tillgren.—p. 407.
- Röntgen Rays in Pulmonary Tuberculosis. Wels.—p. 414.
- *Blood Pressure in Affections of Kidneys. A. Arrak.—p. 453.
- *Diabetes Insipidus. E. Meyer and R. Meyer-Bisch.—p. 469.
- Movements of Healthy and Diseased Stomachs. Nick.—p. 495.
- Acute Micromyeloblast Leukemia. Kohn.—p. 513.

Law of Hydration of Tissues, and Its Significance for Water Exchange in Tissues, Lymph Formation and Genesis of Edema.—Schade and Menschel found an antagonism between the cells and intercellular substance with the use of changes of hydrogen ion concentration and hypertonic solutions. The edemas in alkaline treatment, stasis and inflammations are physico-chemically different.

Disturbances of Liver Function in Epidemic Encephalitis.—Meyer-Bisch and Stern found marked urobilinuria in eleven cases of chronic progressive epidemic encephalitis. Ingestion of 100 gm. of levulose was followed by levulosuria in five out of six patients examined. The urobilinuria increased after it in all of them. They do not believe that the probable lesion of the liver was caused by the central nervous process.

Complete Differential Cell Count (Hemogram) in the Puerperium.—Fuss examined the blood of twenty-one women after confinement. He found during labor a shifting of neutrophils to the left, sometimes with a very large (49.5 per cent.) number of forms with "rod shaped" nuclei. Two days after delivery, the blood has a distinct tendency to return to normal. If this does not occur, or if the blood "shifts" again to the left, it indicates a disturbance. The severity of the disturbance is proportional to the new disappearance of eosinophils, lowering of lymphocytes and especially to the increase of "rod shaped" and young forms of neutrophils, up to myelocytes.

Changes of Blood Pressure in Affections of Kidneys, and Their Causes.—Arrak found that the blood pressure in affections of kidneys varied in the same way as in healthy persons. Food had no influence. The cause of the periodicity is unknown.

Diabetes Insipidus.—Meyer and Meyer-Bisch publish two cases of diabetes insipidus, one of which occurred after an injury of the head. They also discuss the newer cases in the literature. Though they fail to find an essential difference between the hypochloremic and hyperchloremic types, they admit the more complicated features in the second. It has not only a renal disturbance of concentration of chlorids but also a similar disturbance between the tissues and the blood. Extracts of the pituitary gland had a predominant action on the tissues in their experiments.

Zentralblatt für Chirurgie, Leipzig

50: 425-456 (March 17) 1923

Suprarenalectomy in Epilepsy. Küttner and Wollenberg.—p. 430.
Treatment of Esophageal Strictures. Lotheissen.—p. 431.
Entrance of Air into Vascular System. Bingel.—p. 433.
Effect of Camphorated Phenol on Articular Cartilage. G. Axhausen.—p. 434.
The Surgical Anatomy of Splenic Vessels. Volkmann.—p. 436.
Colostomy in Ileocecal Invagination. Gottesleben.—p. 438.
Stab Wounds of Liver and Duodenum and Complications. Roth.—p. 440.
Blocking the Phrenic Nerve in Injury of Diaphragm. Báron.—p. 442.
Lymph Drainage in Elephantiasis Edema. Kondoleon.—p. 443.

Negative Effect of Extensive Suprarenal Operations in Epilepsy.—Küttner and Wollenberg report their results in four cases of epilepsy in which they removed one suprarenal completely and half of the other. The effect in all cases was entirely negative; in one case exacerbation followed the operation.

Entrance of Air Into Vascular System: Its Removal from Right Ventricle by Heart Puncture.—In Bingel's case, a man, aged 47, had had air injected, for roentgen examination, into the space left after drawing off 1,250 c.c. of encapsulated ascites, a subphrenic abscess having formed in consequence of a recurring malignant tumor in the pyloric region. Slight emphysema of the skin appeared. About 100 c.c. of air had been injected, when the patient sank back unconscious. Auscultation of the heart revealed water-wheel sounds. There was evidently air embolism in the brain and, therefore, with a 1 c.c. record syringe, the right ventricle of the heart was punctured close to the left edge of the sternum, and 3 c.c. of air was aspirated from the heart. The patient had already improved somewhat under camphor, and, following the heart puncture, he was soon restored to his previous condition. The mill-wheel sound in the heart disappeared; the pulse was full and strong, and he was again fully conscious. The patient died two weeks later. Under many different circumstances and in connection with operations on or near veins, artificial pneumothorax, pneumoperitoneum, etc., air may possibly penetrate a vein. In such cases, Bingel advises immediate auscultation of the heart. If a water-wheel sound is noted, an attempt should be made to remove by puncture the air from the right ventricle. It is possible that in this manner some patients might be saved.

Colostomy with Witzel Fistula for Ileocecal Invagination.—Gottesleben illustrates a procedure that he recommends to prevent postoperative complications after successful disinvagination, and also in palliative operations in which the condition does not allow resection. After reduction of the invagination, a Witzel fistula is made in the cecum, with a long tube introduced through a slit in the muscular band. The tube is passed through the valve into the ileum, and the abdominal incision is sutured around the tube. The advantages claimed for this method are: (1) the speed with which it can be carried out; (2) prevention of recurrence, as the tube guides the passage of feces; (3) the opportunity for influencing sluggish intestinal activity through the fistula, and (4) operative closure is unnecessary, since the slanting fistula closes spontaneously in a short time.

Blocking the Phrenic Nerve in Injury of the Diaphragm.—Báron reports the case of a young man with a nonhemorrhagic bayonet wound in the ninth left intercostal space. Symptoms of light shock were present. The patient had paroxysms of coughing and complained of severe radiating pain in the left shoulder. The local pain was insignificant. As there was no evidence of injury to the abdominal organs, a bandage was applied and the left phrenic nerve was blocked by 15 c.c. of a 32 per cent. procain solution to immobilize the diaphragm. In a few minutes the patient became calmer and the pain and the cough disappeared. Six hours later no movements of the diaphragm, as far as could be ascertained by percussion, were discernible. The pain in the shoulder did not return and in a few days the patient had recovered. It seems assured that the elimination of sensation and movement in half of the diaphragm, which was accomplished a few minutes after the injury, exerted a favorable subjective and objective influence (hemostasis, localization of eventual infection).

50: 457-504 (March 24) 1923

*Paravertebral Anesthesia in Diagnosis. A. Lâwen.—p. 461.
Operation for Bile Fistula. L. v. Stubenrauch.—p. 465.
Repeated Resection of Stomach for Peptic Jejunal Ulcer. W. Denk.—p. 466.
*Exclusion of the Pylorus. K. Lutz.—p. 469.
*Dangers of Encephalography with Brain Tumor. Denk.—p. 471.
*A Method of Treating Exophthalmic Goiter. P. Pajzs.—p. 472.
*Habitual Displacement of Ulnar Nerve. G. Schmidt.—p. 474.
*Operative Treatment for Tuberculous Shoulder Joint. A. Báron.—p. 477.

Nerve Blocking in Differential Diagnosis.—Lâwen now has a record of 150 cases in which he injected procain to block the spinal nerve innervating a given organ. The response is instructive not only for differential diagnosis in affections of the gallbladder, stomach, kidney and appendix, but the relief from pain and the prevention of postoperative pain are further advantages of this paravertebral anesthetization.

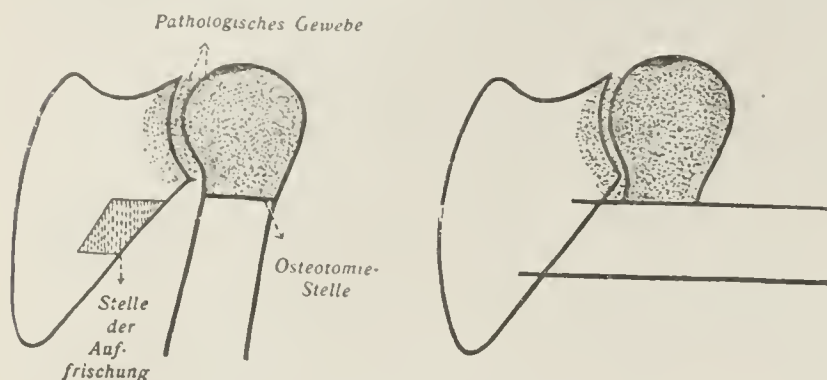
Exclusion of the Pylorus.—Lutz describes the method of pyloric exclusion that he has used with success in 24 cases of duodenal ulcer distant from the pylorus. After gastroenterostomy, a longitudinal incision about 2.5 cm. long is made in the stomach wall just above the pylorus. This small incision is kept open with four tenacula and the mucous membrane is gently mopped clean. Then the mucosa of the pylorus is painted for from six to ten seconds (with a turning motion) with a pledget of cotton, attached to a Blephaire sound, dipped in a concentrated solution of hydrochloric acid or sulphuric acid. The opening is then closed by Lembert sutures. In four weeks the stenosis from the caustic is complete. In 17 of the 24 cases, an examination was made after two to eight months. In all 17 cases the patients were free from discomfort. In 14 cases the closure of the pylorus (fluoroscopic examination) was complete; in the other 3 cases a very small quantity of chyme was passing from the stomach into the duodenum. No complications of any kind have occurred as yet.

Dangers of Lumbar Encephalography in the Presence of Cerebral Tumors.—Denk reports that, in a man, aged 26, the right lateral ventricle was punctured for the purpose of ventriculography. As no fluid could be aspirated, no oxygen was injected. Two days later, the left lateral ventricle was punctured, with the same negative result. Compression or dislocation of the ventricles by a tumor was assumed. Thirteen days later, in order to determine on which side the tumor lay, a very cautious attempt at lumbar puncture and insufflation of oxygen was made. The fluid was under high pressure; 60 c.c. of fluid was removed, 4 c.c. at a time, and after the removal of each 4 c.c. of fluid, a like quantity of oxygen was injected. No more fluid was removed because the patient showed signs of weakness. One-half hour after the lumbar puncture, the patient became apathetic, and the stupor became deeper with each succeeding hour. The next morning, general convulsions occurred, and soon after death ensued. A glioma was found in the left temporal lobe, with displacement of the lenticular nucleus and compression of the lateral ventricle.

A Method of Treating Exophthalmic Goiter.—Pajzs gives a preliminary report on a method he has employed in about fifteen cases. He injects alcohol into the diffuse parenchymatous goiter tissue. The injections are repeated until the pathologic secretion of the goiter is sufficiently reduced, which fact is measured by the general condition of the patient. At first, from 1 to 2 c.c. of 80 per cent. alcohol is injected—if possible, deep within the parenchyma, on one side. The first injections cause a marked general reaction. The tachycardia is increased temporarily; frequently diarrhea occurs, and the exophthalmos appears to be greater, doubtless due to the resorption of toxins liberated by the coagulating effect of the alcohol in the goiter tissue. The injections are then cautiously increased. At first alternating, then daily one or two injections on both sides, later two or three injections, of from 0.5 to 1 c.c. of alcohol are given until the desired result is obtained. If the general manifestations are increased or local inflammations (disappearing usually in one or two days) should appear, the injections are stopped and fomentations are employed. The injections are made at different points each time. In a week, a con-

siderable diminution of the goiter will be noted. In from three to four weeks after the injections are begun, the general condition of the patient starts to improve. In some cases, from 70 to 80 injections are required to effect a cure. As little as possible of the goiter tissue should be destroyed; otherwise, thyroprival symptoms may be produced.

Operative Method in Tuberculosis of Shoulder Joint.—Báron in Budapest describes in detail his operation which consists essentially in the resection of the tuberculous head of the humerus and implantation of the shaft—at a right



Excision of tuberculous shoulder joint.

angle to the side of the trunk—in a prepared bed in the lateral border of the scapula. Other illustrations show the almost normal functioning of the arm in time.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1298-1404 (March 31) 1923

*Polyserositis. J. L. A. Peutz.—p. 1298.

*Treatment of Certain Psychoses. H. Breukink.—p. 1321.

*Laryngeal Tuberculosis. H. Verploegh.—p. 1329.

Tuberculosis Death Rate in the Netherlands. Rietema.—p. 1351.

Polyserositis.—Peutz describes six cases in detail and discusses the etiology and symptomatology. There is no question of a rational treatment beyond that for tuberculosis in general. The special liability to infection of the serous membranes justifies a "hands off" policy. In some of his tuberculous cases the cerebral meninges and the synovial membranes of the extremities shared in the polyserositis. In one case, bilateral pleurisy and peritonitis ran their course with death in nine months but no tubercle bacilli had ever been discovered in the sputum or pleural effusion. One woman had pleurisy at 23, then pleurisy on the other side and peritonitis at 28, then a free interval of several years and pleurisy with synovitis; then after an interval of three years, synovitis and peritonitis. No tubercle bacilli have been found in the sputum, but an exploratory operation confirmed the tuberculous peritonitis. This patient now has pleurisy again. The others all died. The anamnesis in these cases is of prime importance. The temperature may suggest typhoid, or be subnormal, or with long periods of normal temperature. Each serous membrane may spontaneously return to clinical normal condition, but we must not forget that the polyserositis is a secondary affection. The prognosis is graver the shorter the intervals.

"Catharsis-Hypnosis" Form of Psychoanalysis in Treatment of Certain Psychoses.—Breukink explains his method as based on both Breuer's and Freud's, but he applies suggestion to the patient in somnambulism, regarding hypnosis as an important aid in the symptomatology, the differential diagnosis and the prognosis of psychoses. When somnambulism can be induced by simple fixation and suggestion, in a case of psychosis, he has found that the psychosis is readily curable.

Laryngeal Tuberculosis.—Verploegh states that with an acute, progressive focus, complete rest is the only treatment; radiotherapy must wait until the acute phase is past. With a chronic focus, with much toxin, any irritation of the focus sends a stream of toxin throughout the system; if the resisting powers are good, this is borne without harm unless a primary focus is aggravated by it. The active laryngeal focus yields to strong vaccine or roentgen treatment, but the primary focus in the lung may become aggravated. The inactive laryngeal focus behaves differently. Even the

strongest irradiation brings little or no improvement. We must first activate the focus; vaccines and diathermy are useful for this. The roentgen rays must be applied when the reaction is at its height.

1: 1406-1500 (April 7) 1923

*Active Immunization Against Diphtheria. Kramer.—p. 1406.

*Hemianopsia in Case of Epilepsy. C. T. van Valkenburg.—p. 1412.

*Tar Cancer. H. T. Deelman.—p. 1416.

Mammary Cancer and Postoperative Irradiation. J. de Smit.—p. 1425.

Sixteenth Century Anatomic Fugitive Sheets. J. G. de Lint.—p. 1429.

Active Immunization Against Diphtheria.—Kramer comments on the results of immunization of nurses in the diphtheria ward at Rotterdam. Of the total 114 tested, forty-seven responded positively to the Schick test and were systematically immunized. Of the ninety employed in the diphtheria ward, 42 per cent. were thus immunized and 58 per cent. left unimmunized on account of a negative Schick test. Two in this latter group developed diphtheria, requiring antitoxin treatment, but in both a preceding influenza had lowered the resisting powers. In a third case, however, a healthy nurse developed typical diphtheria with paralysis of the palate, notwithstanding her negative Schick test. He queries whether the skin may not react (in adults) to the Schick test even when the antitoxin content of the blood is below the safe limit. Twelve of the nurses became carriers, six with positive and six with negative Schick responses.

Focal Symptoms in Epilepsy.—The young epileptic had been under observation for ten years when suddenly hemianopsia developed and persisted. The seizures were not modified by it.

Tar Cancers.—Deelman's research on experimental cancers, confirms that they often develop with multiple centers.

Hygiea, Stockholm

85: 113-240 (Feb. 28-March 31) 1923

*Widal's Test of Liver Functioning. A. Andreen-Svedberg.—p. 115.

Colloidal Metals in Therapeutics. S. Zandren.—p. 121. Conc'n p. 147.

*Intraspinal Introduction of Fluids. I. Holmgren.—p. 130. Idem. W. Gennerich.—p. 226.

*Mechanics of the Formation of Diphtheria Toxin. K. G. Dernby.—p. 165.

*Neurologic Surgery. A. Troell.—p. 198.

Widal's Test of Liver Function.—Andreen-Svedberg found the hemoclastic crisis test accurate in sixteen cases of certain liver disease and negative in four dubious cases. Only a positive reaction seems to be instructive.

Holmgren's Technic for Single Intraspinal Introduction of Medicated Fluids.—Holmgren uses a needle with two openings close together. When it has been inserted, a manometer is connected with the side opening, and the pressure is measured. A glass cylinder is then connected with the main opening; the side valve is closed, and the main valve opened. The cylinder is lowered so that the cerebrospinal fluid can flow into it in the usual way. When the desired quantity has been drained off, the arsphenamin solution is introduced through the side opening by means of a syringe. Then the side valve is closed, the cylinder raised, the main valve opened and the cerebrospinal fluid flows back into the spinal cavity. He says that the result is the same as with Gennerich's double puncture, with less risk of leakage, and the advantage that this method requires only a single puncture.

The Mechanism of the Formation of Diphtheria Toxin.—Dernby, referring to the necessity of obtaining strong toxins in order to produce effective antitoxins, outlines a new theory, based on a number of experiments, on the mechanism of the formation of diphtheria toxin in cultures. The diphtheria toxin is formed mainly outside the cells. The bacilli grow, die and autolyze. In this process, proteolytic enzymes of a nature specific to these bacilli are set free. These enzymes act on the albumoses and peptones present in the bouillon. Certain of the first intermediary products are the toxic substances. The toxicity disappears if the proteolytic process is permitted to proceed further.

Gasserectomy.—Troell reports resection of the gasserian ganglion for trigeminal neuralgia in two cases, with successful outcome. The only by-effect was transient paralysis of the ocular muscles in one case. The patients were a woman of 38 and man of 49. Five other operations are reported.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 24

CHICAGO, ILLINOIS

JUNE 16, 1923

GASTROPEXY BY SHORTENING THE GASTROHEPATIC OMENTUM

WITH ANATOMIC AND PHYSIOLOGIC CONSIDERATIONS

JOHN J. GILBRIDE, A.M., M.D.

PHILADELPHIA

I cannot agree with those clinicians and roentgenologists who are so liberal in their interpretations as to say that the stomach is within its normal limits, irrespective of its size and shape or of the position it may occupy in the abdomen. Under peristaltic action, the stomach descends and elongates as well as contracts. A stomach that descends into the pelvis is not only dislocated but also markedly dilated. The anatomic changes, important as they are, may not be regarded seriously, but the functional derangement with impaired motility, altered secretion and disturbed sensation cannot be dismissed without more serious consideration.

From the clinical standpoint, practically all of the cases of gastropexy may be divided into two groups: (1) Those cases in which the abdomen is large and pendulous, a condition most commonly found in multiparous women in whom the abdominal walls are thin, relaxed, wasted and atrophied; and (2) the so-called virginal type (Rovsing), in which the abdomen is long and narrow.

There are two fundamental principles in the treatment of gastropexy whether the treatment is medical or surgical: (1) the support of the stomach to relieve the dragging on its ligamentary attachments, and (2) the building up of nutrition.

Medical treatment gives a measure of relief in the majority of cases of gastropexy. When it is effective, it brings about improvement, usually within a short time. As a matter of fact, most of the patients express a feeling of well-being immediately after a well fitting abdominal belt or support has been applied. This treatment is best suited for patients with relaxed, pendulous abdomens. External abdominal supports rarely give satisfactory results in patients belonging to the second group, because in these cases the abdomen is flat and the iliac bones are prominent, so that pressure cannot be applied satisfactorily below the prolapsed stomach.

Patients who are improving under medical treatment do not consent readily to operations, and I do not know of any one who would advise an operation under these circumstances. Only those patients who do not respond to medical measures are considered for operation. It is my belief that many of these patients should be operated on unless there are contraindications to operation. It is not fair to the patient to continue medical treatment when it has been given a good and fair trial and it has been shown that improvement has not taken place—provided, however, we have something further

to offer. I feel certain that surgery has much to offer in properly selected patients, who would otherwise drift from one physician or clinic, as the case may be, to another, only to receive a repetition of the treatment that has given the patient no results. As I see it, there is no competition here between medical and surgical treatment. It is a case of rescuing some of these human derelicts.

In cases of the first group, medical treatment has its field for application and usefulness. Surgery, if it is used at all in cases of this type, must be cautiously employed, because not only is there a prolapse of the abdominal viscera, but the whole gastro-intestinal tube is usually dilated; and although the abdomen is greatly increased in size, there does not seem to be room within it to hold its contents. Visceroptosis, combined with the ever present hypomotility of gastro-intestinal atony, is not a field for any form of fixation surgical procedure or short circuiting operation. These are the pathologic rocks on which both the operator and the patient come to grief.

I have operated on seven patients. The immediate and ultimate results have been very gratifying. There were six women and one man. The operation that I performed was strictly an anatomic and physiologic procedure. The stomach was not fixed, but it was placed in a position which greatly facilitated a restoration of its functions. In one of these cases I had roentgenograms taken before and after operation. In the other six cases I made the diagnosis clinically. I would not have had a roentgen-ray examination in this one case had not the patient complained of much pain and tenderness in the region of the lesser curvature. I thought that an ulcer might be present, although there was no other evidence that pointed to the existence of an ulcer. I wanted to decide before the operation whether an ulcer was present. This was decided in the negative.

CASE 1.—History.—Mrs. D., aged 28, white, born in the United States, a housekeeper, referred to me, May 1, 1922, by Dr. William B. Scull of Philadelphia, was the mother of one child, aged 7; there was no other pregnancy. Indigestion had been present off and on during the preceding ten years. For the last year she had complained of constant pain and distress in the epigastrium. These symptoms were made worse after eating or drinking anything, so that she tried to live on as little food as possible. There were attacks of nausea every morning, and on two or three mornings a week she would vomit several ounces of a sour, greenish liquid. There was a gnawing sensation in the stomach almost all the time. The appetite was good, but she was afraid to eat. The bowels were constipated. There was a loss of 25 pounds (11 kg.).

Examination.—The patient was tall and thin, and was of fair color and poor nutrition. The mouth and teeth were in good condition. The chest was long and narrow, with the epigastric angle acute. The lungs were normal. The heart

was accelerated, with the pulse rate 100 a minute. The abdomen was long, narrow and flat, with good muscular development. Palpation of the abdomen showed fulness in the left side, and the sigmoid flexure of the colon was palpable. Inflation of the stomach showed that the greater curvature descended into the pelvis; and the lesser curvature descended vertically to the left of the umbilicus, and crossed



Fig. 1 (Case 1).—Extension of stomach into pelvis before operation; patient in prone position.

the lower abdomen midway between the umbilicus and the symphysis pubis. Auscultation over the pylorus during digestion revealed peristaltic sounds at intervals of one minute. This was somewhat delayed. Webster's and Stiller's signs were absent. The liver was palpable below the costal margin. The kidneys were not palpable.

The gastric contents, examined after an Ewald test meal, showed a total acidity of 40; free hydrochloric acid was absent. Digestion was fair. The test for occult blood was negative. The urine was normal. The feces were negative for occult blood. A blood examination, July 6, revealed erythrocytes, 3,400,000; leukocytes, 7,000; hemoglobin, 70 per cent.

Roentgen-ray examination, made by Dr. George E. Pfahler, at the Medico-Chirurgical Hospital, June 21, disclosed a marked ptosis of the stomach, but gave no evidence of organic disease about the stomach or duodenum. The greater curvature of the stomach sagged well down into the pelvis. The stomach was hypotonic. Peristalsis was feeble and sluggish. There was a great deal of tenderness in the epigastric region, but there was no evidence of organic disease of the gastrointestinal tube. The diagnosis was gastroptosis with gastrointestinal atony.

Operation and Result.—July 8, at St. Mary's Hospital, under gas and oxygen anesthesia, an incision was made through the upper part of the right rectus muscle, and the peritoneal cavity was opened in the usual manner. The stomach was drawn up so as to relax the gastrohepatic omentum. This structure was stretched out, and in many places it was as thin as tissue paper. Retractors were placed in the wound. Only one gauze sponge was placed inside the abdomen, between a retractor and the liver to hold that organ out of the way.

Three continuous mattress sutures of No. 1 chromic gut were introduced into the gastrohepatic omentum to shorten that structure by pleating it and thereby elevate the stomach. The sutures were introduced from left to right and caught with hemostatic forceps. The first suture began in the lesser curvature and near the cardiac orifice of the stomach. The suture included the serous and muscular coats of the stomach, passed in front of the vessels of the lesser curvature, and as a continuous mattress suture included the gastrohepatic and gastrophrenic ligaments up to the under surface of the liver. It was then continued downward to the stomach to the point of starting.

The second suture was introduced in a similar manner to the first, and at about the center of the lesser curvature. The third suture was placed at the pylorus. The stomach was brought close to the under surface of the liver, and the first, the second, and then the third suture was tied. The stomach was thereby elevated to practically its normal position. The sutures were tied only sufficiently tight to bring the pleated folds of the suspensory ligaments of the stomach exactly into apposition. There was no other structure that required surgical interference, and the abdomen was closed. The outer covering of the pyloric end of the stomach and the duodenum was deeply injected, and the duodenum was dilated to the size of the transverse colon. The convalescence of the patient was uneventful. She got out of bed on the twelfth day, and the next day, the thirteenth day after the operation, the second roentgenogram was taken with the patient standing (Fig. 2). This roentgenogram shows that, although the stomach was hugely dilated, it had been elevated about 4 inches



Fig. 2.—(Case-1).—Position of stomach thirteen days after operation; patient standing; the dilated stomach has been elevated about 4 inches.

as compared with Figure 1, in which the roentgenogram was taken with the patient in the recumbent posture. In Figure 3, the roentgenogram shows the position of the stomach, August 21, one month after the second picture was taken, and six weeks after the operation. The stomach is shown to be elevated well up out of the pelvis, and it exhibits good peristaltic contractions, which it did not show before the operation. The patient consulted me, September 25 and again, October 15. Although she had disregarded dietetic instructions and had

eaten all kinds of food, she stated that she was entirely free from stomach symptoms. Her condition was good.

The gastrohepatic omentum was pleated or puckered and drawn together when the sutures were tightened. I believe that this procedure adds greatly to the support of the stomach. It is a simpler operation than the one introduced by my friend Dr. Henry Beyea. In Figure 6 I have compared, in a diagrammatic way, the two methods of shortening the gastrohepatic omentum. The method I used is illustrated at *a*, showing the suture before it was tightened; *b* represents the mechanical result of shortening by the Beyea method. The latter operation does not increase the strength of the ommental support of the stomach. The pleated omentum lessens the likelihood of a recurrence of the gastropotosis. The stomach is elevated by its normal ligamentary supports.



Fig. 3 (Case 1).—Appearance of stomach six weeks after operation; patient in prone position; the stomach has been reduced in size.

This does not interfere with the motility of the stomach. On the contrary, the stomach is placed in a position which enables that organ to have its normal motility restored.

The sutures in the gastrohepatic omentum do not pass round or under the vessels of the lesser curvature, but they are passed in front of the vessels. The needle, when it is introduced into the stomach wall, is parallel to the long axis of the stomach. Therefore, no risk is incurred of cutting off the circulation in these vessels. It is a good idea to avoid puncturing the veins in the gastrohepatic omentum; not that it does any harm, but it saves time and trouble.

The operations of Duret and Rovsing are fixation operations. In the Coffey operation, the great omentum is attached to the abdominal wall. Other operations have been devised by Hartmann, Eve, Davis and Ransohoff. Any operation that solders the stomach to the

liver is almost as objectionable as an operation that solders the stomach to the abdominal wall. That is a condition which should be avoided as far as possible. The Beyea operation and the one that I have described here are anatomic and physiologic in principle.



Fig. 4.—The three sutures have been placed in the gastrohepatic omentum; the arrows *a* and *b* illustrate the direction of the sutures; the sutures were passed in front of the vessels of the lesser curvature; the inset, *b*, shows a single suture.

The first patient on whom I performed this operation was referred to me by Dr. Samuel Falls of Philadelphia:

CASE 2.—A man, aged 52, white, born in the United States, an automobile mechanic, whose height was 6 feet and 1 inch (185 cm.) and whose weight was 130 pounds (60 kg.), complained of indigestion off and on nearly all of his life. Fulness, distress, and a sense of weight in the stomach after meals caused him to eat but little. There had been a gradual loss of weight and strength. He had not been able to work during the preceding two months, and he had worked only irregularly during the previous year. The stomach descended into the pelvis. Operation was performed, July 12, 1918. The patient made a good recovery, and he returned to work in six weeks. He has remained well and at work ever since.

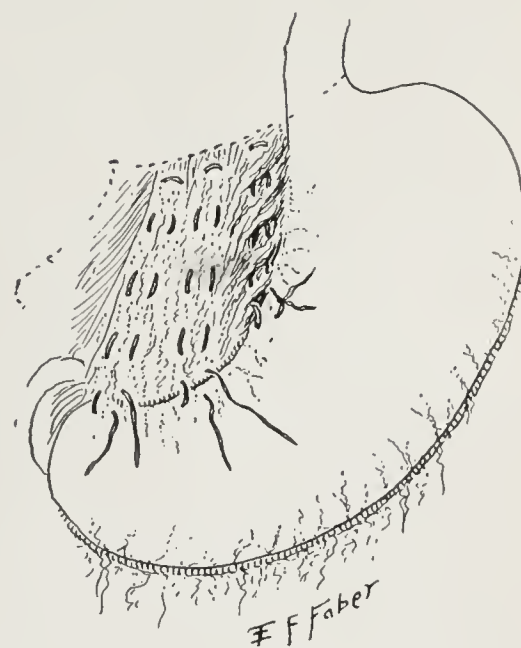


Fig. 5.—The first suture has been tightened slightly.

PULMONARY TUBERCULOSIS AND GASTROPTOSIS

In the dissecting room I have often seen tuberculosis of the lungs and gastropotosis associated, more particularly the association of tuberculosis with coloptosis in which the transverse part of an M or a U shaped colon rested on the floor of the pelvis. Under these conditions it was not surprising to note the presence of tuber-

culosis. This was of a comparatively common occurrence. The following observation of the development of tuberculosis in a patient with gastropotosis may be of interest, and I will give it for what it is worth:

Oct. 20, 1921, Dr. William H. Schellhamer of York, Pa., referred to me a single woman, aged 28, who had complained



Fig. 6.—The sutures have all been tied: *a*, front view of a single suture in the gastrohepatic omentum before the suture has been tightened; *b*, side view of the mechanical result of shortening the omentum by the Beyea method.

of fulness and distress in the stomach, loss of appetite and a gradual loss of weight extending over a period of several years. She had not been able to work for the previous three months. Examination showed that she had a gastropotosis, for which condition I advised an operation. To this she

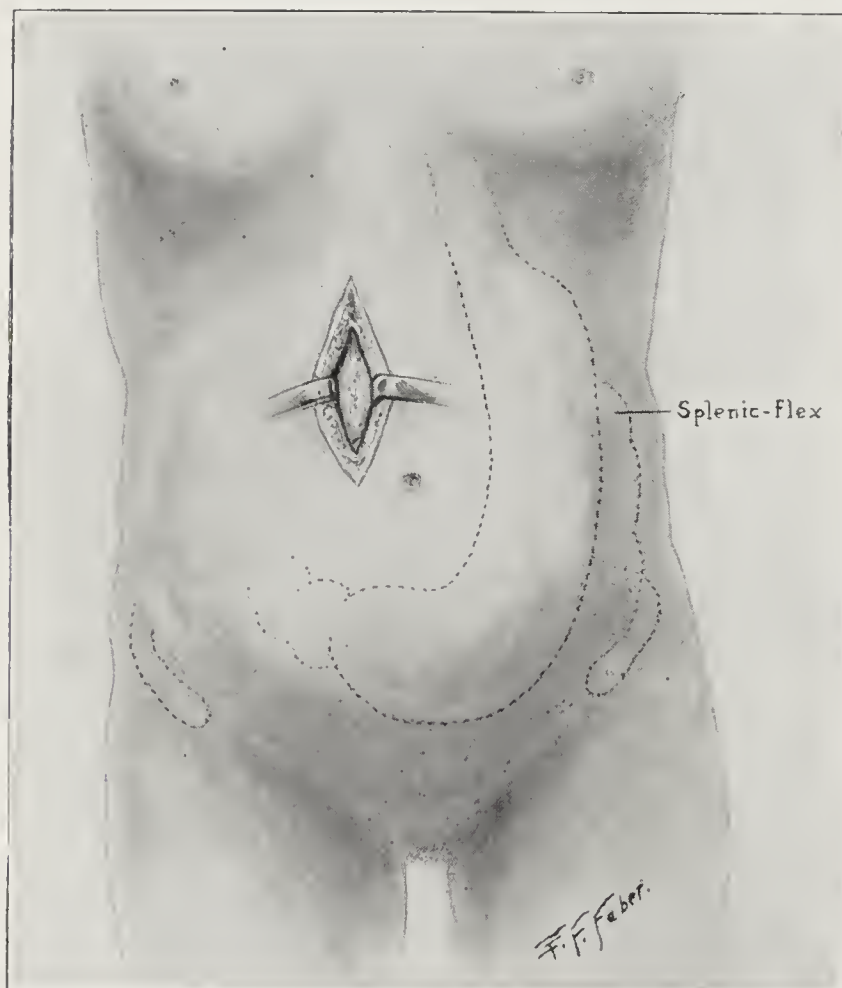


Fig. 7.—Position of stomach, and moderate ptosis of splenic flexure of colon; retractors have been placed in the abdominal incision.

refused to give her consent. There was nothing in the history nor any clinical evidence of tuberculosis of the lungs at the time. Dr. William A. Schmidt, roentgenologist at St. Mary's Hospital, made a fluoroscopic examination of the thorax and gastro-intestinal tract, which showed that the chest was clear and that the heart, lungs and esophagus appeared to be normal. The stomach filled normally, it was fish-hook in shape, and the lower border was 4 inches below the iliac crest. Peristalsis

was very sluggish, and the duodenal cap filled only after manipulation. The examination showed no filling defect of the stomach or duodenum. There was a slight residue in the stomach after six hours, and the six hour barium meal was entirely in the small intestine, none of it having reached the cecum. The diagnosis was atony of the stomach and gastroenteroptosis. Dr. Schellhamer informed me several months later that the patient had developed an active tuberculosis of the lungs. She died in April, 1922. She had a long, flat, narrow abdomen, with good muscle tone.

The histories of many of these cases of gastropotosis are quite similar. However, the diagnosis is made by clinical examination and by the roentgen ray.

In the seven patients that were operated on, the right kidney was palpable in three; a moderate ptosis of the transverse colon was present in all of the cases; the splenic flexure of the colon had dropped about 4 inches in three cases. It is well not to do too much, and I believe that it is unnecessary to do anything more than to raise the stomach. Intelligent postoperative treatment is absolutely necessary to obtain the best results.

1934 Chestnut Street.

THE MOTOR MECHANISM OF THE GALLBLADDER

ASHER WINKELSTEIN, M.D.

NEW YORK

The Meltzer-Lyon test for disease of the biliary tract has aroused a renewed interest in the motor mechanism of the gallbladder. Despite the large amount of research devoted to it, this phase of the physiology of the gallbladder remains quite obscure. I was convinced of this during some experimental studies on the excretion of foreign-body dyestuffs in the gastro-intestinal tract which I carried on in Professor Bickel's biologic laboratory in the University of Berlin.

It was found that the secretion in the bile of a subcutaneously injected dyestuff, specifically indigocarmin, was entirely ended in from eight to fifteen hours in a complete gallbladder fistula dog (i. e., one with the ductus choledochus ligated), while in a normal dog, not operated on, indigocarmin-colored bile remained in the gallbladder from four to five days. At the end of two weeks, the bile in the gallbladder was found uncolored by the dye. (The exact intermediate end-point is now under investigation). This signifies that the motor activities of the gallbladder are quite slight. Furthermore, this differs so much from the usual conception, which is that of a gallbladder actively contracting and emptying itself of its bile content following the ingestion of a meal, that further experimental investigation seemed desirable. A series of studies was therefore undertaken, the conclusions of which have recently been published briefly. The experimental work done in these studies will be described here, with a short discussion of its physiologic and practical significance.

One finds in the literature¹ many contradictory statements and many conflicting results. This is probably due to inadequate and inappropriate methods of experimentation. The ideal, and perhaps the only proper physiologic method of studying the motor function of the gallbladder, would be to observe its movements in the closed abdominal cavity. Many

1. Excellent references to the literature on the physiology of the gallbladder are given by Mann, F. C., and Giordano, A. S.: The Bile Factor in Pancreatitis. *Arch. Surg.* **6**: 1 (Jan.) 1923. Auster, L. S., and Crohn, B. B.: Physiology of the Gallbladder, *Am. J. M. Sc.* **164**: 345 (Sept.) 1922. My own article embodying briefly the conclusions of the above work appeared in the *Klinische Wochenschrift*, Feb. 26, 1923.

previous studies may be seen to be invalid when one considers how unphysiologic is the approach through an opened abdominal cavity or an operated gallbladder.

The solution of this difficulty occurred to me in the utilization of the following technic: Four very small, light, flat disks of silver were sewed in quadrilateral arrangement on the serosa of the ventral wall of the dog's gallbladder. When the laparotomy wound was completely healed, the animal was studied roentgenologically. The accompanying illustration demonstrates the definite outline thus obtained.

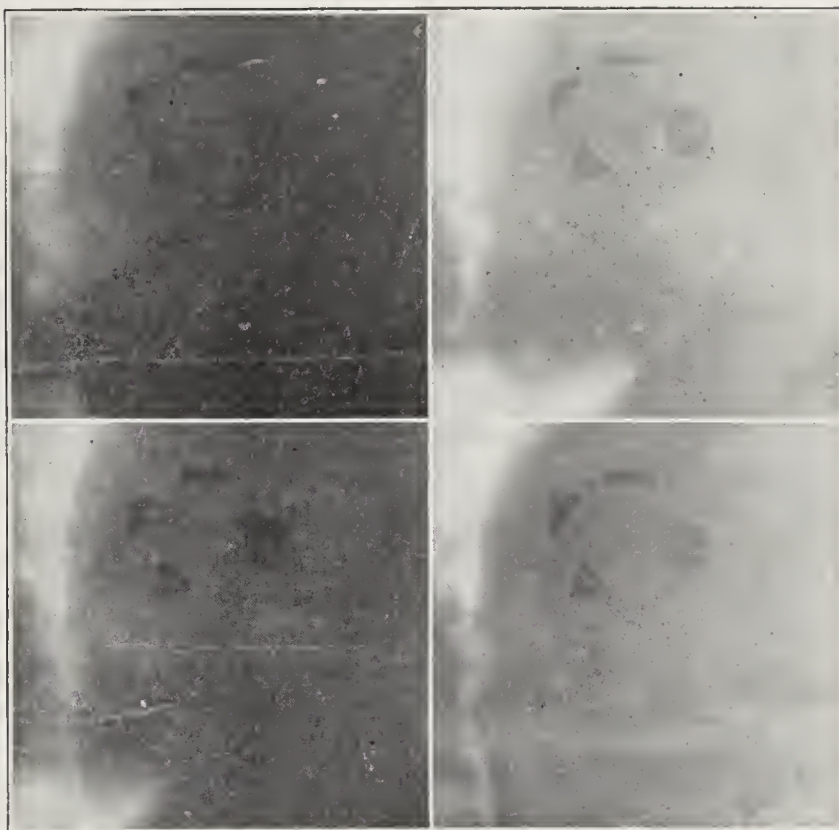
With the aid of this procedure, it was found that during the fasting state, on the exhibition of food, when food was in the stomach, at the instant of entrance into the duodenum, and during the duodenal passage of food, there occurred no approximating motion of the metal buttons. In other animals, there was introduced in addition to this method a duodenal fistula opposite the papilla of Vater. Various solutions of magnesium sulphate, hydrochloric acid, sodium chlorid and peptone were then injected through the fistula. A contractile movement was, however, not seen. Furthermore, a definite decrease in the size of the outline of the gallbladder after a meal or an injection was not apparent, indicating that an appreciable emptying did not occur. The only motion seen was a definite craniocaudal rhythmic approximation of the disks with each inspiration. The importance of this hitherto unobserved phenomenon will be discussed later. Post-mortem investigation revealed no adherence of the silver platelets or of the gallbladder wall to the surrounding structures. It might be mentioned at this point that, with this new technic, further studies, particularly of the action of drugs which affect the vegetative nervous system, are now being carried on.

From these observations, it seems that a contractile emptying of the gallbladder, if it occurs at all, can be only slight and so of little significance. Since, however, the dyestuff studies had demonstrated that the gallbladder sooner or later does empty, an aspirating mechanism suggested itself. But this idea was disproved by the following experiment: After the bile was colored by an injection of methylene blue into the gallbladder, a glass cannula was tied in the ductus hepaticus, and ordinary clear dog bile was forced through the duct system at different pressures. Only bile unstained by methylene blue appeared at the papilla of Vater or at the separated end of the ductus choledochus.

During this experiment it was observed that the manual pressure necessary to force bile out of the gallbladder and through the ductus choledochus into the duodenum when the papilla of Vater and its sphincter were retained was considerable, whereas it seemed quite minimal when the ductus choledochus was deprived of these structures. This, together with the foregoing observations, namely, (a) the eventual emptying of the gallbladder, (b) the failure of an aspirating mechanism, (c) the apparent absence of a contractile or peristaltic movement and (d) the change in the outline of the gallbladder synchronous with respiration, led to the following proposition: If the gallbladder has a definite elasticity (and this probably results from a tonus tension of its muscular wall about its content so as to permit distensibility changes), then the changes in the intra-abdominal pressures during respiration must influence its volume. Are these pressures sufficient to express some bile from the gallbladder? This question can be answered affirmatively, since it was found that

the pressure necessary to drive bile out of the gallbladder into the duodenum when the papilla of Vater was relaxed (or its approximate equivalent, viz., a separated duct, a lateral prepapillary opening, or a glass tube in the papilla) was less than the pressure normally exerted at the height of inspiration in the immediate location of the gallbladder.

These pressures were measured in the following manner: A rubber balloon, the size of a moderately distended gallbladder, was placed in the location of the gallbladder, and connected through the closed abdominal wall wound to a water manometer. A minimal value of 20 mm., and, with moderately increased respiration, an average value of from 80 to 100 mm. water pressure, was found at the height of inspiration. The pressure at the end of expiration was zero. It may be said, then, that in the normal animal, a pressure of from 80 to 100 mm. is thrown on the gallbladder at the height of each inspiration.



Outline of the fundus of the gallbladder obtained by four roentgenograms taken successively.

Then the pressure necessary to empty the gallbladder was investigated by invaginating the gallbladder in a rubber sac, enveloped in undistensible canvas, and connected with a water manometer so arranged that various pressures could be put on the gallbladder. With the sphincter of Oddi closed, from 110 to 120 mm. pressure was needed to overcome its tonus; but when the papilla was relaxed or, rather, its equivalent substituted, 15 mm. pressure, merely, was sufficient to drive out, at each application of that pressure, a tiny amount of gallbladder bile. At 10 mm., however, none appeared.

It seems apparent, therefore, that each normal inspiration when the papilla is open is sufficient to effect a passage into the duodenum of a tiny amount of gallbladder bile. This is not true when the papilla of Vater is closed. The emptying proceeds in a most gradual and incomplete manner; hence the persistence of dyed-colored bile in the gallbladder for days after the liver bile is free from the dyestuff. Peristaltic or contractile motions of the musculature, if they occur at all, can play only a very subordinate rôle in the emptying act.

What happens when the papilla of Vater is closed forms a very important problem. The relationship

existing between intraductal and gallbladder bile, and also the filling mechanism, can probably be explained, in terms of differential pressures. The possibilities are (1) a constant inflow of liver bile with or without any interchange of duct and gallbladder bile; (2) an ebb and flow again with or without interchange; (3) an inflow only at the expiration phase, or (4) merely a change in the form of the gallbladder without any interchange. These fascinating possibilities are being studied, and, together with a study of the mechanism of the sphincter papilli, will form the content of a future communication.

Many practical applications of these physiologic observations, of course, immediately suggest themselves. Among these may be mentioned (a) an explanation of gallbladder stasis, (b) some new prophylactic and therapeutic measures in cholelithiasis and cholecystitis, (c) a renewed study and evaluation of the Meltzer-Lyon test, and (d) an improved diagnostic method for disease of the gallbladder. These and other clinical applications are now being investigated.

SUMMARY

1. A definite specimen of bile can remain at least four or five days in the gallbladder. The latter is, however, eventually emptied of that definite specimen, although the act is very gradual.

2. The only movement seen roentgenologically in the closed abdominal cavity is an alternate contraction and expansion of the gallbladder outline synchronous with respiration. A contractile emptying of the gallbladder following a meal, if it occurs at all, is only of minimal character and significance.

3. The intra-abdominal pressure at the height of inspiration is insufficient to force bile out of the gallbladder into the duodenum when the papilla of Vater is closed.

4. The pressure necessary to drive bile from the gallbladder into the duodenum when the papilla is relaxed is less than is exerted in the location of the gallbladder at the height of a normal inspiration.

5. It is, therefore, concluded that the respiratory act is the chief factor in the emptying of the gallbladder; i. e., the respiration is the motor of the gallbladder.

15 West Eighty-Ninth Street.

BREAST CARCINOMA TREATED SURGICALLY AND BY ROENTGEN RAY

CLINICAL AND POSTMORTEM FINDINGS
IN TWO CASES *

CASSIE B. ROSE, M.D.
CHICAGO

Several roentgenologists have reported a dense shadow appearing on the roentgenograms of the chest of patients who have received roentgen-ray treatment over the thorax. The exact causation of this shadow has been in doubt. Carcinoma of the lung, pleural thickening, pleural effusion, and fibrosis due to the roentgen-ray treatment have been offered as possible explanations.

In 1922, Tyler and Blackman¹ reported seven cases in which a dense shadow appeared on roentgenograms of the chest following heavy irradiation of the thorax for carcinoma of the breast, and suggested that the

change might be due to a fibrous thickening of the pleura and lungs as a result of the roentgen-ray therapy. There were no necropsies in this group.

In similar cases reported by Drs. Pfahler, Groover and Case in the discussion of the article by Tyler and Blackman there were likewise no necropsies.

Dr. Pfahler was of the opinion that roentgen rays might change a malignant into a fibrotic process, or that a preexisting fibrotic process might be stimulated by the roentgen rays.

Dr. Groover felt that the roentgen rays either caused these lung changes or else had something to do with the development and spread of metastatic foci therein, and that, at least in certain instances, definite changes

in the lung may be produced by the roentgen ray without a preexisting cancer focus.

Dr. Case believed that part of these changes could be accounted for by pleural irritation, and that part were of a pneumonic nature.

All agreed that without necropsies one should be careful about drawing conclusions.

In December, 1922, Case² mentioned pleural effusion among the "untoward results in deep roentgen-ray therapy," although he did not feel that the roentgen ray necessarily caused the effusion. Dr. E. L. Jenkinson³ stated that in the course of the treatment of mediastinal tumors a pleural effusion may develop after moderate treatment, and sometimes clears up after more intensive irradiation.

Two cases of breast carcinoma, with clinical and necropsy findings are offered here as a contribution to

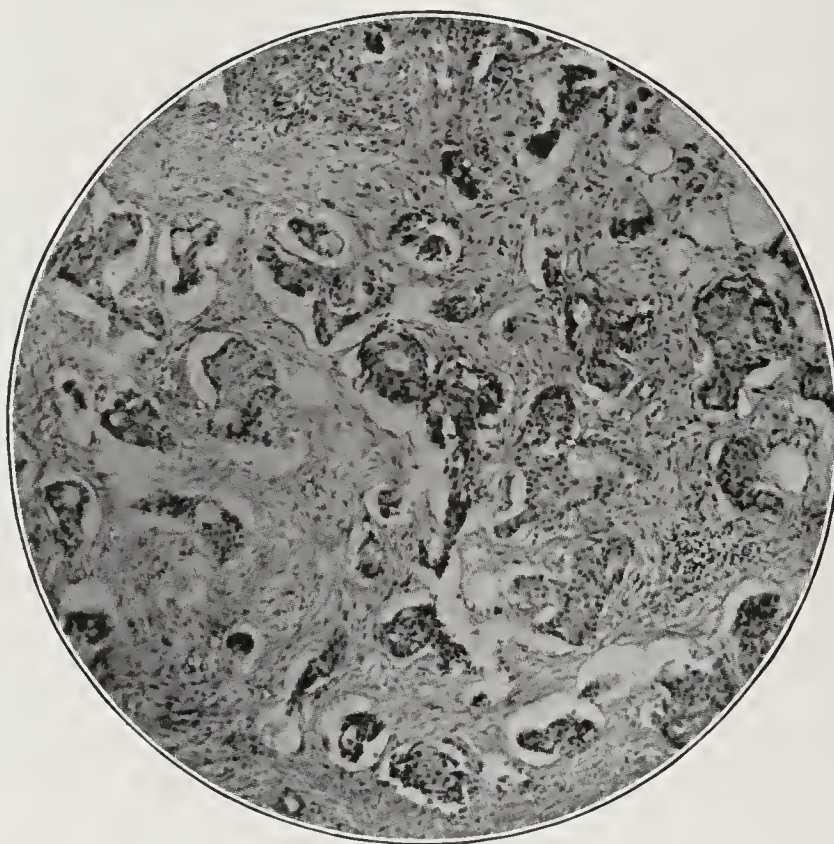


Fig. 1 (Case 1).—Section of tumor, slightly reduced from a photomicrograph with a magnification of 100 diameters.

Acute Infectious Fevers as Predisposing Causes of Tuberculosis.—Scarlet fever, influenza, colds, and all diseases which lower resistance, impair nourishment, and increase the stress of life at any age must be reckoned with as important factors in tuberculosis. The importance of typhoid fever is shown in the fact that the general death rate among survivors is more than twice that among persons who have never had typhoid. Of those who recover from typhoid but die from other causes within three years, 39 per cent. succumb to tuberculosis.—F. C. Smith, *Public Health Rep.* 38:781 (April 23) 1923.

* Read before the Chicago Roentgen Ray Society, March 23, 1923.

1. Tyler, A. F., and Blackman, J. R.: *J. Radiol.* 3: 469 (Nov.) 1922.

2. Case: *Untoward Results in Deep X-Ray Therapy*, read before the Radiological Society of North America, Detroit, December, 1922.

3. Jenkinson: *X-Ray Therapy of Cancer*, read before the Radiological Society of North America, Detroit, December, 1922.

the study of roentgen-ray therapy. Both cases were treated surgically and by the roentgen ray, and in both a heavy shadow appeared on the chest roentgenograms after a considerable amount of exposure.

REPORT OF CASES

CASE 1.—Mrs. M. S., aged 50, entered the Presbyterian Hospital, Jan. 28, 1918, to the service of Dr. A. D. Bevan, complaining of two small nodules in the region of the right breast. In June, 1914, she noticed a small nodule in the right breast. In eight months this tumor grew to the size of a walnut. In February, 1915, it was removed, together with the nipple. A second nodule developed in the same breast about a year later. This was removed, with the rest of the breast tissue and the pectoralis major muscle, in August, 1916.

On entering the Presbyterian Hospital, the patient was in good general health. Two bean-sized, hard, rather fixed nodules were present in the scar, and the right axillary glands were enlarged. No other pathologic changes were found.

A radical removal of all tissues down to and including the pectoralis minor muscle, together with the right axillary glands, was done by Dr. Bevan, Jan. 29, 1918. Microscopic examination of this tissue revealed mammary carcinoma (Fig. 1). February 20, after the wound had healed, roentgen-ray treatment was begun. The dosage was 50 milliamperes

During July and August, the patient was considerably improved, as the result, apparently, of rest and the roentgen-ray treatment. In September, she complained of loss of appetite, frequent cough, and gradual loss of strength. Chest examination showed marked dulness over the right side, and on auscultation there was bronchial breathing and bronchophony.

Late in October, the patient overtaxed her strength nursing her son, and became bedfast. Even attempts to change her position in bed caused cough and dyspnea, so severe that morphin was given. The appetite was very poor, the color yellowish, and the breath had a very foul odor. After two weeks' rest, the patient felt somewhat better.

December 1, the right chest showed marked dulness anteriorly, with bronchophony and tubular breath sounds. There was flatness posteriorly to the seventh interspace. The left chest gave negative findings.

From September to December, the patient was brought to the hospital (by taxicab and wheel chair), at weekly intervals, for treatment, as she felt that the roentgen ray was her only hope for life.

December 13, when she came for her last treatment, she was feeling a little better, though her general complaint was the same. She had lost considerable weight, but was not extremely emaciated.

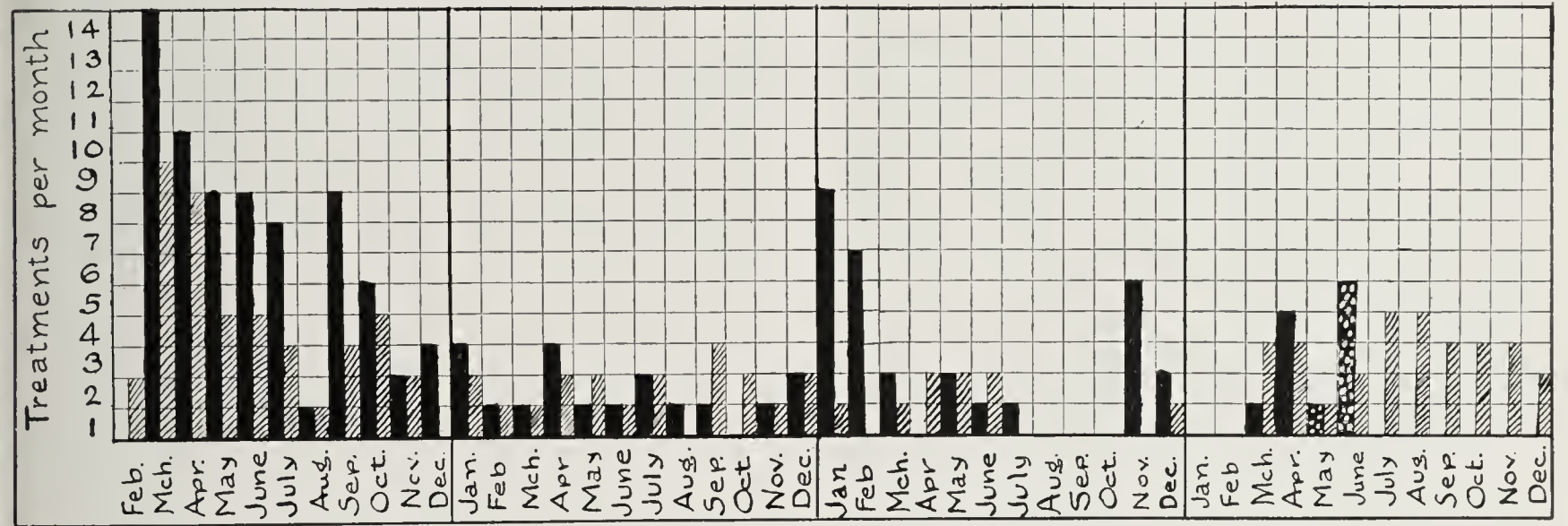


Fig. 2.—Amount of roentgen-ray treatment given each patient. Each treatment consisted of 50 milliamperes minutes, 9-inch spark gap, 10-inch distance, 4 mm. aluminum and sole leather filter, covering one circular area 15 cm. in diameter. Each small square represents one such treatment. Shaded areas for Case 1; solid areas for Case 2; dotted areas indicate massive high voltage irradiation given in Case 2. The first treatment in Case 1 was given Feb. 20, 1918; the first treatment in Case 2, March 1, 1919.

minutes, 9-inch spark gap, 10-inch distance, 4 mm. aluminum and sole leather filter, covering one circular area 15 cm. in diameter at each treatment. Both sides of the chest, anteriorly and posteriorly, both supraclavicular fossae, and both axillae were treated. Treatments were given as indicated in Figure 2. It will be noticed that treatments were given most frequently in the first few months. Later treatments were given at irregular intervals, with rest periods up to five months.

A notation on the roentgen-ray treatment record of March 8, 1921, says: "Patient in good condition. No glands palpable. No evidence of recurrence found." The patient continued well and worked as a seamstress up to June, 1921. June 15, she complained of a cough and shortness of breath, which had been progressively increasing for about two weeks. On physical examination by Dr. F. C. Straus, there was dulness over the right side on percussion, with bronchial breathing and bronchophony on auscultation.

Roentgenograms of the chest, taken June 17, 1921 (Fig. 3) show a heavy, mottled shadow in the right lung field below the level of the fourth dorsal vertebra. This area contains evidence of thickened lung markings, which at least partly account for the mottling. The general density of this region grows a little heavier toward the lung base. The right side of the heart, and the right diaphragm outlines are indistinct. The trachea is deviated to the right. The left lung field is clear.

December 27, a bronchopneumonia developed on the left side. The patient died, Dec. 30, 1921.

From the time roentgen-ray treatment was begun in February, 1918—to the time the chest symptoms developed, in June, 1921—the patient had received a total of 2,300 milliamperes minutes over the right side, and 1,450 milliamperes minutes over the left side. From June 17, 1921, after the appearance of the chest symptoms, to Dec. 13, 1921, the patient received a total dosage of 600 milliamperes minutes over the right, and 450 milliamperes minutes over the left side of the chest.

The necropsy was conducted by Dr. H. A. Oberhelman of the Presbyterian Hospital. The skin of both sides of the chest was brown, scaly and indurated and contained an increased amount of fibrous tissue. The intercostal muscles were almost entirely replaced by fibrous tissue on the right, partially on the left. The ribs on the right side were atrophied; those on the left were not. The right chest cavity was filled with a light yellow fluid with a few flakes of fibrin free in it. This fluid was so abundant that the right lung was compressed and pushed tightly against the mediastinum. The entire right lung was completely atelectatic, and scarcely filled a hand. The right pleura, both visceral and parietal, was covered with a very fine irregular layer of fibrin. No tubercles were present on the pleura. There was one dense adhesion at the apex of the right lung, 1 cm. in diameter. In the lung tissue, under this adhesion, was a nodule from 5 to 7 mm. in diameter, containing a cavity from 3 to 4 mm. in diameter, surrounded

by dense fibrous tissue, which extended close to the visceral pleura. There was one similar nodule, without cavity, near the apex. These were tuberculous lesions, and were the only evidence of tuberculosis found. The left chest cavity contained 500 c.c. of serosanguineous fluid. A definite bronchopneumonia was present in the lower lobe of the left lung. An acute pyelo-ureterocystitis was present. There were no other noteworthy findings.

Microscopic sections of the right lung showed marked increase of fibrous tissue around the small bronchi and blood vessels. The alveoli were almost completely obliterated, their walls being in apposition, as from compression atelectasis. There was no evidence of pleural thickening or tuberculosis on the pleura, and no round cell infiltration of the pleura.

The tracheobronchial lymph glands contained fibrous tissue, but no evidence of tumor or tuberculosis.

There was no evidence of carcinoma in any part of this body, either grossly or microscopically.

In July, 1922, another case, which had been under my observation for more than three years, came to necropsy.



Fig. 3 (Case 1).—Appearance of chest, June 17, 1921.

CASE 2.—Mrs. E. V., aged 47, entered the Presbyterian Hospital to the service of Dr. J. B. Herrick, Feb. 17, 1919, complaining of frequent and severe paroxysmal attacks of unproductive cough, marked weakness, loss of weight, and pain in the right hip and knee. In October, 1916, a hard, painless lump was discovered in the right breast, above which the skin was retracted. A radical removal of this breast was done a week later by Dr. A. J. Ochsner.

On entrance to the hospital, the patient was not acutely ill, though having marked distress from cough. The lower right chest was dull, especially in front, and breath sounds were faint. There was also tenderness on pressure along the fourth, fifth and sixth ribs in the mammary line on the right side.

Roentgenograms of the chest, taken Feb. 18, 1919 (Fig. 4), showed moderately heavy, beaded intensification of lung markings extending well out into the parenchyma of the right lung, heaviest in the lower lobe, and especially near the hilum. A uniform haziness was present over the right lower lobe, and a line of interlobar thickening crossed the right lung field. There was moderately increased density along the bronchial markings of the left lung field. The outline of the right

diaphragm was slightly nodulated; the left was normal. The heart shadow and the bones were normal.

The clinical diagnosis was fluid and tumors in the chest, and bone metastases in the ribs.

Rest and sedatives gave little relief. March 1, 1919, the patient was referred for roentgen-ray therapy. The general management and dosage were the same as in Case 1. Treatment covered the same areas of the thorax, and in addition the abdomen, right hip and right knee were irradiated (Fig. 2).

The patient improved under this treatment, was soon able to continue her work as a private secretary, gained 25 pounds (11 kg.) by October 1, and for more than a year was in good health.

Late in December, 1920, the old symptoms returned, though in moderate degree. The patient again entered the hospital, Jan. 12, 1921. Chest examination showed distant breath sounds over the right lower lobe posteriorly, with scattered crackling râles, especially posteriorly over the right middle lobe. There was tenderness on pressure over the ribs. Roentgenograms of the chest, compared with those previously taken, showed very little change in the lung fields. In the ribs there was a mottling in many places on both sides due to areas of rarefaction interspersed with small areas in which the trabeculae were increased in density. A ten-day rest in bed and increased irradiation brought relief, and the patient returned to work for nearly a year.

In September, 1921, the patient came under the clinical care of Dr. Milton Portis. The symptoms had again returned, and although the roentgen-ray treatment was continued as before, the relief was not so satisfactory. A lump found in the left breast was excised, and proved to be carcinomatous. In October, a radical removal of this breast was done by Dr. Lackner of the Michael Reese Hospital.

In April, 1922, the patient suffered from shortness of breath and pain on respiration. I examined the patient and found flatness of the left chest anteriorly to the second interspace and to the fifth rib posteriorly. Breath sounds were distant. The liver was tender, and palpable two and a half finger breadths below the costal border in the mammary line.

Roentgenograms of the chest (Fig. 5) taken, April 29, 1922, showed a little intensification of the shadows previously described on the right side, especially near the hilum. On the left, a very dense uniform shadow was present over the lower lung field, blotting out the shadows of the heart and diaphragm, and curving upward at the lateral costal margin. A similar shadow, though less dense, occupied the rest of the lung upward to the apex. Lung markings could be traced only in a small area in the midportion of the lung field. The ribs and the lower ends of the scapulae had a mottled appearance due to small areas in which the trabeculae were irregularly arranged and increased in density, interspersed with small areas of decreased bone density.

The findings in the left lung field were compatible with a large quantity of fluid in the pleural cavity. The bone findings were questionable for metastatic foci.

In June, 1922, the left pleural cavity was aspirated by Dr. Milton Portis, and 3 pints (1.5 liters) of bloody fluid removed. There was slight relief of symptoms for a week, and then the symptoms returned.

The patient had worked daily since May, 1919, except for the few days in the hospital at various times. In fact, she went to her work up to within three days of her death, although with difficulty, which had been continuously increasing in the last few months.

From the beginning of the roentgen-ray therapy to June, 1922, the patient received a total of 2,300 milliamperere minutes over the right, and 2,325 milliamperere minutes over the left side of the chest, 355 milliamperere minutes over the abdomen, 810 milliamperere minutes over the right thigh, and 340 milliamperere minutes over the right knee.

May 30, at the request of Dr. Portis, I gave the patient 300 milliamperere minutes over the left side of the chest, at 140 kilovolts (sphere gap) at 50 cm. distance, 0.25 mm. copper and 1 mm. aluminum filter.

From June 26 to 30, intensive irradiation for an hour a day, at 200 kilovolts, was given by Dr. E. L. Jenkinson, at St. Luke's Hospital.

July 14, the patient developed a gradually increasing afternoon fever, the temperature rising to 104 F. She died, July 16, 1922.

At necropsy, conducted by Dr. H. A. Oberhelman, the skin of the chest anteriorly and of each axilla was brown, scaly and indurated, and there was marked atrophy of the skin.



Fig. 4 (Case 2).—Appearance of chest, Feb. 18, 1919.

The intercostal muscles of both sides, when cut at right angles, showed broad streaks of white fibrous tissue. The costal cartilages were soft. The mediastinal tissues were densely adherent to the back of the sternum. The entire right pleural cavity was obliterated by dense fibrous adhesions that held the lung firmly against the chest wall, and the interlobar fissures were obliterated. The right lung weighed 815 gm., and was boggy. The upper two thirds of the left pleural cavity was obliterated by fibrous adhesions. In the lower third were 800 c.c. of turbid yellow-brown fluid, in which were a few stringy blood clots. This fluid was in a pocket between the lung and the diaphragm. The lung was pushed up to the level of the fourth interspace. The parietal pleura of the left side was adherent to the ribs and studded with tumor nodules, as was also the diaphragmatic reflection of the pleura. The left lung weighed 440 gm. The pericardial sac was also studded with tumor nodules, which could be seen from the outside. The sac was thickened and indurated, and contained 50 c.c. of fluid. No cavities or tumors were found in either lung on many surfaces made by cutting. Metastatic tumors were present in the mediastinal lymph glands, and also in the liver and biliary lymph glands, the peritoneum and ovaries.

Microscopic examination showed the tumor nodules to be carcinoma. There was a definite necrosis in the centers of even the very small tumor nodules. The nodules lay in an abundant stroma. A few nuclei lay about the margin of the necrosis, some fragmented, and some intact. There were few mitotic nuclei, and very little round cell infiltration in this zone. The fibrous thickening of the left lung substance was so marked that almost no alveolar spaces were seen. The piece of rib sectioned showed marked bone atrophy, loss of lacunar arrangement, and hyaline degeneration. There was no tumor invasion.

SUMMARY

These two cases present a great similarity in their clinical pictures, but a striking difference in necropsy findings. In each case the postmortem revealed patho-

logic findings sufficient to account for the shadows on the roentgenograms of the chest.

In Case 1, clinically a carcinoma of the breast with three surgical interventions, the patient died seven and a half years after the discovery of the first tumor, and four years after the last operation, which was done for metastases in the old scar, microscopically carcinoma. Postoperative roentgen-ray treatment was started immediately after the last operation, without clinical evidence of metastases other than breast nodules and axillary glands so recently removed. Postmortem examination showed a large pleural effusion, without pleural thickening, on the right side of the chest—the site of the tumor and the greatest amount of roentgen-ray treatment, 2,900 milliamperere minutes. Carcinoma was absent. There was no inflammatory process of the pleura, as indicated by the absence of round cell infiltration. There were two small tuberculous foci in the apex of the right lung. A tuberculous effusion from so small a focus, without tubercles on the pleura, and in the absence of pleural thickening, is rare. That the roentgen ray lowered the patient's resistance to tuberculosis, and stimulated an effusion from even so small a focus is to be considered, in view of the statement that roentgen-ray treatment given to guinea-pigs hastens diagnostic results following the injection of tuberculous material into the peritoneum.

In Case 2, clinically a carcinoma of the breast, with two surgical interventions, the patient died five and two-thirds years after the discovery of the tumor and first operation, and eight months after the second operation, which was done for a tumor in the opposite breast, microscopically carcinoma. Palliative roentgen-ray treatment was begun two and one-third years after



Fig. 5 (Case 2).—Appearance of chest, April 29, 1922.

the first operation, for clinical evidence of metastatic carcinoma within the thorax. Prolonged improvement followed. Two later relapses also responded to this treatment, although not so completely as at first. Postmortem examination showed a pleural thickening and a large pleural effusion of the left side of the chest—

the site of the second tumor and greatest amount of roentgen-ray treatment, 2,625 milliamperes minutes, plus the intensive irradiation given by Dr. Jenkinson. The presence of numerous carcinomatous nodules on the pleura may well account for the pleural thickening and effusion, for, as is well known, such nodules frequently cause an effusion, often bloody, and a patchy thickening of the pleura. The presence of central necrosis in even the very small tumor nodules speaks strongly for the destructive action of roentgen rays on carcinoma cells, as is so often stated in current medical literature. The presence of an abundant stroma surrounding the tumor nodules, and the marked fibrous thickening of the pleura, speak for the stimulation of fibrous tissue by roentgen rays, as is also stated in medical literature. The extent of the fibrosis and tumor necrosis probably explains the long and satisfactory palliation. Nevertheless, in this case, all the irradiation given did not prevent the formation of carcinoma in the opposite breast.

Presbyterian Hospital.

CONGENITAL STRICTURES OF THE ESOPHAGUS *

PORTER P. VINSON, M.D.
ROCHESTER, MINN.

The literature concerning complete congenital strictures of the esophagus has been reviewed very fully by Plass,¹ Griffith and Lavenson,² Cautley³ and Hirsch,⁴ and I shall not endeavor to analyze the cases they have compiled. There have been numerous types of esophageal deformity, but the majority of them are represented by Figure 1 *a*, in which the upper portion of the esophagus ends in a blind pouch and the lower portion enters the trachea, or a bronchus forming an esophagotracheal or esophagobronchial fistula. Another type of stricture (Fig. 1 *b*) is represented by an upper and a lower culde-

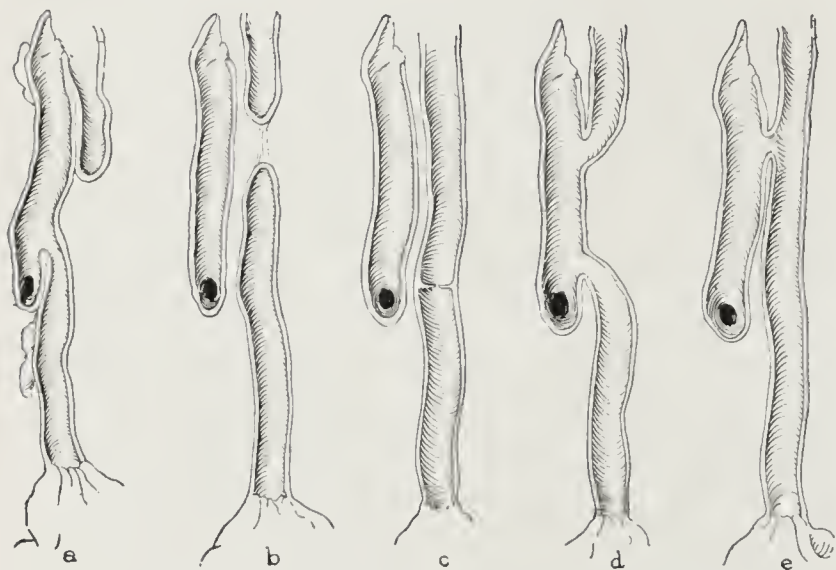


Fig. 1.—Types of congenital deformity of the esophagus.

sac connected by a strand of tissue. A third type is similar to this, with the exception that there is no connection between the two segments.

Again there may be an upper culdesac only, sometimes connected with the stomach by strands of tissue. These strands, however, are often absent. The esophagus may be also partially or completely closed by a diaphragm-like membrane (Fig. 1 *c*). The organ may be completely absent or may be represented by a solid cord throughout. Partial or complete doubling of the esophagus is sometimes seen. One case has been reported by Fischer⁵ in which there was a double esophagotracheal

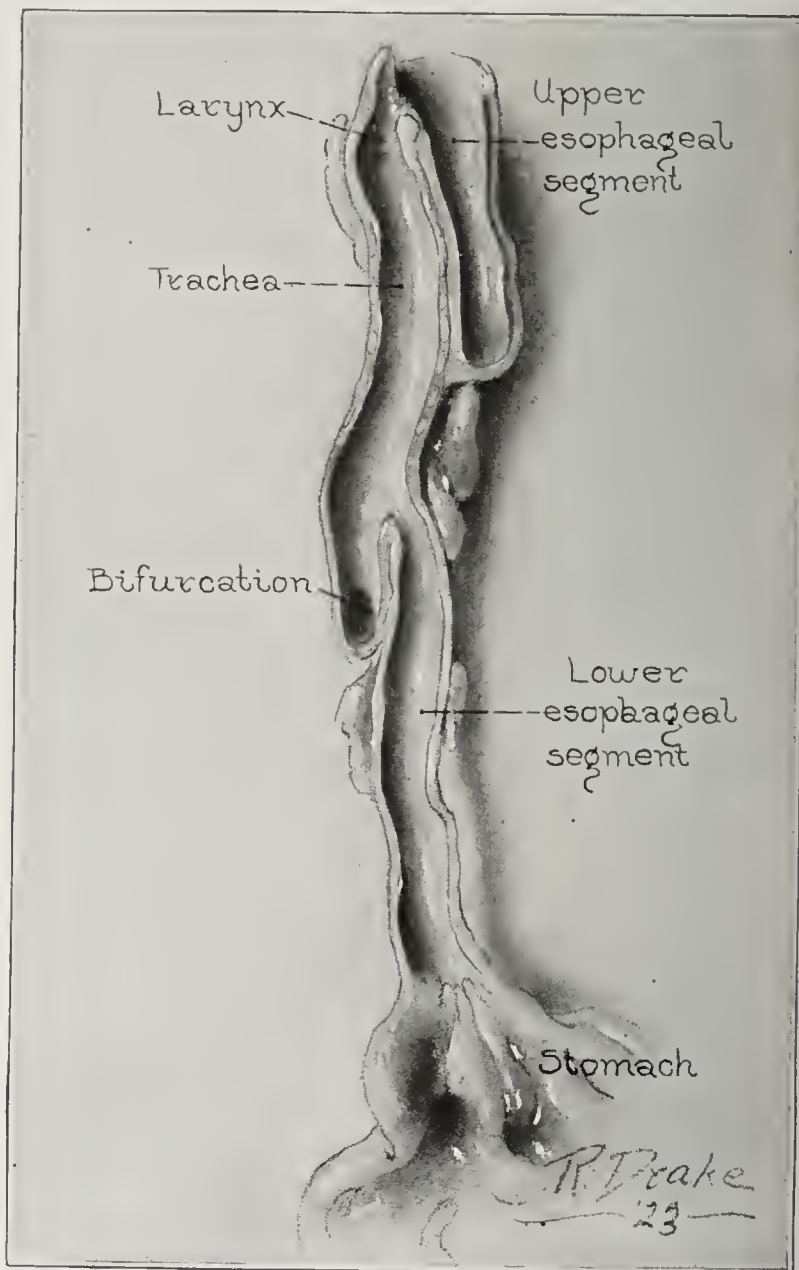


Fig. 2.—Congenital stricture of the esophagus in a child, aged 9 days.

fistula, both the upper and lower segments of the esophagus being in communication with the trachea (Fig. 1 *d*). A simple fistula between the esophagus and trachea resulting from incomplete closure of the esophagotracheal partition may be the only defect (Fig. 1 *e*). Hirsch presumed from roentgenographic evidence that there was a communication between the upper segment of the esophagus and the trachea in one of his cases, but as no postmortem examination was made, this conclusion is open to question. An overflow into the larynx of the swallowed opaque mixture may have occurred, and the outline of the bronchial tree may have been obtained without the existence of a fistula. This finding has been frequently observed when a stricture of any type is located in the upper portion of the esophagus. In 1921, Hirsch was able to compile 146 cases of complete congenital stricture of the esophagus. The case reported here adds one more to the list.

5. Fischer, B.: Ueber die Beziehungen zwischen Missbildungen und Traktionsdivertikeln des Oesophagus, Zentralbl. f. allg. Path. u. path. Anat. 16: 1, 1905.

* From the Division of Medicine, Mayo Clinic.

1. Plass, E. D.: Congenital Atresia of the Esophagus with Tracheo-Esophageal Fistula, Associated with Fused Kidney, a Case Report and a Survey of the Literature on Congenital Anomalies of the Esophagus, Johns Hopkins Hosp. Rep. 18: 259, 1919.

2. Griffith, J. P. C., and Lavenson, R. S.: Congenital Malformation of the Esophagus, Arch. Pediat. 26: 161, 1909.

3. Cautley, E.: Malformation of the Esophagus, Brit. J. Child. Dis. 14: 1 (Jan.-March) 1917.

4. Hirsch, I. S.: Congenital Atresia of the Esophagus, J. A. M. A. 76: 149 (May 28) 1921.

CASE 1.—K. K., a baby girl, born March 4, 1923, was apparently normal in every way save that she was unable to retain any of her feedings. The milk, unchanged by digestion, was regurgitated as soon as it was swallowed. Meconium was passed normally. March 9, a fluoroscopic examination of the esophagus was made, and it was observed that the opaque meal was obstructed in the upper portion of the organ. A diagnosis was made of a congenital stricture of the esophagus. The patient was referred to the Clinic, March 12, and an immediate esophagoscopy examination revealed that the upper portion of the esophagus terminated in a blind pouch a short distance below the introitus. The mucous membrane was considerably congested, and the sac contained a small amount of frothy mucus. A gastrostomy was performed. The child died, March 13, and postmortem examination revealed an upper esophageal pouch terminating blindly 3 cm. below the introitus (Fig. 2). The walls of the sac were considerably hypertrophied. The lower esophageal segment was connected with the trachea 1 cm. above the bifurcation. The fistulous opening was 1.5 mm. in diameter. A Meckel's diverticulum was present also. Extensive bronchopneumonia was the immediate cause of death.

Besides this case of complete congenital stricture of the esophagus, four cases of partial congenital stricture have been observed in the Mayo Clinic. A brief abstract of each follows:

CASE 2.—D. W., a boy, aged 4 years, examined, June 21, 1917, had never been able to swallow anything except fluids, and for two months water and milk were often regurgitated. Esophagoscopy examination revealed a congenital stricture 20 cm. from the incisor teeth. There was no evidence of scar formation. The stricture was dilated easily, and the child was allowed to go home. He returned for further treatment, December 6, and a 50 F. sound was passed through the stricture without difficulty. Immediate relief from dysphagia followed the dilations, but I have been unable to trace the patient and learn of his present condition.

CASE 3.—M. M., a girl, aged 5 years, examined in the Clinic, Oct. 17, 1917, had weighed 3 pounds (1.36 kg.) at birth. When a few days old, she began to spit up most of her food, unchanged by digestion. This continued, and at two years of age her weight was 14 pounds (6.4 kg.). With careful feeding by mouth, supplemented by nourishment administered by rectum, her weight had increased to 42 pounds (19 kg.). She had never been able to eat solid food. An esophagoscopy examination revealed a congenital diaphragm-like membrane in the lower portion of the esophagus. The stricture was dilated to 45 F., with complete and permanent relief from dysphagia. From a recent report, it was learned that the child is in perfect health.

CASE 4.—G. V., a boy, aged 20 months, brought to the Clinic, April 12, 1920, had choked on milk frequently from birth, but the condition had been disregarded until a week before, when almost complete esophageal closure had followed the ingestion of a small piece of meat. Roentgenographic examination revealed an obstruction in the upper portion of the esophagus. The stricture was dilated to 45 F., with complete relief from dysphagia.

CASE 5.—A. C., a youth, aged 17, came to the Clinic, April 22, 1920, complaining of dysphagia that had been present from birth. He had never been able to swallow solid food, and milk was the chief source of nourishment. A stricture with a very tiny opening was located 13 inches from the incisor teeth, and was dilated easily to 42 F., with complete and permanent relief from dysphagia. During the year after the divulsion of the stricture, the patient gained 46 pounds (21 kg.) in weight.

SUMMARY

The case of complete congenital stricture of the esophagus here reported brings the number of cases that have been recorded to 147. In the four cases of partial congenital stricture of the esophagus also reported, free deglutition was restored by passing sounds.

RIEDEL'S LOBE SIMULATING NEPHROPTOSIS*

OTTO J. WILHELMI, B.S., M.D.

Assistant Surgeon, Urological Outpatient Clinic, Washington University
Medical School

ST. LOUIS

When scanning the literature for cases of Riedel's lobe of the liver, one finds amazingly few reported. I garnered from those cases that had been reported that the majority showed an error in diagnosis preoperatively; therefore I think it advisable to report these conditions when they do occur, so as to enable the operator to have them in mind when rendering a diagnosis.

The lobe was originally described in 1888, by Riedel,¹ as a linguiform lobulation, or tonguelike prolongation of the anterior margin of the right lobe of the liver. This tonguelike process is attached to the liver proper either by a small bridge of hepatic tissue, or occasionally by merely fibrous tissue. One anatomist, writing in the early eighties, said that it occurred in as high as 30 per cent. of women over 40, but in only 15 per cent. of men. At this time he ascribed the higher percentage in women to the tight lacing then in vogue. His necropsies in children gave negative findings. Today, however, we see very few cases, and in the department of anatomy at Washington University Medical School not a single case has been seen in the last five years.



Fig. 1.—Diagrammatic posterior view demonstrating lobular elongation which occurs in a Riedel's lobe, and difficulty of locating kidney by palpation or simple roentgen-ray examination.

When we enter into the etiologic entities of this anomalous condition, we are confronted with a rather moot question. As early as 1888, Riedel described

eight cases. He was an advocate of gallbladder traction, and considered the condition due to the gradual enlargement of the gallbladder, which in turn pushed the liver lobule downward. A little later, Leaf² and Thompson³ reported several cases of linguiform lobulation, but made no mention of gallbladder enlargement or traction at necropsy. However, the condition has been described in children,⁴ and its occurrence at this age, when gallbladder disease is quite rare, would strengthen the belief that it is an anatomic anomaly⁵

* Read before the St. Louis Medical Society, Feb. 20, 1923.

1. Riedel, H.: *Berl. klin. Wchnschr.*, July, 1888, p. 577.

2. Leaf, C. H.: *J. Anat. & Phys.*, 1898, p. 17.

3. Thompson, Arthur: *J. Anat. & Phys.*, 19: 3, 1885.

4. French, Herbert: *Index of Differential Diagnosis*, p. 366.

5. Ruge, George: *Normale und abnormale Entwicklung des Menschen, Morphologisches Jahrbuch*, 42: 397, 1911.

rather than the result of either external or internal traction.

A point worthy of note is the distinction that can be made between the elongated process found in persons guilty of tight lacing or tight jackets, and the lobular enlargements that occur from other factors, such as gallbladder traction. In the former, the right lobe is separated from the liver proper by merely a dense fibrous band, but in cases of Riedel's lobe it seems to be true hepatic tissue. In a manner, Moynihan⁶ supports Riedel's theory as to the gallbladder traction on the right lobe. Eighteen months after a cholecystectomy on a woman suffering from an enlarged hepatic pedicle, he noticed that the pedicle had disappeared. He also found that the enlargements were a frequent complication of gallbladder calculi. That this condition could simulate other conditions was brought out by a

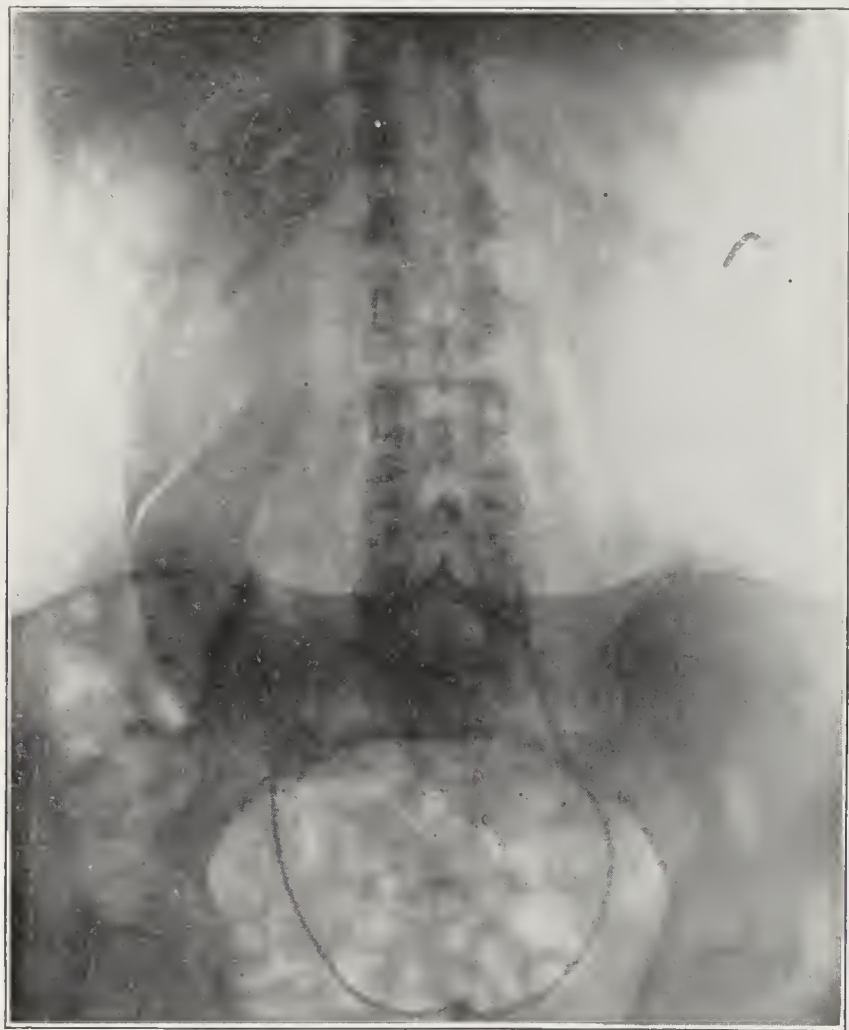


Fig. 2.—Simple roentgenogram, bringing out nicely the right lobular prolongation (Riedel's lobe); the kidney does not appear.

case, at first thought to be a kidney tumor, which later proved to be a lobular enlargement of the liver.

Again in 1920, O'Connor⁷ showed in his two cases the difficulty of accurate preoperative diagnosis. The first case was diagnosed as a pyonephrosis, with possibilities of a perinephritic abscess. At operation, he found a normal kidney, but an elongated liver lobe extending to the ramus of the pubis. His second case suggested such variations in diagnosis as hypernephroma, acute obstruction and Addison's disease. After operation, however, this also showed a large Riedel's lobe extending to the superior iliac spine, with a normal kidney.

Diagnosis appears off-hand to be quite simple with our available cystoscopic and roentgen-ray apparatus, but we are often misled. A palpable notched mass below the right costal border, freely movable, will

undoubtedly bring the thought of the kidney to our minds. Later, in order to check up on the tentative diagnosis, we resort to pyelography, and in all probability place the patient in the sitting posture previous to the roentgen-ray examination. As a result, the pyelogram demonstrates a kidney pelvis a little below the crest of the ilium, and shows an outline of a ptosed kidney. The thin, tongue-like process of the liver as a rule does not show up in this picture, and we are left ignorant of the actual status of affairs until the operation. In those cases in which the liver is demonstrated on roentgenograms and pyelography has been omitted, we are most likely to err in calling the unusual shadow kidney, especially after palpating a large mass in the right flank; the same error can easily be made when the picture is partially obscured by gas.

It is quite true that renal tissue⁸ on palpation usually retains the kidney shape and is rounded, but often the abnormal liver lobe will simulate this so closely that the differentiation is impossible if one resorts to this method of examination alone. However, one important factor in differentiation is that renal tissue does not descend as freely on inspiration as do liver enlargements, although this observation is of little value in a floating ptosed kidney which is freely movable in the upper right quadrant.

One can usually grasp an enlarged kidney bimanually and push it down into the loin; this is an impossible feat with liver tumors. Also, renal tumors in their process of enlargement generally project downward and forward, and seldom cause the posterior prominence that liver tumors do.

The urinary findings may aid one in diagnosis. Kidney tumors, on the one hand, show such changes as frequency of urination, hematuria and deficient renal function, while a nephroptosis is apt not only to show a variance in function but also a pelvic retention with an accompanying infection. Lobular hepatic enlargements, on the other hand, seldom show urinary changes, and these changes are accidental when they do occur.

Reconsideration of the foregoing points will show that pyelography, when available, will prove the most reliable aid in accurate diagnosis.

The case of Riedel's lobe of the liver here reported demonstrates the possibility of error in diagnosis before operation, even though the roentgen ray, cystoscopy and pyelography had been resorted to previously.

REPORT OF CASE

History.—Miss K., aged 63, white, consulted me, March 9, 1922, for pain in the right epigastrium, a mass in the right upper quadrant, and frequency of urination. The family history was grossly negative. She had had occasional attacks of hay-fever and headaches. She had always enjoyed fairly good health. The pain in the right side had troubled her at intervals for the last thirty years. She imagined that the abdomen was increasing in size, and of late she had been suffering from frequency of urination and incontinence. She had felt bloated after eating.

Examination.—On account of the gastric symptoms and the feeling of bloatedness, I referred her to an internist, who reported that the patient was of rather meager build, weighing 113 pounds (51 kg.), and had a rather relaxed abdomen. Examination of the head, heart, and lungs was negative. A large movable mass was felt on the right side which appeared to be the kidney. The epigastrium was very tender, and the patient complained of pain in this region. A test meal showed but 10 c.c. of thin contents one hour after ingestion. The stomach, on inflation, ran down to within 1 inch of the pubis.

8. Cabot, R. C.: *Differential Diagnosis* 1.

6. Moynihan, Berkeley: *Gallstones and Their Surgical Treatment*, Philadelphia, W. B. Saunders Company, p. 145.

7. O'Connor, V. J.: *J. Urol.* 4: 97 (Feb.) 1920.

Free hydrochloric acid was present. No lactic acid was present. Microscopic examination was negative. The stool presented a trace of occult blood. Examination of the urine was negative for albumin but revealed a trace of carbohydrate.

The urine was acid, and its specific gravity was 1.004. Microscopic examination was negative.

Roentgen-ray examination showed no six hour residue. The stomach filled well; it lay to the left and below the navel. The resistance that one felt in the epigastrium was distinctly above the stomach, and probably was the lower edge of the liver or pancreas.

On completion of the internist's examination, the patient was referred back to me. On palpation there could be felt a very large, smooth, movable, mass extending from the costal border to within a few inches of the iliac crest. The lower border of this mass could be grasped bimanually on inspiration.

On cystoscopic examination, the cystoscope encountered no obstruction in the urethra. The bladder capacity was normal. The bladder dome was thrown into folds, and distorted, probably from extra-uterine pressure. A catheter passed into the left kidney pelvis, but was blocked 6 cm. from the right orifice.



Fig. 3.—Short distance to which catheter could be introduced in right ureter owing to ptosed kidney; light area at distal end of catheter shows indistinct kidney pelvis after pyelogram had been made.

Microscopic examination detected pus but no bacteria from the right side, and on the left side was negative.

The functional test was performed, 1 c.c. of phenolsulphone-thalcin being given intravenously. The time of appearance was: right, one and one-half minutes; left, one and one-half minutes; first fifteen minutes, right, 18 per cent.; left, 12.5 per cent.

A pyelogram, 18 c.c. of thorium being injected into the pelvis of the right kidney before any sensation occurred in the right side, showed a marked ptosis of the right kidney with a dilated pelvis and an accompanying hydronephrosis. The picture was partially obscured by the crest of the ilium and by gas. But on closer scrutiny, a faint, tongue-like shadow was seen extending from the right costal border downward into the right flank.

Up to the present time an internist, a surgeon and I had seen this woman and diagnosed the condition as a ptosed kidney; owing to the rarity of Riedel's cases, no suggestions had been even offered as to the possibilities of such a lobular prolongation. However, all had agreed as to the presence of a palpable liver. The point which I wish to bring out is that it was practically impossible on palpation to differentiate renal from hepatic enlargement. Since deeper roentgen-ray penetration is used for the kidney than for the

liver, the roentgenologist likewise would not aid us, for the two organs would not appear on the same plate.

Operation and Result.—The patient was placed in the position for a kidney operation, with the left knee flexed and the corresponding arm and leg extended. A regular kidney incision was made, and after the muscle layers had been cut through, a large, fluctuating mass of adipose tissue was found surrounding the tumor mass and considered to be perirenal fat. On splitting this with the fingers, we found the mass to be a huge tongue of the liver which extended from the diaphragm to the crest of the ilium. The rent in the peritoneum was sewed up and the kidney was located extraperitoneally below the iliac crest posterior to the tongue of the liver. The kidney was normal in size, with an enlarged pelvis. A regular nephropexy was completed. The patient made an uneventful recovery, and was discharged from the hospital the third week.

I might add that the urinary symptoms have cleared up since the operation; that is, incontinence, frequency of urination, pain in the right flank, and pus in the urine. However, she still complains of gastric symptoms occasionally, and the tumor in the abdomen, which one would expect with the liver enlargement.

It is quite probable that all of us had been continually palpating this linguiform process of the liver and considering it kidney. It is also probable that, on change of position, we occasionally palpated the kidney, although it was rather deep in the iliac fossa to permit much palpation.

COMMENT

I would suggest that it is advisable that the urologist always keep Riedel's enlargement in mind when palpating tumors in the right flank, and always perform pyelography before any operative procedure, even though sufficient evidence apparently has been gathered, by palpation and functional tests, to warrant such procedure.

University Club Building.

PYELOTOMY, URETEROLYSIS AND EXTIRPATION OF THE KIDNEY

A SPECIAL TECHNIC

GUSTAV KOLISCHER, M.D.

Attending Genito-Urinary Surgeon, Michael Reese and
Mount Sinai Hospitals

AND

HARRY KATZ, M.D.

Associate and Adjunct

CHICAGO

In exposing deeply seated organs, two principles are to be observed: complete exposure of the organ concerned and the least possible destruction of the covering structures compatible with such free exposure. If, in renal surgery, a flank incision is chosen, the proper position of the patient is one of the decisive factors in providing for good accessibility of the kidney.

The available space is framed by two bony structures—above, the edge of the lower costal arch, and below, the crest of the iliac bone. The farther apart these enclosures are forced, the larger the usable interstice will be. The proper widening of the bony frame will best be accomplished by placing the patient in a lateral position and by putting him on an incline in such a way as to cause bulging of the flank concerned.

Unnecessary destruction may be avoided by employing a muscle splitting procedure in lieu of the usual transverse severing of the covering muscle layers.

The skin incision is placed halfway between the last rib and the crest of the ilium, and deepened until the

fascia also is severed. Now the skin and the fascia together are stripped off the muscles until the latter are denuded upward and downward to the extent of several inches. This is most expeditiously accomplished by employing a sharp, straight edged bone chisel (Fig. 1).

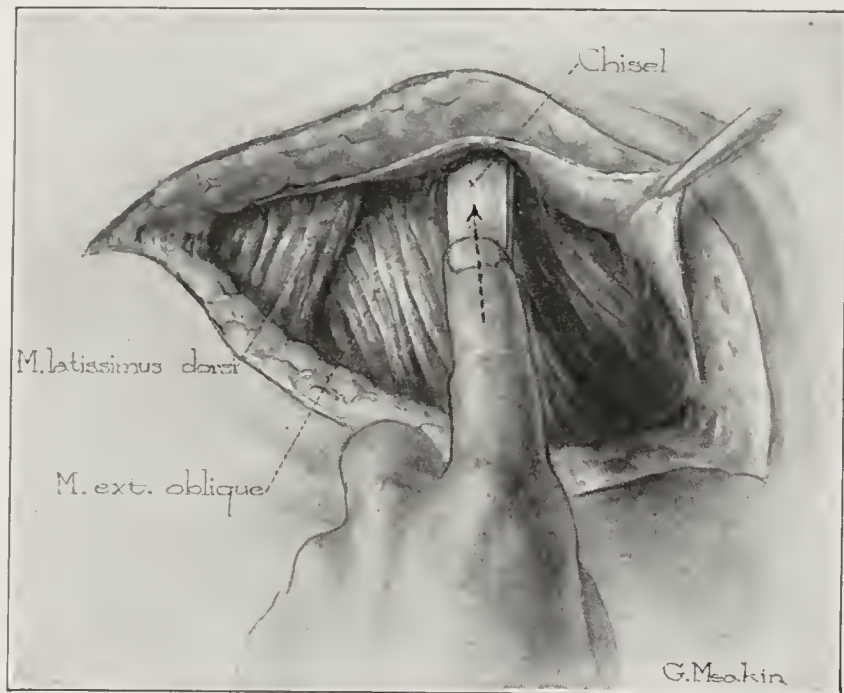


Fig. 1.—The exposed abdominal muscles are denuded by scraping motions executed by a sharp chisel.

This denuding of the muscles is an important step, because the resistance to opening the flank gap widely is offered mainly by the skin and the fascial structures. After the belly of the external oblique muscle is exposed by blunt dissection, its fibers are spread apart in its center; there now appears in the bottom of this fissure the belly of the internal oblique muscle.

This is manipulated in a similar way, leading to the appearance of the transverse muscle; the splitting of this muscle makes the renal fascia visible. The fascia is incised in its center, and the incision is spread by introducing the first two fingers of each hand (Fig. 2).

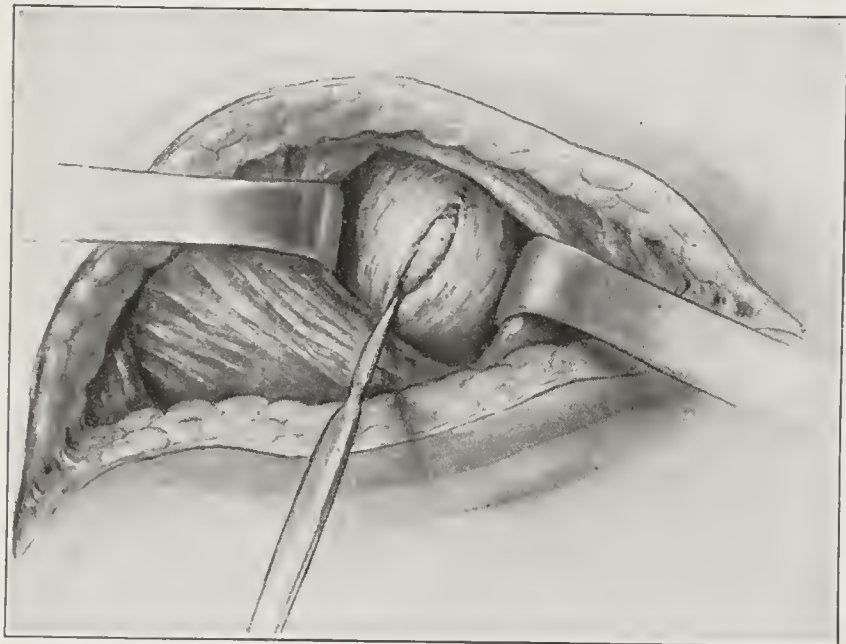


Fig. 2.—After the covering muscles have been spread, the fascia renalis is incised.

Large retractors are now inserted, and by steady traction on them the gap is widened sufficiently to admit a palpating hand. Occasionally, additional resistance is furnished by the inner lamella of the fascia pertaining to the latissimus dorsi. Nicking the anterior edge of this fascia as a rule helps to widen the gap.

A criterion of the success of the muscle splitting is the determination as to whether or not the opening permits the introduction of one hand. If it does, the dislocation of any but an extremely oversized kidney will not present difficulties. It will, of course, always lie within the choice of the operator to cut the muscles.

The advantages of the exposure by this gridiron incision are obvious. There is no hemorrhage to speak of; no muscle stumps have to be reunited, and the

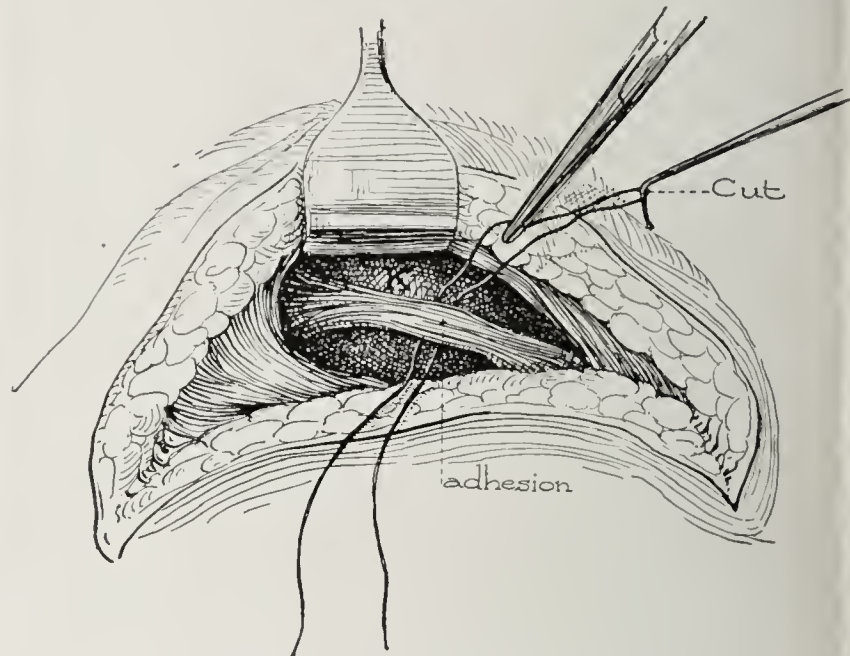


Fig. 3.—Ligating and severing of firm adhesions.

condition of the wound after the necessary renal surgery is finished is simple.

In the technic of extracting the kidney, it is always best to make sure of the topography by carefully pal-

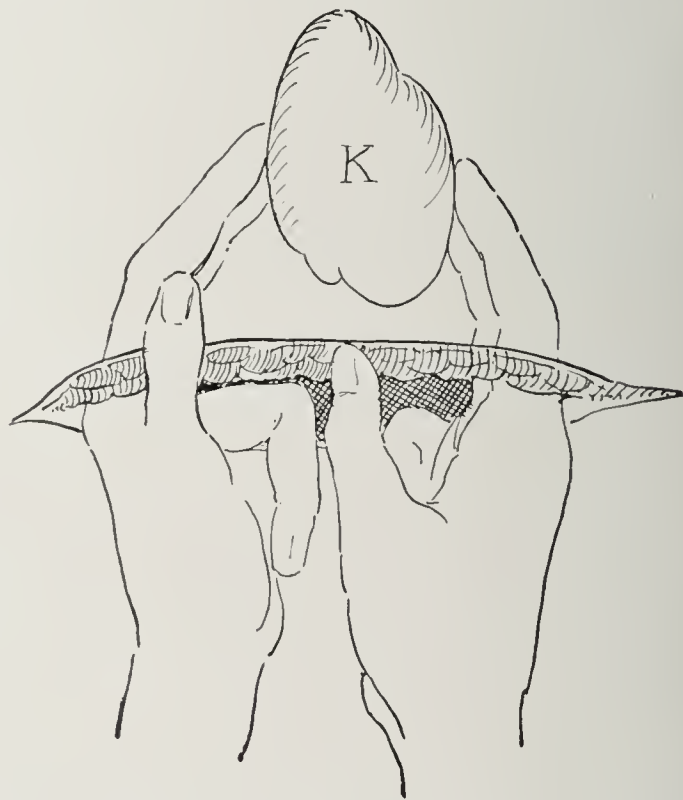


Fig. 4.—Lugging out of the kidney by bimanual manipulation.

pating for the outline of the kidney, the liver and the spleen, respectively. Then the adipose layer around the kidney is bluntly entered and wiped off the kidney by sponge dissection, always working from behind toward the front.

It is of great advantage to begin at the lower pole and to carry the dissection gradually upward. If one encounters rather firm adhesions, it is best to sever these between two ligatures, so as to avoid either tearing into the renal parenchyma or opening up large blood

vessels, which are frequently found within such strands (Fig. 3).

Occasional hemorrhage emanating from the perirenal fat is best controlled and eventually stopped by pressing gauze pads against the bleeding area and keeping them in place with the flanges of the retractors used in clearing the field of operation.



Fig. 5.—Underpadding of the kidney with gauze pads.

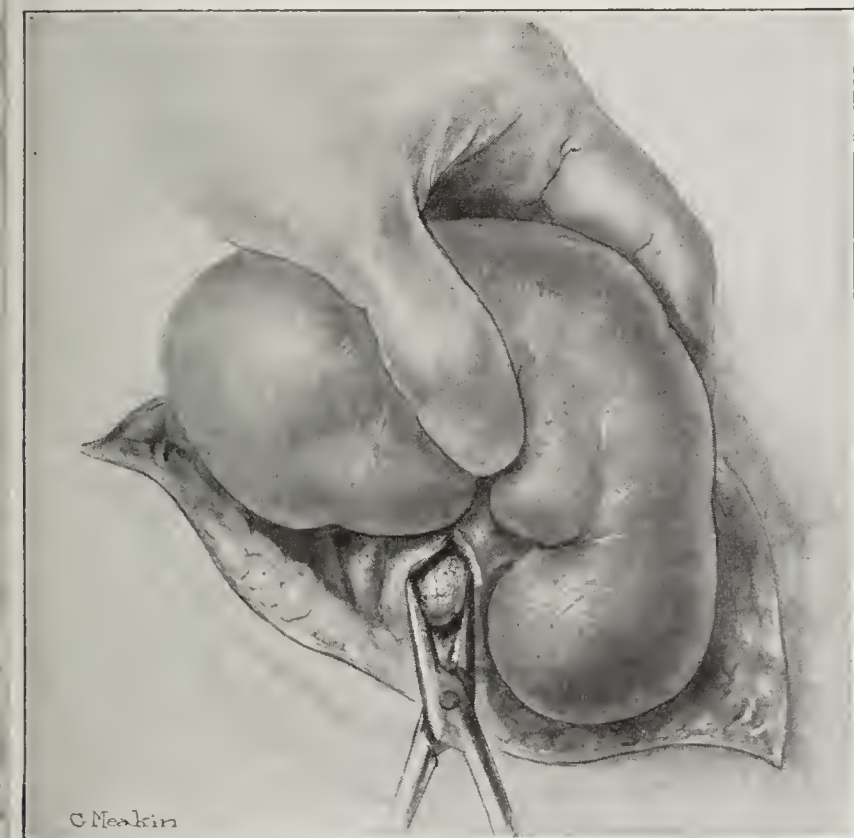


Fig. 6.—Extraction of stone from the incised renal pelvis.

When the kidney is once freed down to its pedicle, circular palpation is employed in order to locate the artery or arteries and at the same time to glean information as to the condition of the ureter and the pliability of the balance of the renal pedicle.

In infectious processes, particularly in tuberculosis of the kidney, the ureter is often infiltrated and shortened. Ligating and severing it as the first step of renal extirpation produces satisfactory results as to the mobility of the kidney.

In trying to dislocate the kidney into the upper region of the incision, it is safer to lift the kidney gradually out of its niche by placing the first two fingers of each hand on its sides and thus bring it upward by burrowing motions, than to grasp the kidney with one hand and try to pull it upward in this way (Fig. 4).

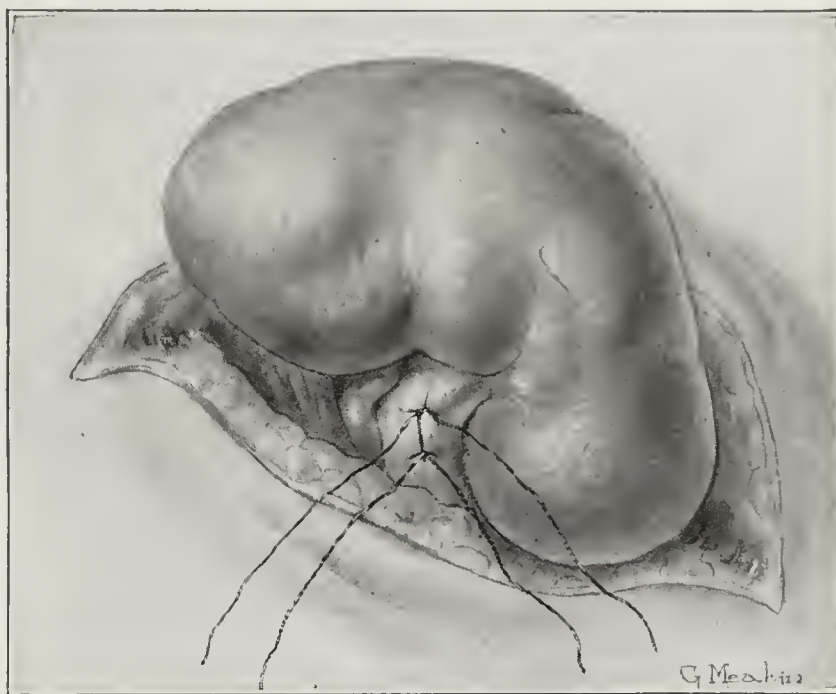


Fig. 7.—Suturing of pelvic incision.

If it is necessary to free the kidney out of a deep recess underneath the costal arch, it is helpful to stabilize the result of each step of development by padding the cavity underneath the kidney successively with large gauze pads, in order to prevent the annoying slipping back of the organ (Fig. 5). This is particularly indicated if the adipose layer is developed to a high degree.

For removal of renal concretions, pyelotomy is now generally accepted as the method of choice. After the posterior aspect of the renal pelvis has been freed, this

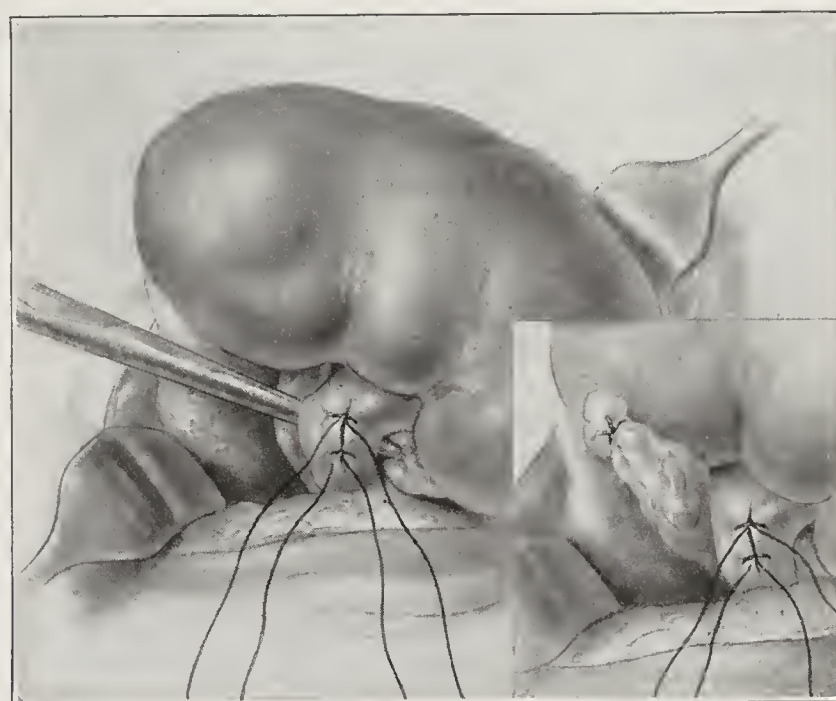


Fig. 8.—Interposition of perirenal fat after ureterolysis.

surface is made to bulge by digital counterpressure, and the pelvic wall is incised with a fine pointed knife. This opening is widened, if necessary, by spreading the tips of artery forceps within its edges, and the stone is extracted with slender stone forceps or a spoon (Fig. 6).

Irrigation with sterile water follows in order to flush out any débris or gravel. The pelvic incision is closed with two fine catgut sutures, care being taken not to bring the sutures within the pelvic cavity. The ends

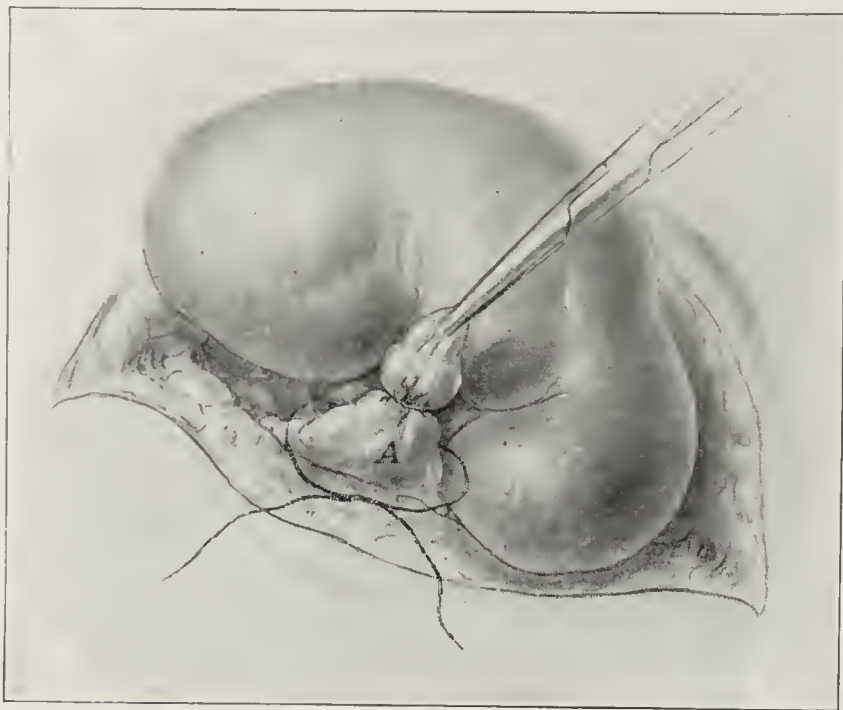


Fig. 9.—Transplantation of fat over the pelvic sutures.

of these sutures, after being tied, are left long for further use (Fig. 7).

In case it is necessary to resort to ureterolysis on account of pathologic attachment of the uppermost end

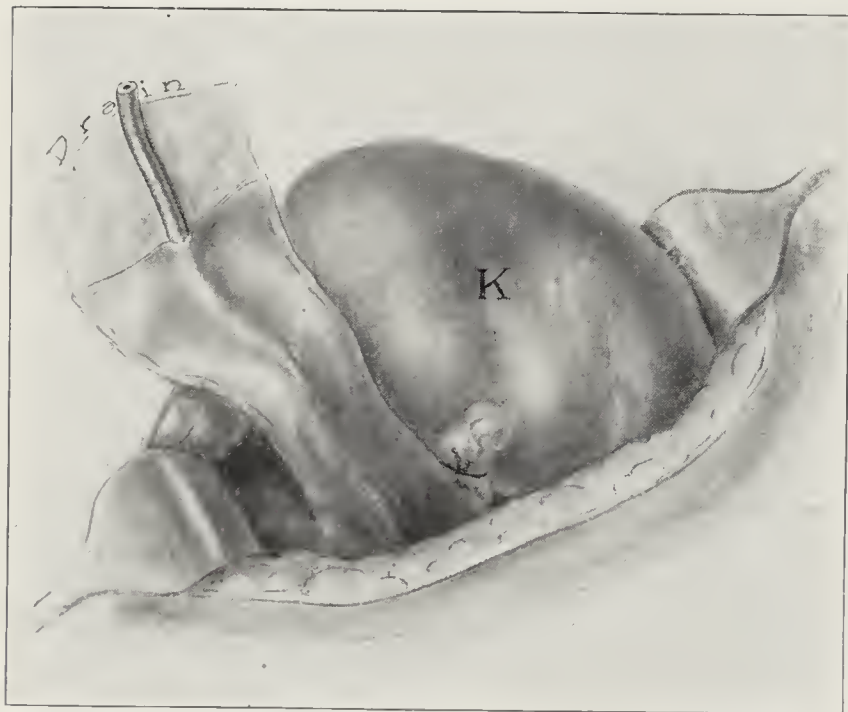


Fig. 10.—Insertion of Bullock drain previous to the replacing of the kidney.

of the ureter, a piece of perirenal fat may be drawn between ureter and kidney, and the free end of this transplant fixed with a catgut suture to the fibrous capsule of a renal pole (Fig. 8). Then another piece of perirenal fat is drawn between the long ends of the pelvic sutures, and fastened over the incision by tying the suture ends over it (Fig. 9).

While it is true that in many instances the pelvis will heal without suturing and fat transplantation, the procedure as described furnishes desirable safeguards.

A Bullock drain is passed down, facing the surface of renal operation, and after this insertion the kidney is replaced. This arrangement prevents any stripping

off of the transplant, which may occur if the kidney is replaced first and the drain inserted afterward (Fig. 10).

If the removal of a kidney is decided on, special technical appliances and their proper employment will facilitate matters, and at the same time guarantee definite and reliable hemostasis.

The use of a doubly fenestrated aneurysm needle makes it much easier to swing the ligatures around the isolated parts of the vascular pedicle. A blunt hook is used for pulling the threads out of the eyelets. The

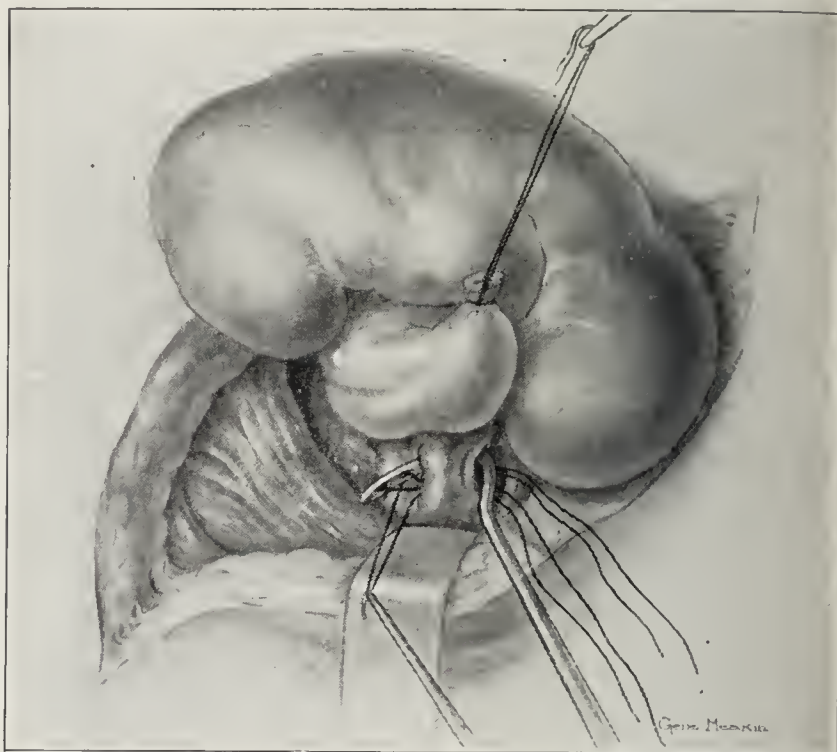


Fig. 11.—Placing of ligatures with the bi-fenestrated aneurysm needle.

employment of this instrument not only facilitates this procedure but also avoids damaging of the ligatures (Fig. 11).

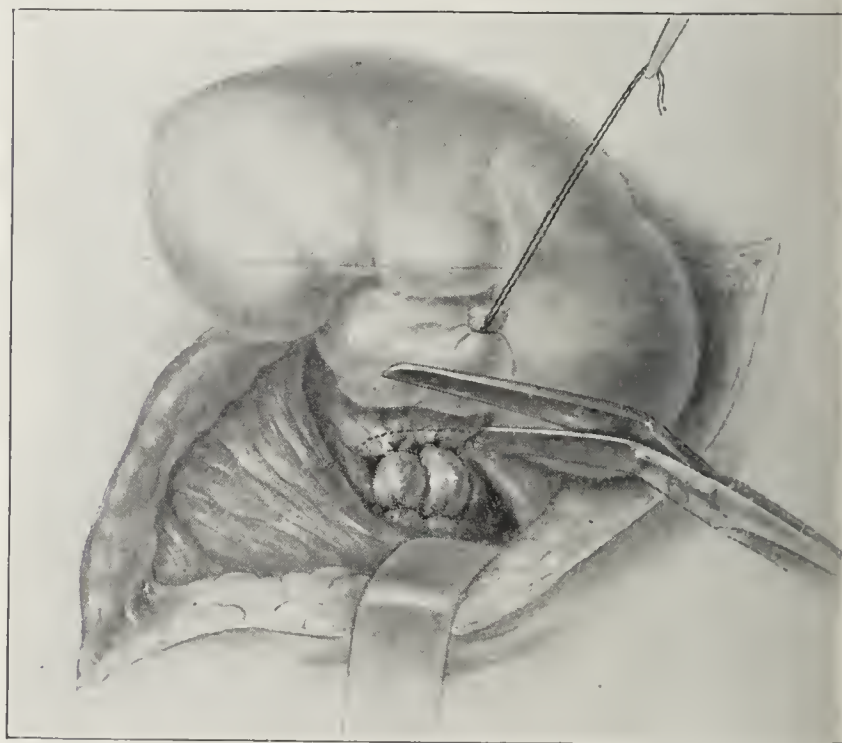


Fig. 12.—Both sets of ligatures around the blood vessels tied; ureteral stump drawn upward.

In order to prevent any slipping of the tied loops, a double set of ligatures is applied. In this way, a bulge between the two rows of ligatures is produced, furnishing absolute safety as to hemostasis (Fig. 12).

108 North State Street.

THE DANGER OF LIQUID PETROLATUM
IN PARENTERAL INJECTIONS *

FRED. D. WEIDMAN, M.D.

PHILADELPHIA

I wish first to touch on the injection of paraffin, a substance which, while not an oil, has a similar pathologic significance, besides being closely related chemically to liquid petrolatum. Furthermore, the more recent findings in connection with liquid petrolatum injections throw a side-light on the paraffin ones which justify this digression.

PARAFFIN INJECTIONS

Every medical man is by this time aware of the untoward effects which sometimes follow the injection of paraffin for cosmetic or other purposes; so much so, in fact, that the term paraffinoma now has a familiar ring, and that the use of this substance in plastic surgery has been almost abandoned.

Davis¹ brings out that not every person thus treated develops a paraffinoma—that there must be a predisposition on the part of the patient; and, from this the final verdict for or against paraffin must depend on the frequency of the development of paraffinomas in relation to the benefit that will accrue from its use. His conclusion on this point is that “the affliction is common enough to clothe the procedure with a distinct risk,” and Oppenheimer² likewise expresses an unfavorable opinion.

Mort,³ on the other hand, believes that he has avoided the untoward effects by carefully selecting his paraffin; i. e., using one with a high melting point. In effect, Mort has been eliminating the lower fractions from his paraffins, the ones more closely related to the liquid petrolatum which has been found both clinically and experimentally to be responsible for swellings practically identical with paraffinomas; and, in all fairness, the whole general subject of paraffin cosmetic work should be reopened, or at least we should hold our minds open in the matter until hard paraffins have been duly incriminated in their turn. I feel that ultimately the same fate will befall the hard paraffins as did the softer ones; for the tissue reaction against paraffin is that of a nonspecific foreign body, and I believe that some day it will be shown that certain individuals have a tendency to react unduly against formed foreign bodies in general, by the familiar tissue proliferation in which giant-cells are so conspicuous, in a way that other individuals do not. So that, provided the individual's tissues are thus disposed, the foreign body reaction will take place regardless of whether the foreign body is hard paraffin, soft paraffin, liquid petrolatum, celloidin or cellulose. However, this is a personal opinion and cannot stand in the way of experimental tests of the hard paraffin injections.

Let us pass now to the subject of liquid petrolatum injections, in which, in practice, the liquid petrolatum

has acted, for the most part, as the vehicle for camphor and the insoluble mercurial salts.

CAMPHORATED OIL INJECTIONS

Of the “tumors” which we can charge against liquid petrolatum, the first to be described were the sequels of camphorated oil injections, liquid petrolatum having been used as the excipient instead of the official olive oil. They were accordingly denominated “camphorated oil tumors.” By now, a dozen or more such misfortunes have been recorded, from France and Germany as well as the United States.⁴ These “tumors,” be it said at once, are not neoplasms. In substance, they are foreign body granulomas having the peculiarity of progressiveness by virtue of the labile character of the exciting agent, an unabsorbable oil, which they contain, and they even extend in more or less linear fashion along lymphatic channels quite to the regional lymph nodes. While they are not a matter of life and death, they are discommoding and disfiguring. Surgery is the only treatment, and this is often unsuccessful on account of recurrences. Of course, such recurrences may be conceivably prevented by a sufficiently radical operation, but the difficulties here may be appreciated in those cases in which the whole deltoid region is

affected and extension has taken place to the axillary lymph nodes. All of this is most disconcerting in connection with a preventable disease, and one that has been produced at the hands of the profession.

Taken on the whole, the tumors that result from camphorated oil injections do not bulk large in general practice, because it is only exceptionally that liquid petrolatum is substituted as the vehicle for camphor. In one hospital, however, I found that the camphorated oil used for rubbing purposes was, as a routine, made up in liquid petrolatum, while that for injections was the official article made up in olive oil. The possibility of an inter-

change between the two in the wards must occur to any one. Probably the most important aspect of the camphorated oil tumors today is their identification from tuberculomas, gummas and sarcomas, but the matter of differential diagnosis does not fall within the scope of this paper.

INSOLUBLE MERCURIAL INJECTIONS

I have written this paper because this class of injections is so commonly practiced today, because liquid petrolatum continues to be used as the base for such injections, and because injections of all classes are destined to be used more and more in the future. That is, the liquid petrolatum tumor situation is calculated to become worse rather than better. There is a real issue before us. Already, in spite of the warnings that have been sounded in connection with camphorated oil injections, there are indications in the literature that tumors have developed at the site of mercurial injections.⁵ And it is in the nature of medical things that tumors resulting under these circumstances should



“Tumor” resulting from injection of liquid petrolatum three months previously.

* Read before the Philadelphia County Medical Society, April 11, 1923.

* From the Laboratory of Dermatological Research, Department of Cutaneous Medicine, University of Pennsylvania.

1. Davis, B. F.: Paraffinoma and Wax Cancer, *J. A. M. A.* **75**: 1709 (Dec. 18) 1920.

2. Oppenheimer, S.: *Laryngoscope* **30**: 595 (Sept.) 1920.

3. Mort, S.: *Lancet* **2**: 105 (July 19) 1919.

4. Bibliography in Weidman, F. D., and Jefferies, M. S.: Experimental Production of Paraffin Oil Tumors in Monkeys, *Arch. Dermat. & Syph.* **7**: 209 (Feb.) 1923.

5. DuBois: *Abst. Schweiz. med. Wchnschr.* **51**: 136, 1921. Mook, W. H., and Wander, W. G.: Camphorated Oil Tumors, *J. A. M. A.* **73**: 1340 (Nov. 1) 1919. Cole, H. N.; Littman, Sidney, and Sollmann, Torald: Study of Mercury Injections by Means of Roentgen Ray, *J. A. M. A.* **75**: 1559 (Dec. 4) 1920.

not be widely advertised; indeed, there are good reasons why they should not be reported in the literature in addition to the reasons for unreported medical cases in general. Thus, since the injections are made intramuscularly, the tumors will be deep-seated and excite less remark than the camphorated ones. The tumor, unless it becomes very large, may be ascribed to the effects of the mercury. Again, it is the lesser of the patient's evils, and will be acquiesced in by him as part of his vice and kept secret, perhaps regarded both by him and by his physician as of syphilitic causation. We say nothing of the likelihood of medicolegal considerations. One of the most recent reports was in conjunction with Halberstädter's⁶ case of liquid petrolatum tumors of the face which were induced by cosmetic injections, and it came out in the discussion which followed that mercury and paraffin injections had induced the same kind of lesion. I have had one case, that of a nurse, who had received mercurial injections ten years previously and had nodular infiltrations the size of an orange in her arms and thighs.

After the camphorated oil and facial surgery experiences, the profession should naturally look to some other base; and, as a matter of fact, the proprietary drug houses have sensed the situation, and have made mercuric salicylate available in ampules of cacao butter, goose-grease, lard oil, olive oil and oil of sweet almonds in addition to liquid petrolatum—not to mention the secret compounds, which are naturally always open to suspicion. A canvass of several of the largest drug stores in Philadelphia shows that the liquid petrolatum preparation is still very widely used: "is most popular," as the leading druggist puts it. And whereas Sutton⁷ deprecates its use, another dermatologist continues to recommend it in his textbook without warning of any untoward effects.

In the end, a final opinion as to the propriety of employing liquid petrolatum and mercury preparations will depend on several considerations: 1. Proving that they continue to be frequently used today. I take it that enough has been said to cover this point. 2. Showing that, thus used, they induce tumors frequently enough to create an issue. This has also largely been covered, but I wish to add that three of the five monkeys (60 per cent.) injected with liquid petrolatum by Dr. Jefferies and myself⁸ developed tumors. 3. The end justifying the means. Liquid petrolatum injections would have to stand in spite of the occasional tumor production if there were no other recourse than the liquid petrolatum base, for the benefit accruing from such injections would far outweigh the occasional tumors. It is paramount to cure syphilis. But the real point is that there is an alternative. In our experiments on monkeys, olive oil excited no such lesions, and olive oil has been injected in conjunction with camphor countless times without adverse reports that I can find; probably the numerous other oils that are susceptible of saponification and absorption would be just as bland in the small dosage necessary for mercurial injections.

Under these circumstances, I feel strongly that we are not doing our utmost for our patients when we continue to use the liquid petrolatum base. We might successfully gamble with eight, nine or ten patients, but what of the eleventh? The foregoing considerations

apply with equal force to injections of other soluble substances, such as the bismuth salts which have been on trial recently.

INJECTIONS INTO SEROUS CAVITIES

I find one report of injection of liquid petrolatum into the "scrotum" (which may or may not have referred to the tunica vaginalis testis). This was done to induce a lesion which would prevent conscription into the Italian army.⁹ The usual liquid petrolatum tumor resulted, and final diagnosis was made from the histologic appearance.

Injected into the peritoneal cavity, oils have variable effects. It appears that whereas small quantities of various oils may be absorbed from the peritoneal cavity, larger ones cannot. Thus, Schwartz¹⁰ found that pressed peanut oil remained in the peritoneal cavity of all the commoner laboratory animals for twenty-four weeks, and that oil cysts developed within a month. If this is true for a vegetable oil, certainly the notorious liquid petrolatum would behave at least similarly. Other workers¹¹ have noted, in passing, the mildly irritative qualities of various oils on the peritoneal lining of animals.

In an attempt to avoid the repeated injections of air in artificial pneumothorax, Archibald¹² injected liquid petrolatum into the pleural cavities of various animals. He found that it did not produce the desired result, because it was not quite inert—only 50 per cent. of it could subsequently be withdrawn on account of inflammatory encapsulations and pocketings. Secondary infection was controlled and eliminated as a possible factor in this. Rost¹³ found that liquid petrolatum, when injected into the peritoneal cavity of guinea-pigs, produced "poisonous" effects.

CHAULMOOGRA OIL INJECTIONS

Lukens¹⁴ has been using this drug highly diluted with liquid petrolatum, by intratracheal and intralaryngeal insufflation. His methods and reports were not calculated to throw any light on the liquid petrolatum reactions.

In addition to chaulmoogra oil, Corper and Freed¹⁵ have insufflated liquid petrolatum and olive oil into the lungs of rabbits. All three oils induced lesions which persisted for two months. Olive oil and liquid petrolatum behaved alike, inducing a mild type of proliferative bronchopneumonia. This persisted for months.

From widely separated spheres of medical endeavor, thus, come the reported experiences with liquid petrolatum—from the internist, the dermatologist, the syphilologist, the surgeon, the laryngologist and the experimenter in tuberculosis. Furthermore, the sites of injection have been various; but in all cases the results have presented the same theme; i. e., a low-grade inflammatory hyperplasia which may rise to the level of tumors. After all this, we must feel convinced that the liquid petrolatum which we have considered so inert and bland when applied to the skin or administered by mouth is by no means free from untoward effects when

9. Bivona, S.: *Polielinico (sez. prat.)* 28: 854 (June 20) 1921.

10. Schwartz, E. W.: *J. Pharmacol. & Exper. Therap.* 17: 115 (March) 1921.

11. Petersen, W. F., and Levinson, S. A.: *Resistance to Experimental Peritoneal Tuberculosis Following Oil Injections*, *Am. Rev. Tuberc.* 6: 1035 (Jan.) 1923.

12. Archibald, E.: *Compression of Lung by Paraffin Oil in Pleural Cavity*, *Am. Rev. Tuberc.* 6: 898 (Dec.) 1922.

13. Rost, E.: *Med. Klin.* 17: 35-36 (Jan. 9) 1921.

14. Lukens, R. M.: *Chaulmoogra Oil in the Treatment of Tuberculous Laryngitis*, *J. A. M. A.* 78: 274 (Jan. 28) 1922.

15. Corper, H. J., and Freed, H.: *Intratracheal Injection of Oils for Diagnostic and Therapeutic Purposes*, *J. A. M. A.* 79: 1739 (Nov. 18) 1922.

6. Halberstädter: *Abst. Arch. Dermat. & Syph.* 7: 565 (April) 1923.

7. Sutton, R. L.: *Diseases of the Skin*, Ed. 4, St. Louis, C. V. Mosby Company, 1921, p. 812.

8. Details of experimental results in Weidman and Jefferies (Footnote 4).

ected into tissues, but that, on the contrary, it is capable of producing important and permanent disturbance which may necessitate surgical interference. I recommend, therefore, that since other oily bases are readily available, all physicians should turn from the old track and decline to use liquid petrolatum any further for medicinal parenteral injections.

INTRAPERITONEAL TRANSFUSION WITH CITRATED BLOOD*

J. MARTIN SANSBY, M.D.

AND

DAVID M. SIPERSTEIN, M.D.

MINNEAPOLIS

The difficulties encountered in the transfusion of blood in infancy and early childhood have prompted numerous investigators to attempt other simpler procedures. Consequently, the use of blood in infants and children has been confined until recently to (1) subcutaneous or intramuscular injection of blood; (2) the introduction of blood into one of the larger peripheral veins, and (3) transfusion into the superior longitudinal sinus.

The subcutaneous or intramuscular injection of blood, which is now used chiefly in the treatment of hemorrhagic disease of the new-born, was at one time considered effective in conditions in which a transfusion was indicated. That this method is not in a strict sense a blood transfusion is substantiated by Taylor,¹ who found that only a small number of the cells so injected ever reach the circulation.

Transfusion by the use of one of the larger peripheral veins has been attended in many cases with much difficulty in the hands of one not adept in blood vessel surgery. Not infrequently, after the surgeon has succeeded in exposing a vein, he finds that it is too small for practical use. The shock incident to this procedure and the local loss of blood in an already weak and puny infant may be of vital importance. We have not infrequently encountered cases in which, after the median basilic vein was exposed, little or no blood could be given on account of its small caliber.

Transfusion through the superior longitudinal sinus, which was first advocated by Tobler² in 1915 and popularized by Helmholz³ the same year, has proved to be of great value in infants in whom this route is available. However, many investigators have from time to time pointed out the dangers inherent in puncturing the superior longitudinal sinus.

Under these circumstances it seemed desirable, if possible, to use a method that would be practically free from mechanical difficulties and dangers.

In a previous paper⁴ we attempted to show experimentally that freshly citrated blood, when injected immediately into the abdominal cavity, is absorbed in a comparatively short time, without the formation of clots or adhesions. We found that the injected red

blood cells entered the circulation without apparently undergoing any change in size, shape or structure. We concluded that this procedure acted as a true transfusion and suggested it as a therapeutic method of possible merit.

Subsequently one of us,⁵ in a clinical study, substantiated further the efficacy of the intraperitoneal avenue of approach. In some of his cases he was able, apparently, to differentiate the erythrocytes of the donor in the blood of the recipient. He was unable to notice any toxicity due to the injected blood. He concluded that the intra-abdominal route could be utilized in cases in which transfusion is indicated and when other means are unavailable and impracticable.

It is our purpose now to present several other cases in which the intraperitoneal route for blood transfusion was utilized.

MATERIALS AND METHODS

The clinical diagnoses in the cases here presented are (1) malnutrition and congenital syphilis; (2) prematurity and third degree cleft palate; (3) erysipelas, and (4) fibroid uterus and secondary anemia. The hemoglobin estimations were made with the Fleischl-Miescher hemoglobinometer.

The patients were not given any breakfast on the morning of the transfusion. Both recipient and donor were grouped, and in some cases cross grouping was resorted to. Ten cubic centimeters of a freshly prepared 2 per cent. sodium citrate solution was used to every hundred cubic centimeters of the donor's blood. The donor's blood was then strained through sterile gauze, and, all aseptic precautions being observed, was immediately injected into the peritoneal cavity of the recipient with a glass syringe equipped with a blunt-pointed needle. The site of the injection is preferably lateral to the midline, one-half inch below the umbilicus. Two points which deserve emphasis in this procedure are: 1. The citrated blood must be fresh and it must be kept at body temperature. 2. The blood should be injected immediately. Details of the amounts used and results obtained are given in the protocols and in the charts.

REPORT OF CASES

CASE 1.—Malnutrition; congenital syphilis. *History.*—An infant, aged 8 weeks, admitted to the service of Dr. F. C. Rodda, at the University Hospital, Jan. 23, 1923, because of loss of weight, had been born at full term, with normal delivery, and weighed 4,000 gm. at birth. It had been breast fed from birth to two weeks before admission. The parents were syphilitic, and were receiving antisyphilitic treatment. One brother, aged 1½ years, was living and apparently well.

Examination.—The child was extremely emaciated and very dehydrated, pale and with marked loss of subcutaneous fat and turgor. It weighed 2,880 gm.; the temperature was 97, and the pulse, 88. The eyes, ears, nose and throat were normal, and there was no adenopathy. The heart and lungs were normal. The liver and spleen were not enlarged; both the upper and lower extremities were normal, as were also the genitalia.

Blood examination revealed: hemoglobin, 87 per cent.; erythrocytes, 5,720,000; leukocytes, 13,000; differential count: polymorphonuclears, 57 per cent.; lymphocytes, 40 per cent.; transitionals, 2 per cent.; eosinophils, 1 per cent.; nucleated red cells, 1.

The urine, Feb. 7, was straw colored, and acid in reaction. There was a slight sediment. There was no albumin, sugar, phosphate or pus. Subsequent urine examinations were also

5. Siperstein, D. M.: Intraperitoneal Transfusion with Citrated Blood, *Am. J. Dis. Child.* **25**: 202 (March) 1923.

* From the Department of Pediatrics, University of Minnesota Medical School.

1. Taylor, Rood: The Fate of Subcutaneously Injected Red Blood Cells, *Am. J. Dis. Child.* **20**: 337-340 (Oct.) 1920.

2. Tobler, L.: Zur Technik der diagnostischen Blutentnahme und der intravenösen Injektion beim Säugling, *Monatschr. f. Kinderh.* **8**: 384, 1915.

3. Helmholz, H. F.: The Longitudinal Sinus as a Place of Preference in Infancy for Intravenous Aspirations and Injections, Including Transfusion, *Am. J. Dis. Child.* **10**: 194 (Sept.) 1915.

4. Siperstein, D. M., and Sansby, J. M.: Intraperitoneal Transfusion with Citrated Blood, *Am. J. Dis. Child.* **25**: 107 (Feb.) 1923.

negative. The blood Wassermann reaction was negative repeatedly. The patient was found to be in Group II.

Progress.—The child on admission was fed by gavage on lactic acid milk formulas. After being in the hospital one month, it had not gained in weight to any extent. It appeared to be progressively growing weaker and more apathetic.

February 25, a severe anemia was evident. Blood examination showed: hemoglobin, 15 per cent.; erythrocytes, 1,340,000; leukocytes, 31,400; differential count: polymorphonuclears, 46 per cent.; lymphocytes, 46 per cent.; eosinophils, 6 per cent.; basophils, 1 per cent.; nucleated red cells, 1. The erythrocytes had definite pale centers. Anisocytosis was also present. The weight was 2,920 gm.

The child was given 50 c.c. of citrated blood intraperitoneally. There was practically no temperature reaction, and there was no abdominal distention.

February 26, the blood picture showed slight improvement. Antisyphilitic treatment was instituted; mercury with chalk, 1 grain, three times a day, and 2 minims of 1 per cent. solution of mercuric chlorid intramuscularly twice a week.

increasing from 15 to 80 per cent. in one month (Table 1, Chart 1). The patient's weight and general condition went hand in hand with the improvement in the blood picture. It is difficult to attribute such a marked change to the mercury treatment, which

TABLE 2.—Blood Examination in Case 2.

Date	Hemoglobin Per Cent.	Erythrocytes	Comment
3/7	80	5,000,000	
3/26	85	4,900,000	
3/27	75	4,720,000	100 c.c. of citrated blood intraperitoneally
3/29	85	5,590,000	

extended over a period of only ten days. While it appears that small doses of mercury administered over an appreciable length of time may, in some instances, influence the hemoglobin and erythrocyte count,⁶ it is

not at all probable that a day's treatment should account for a rise in hemoglobin from 22 to 43 per cent. This improvement persisted even after the withdrawal of mercury. It would therefore appear that the medication in this case had little effect on the blood picture and the general condition.

CASE 2.—Prematurity; third degree cleft palate. History.—An infant, aged 10 days, admitted, Feb. 27, 1923, to the pediatric service of Dr. E. J. Huenekens at the Minneapolis General Hospital, because of loss in weight and a third degree cleft palate, was two months premature. The birth weight was 2,500 gm. The family history was negative. Four other children were living and well.

Examination.—The child appeared markedly undernourished, and presented a number of congenital malformations. The left eyeball was not developed, and the lids of that eye were adherent. The right eye showed a mild conjunctivitis. The weight was 2,200 gm. Physical examination was otherwise negative.

February 28, the urine examination was essentially negative.

The blood examination, March 7, revealed: hemoglobin, 80 per cent.; erythrocytes, 5,000,000; leukocytes, 29,700; differential count: polymorphonuclears, 58 per cent.; lymphocytes, 36 per cent.; transitionals, 6 per cent. The blood Wassermann reaction was negative. The coagulation time was five minutes; the bleeding time, two minutes.

Progress.—The child, on admission, was fed, by gavage, casein milk formulas with increasing amounts of dextrimaltose. One month after admittance, there was very little increase in weight. During the child's entire stay in the hospital, its condition remained practically unchanged.

March 27, the child was listless; it weighed 2,060 gm.

March 28, 100 c.c. of citrated blood was given intraperitoneally.

March 30, the child died. At necropsy, 20 c.c. of thick, viscous material was recovered. No clots or adhesions were present.

CASE 3.—Erysipelas. History.—An infant, aged 7 weeks, admitted to the contagious service at the Minneapolis General

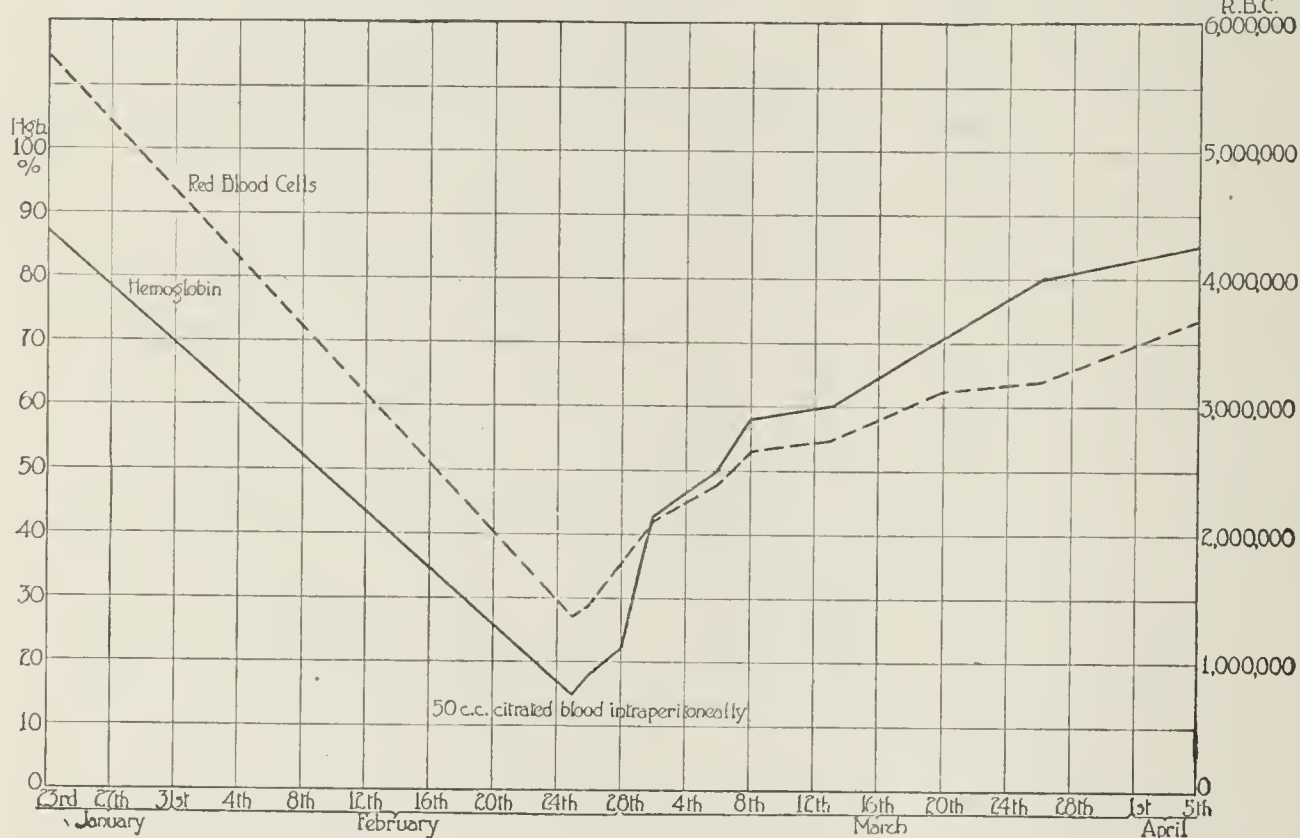


Chart 1 (Case 1).—Hemoglobin and erythrocyte curves.

March 2, the child appeared a little brighter.

March 6, it took food well.

March 10, antisyphilitic treatment was discontinued.

March 13, the child was much improved. Gavage feeding was supplemented by bottle feeding.

TABLE 1.—Comparative Data Regarding Hemoglobin and Erythrocyte Counts in Case 1

Date	Hemoglobin Per Cent.	Erythrocytes	Comment
1/23	87	5,720,000	
2/25	15	1,340,000	Intraperitoneal transfusion of 50 c.c. of citrated blood
2/26	18	1,440,000	
2/28	22	1,760,000	
3/2	43	2,110,000	March 1, antisyphilitic treatment instituted
3/6	50	2,400,000	
3/8	58	2,650,000	
3/13	60	2,730,000	March 10, antisyphilitic treatment discontinued
3/20	71	3,123,000	
3/26	80	3,192,000	
4/5	85	3,690,000	

March 26, the child's condition was good. It weighed 3,480 gm.

March 29, it weighed 3,600 gm.

April 5, the child was discharged.

This case is interesting because of the apparent rapid response to a single transfusion, the hemoglobin

6. Keyes, E. L.: The Effect of Small Doses of Mercury in Modifying the Number of Red Blood Corpuscles in Syphilis, *Am. J. M. Sc.* 71: 17, 1876.

Hospital, March 26, 1923, because of restlessness, and a rash on the elbow and hip of one week's duration, had been born at full term, with normal delivery. The family history was negative. The past history was negative except for a slight swelling on the right side of the neck a week previous to admission. This disappeared spontaneously.

Examination.—The child was fairly well developed, but undernourished and crying as though in pain. The temperature was 103.6 F. The face and neck presented slight redness, more marked on the nose. There was slight adenopathy of the anterior cervical glands. The mouth showed a questionable stomatitis involving the palate. The eyes, ears, heart, lungs, abdomen, liver and spleen were all normal; the buttocks presented a discrete area of redness and swelling about 12 inches in circumference. The extremities were normal except for a similar redness and swelling involving both wrists and forearms.

The urine examination, March 27, was essentially negative. Repeated examinations were negative. Unfortunately, no blood examinations were made.

Progress.—The child, on admission, was fed on breast milk, complemented with casein milk and 5 per cent. dextrimaltose. Magnesium sulphate solution and alcohol-glycerin packs were applied to the inflamed areas.

March 29, the inflammation appeared to be spreading down the right lower limb.

March 30, the inflammatory process was extending toward the left axilla anteriorly.

March 31, the entire left foot was inflamed. The temperature ranged between 101.6 and 103.6. The child's condition was bad. There was marked pallor. It refused food.

April 1, the redness was spreading over the chest. The child's condition was serious. The temperature was 102. Severe secondary anemia was evident; 70 c.c. of citrated blood was given intraperitoneally. There was no temperature reaction.

April 2, the child appeared improved. It took feedings well. The fever was declining.

April 4, the redness was disappearing, the color, improving; the temperature was 99.

April 6, the inflammatory process had entirely gone; medication was discontinued; the temperature was 98.

April 7, the child was discharged.

April 18, outpatient department examination was negative; the child was in good condition.

TABLE 3.—Comparative Data Regarding Hemoglobin and Red Blood Cell Counts in Case 4

Date	Hemoglobin Per Cent.	Erythrocytes	Comment
3/13	38.5	3,000,000	
....	....	.....	3/16, 300 c.c. of citrated blood intravenously
3/20	35.0	2,930,000	
3/23	38.5	2,730,000	
3/26	45.0	3,200,000	
3/29	45.0	3,610,000	
3/30	42.0	3,350,000	500 c.c. of citrated blood intraperitoneally
3/31	45.0	3,950,000	
4/1	45.0	3,900,000	
4/2	52.0	4,120,000	
4/3	52.0	4,000,000	
4/4	60.0	4,320,000	
4/6	70.0	4,880,000	
4/7	70.0	4,760,000	
4/14	70.0	4,730,000	Day of operation
4/18	66.0	4,800,000	

The patient's general condition improved markedly following the transfusion. Whether or not the transfusion shortened the duration of the disease, we are unable to say.

CASE 4.—Fibroid uterus; secondary anemia. History.—A woman, aged 45, admitted to the service of Dr. F. L. Adair at the Minneapolis General Hospital, complained of a bloody vaginal discharge and some backache. Physical examination and laboratory evidence showed a fibroid uterus accompanied by a marked secondary anemia. In order to prepare the patient for a later operation, an intravenous transfusion of

citrated blood was decided on. Owing to the patient's obesity, it was necessary to expose a vein in the elbow, and, with some difficulty, 300 c.c. of blood was injected. There was apparently no change in the blood picture.

Two weeks later, 500 c.c. of citrated blood was injected intraperitoneally, by means of a trocar. The procedure was apparently harmless. Her general condition appeared much improved following the intraperitoneal transfusion, and the change in the blood picture was also satisfactory (Table 3, Chart 2).

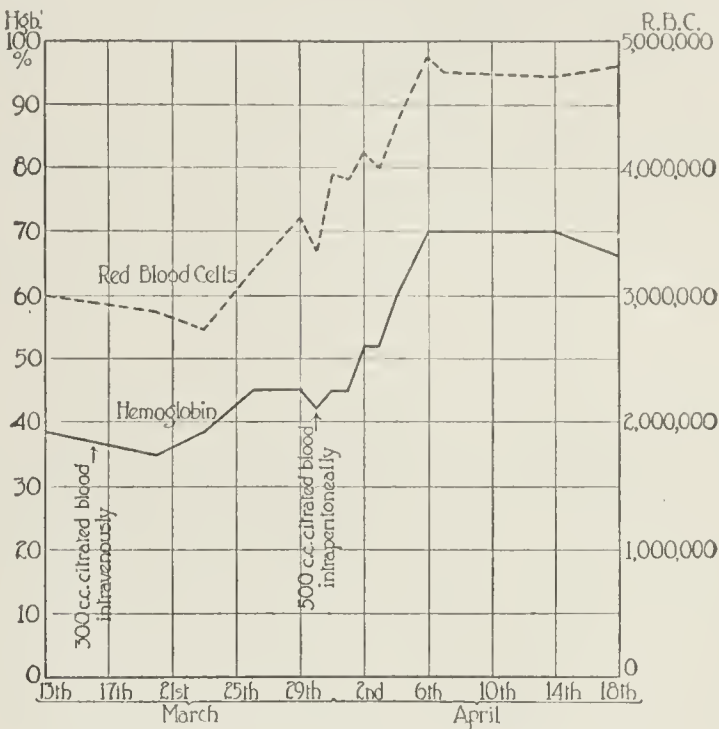


Chart 2 (Case 4).—Hemoglobin and erythrocyte curves.

At the operation, two weeks after the intraperitoneal transfusion, a few cubic centimeters of blood-stained fluid was found in the posterior culdesac. There was no evidence of peritonitis. There were no clots in the abdominal cavity. There were no adhesions. A supravaginal hysterectomy and an appendectomy were performed. The recovery was uneventful.

As far as we know, this is the first instance in which an intraperitoneal transfusion of citrated blood was given to an adult. Absorption from the peritoneal cavity, increase in blood values and clinical improvement were undoubtedly interdependent. The laparotomy afforded an excellent opportunity to observe directly what had previously been deduced only indirectly, namely, that absorption does take place from the peritoneal cavity of man.

A complete and detailed report of this case is being prepared by Dr. W. P. Sadler of the department of gynecology.

INTRAPERITONEAL INJECTION

The intraperitoneal route as an avenue for therapy is not an altogether new procedure. A review of the literature shows that as early as 1875 an attempt was made to apply it clinically by Ponfick,⁷ Giovanni,⁸ Liegl⁹ and others. They injected defibrinated blood into the abdominal cavity of patients, but clinical improvement was variable.

No further application was made of this procedure until 1918, when Blackfan and Maxcy¹⁰ called the attention of the profession to the safety of the intra-

7. Ponfick: Experimentelle Beiträge Zur Lehre von der Transfusion, Virchows Arch. f. path. Anat. 62:273 (Jan. 20) 1875; Berl. Klin. Wchnschr. 16:589 (Sept. 29) 1879.
8. De Giovanni, A.: Uno caso di gravissima anemia felicemente mediante la trasfusione di sangue intraperitoneale, Raccolt. da Marzolo, Gazz. med. ital. 24:39 (Nov.) 1881; abstr. Jahresb. f. d. ges. Med. 16:240, 1881.
9. Liegl: Ueber peritoneale Transfusion, Aerzt. Int. Bl. 31:33, 49, 1884.
10. Blackfan, K. D., and Maxcy, K. F.: Intraperitoneal Injection of Saline Solution, Am. J. Dis. Child. 15:19 (Jan.) 1918.

peritoneal route as a rapid method of giving saline solution. At present, the intraperitoneal injection of physiologic sodium chlorid solution and glucose solution in dehydrated infants is a recognized, valuable therapeutic procedure.¹¹

The introduction of citrated blood into the peritoneal cavity apparently affords another opportunity to utilize the abdominal route as a therapeutic medium.

CHRONIC SPLENOMEGALIC HEMOLYTIC JAUNDICE

WITH THE ISOLATION OF A STREPTOCOCCUS
FROM THE SPLEEN *

JACOB MEYER, M.D.

AND

ISADORE PILOT, M.D.

CHICAGO

Chronic hemolytic jaundice with splenomegaly is a condition of obscure etiology. The disease has been ascribed by Widal to a congenital condition of the red blood corpuscles, which are destroyed in the circulation and their products taken up by the spleen with resulting splenomegaly. Minkowski and his co-workers hold that the condition is due to an increased hemolytic activity of the spleen. Rolleston¹ states that the acquired form "may occur without obvious cause; as after some infection acute, such as streptococcic or pneumococcic, or chronic, such as tuberculosis or malaria," and that he has seen it develop after measles. It is apparent that various infections act in a nonspecific way, exciting some unknown latent factors which are the true underlying causes. The observations recorded here are believed of interest because of the dominant rôle of infection in precipitating the condition; furthermore, the extirpated spleen contained considerable numbers of streptococci. A review of the literature shows few bacteriologic observations in this disease. In a report by Elliott and Kanavel,² cultures were made of the spleen by Kendall, who obtained short bacilli occurring singly and in pairs, which produced no effect when injected into rabbits. Cocci have not been noted in hemolytic icterus, but Sellards³ cultivated micrococci from the spleens of three patients with pernicious anemia.

REPORT OF CASE

N. L., aged 7, seen in June, 1921, had not complained, but was "feverish," and the mother desired an examination. The child was fairly nourished and sallow, with a temperature of 102, respiration, 20, and pulse, 90. The heart and lungs were normal. The abdomen was soft and relaxed, and the spleen was palpable, extending about 1 cm. below the costal margin. No other findings were noted. The following morning the child was apparently well.

In August, the patient was suddenly seized with severe abdominal pains, and vomited. About half an hour after the attack, the pain had disappeared; there was no localized tenderness or rigidity over the abdomen. The temperature by mouth and rectum was normal. The spleen was enlarged, and was noted to be about 2 cm. below the costal arch. When asked where he had felt his pain, the child placed his

finger in the region of the gallbladder. A history was now obtained that the child had had similar attacks, "due to over-eating and excitement." No medication was given. The next morning, the child had no complaints, but the scleras were icteric. A diagnosis of cholecystitis was suggested.

In September, he was seen during an attack of abdominal pain and vomiting. He was taken to the hospital. A physical examination revealed an enlarged spleen and a palpable liver. The temperature was normal; the leukocyte count was 26,000 per cubic millimeter. The clinical picture did not suggest any indication for surgical intervention, but he was kept under observation. The red cell count was 4,200,000, and later, 3,800,000; the hemoglobin was 85 per cent. On fluoroscopic examination, the liver and spleen appeared enlarged, the former pressing on the stomach. The Wassermann test on the blood was negative. The presence of an enlarged spleen and liver, associated with attacks of abdominal pain and vomiting followed by a jaundice, suggested that the case might be one of splenomegalic hemolytic jaundice. A fragility test of the red blood cells was made, and it was found that hemolysis began at 0.700 and was complete at 0.500. The urine contained demonstrable amounts of urobilin. A blood culture test was negative. Inquiry now elicited the fact that the child was jaundiced at birth. There was no history of any similar trouble in the family of the father or mother. Wassermann tests of both parents were negative. The parents were advised of the condition; operation was suggested, but consent was not obtained. The child improved on a bland diet.

Seven months later, in February, 1922, the patient was seen again for what first appeared to be an upper respiratory infection. After a few days, there was severe bronchopneumonia, with local findings of consolidation in the left lower lobe. The course of the disease was one of sepsis, the temperature rising to 103 or 104, with remissions to 99 in the morning; the leukocyte count was 36,000, and the course was terminated by lysis on the tenth day. The anemia and the icterus were more marked than previously. The liver and spleen were greatly enlarged. Blood culture tests were negative. Recovery and convalescence followed.

In May, the patient developed a "sore throat," with a temperature of 101. There were no local findings of inflammation in the throat, but the child had the appearance of being sick. The following day, restlessness and irritability were noted. The child complained of various aches and pains. A marked anemia, jaundice and toxemia had developed. The enlarged liver and enlarged spleen were the only positive physical findings. The patient was again removed to the hospital. Examination of the blood showed a leukocytosis of 12,500; red count, 1,400,000; hemoglobin (Dare), 30. A blood smear revealed slight anisocytosis; blood culture tests were negative, and urobilin was found in the urine. Two days later, the child was transfused with 250 c.c. of the father's whole blood, and on the following day there was an apparent improvement in the general condition, followed by subsequent rise in temperature, which later dropped by lysis. During the course of the last attack, and preceding the operation, a systolic murmur was noted at the apex. This was associated with a tachycardia. Sodium cacodylate and ferric cacodylate were given daily. Improvement followed; the patient became afebrile on the eleventh day after admission.

One month later, the spleen was removed. It was large, soft and free, and weighed 1,000 gm. The gallbladder was normal and did not contain stones. The appendix was also removed. Histologic sections of the spleen revealed the capsule not thickened. The trabeculae were thin and far apart. The malpighian bodies were widely separated, and revealed active germinal centers and congestion. The pulp was markedly congested, and was filled with red blood cells and pigment. The sinuses were numerous, some appearing newly formed. They were dilated and filled with cells of different types, predominately erythrocytes, a few erythroblasts, many lymphocytes, and a few polymorphonuclear leukocytes, many of which were of the eosinophilic type. In addition, there occurred numerous macrophages filled with blood pigment. Bacteria were not found. No abscesses were present.

11. Marriott, W. McK.: Some Phases of the Pathology of Nutrition in Infancy, *Am. J. Dis. Child.* **20**: 461 (Dec.) 1920.

* From the Department of Pathology and Bacteriology, University of Illinois College of Medicine.

1. Rolleston, in *Oxford Medicine* **3**: 310.

2. Elliott and Kanavel: *Tr. Am. Surg. A.* **33**: 258, 1915.

3. Sellards, A. W.: *New Orleans M. & S. J.* **69**: 502-518 (Jan.) 1917.

The patient recovered quickly after the operation. Nine months later he had gained 16 pounds (7.2 kg.); the hemoglobin was 90 per cent.; red blood count, 5,000,000.

Jan. 5, 1923, the patient was seen during an acute attack of influenza. The temperature was 103; the pulse, 100. There were no positive physical findings and no abdominal discomfort. The liver was not palpable. The urine was examined, but no urobilin was demonstrable. No jaundice, toxic symptoms or anemia appeared. The next morning, the temperature was 99; it rose to 101 in the afternoon, and the following day was normal. No jaundice or other sequelae developed, and in a few days the child was up and about.

In fragility tests of the patient's corpuscles, made April 10, 1923, hemolysis ranged from 0.350 to 0.500 per cent. sodium chlorid. Similar tests on the father's and mother's cells gave hemolysis from 0.350 to 0.400. These findings, together with an absence of clinical history, would indicate that the parents were not affected and that the boy had had the acquired form of hemolytic icterus.

BACTERIOLOGIC FINDINGS

Cultures were made by inoculating one loopful of splenic pulp of the extirpated spleen immediately into 10 per cent. blood agar. Innumerable small biconvex colonies surrounded by grayish green zones appeared as a pure growth. Smears revealed gram-positive cocci in chain formation. In dextrose broth, the organisms formed a granular sediment settling along the sides and bottom of the tube, while the supernatant fluid was clear. Dextrose was fermented, while salicin, mannite and inulin were not broken down. The cocci in broth were oval, and formed extremely long chains. The streptococci resembled *Streptococcus viridans*, and on the basis of carbohydrate fermentation, belonged to the group of *Streptococcus salivarius*.

Sediment of 15 c.c. of dextrose broth cultures was injected intravenously into a rabbit. No symptoms appeared. The animal was killed, and necropsy revealed no gross lesions. Sediment of 25 c.c. of dextrose broth was injected intravenously into a second rabbit weighing 750 gm. The animal became ill, lost weight rapidly, and died within eight days. Necropsy revealed pericardial and endocardial petechial hemorrhages, marked congestion of the spleen with a few hemorrhages, and petechial hemorrhages in the kidneys. No endocardial vegetations or arthritis were present. No icterus was apparent. The heart's blood on culture contained *Streptococcus viridans*. Microscopic sections of the lungs revealed slight bronchopneumonia. The myocardium presented diffuse round cell infiltration and swelling of the fibers. In the liver, areas of focal necrosis, together with areas of hemorrhage, occurred. In the kidneys were scattered areas of round cell infiltration about the tubules, with degeneration of some of the cells lining the tubules. The spleen showed marked dilatation of the vessels, with a few areas of hemorrhage.

COMMENT

The occurrence of a streptococcus in the enlarged spleen is of special interest in connection with its possible etiologic significance in exciting the clinical picture. From the history, the icterus each time followed infection. It is very probable that the last attack resulted from a mild tonsillitis, streptococcal in origin. The streptococci may have entered the general circulation, to be filtered out in the spleen. An endocarditis may have coexisted, although clinical findings of valvular involvement were not sufficient to indicate such a condition. Unknown factors may have been reawakened in the infected spleen and caused the reappearance of the hemolytic jaundice. The streptococcus, however, is not a specific excitant, as apparently other types of infection may initiate the symptoms of splenomegalic jaundice.

SUMMARY

A streptococcus similar to *Streptococcus viridans* was isolated from the spleen of a child, aged 7 years, who presented the clinical picture of chronic spleno-

megalic hemolytic jaundice. Mild and severe infections may initiate as well as aggravate the symptomatology of this disease. On removal of the spleen, recovery took place, and the subsequent development of an acute influenza was not accompanied by any evidence of hemolytic activity.

SOME ORIGINAL BLOOD PRESSURE OBSERVATIONS *

VIRGIL C. KINNEY, M.D.

WELLSVILLE, N. Y.

A correct interpretation of blood pressure findings is becoming a matter of the greatest importance. The time has gone by when the mere knowledge of a patient's systolic blood pressure was all that was necessary in order to arrive at a correct diagnosis.

In the study of cardiovascular renal diseases, we find many diversified and interesting phenomena. These are each varied and distinct factors, but so closely related that they must all be taken into consideration if we are to arrive at intelligent conclusions. We have alterations (1) in the composition of the blood itself which are caused either by changes in the corpuscular content, by variations in the blood viscosity, or by circulating toxins; (2) in the venous pressure; (3) in the cardiac rhythm, and (4) of the greatest importance, and either temporary or permanent, in the caliber of the arterial venous and capillary circulation.

SAME SYSTOLIC PRESSURE IN DIFFERENT CONDITIONS

Although the systolic pressure tells us how high or how low the general blood pressure is ranging, it is to the diastolic pressure that we must go for more reliable and accurate information. A number of patients may show identically the same systolic pressure and still be suffering from entirely different conditions.

To illustrate this, I shall give three different examples.

EXAMPLE 1.—In a patient in whom the pulse rate was 72, the systolic pressure was 145; the diastolic pressure, 90, and the pulse pressure, 55.

Here the pulse rate is normal, and the pulse pressure is normal. We also have a normal cardiac load, a normal cardiac response and a normal peripheral resistance.

EXAMPLE 2.—In a patient in whom the pulse rate was 90, the systolic pressure was 145; the diastolic pressure, 110, and the pulse pressure, 35.

Although the systolic pressure is the same as in Example 1, we now have a different relationship of our parts. The pulse rate is now high; the pulse pressure is low; the peripheral resistance is high; the cardiac load is high; the cardiac response is low, and the myocardium is probably weakened.

EXAMPLE 3.—In a patient in whom the pulse rate was 58, the systolic pressure was 145; the diastolic pressure, 40, and the pulse pressure, 105.

Here, again, the systolic pressure is the same, yet we have an opposite condition from that in Example 2. The pulse rate is now low; the pulse pressure is high; the peripheral resistance is low; the cardiac load is low,

* Read before Allegany County Medical Society, April 19, 1923.

while the cardiac response is high. This condition is caused by a great cardiac exertion superinduced by a capillary and arterial dilatation.

I could go on showing other cases in which the systolic pressure, *per se*, has little bearing on the general condition. The same holds good in the low blood pressure cases. It is the systolic pressure, the diastolic pressure and the pulse rate, along with cardiac, arterial and venous conditions, that must guide us in making a correct diagnosis.

As my purpose is to give in a condensed form some original observations extending over a period of four years, I will have to shorten this interesting phase of blood pressure findings. In making these observations, I have not had the advantage of thousands of cases; but the several hundred coming under my personal observation have each been subjected to a great deal of study, many of them over a period of several months.

REVERSAL OF NORMAL BLOOD PRESSURE REACTION

Nearly four years ago, and quite by mistake, I found what I called "a complete reversal of the normal blood pressure reaction." It is a well recognized law of physics that a greater force is required to drive or force fluid to a height against gravity than is required to pump this fluid through the same calibered tube on the horizontal. Strangely enough, without taking into consideration the nervous rôle regarding vasoconstrictors and vasodilators, heart tone and elasticity of the blood pathways, we had applied this physical law to blood pressure, and had taken for granted the fact that blood pressure would naturally be higher with the patient standing than while lying supine.

In a large proportion of both the high and the low blood pressure cases, this law is reversed and the blood pressure is higher in the patient lying supine than when the patient is standing.

EXAMPLE 4.—In my first case showing this reaction, the systolic pressure, with the patient supine, was 240; the diastolic pressure, 135, and the pulse pressure, 105. When this patient stood on her feet, the systolic pressure was 194; the diastolic pressure, 110, and the pulse pressure, 84.

This case was a reversal of an extreme type and, strangely enough, out of the next seventeen cases of cardiovascular renal disease examined, twelve showed this reversal of blood pressure. So in these cases, after the patient lies supine a certain time and then assumes a standing position, we find that the height of the systolic pressure drops, the pulse pressure drops, the peripheral resistance is lowered and the heart response is lowered, as is also the cardiac load.

In a large majority of patients with heart and kidney disease who cannot breathe well lying supine, but who feel better walking around or propped up in a chair, this phenomenon occurs. So it is that in certain patients who have a very high systolic pressure and a high peripheral resistance when supine, which drops from 20 to 40 mm. on standing so that a stroke of apoplexy is imminent, I wisely keep them standing or sitting as much as possible, and propped high on pillows during the night.

This reversal pressure is also to be found in low blood pressure cases.

EXAMPLE 5.—In a patient in whom the systolic, diastolic and pulse pressures, when the patient was supine, were respectively, 100, 70 and 30, they became 86, 64 and 22 when the patient was standing.

Here we have the same condition existing in our hypotension cases as in our hypertension cases; *e. g.* the same lowered systolic pressure, the same lowered diastolic pressure, and lowered peripheral resistance, heart response and cardiac load.

This case is rather interesting:

EXAMPLE 6.—A married woman, aged 28, previously well, became extremely weak, and finally was unable to walk. A physical examination was negative as to any organic changes. With the patient lying supine, the heart action and capillary circulation seemed fair, but the blood pressure was too low: systolic, 94; diastolic, 76; pulse pressure, 18. Every factor was too low. Then the patient was slowly lifted to her feet, when the systolic pressure became 82; the diastolic pressure, 70, and the pulse pressure, 12. This condition lasted for perhaps fifteen seconds, when the systolic pressure dropped to 76 mm., the diastolic pressure to 62 mm., and both disappeared. The patient in the meantime had turned a ghastly white, the knees gave way, and the signs were those of rapidly approaching death. Within two minutes from the time she assumed the supine position, the systolic pressure, diastolic pressure and pulse pressure had returned to their former readings. This patient made an uneventful recovery.

CAUSE OF REVERSAL PHENOMENON

To what cause or causes is this reversal phenomenon attributable? Not to one cause, I believe, but to many. In some cases, a condition of so-called splanchnic neurasthenia exists with a lowered tone in the mesenteric blood vessel walls. If this condition exists and the patient lies supine, no change is evident. However, let this patient assume a standing position, and the mesenteric vessels dilate and act as reservoirs, drawing much blood from the general circulation, and the blood pressure drops.

In most of my reversal cases, the readings obtained follow a rather general course. Whether the patient examined is a hypertension or a hypotension case, the reversal reaction is due, not to a simple lowering of the systolic pressure with a change and variation of the other factors, but to a general lowering of all the readings. Not only does the systolic pressure drop, but, along with this, we have a lowered pulse pressure, a lessened cardiac load, and a lowered cardiac response.

This has led me to believe that probably the arterial, venous and capillary systems all undergo a simultaneous dilatation; and this, coupled with a weakened myocardium which, under the extra strain of standing, does not actively respond, would seem to explain the reversal phenomenon.

What I believe is greatly needed is some standardized system of taking blood pressure. A patient who visits many physicians within a period of a week or two may be told a different reading by each, because one physician may take the blood pressure standing and another sitting, while the third may take it with the patient supine.

If all take it with the patient supine, one may get the reading as soon as the patient assumes the position, another may catch it one or two minutes later, and still another after the patient has been supine for five minutes or longer. In each of these conditions, the blood pressure may show a variation amounting to many points.

In my own blood pressure taking, I follow a standardized technic. Of course, there are nervous elements to be encountered; again, eating and exercising will cause unavoidable variations in our readings. Contrary to a common belief, sexual excitement or sexual

indulgence, in the few cases in which I have been able to obtain accurate data, has not produced a temporary increase in blood pressure.

In making accurate tests in 100 variable cases, I had some rather surprising results. Tests were taken on the patient assuming the standing posture, standing one minute and standing five minutes; when first assuming the supine position, supine one minute; supine five minutes, and supine ten minutes.

With the patient standing for different periods of time, the results were variable, and nothing characteristic was found. In the tests with the patient supine, the results were interesting and fairly constant.

CASES IN WHICH PRESSURE IS HIGHEST WHEN SUPINE POSITION IS FIRST ASSUMED

In a large percentage of cases, and especially in the reversal cases, the pressure is highest at just the time the patient assumes the supine position, becoming less after one minute, and dropping to its constant level in five minutes, as shown in the accompanying table.

Pressure Readings in Supine Position				
Pressure	At Time of Assuming Position	After 1 Minute	After 5 Minutes	After 10 Minutes
Systolic	185	182	174	174
Diastolic	100	96	88	88
Pulse	85	86	86	86

Not all cases give this reaction, but a great many do, so that it is well to have the patient taken at just a certain time for each observation; otherwise, an incorrect reading may result.

A PECULIAR REACTION

I have observed an interesting phenomena many times, especially in the hypotension cases. I have some theories regarding its causes, but none of sufficient importance to put into writing. This peculiar reaction I found mostly when a low blood pressure patient first assumed the standing position.

EXAMPLE 7.—*Patient when first assuming a standing position.* The systolic pressure is 100; the diastolic pressure, 0, and the pulse pressure, 100.

Instead of a true "tunk," a loud sound resembling a carotid bruit is heard through the stethoscopic Pilling sleeve, and as the air is gradually removed from the mercurial apparatus, this apparent diastolic sound keeps on down the scale, getting louder and louder, until it reaches its greatest intensity at zero. After a period ranging from thirty to forty seconds, this sound gradually diminishes in intensity, is no longer heard at zero, ascends the scale, and in about ten seconds more ends as a straight diastolic sound at perhaps 80 mm. Then we have:

EXAMPLE 8.—*After loud bruit has disappeared and the characteristic tunk is again established.* The systolic pressure is 100; the diastolic pressure, 80, and the pulse pressure, 20.

Why the peripheral resistance should be so greatly lowered is a question to be solved later. Or is it really lowered? Possibly the true diastolic pressure ended at 80 mm., but this could not be determined because of the ever increasing extra sound, i. e., if this is an extra sound.

CONCLUSIONS

In making careful blood pressure observations, one is often confronted with strange conditions and varia-

tions, which are puzzling, to say the least. Scientific investigation has already cleared many of these difficulties, but much more work remains to be done before blood pressure reactions can be interpreted in their truest sense.

INTRA-UTERINE TRANSMISSION OF ANTHRAX

REPORT OF CASE *

JOSEPH C. REGAN, M.D.,
ABRAHAM LITVAK, M.D.
AND
CATHERINE REGAN, M.D.
NEW YORK

The possibility of the transmission of anthrax to the fetus of pregnant animals following the inoculation of these animals with anthrax cultures was denied for many years. Pollender, Brauell, Davaine, Bollinger, Wolff and others contended, as a result of experimental work, that the placenta of the experimental animals used afforded an impermeable barrier against this micro-organism. To Strauss and Chamberland¹ must be given the credit for proving that intra-uterine infection may be induced experimentally in animals. These investigators, by the use of modern methods (cultures and animal inoculation of these cultures), were able to prove that the placental barrier was not as impermeable as previous workers believed, and that while not constantly, yet in a good proportion of experiments, infection of the fetus could be produced. Subsequently, other writers confirmed these conclusions, using various animals (guinea-pigs, dogs, pigs) for inoculation.

There are extremely few reports in the literature of anthrax occurring during pregnancy in the human being. Morisani² and Romano³ each separately observed the disease in a pregnant woman who, in each instance, succumbed to the infection, but both writers state that they could find no evidence of transmission to the fetus. Eppinger,⁴ in a single observation, also fatal, found anthrax bacilli in the chorionic villi but not in the fetal organs or blood. Paltauf⁵ was apparently the first to report an instance of transmission of the disease in man. This writer mentions the case of a woman who was in the fifth month of pregnancy when she was infected, and developed a malignant pustule, of which she quickly died. On necropsy, he was able to recover anthrax bacilli from the lungs of the fetus. The methods Paltauf used were not thorough enough, however, to establish the question beyond dispute, and it is to Rostowzen⁶ that really must be conceded the credit of conclusively establishing the fact that human transmission may occur. In 1897 he reported three instances of placental transmission in women who were respectively four, seven and eight months pregnant, and all of whom succumbed to a malignant pustule of the face. By

* From the Kingston Avenue Hospital of the Bureau of Hospitals, Department of Health, New York City.

1. Strauss, I., and Chamberland, C.: Passage de la bactérie charbonneuse de la mère au fœtus, Mém. Soc. de biol., Series 4, 1882, p. 804.

2. Morisani, D.: Sopra un caso di pustulo maligno, Il Morgagni, 1886.

3. Romano, S.: Sopra un caso di pustulo maligno, Il Morgagni 1: 1888.

4. Eppinger, H.: Wien med. Wchnschr., 1888, No. 37.

5. Paltauf, R.: Wien. klin. Wchnschr. 1888, No. 18.

6. Rostowzen, M. J.: Ueber die Uebertragung von Milzbrandbacillen beim menschen von der Mutter auf die Frucht bei Pustulo maligno, Ztschr. f. Geburtsh. u. Gynak. 37: 542, 1897.

careful cultural work of the blood, placenta and viscera of the fetus, including also animal inoculations of the cultures recovered and study of the tissues of the viscera in each case, he was able to prove that the anthrax bacilli were present in the organs of both mother and child in all three instances.

Subsequent to the report of Rostowzen and up to the present time, our search of the literature has not rewarded us with the finding of any further instances of placental transmission. We now add to the literature of the subject—which, in passing, one may well emphasize seems to be entirely nonexistent in the English language—another case of intra-uterine infection, making apparently the fifth on record.

REPORT OF CASE

History.—A married woman, aged 22, was admitted to the Kingston Avenue Hospital, Dec. 29, 1921, at 9 p. m., because of probable anthrax. The family history was irrelevant. The patient had had the usual diseases of childhood, but during adolescence and adult life she had been very healthy and had never had any serious illness. She had been married for one year; her menstrual history had been regular until six months before admission, but since that time she had had no menstrual flow, and had been told by her family physician that she was pregnant. Her occupation was that of a housewife.

Sunday, December 25, the patient noticed a small papule on the left cheek. She paid no attention to it, as there was a complete absence of pain.

During the ensuing two days, the papule began gradually to enlarge. December 28, the region of the face around the papule began to swell, but as no pain was experienced, she was not alarmed. She went to a druggist for advice, and he gave her an ointment, which she used.

By the evening of December 28, the swelling had advanced considerably, involving the neck and the upper portion of the chest, and difficulty in respiration and deglutition began to be experienced. It was only then for the first time that the patient began to feel that she might be really ill. On the morning of December 29, she was able to walk to the office of her physician, who, on examination, immediately made a diagnosis of probable anthrax and referred her to this hospital. The patient had no knowledge of the manner in which she might have contracted the infection. Careful questioning regarding the purchase of new fur pieces, household brushes, braid for hats, etc., were entirely negative. Her husband had not recently purchased a new shaving brush, and he did not handle hides in his occupation.

Physical Examination.—The patient on arriving at the hospital insisted on being able to walk to her room. She was unusually well developed and nourished. Mentally she was bright, and responded to questions readily, and her answers were clear and concise. She was able to give a clear history of her illness, and stated that she would not feel so sick if it were not for the great difficulty she had in swallowing and breathing, conditions that compelled her to change her position frequently in order to make her respiration easier. She was slightly hoarse and quite thirsty, asking for water to drink; but when she was given the water she was able to swallow only a little. The patient seemed to be very optimistic of her recovery, and had no idea of how gravely ill she really was. She made no complaint of any pain in the lesion on her face.

On the left side of the face just in the region of the malar prominence, there was a small elevated papule-like lesion measuring about 1.5 cm. in diameter. It was composed of tissue of a fairly uniform consistency, was reddish pink, round, and had a slightly flattened top. On probing this top portion with a scalpel, one discerned for the first time that the central portion was an eschar, very hard and tenacious, almost leathery in consistency, and that it could not be lifted from its bed; it could be cut only with the greatest difficulty. It had a slightly more yellowish tinge than the remaining portion of the lesion. The lesion was practically insensitive. While in all these points it resembled anthrax, it lacked the vesicles,

being perfectly dry, and had no red areola or indurated zone, and the eschar was not a typical cherry black. Around the base of the papule was a zone of purplish red ecchymosis measuring about 1.5 cm. in diameter, and beyond this was that soft edematous swelling so characteristic of the malignant edematous form of cutaneous anthrax. This swelling, beginning immediately around the papule, extended downward to the neck and lower thorax, especially on the left side, producing an enormous soft distention of the tissues and completely obliterating the normal anatomic markings filling out the supraclavicular and suprasternal fossae. This edematous area was not painful and was noncrepitant. Gentle scraping of the margins of the minute eschar-like area at the summit of the papule caused a serous, blood-stained fluid to exude, from which cultures were taken.

The pupils of the eyes were equal, and reacted to light and in accommodation. There was a marked edematous swelling of the left eyelids. The tongue was heavily coated. The throat was considerably congested around the fauces and pillars, with a tendency to edematous swelling of the mucous membrane.

The lungs gave negative results on examination. The first sound of the heart at the apex was of impaired muscular quality, the sounds at the apex and base being rather faint. No murmurs were heard. The pulse was of poor volume and the peripheral circulation showed a tendency toward stasis. On admission, the temperature was 97.8; the pulse, 90, and the respiration, 28.

The uterus extended to the level of the umbilicus. A globular mass was felt in the uterus. Fetal heart sounds were not heard. The liver and spleen were not palpable.

Course.—While the cutaneous lesion was not absolutely characteristic, there was sufficient evidence on which to base a diagnosis of cutaneous anthrax. It was therefore decided to give treatment at once. A blood culture was first taken, and then 110 c.c. of anthrax serum was injected intravenously, 20 c.c. intramuscularly, and 10 c.c. around the local lesion by the usual subcutaneous "blockage" method. A wet dressing of chloramin-T was then applied locally to the pustule. The patient had a slight chill during the administration of the serum, but the symptoms were very transient.

She remained in about the same condition until 7:20 a. m. of the following morning, when a decided change for the worse was noticed. Light stupor alternating with periods of restlessness supervened, the extremities became markedly cyanotic, the pulse imperceptible, and she died at 8 o'clock.

Necropsy.—The uterus, enlarged and containing a fetus of about the fifth or sixth month of gestation, was removed complete. A slight excess of clear, straw-colored fluid was present. The liver presented a few depressed scars on its surface, and on section it appeared soft, friable and deeply congested. The spleen was a purplish brown or red; on section, the normal markings were obliterated, and there appeared to be hemorrhagic areas on the pulp. The pancreas was soft and light yellowish brown. The suprarenals were normal microscopically. The kidneys seemed rather congested. The thyroid was normal microscopically, except for one blackish red nodular area on the border. The stomach showed moderate congestion. The upper portion of the small intestine appeared dilated, and the mucosa was deeply congested; in places there were swollen elevated areas on which were some yellowish patches. The pleural cavities showed a slight excess of straw-colored fluid. The heart was normal, except for a nodular thickening on one of the leaflets of the mitral valve. The right lung showed a depressed scar on the pleural surface of the apex. The lung tissue pitted on pressure, and the upper, middle and lower lobe had mottled, bluish red, elevated areas on the pleural surface measuring several (8 to 10) millimeters in diameter. On section, the tissue was moist and deep red; air could be expressed from the cut surface, and a large amount of dark, venous blood exuded. The left lung presented a similar condition.

The uterus was opened with careful precautions for sterility. When the amniotic sac was incised with sterile instruments and the fluid flowed forth, cultures were taken. The fetus was removed to an entirely different building; the surface of the body was carefully flamed, and with sterilized

instruments the viscera were examined. The surface of the organs having been treated with the actual canter, they were incised, and cultures were taken from the heart's blood and liver.

Microscopic examination of the fetal lung revealed intense congestion of the alveolar walls; some alveoli filled with red blood cells, polymorphonuclears and a little fibrin; adjacent alveoli empty. In some areas, the alveoli were filled with an exudate of serum with a few red blood cells. The picture was that of intense congestion and edema of the lungs with some consolidation. In the spleen, congestion was generalized, there being hemorrhage in places. There was a moderate increase in the number of pus cells in the splenic pulp. The malpighian corpuscles showed a large number of lymph cells. In the kidney, the condition of congestion and focal hemorrhages was repeated. The cells were swollen, and showed cloudy swelling. There was marked congestion of the suprarenals, the cortical cells being swollen. There was diminished lipoid material, and hemorrhage in the capsule. In the thyroid, the alveoli were distended with colloid, and the capillaries were swollen and filled with blood. There was a moderate amount of fibrinoid material on the villi of the placenta. A few polymorphonuclears and desquamated epithelial cells were present. The capillaries of the liver were dilated and engorged. Square-cut, large, gram-positive bacilli like anthrax were found here and there in the liver of the fetus.

Cultures and smears taken before death from the lesion show gram-positive bacilli, which in subsequent transplants were isolated pure, were nonmotile and were pathogenic for a rabbit. The same organism was found in great numbers in the blood culture.

Smears from the heart, lung, liver, kidney, spleen and placenta of the mother after death showed large gram-positive bacilli, some in chains, squares ended, and some with a narrow capsule. Cultures on plain agar from the same organs gave colonies isolated and confluent, of a rather large, dry, grayish white opaque type, with hairlike extensions at their borders. Only the cultures from the lung showed a contaminating staphylococcus. Smears from the colonies showed gram-positive bacilli, square ended, occurring singly and in chains. Transplants from these colonies to plain broth gave a growth characterized by a pellicle formation with a stringy sediment in the bottom of the tube. The hanging drop showed the bacilli in this transplant to be nonmotile.

The cultures from the heart, liver and amniotic fluid of the fetus gave similar, but few, anthrax colonies. The organism recovered from these cultures was identical with that isolated from the viscera of the mother. Inoculated into a pregnant rabbit, these cultures from the mother and the fetus (in amount of 2 c.c. of a three-day broth culture) produced death within less than seventy-two hours. The same bacilli were recovered from the heart's blood and viscera of this animal in pure culture, and from the viscera of the fetus of the rabbit.

COMMENT

In this instance, just as in the three patients of Rostowzen, it was a question of a very healthy, well-developed woman with an anthrax lesion of the face. On admission, she did not seem prostrated or dangerously ill, yet her blood stream already contained large numbers of anthrax bacilli, as the blood culture taken at the time subsequently showed. This is, indeed, a striking example of the little reliance that should be placed on clinical phenomena in this disease and emphasizes the necessity of an immediate blood culture in all cases, and the application of intensive intravenous treatment until the result is known.

The transmission of the disease to the fetus was undoubtably proved in the case we have reported, both by the cultures taken, at the necropsy of the mother, from the fetal heart's blood and liver, and by the finding of typical large, gram-positive bacilli in the microscopic sections of the fetal liver tissue. It is logical

to believe that the transmission occurred through the placenta. While it is an ideal filter and barrier against penetration of bacteria, the placenta cannot be relied on to withstand the attack of certain pathogenic bacteria, and among the latter must be placed the anthrax bacillus. By no means a constant phenomena, it is nevertheless true that in certain infectious diseases, especially those in which a septicemia exists, the integrity and impermeability of the placenta is often partially destroyed, to such an extent at least as to allow the invading micro-organism to pass through. The epithelium of the chorionic villi may, for example, lose its protective power in conjunction with the general lowering of resistance of the cells in all portions of the body. In anthrax, particularly, it would seem that this protection may be interfered with mechanically by gross injury to those cells; for example, by hemorrhage and necrosis; and it is possible that the blood vessel walls may be more permeable.

It is quite probable that in a nonsepticemic case of anthrax, with recovery, the course of pregnancy might not be interfered with; but in the limited statistics available, the malady has usually assumed, as is commonly the case with all infections occurring at this time, its more severe and fatal form.

THYROIDISM COMPLICATED BY HEART FAILURE

REPORT OF A GROUP OF CASES *

BURTON E. HAMILTON, M.D.

BOSTON

The group of cases I am reporting comprises twenty-two individuals within a total of about 600 patients who have come to Dr. Lahey's clinic in the last three years because of thyroidism. In order that the small, more or less distinct, unit that this group forms within the whole mass of thyroidism cases may be clearly placed, it seems necessary to describe thyroidism cases in general.

If one considers all the cases of thyroidism, one finds that, excluding the few instances in which some complicating affection masks the picture, the patients who are most ill fall naturally into two rather distinct classes.

1. The larger class shows aggravated toxic symptoms of thyroidism alone, without signs of heart failure. When such patients die, they apparently succumb to exhaustion; they do not at any time show the true signs of heart failure. Three such patients have come to the clinic in an extremely advanced condition during the last year, and have died within a few hours of admission, not operated on, in spite of all palliative measures.

2. A smaller class shows more or less violent toxic symptoms, and, in addition, clean-cut signs of the congestive type of heart failure. And this means, not breathlessness and tachycardia alone, which all patients with thyroidism show to some degree, but gross evidences of venous congestion, such as (a) pulmonary congestion—orthopnea, with perhaps cough, râles, hemoptysis, and (b) systemic congestion—particularly engorgement of the liver, with perhaps tenderness and pain. Four such patients have come to the clinic during the last year, in an extremely advanced condition, and have died without operation.

* From the New England Deaconess Hospital.

Between these two groups are, indeed, many cases that show absolute disorder of the heart beat (auricular fibrillation), transient or established, associated with enlargement of the heart in varying degrees—cases that seem to threaten heart failure, but that do not show or give a history of its actual occurrence.

It is generally known that the severely toxic thyroid case of the first group can, under proper conditions, be treated surgically with success. For instance, it has been more than two years since, in a case of this sort, the patient has died following operation in this clinic; and the follow-up work shows a relatively steady succession of patients relieved of disability. But I am not aware that the second group has heretofore been differentiated and discussed, or the effect of treatment studied.

Though each case within the group (namely, the second group) with which this paper deals deserves separate consideration, the cases can best be discussed as a group, with selected cases given in detail for illustration.

The patients were not young; their average age was 51, about fifteen years higher than the average age of all the patients with thyroidism; they looked about twenty years older than they were. Mentally, they appeared stupid and bewildered; they were incapable of, or disinterested in, making mental as well as physical effort. They were emaciated; they were pigmented. Some had eye signs; some had symmetrical thyroid enlargement; some had neither. A few had adenomas of the thyroid. All had significantly and persistently elevated basal metabolism rates. All had definite enlargement of the heart—usually gross enlargement—shown by movements of the thoracic cage with the heart beat, and with the left border of the heart felt an inch or more outside the nipple or midclavicular line. All (except one) had auricular fibrillation—complete and continuous disorder of the heart beat; in most of the cases it could be judged that this had been persistent for months or years (one patient apparently had had it for twelve years).

All had gross signs of the congestive type of heart failure, varying in degree, and with a history or direct evidence of aggravation of these signs under effort. And I wish to emphasize that by signs of heart failure is meant, not breathlessness and tachycardia alone, which all thyroidism cases show, but evidence of venous congestion in the pulmonary or systemic circuit, or both. In detail, nearly all patients had orthopnea, many had cough and râles at the lung bases, and a few patients spat blood at times. These symptoms were found either only after exertion, or persistently but aggravated by exertion. Nearly all had, in varying degrees, enlargement of the liver and congestion of the neck veins. Nearly all had some edema; several had gross edema of the legs and ascites. All were disabled, nearly all to the point of complete invalidism; many of them had been in bed for months, some for more than a year before they came to us. They were very miserable beings, and they clearly appeared poor operative risks.

A fair example of these cases, one of the earlier members of the group seen, was Case 1.

CASE 1.—Mrs. A., aged 56, had been increasingly disabled, bedridden for part of the time, and barely about the rest of the time, for one and one-half years. She had a very large heart; auricular fibrillation; distinct orthopnea; engorged liver; edema of the legs extending up to the waist, and ascites. She was at first rejected as a surgical possibility.

But after six months of watching, with medical treatment for her heart condition (during this time she also had ten roentgen-ray treatments), since she failed to die or to improve, a single superior pole ligation was successfully done, and the subtotal thyroidectomy completed six weeks later. At the end of three months, she was about, doing housework for herself and her husband, and during the last six months has also engaged in teaching. She has no complaints, and she has had no signs of heart failure since operation.

The least severe operative risk (the only man) was a physician:

CASE 2.—A man, aged 38, but appearing much older, was mentally torpid, and on entrance, had edema of the legs and abdominal wall. There were definite orthopnea and slight liver engorgement, but no other gross signs of congestive heart failure. Because of breathlessness and fatigue, he was just able to walk about. The heart was clearly enlarged, and he had auricular fibrillation (the heart rate several hours after entrance was 170, and the next morning, after digitalization, from 90 to 100), which had appeared in paroxysmal attacks lasting about twelve hours each over a period of two years. These attacks came more and more frequently, and two months before entrance, the auricular fibrillation became established and persisted until two months and three weeks later, five weeks after his final operation. Since then, the rhythm has been normal, and the rate about 70 (at ordinary office examination). It is now four months since his final operation. For the last two and one-half months, he has felt perfectly well and has started practice. He has an entirely negative physical examination (basal metabolism on entrance +72, now +7) except for slight edema of the feet with pain after walking; he has flat foot and varicosities of the legs. His heart shows doubtful slight enlargement. His mental condition is normal, and he is interested in things again. He does not look much older than his age.

Perhaps the worst risk of the series was Case 3.

CASE 3.—Mrs. S., aged 37, but appearing to be at least 60, had been operated on elsewhere for thyroidism twelve years previously, but without much improvement, apparently because an insufficient amount of the gland had been removed. She had had a disorderly heart beat for twelve years. The heart was huge; the liver enlarged, and she had edema of the legs and some ascites, though she weighed only 82 pounds (37 kg.). She was somewhat orthopneic. These symptoms were present in spite of little effort being made by the patient beyond lying in bed and being transported for the last three years. She had been an invalid, traveling from hospital to sanatorium and from one physician to another for twelve years. She did not appear neurotic. A few weeks before coming to us, she had been under the care of an excellent, modernly trained cardiologist, who emphatically said that she could not stand operation. After several weeks' preparation, she was operated on in two stages, with six weeks intervening. The operations were difficult because of scar tissue. It is too soon to judge the relief of her physical disability, but improvement in mental outlook, appearance, breathlessness, edema, heart rate and other physical signs was marked before she left the hospital, five weeks after her second hemithyroidectomy. She now makes more exertion than she has for several years, since she goes up and down stairs and walks about freely several hours each day.

CASE 4.—Mrs. P., aged 56, had more marked heart failure, and took longer to prepare for operation, but was perhaps a little more attractive operative risk because she had had no previous operation. Her weight was 62 pounds (28 kg.), her normal weight being 140 pounds (63.5 kg.). She had a huge heart, with auricular fibrillation. She showed orthopnea, edema of the lungs, a very large liver (the edge was felt at the umbilicus), and when the patient was first seen, the liver was acutely tender. After many weeks of watching and treatment directed toward her heart condition, the orthopnea improved, the lungs were cleared of râles and the liver tenderness left, though gross engorgement remained. Her final operation was five months ago. She has gained 30 pounds (13.6 kg.), and is at home and up and about, without any

sign of heart failure. She had been in bed for seven months (and had chronic heart failure with acute exacerbations throughout this time) before reporting for operation.

In brief, the other cases differ in severity, so far as this can be measured, between the second and third cases given above. All the patients have been operated on by Dr. Lahey. The first of this group had the operative procedure completed more than two years ago; she had increasing disability for two years and was in bed six months before the operation. Since three months after the operation, she has led a normal life—she does all her housework, and is very active socially. The last of the group, Case 3, had operative procedures completed a few weeks ago. Of the whole group, one died (this case will be discussed later). The others, not previously discussed, except one patient who improved until last heard from and with whom we cannot now get in touch, so far as elapsed time permits proof, have lost their disability to a surprising extent. These persons lead lives that differ widely in extent of physical strain. One does all the housework for a large family and, in addition, earns money by doing laundry work; another lives without effort in a city hotel. They are relieved of signs of heart failure. They have gained weight and show indirect evidence of improvement by lowered basal metabolism readings and heart rate.

Only a few of these cases with established auricular fibrillation have returned to normal rhythm after relief of thyroidism. It is the commoner thyroidism case that has had auricular fibrillation for a short time, or in repeated transient attacks, that permanently returns to normal rhythm after relief of thyroidism.¹

The improvement in mental condition and evident enjoyment of life is difficult to record, but is very noticeable to me as I follow the individual cases.

It is difficult not to appear overenthusiastic in recording this group of cases. But when one is familiar with the picture of cases in which there is chronic heart failure of the congestive type in rheumatic heart disease, degenerative sclerotic conditions, etc., the contrast in what can be done for these patients with chronic failure with acute exacerbations and thyroidism is delightful. There is no similar improvement from prolonged disability to prompt and, so far as can be told, lasting relief to be hoped for in other heart diseases, save in rare instances.

Many of these patients have been told by the highest type of medical consultant, known to us and known widely, that they could not be operated on, and others have been seen and treated by them and operative measures not suggested. This sort of case is considered too far gone for surgical aid.

If not operated on, it is scarcely to be judged that they could improve, since most of these persons have for years had an irregular course tending unmistakably downward. Most of them have had prolonged rest in bed; many have had roentgen-ray treatment by well trained men, without satisfactory improvement.

It is scarcely to be expected that in this class of cases the operative risk can be as low as that of the whole clinic. The low death rate recorded here is accepted by us in part as good fortune. But, remembering the four patients mentioned in the second paragraph of this article, who came to the clinic the last year with thyroidism and heart failure and died in a few hours or days, not operated on, there is no question that, even

though the risk were much greater than it is, the chance of cure of such cases by operation would still be an attractive choice. I will describe one of these four cases as an illustration.

CASE 5.—A woman, aged 50, who is known to have had thyroidism for several years, journeyed from one physician to another, because she was not cooperative. Her course was rapidly downward. She had a prolonged attack of heart failure of the congestive type, from which she improved enough to go home against advice from a hospital in another city, a few weeks before reporting to us. She promptly failed again, and came to this clinic in an extreme condition. When first seen, she was deeply cyanosed, sitting upright in bed, the lungs full of râles, the sputum bloody, the liver large and tender, gross edema from her feet to her waist, the heart very large, with a rate around 200 and absolutely irregular. Morphine gave her a reasonably comfortable night. Digitalis was given in divided doses at six-hour intervals, to give an estimated full dose in eighteen hours. Eighteen hours after admission, her condition was unrelieved; oxygen administrations and venesection, during which the blood whistled out of the proximal end of the cut vein, caused partial relief, but death occurred six hours later, with the classical symptoms of heart failure persisting.

The other three cases were essentially similar.

There is no routine treatment for cases of this group. They are given rest, in all its details, and sedatives as indicated. They are thoroughly digitalized. (All but one of the patients had auricular fibrillation; this patient had no digitalis.) They are watched, and operated on when the signs of acute heart failure have cleared. None so far has been operated on while the liver was tender, or orthopnea marked, or with persistent râles in the dependent portions of the lungs. Many have still had, when operated on, large livers, slight orthopnea or edema of some extent in the legs. Breathlessness and tachycardia are, of course, a part of the thyroidism; if one waits for these to clear before operating, one may wait out the life of the patient. We consider it wise to wait for three weeks after the evidence of acute heart failure has cleared. Heart failure of the congestive type, particularly in the presence of auricular fibrillation, would seem to offer favorable opportunity for the formation of intra-auricular thrombi, and they are known to occur. There is evidence that it takes at least three weeks for such thrombi to become firmly attached to the heart wall. The single death among the cases in this group that were operated on occurred in a woman who entered the hospital with signs and history of heart failure. These cleared promptly, and she stood a preliminary operation well, after several weeks of rest and preparative treatment. She returned six weeks later, without signs of acute heart failure, but with a story that suggested some acute failure a few days before. She was operated on a few days after entrance, but died suddenly twelve hours later. Her condition remained entirely satisfactory until she died. No necropsy was obtainable, but it seems probable to me that an embolus from an intracardiac thrombus caused death.

In these seemingly hopeless cases, the patients have stood operation very well. It is the rule for the signs of heart failure not to be aggravated after operation. Relief of symptoms occurs, as a rule, promptly. Within a week after the final operation, beginning general improvement is usually quite evident.

SUMMARY

A small group, within a large group of thyroidism cases, is found completely disabled by heart failure of the congestive type.

1. Hamilton, B. E.: Clinical Notes on Hearts in Hyperthyroidism, Boston M. & S. J. 186: 216 (Feb. 16) 1922.

These patients as a class are oldish, have auricular fibrillation, and have severe degrees of thyroidism which has persisted for a long time in spite of attempts at palliative treatment.

As a rule, they have been considered by their medical advisers to be unfit for operative treatment.

Twenty-two such patients have been operated on in this clinic in the period extending from more than two years ago to five weeks ago. One patient died suddenly. The others are alive, and, up to the present time, show relief of disability in varying but satisfactory degrees.

19 Bay State Road.

Clinical Notes, Suggestions, and New Instruments

POLYCHROME METHYLENE BLUE USED TO HELP LOCATE MALIGNANCY IN TISSUES TO BE EXAMINED MICROSCOPICALLY *

BENJAMIN TAYLOR TERRY, M.D., NASHVILLE, TENN.

Polychrome methylene blue is successfully used at the Mayo Clinic,¹ Johns Hopkins University,² Vanderbilt University,³ and other places to diagnose malignancy quickly under the microscope. When good sections through the malignant area are obtained, the diagnosis is usually easy. There remains the problem of how to find a small area of malignancy in a large mass of tissue. The observation that frozen sections of malignant and rapidly growing tissues often stain so intensely with polychrome methylene blue as to be striking even to the naked eye suggested that this stain might be applied directly to tissues to select areas of malignancy. My results show that malignancy can in this way often be picked out.

TECHNIC

A thin slice of tissue is cut and flooded for five seconds with at least ten times its volume of polychrome methylene blue No. 1.³ At the end of this time the section is removed from the stain and rinsed in distilled water, the surface is illuminated with strong light, and the moist surface is examined carefully with the naked eye and also with a good high power magnifying glass. One should look for areas staining deep blue. Areas that are suspicious, owing either to an unusual amount or to unusual distribution of deep blue, are to be examined microscopically, preferably by the frozen section method. Fixed tissue can be examined similarly.

KNOTTING OF THE DUODENAL TUBE IN SITU *

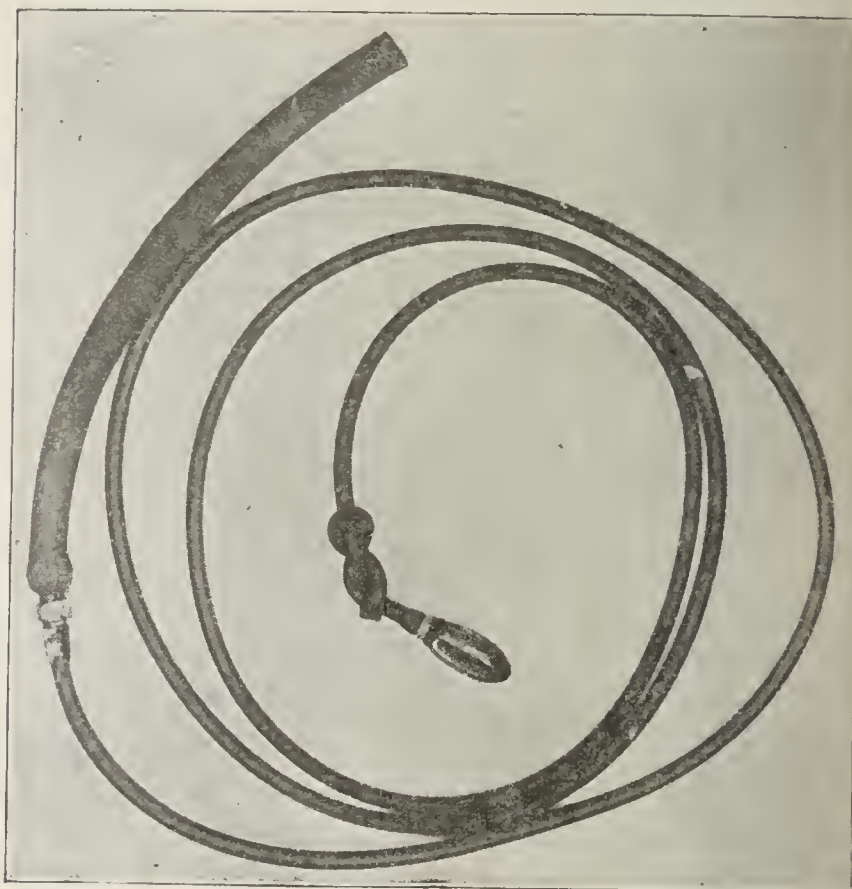
F. T. BILLINGS, M.D., PITTSBURGH

Mrs. M. B., admitted to the Western Pennsylvania Hospital, Feb. 23, 1923, and discharged, March 12, 1923, came to the hospital complaining of "gas on the stomach," pain over the right side of the abdomen, and a vaginal discharge. The family history was unimportant. For the last two years she had experienced flatulence, accompanied by belching, but no nausea. The attacks generally followed meals, and came in definite periods of pain and indigestion. She had lost 16 pounds (7 kg.) during the last six months. At the time of admission, she complained of considerable gaseous distention of the abdomen, especially pronounced after meals, but not necessarily dependent on them. During deep inspiration, the patient experienced a feeling of "goneness" of the stomach and intestine. There was also a sore, dull, aching pain in the upper right quadrant of the abdomen, accentuated at times

to a sharp knifelike intensity radiating upward to the chest. She had had a vaginal discharge for the last six years, which was profuse, white and of thick consistency.

On the day of admission, the patient was given a complete physical examination with practically negative results. In the lower abdomen, in the medium line, there was the scar of a past pelvic operation, at which time (five years before) there had been performed a double salpingectomy, removal of one ovary, and an appendectomy. There was some tenderness over the upper abdomen. A tentative diagnosis was made of gastric or duodenal ulcer, gallbladder involvement or a secondary hyperchlorhydria.

The day after admission, the stomach contents were examined in this manner: A slice of bread and a cup of water were given, and the Rehfuß tube was inserted with very little difficulty. Eight specimens of the gastric contents were recovered, at fifteen-minute intervals. The patient was then placed on the right side, and the left knee and thigh were flexed, so that the thigh rested on the abdomen. This was done in order to facilitate the passage of the metallic button from the stomach into the duodenum. Repeated specimens were taken in this position, but all proved acid to



Knotted duodenal tube

litmus. It was decided to leave the tube in place for from twenty to thirty minutes, in the hope that the evident pylorospasm would eventually be overcome.

At the end of twenty minutes, the resident physician was hurriedly summoned because the patient seemed to have difficulty in breathing. She was found to be pulling at the tube, and seemed to be in great discomfort. On the assumption that the tube had induced a cardiospasm by being pulled forcibly against the esophageal-gastric juncture, the resident physician ordered the patient to swallow a glass of water, hoping that this would induce a relaxation of the spasm. During the act of swallowing, the tube was pulled taut, and quite a little force was necessary in order to pull it past the constricted orifice. The tube was felt to pass irregularly, and in a jerky fashion up the esophagus. When the whole of the tube was finally recovered, it was found to be tied in a double knot at the distal portion, close to the metal tip. The knotting had no doubt taken place as a result of the excessive peristalsis with its underlying factor, hyperchlorhydria. The chemical examination of the stomach contents proved the presence of the latter.

Other laboratory reports revealed that the urine was negative, the spinal fluid negative, as to both Wassermann reaction and cell count, and the blood Wassermann reaction was

* From the Department of Pathology, Vanderbilt University Medical Department.

1. Wilson, L. B.: J. Lab. & Clin. Med. 1: 40, 1915.

2. Bloodgood, J. C.: J. Radiol. 4: 46 (Feb.) 1923.

3. Terry, B. T.: J. Lab. & Clin. Med. 8: 157 (Dec.) 1922.

* From the Second Medical Service, Western Pennsylvania Hospital.

negative. Chemical examination of the blood was negative in every respect.

The barium roentgen-ray series of the gastro-intestinal tract revealed a great degree of ptosis of the stomach and a slight dilatation of the greater curvature. The small intestine and the colon were normal. The diagnosis was gastropnoxis. The accompanying illustration shows the tube immediately after it was removed from the stomach. The patient was extremely neurotic, and remained so during her stay in the hospital.

626 Union Arcade Building.

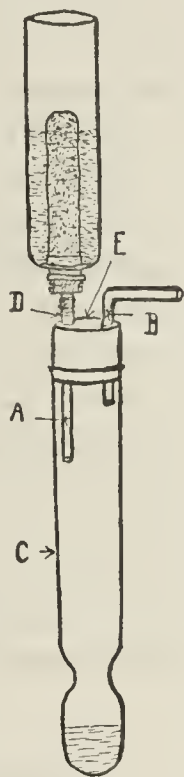
SIMPLE APPARATUS FOR FRACTIONAL FILTRATION BY GRAVITY OR SUCTION*

LELAND W. PARR, S.B., CHICAGO

It is often desirable to obtain fractions in the filtration of a bacterial culture or other material. The apparatus described and illustrated here has been found very satisfactory for this sort of work, and has the advantage that it involves no costly material or unusual technic.

The Mandler or Berkefeld filter is assembled as usual, after thorough cleaning. Then a two-hole No. 4 rubber stopper (E) is taken, and the stem (D) of the assembled filter is pushed about half way through one of the holes from the top side. Into this hole, but from the bottom, a short piece of straight glass tubing (A) is inserted. A second piece of glass tubing (B), 3 or 4 inches long and bent at right angles, is inserted through the second hole of the stopper from the top side. The stopper, so equipped with filter and tubes, is then inserted into the mouth of a potato tube (C) of such size that there is a snug fit of the two. A pledget of cotton can then be placed in tube B and the apparatus sterilized appropriately. A basket of potato tubes of the same size as the one used should be plugged, baked and sterilized at the same time.

When it is desired to use the apparatus, it is mounted on an iron stand by a clamp which grasps the stopper above the mouth of the potato tube and below the filter mantle. The apparatus is held up clear of the table, and it is thus possible to remove the potato tube whenever one wishes, ordinary asepsis being observed, and to replace it with a new one, the cotton plug of the new one becoming the cotton plug of the old. It is thus possible to obtain fractions of the filtrate or to filter directly into the culture medium. In gravity filtration, the displaced air escapes by the way of tube B. In suction filtration, the negative pressure is attached to tube B. The justification for tube A is that in suction filtration it is needed to keep the liquid, as it filters in, from being sucked across to tube B, and out of the system.



Apparatus used in fractional filtration, either by gravity or by suction.

A CASE OF PAPYRACEOUS FETUS

J. L. MILLS, M.D., WINNEBAGO, MINN.

A woman, aged 38, housewife, well developed and well nourished, now in her fourth pregnancy, gave a negative family history, with no record of multiple pregnancies on either side of the family. The youngest child was 7 years old.

The last menstruation was on July 15. For the first three months, the patient was nauseated in the morning and vomited occasionally. Other than that, she felt perfectly well during the entire course of her pregnancy. At no time did she have any bloody vaginal discharge or excessive leukorrhea. Quickening occurred, November 23, and from then on, fetal movement was felt every day.

Examination, February 5, showed the fundus half way between the umbilicus and the ensiform cartilage. The posi-

tion was right occipito-anterior. The fetal heart rate was 170. The pelvic measurements were: interspinous, 27 cm.; intercrural, 29 cm.; intertrochanteric, 36 cm., and external conjugate, 22 cm. Blood pressure was: systolic, 132; diastolic, 80. The pulse was 84, and urinalysis was negative.

Labor began at 1 a. m., April 20. Dilatation was complete at 10 a. m., and the baby was born at 11 a. m. The baby was a normal girl, weighing 8¼ pounds (3.75 kg.). The placenta was delivered spontaneously thirty minutes later. Incorporated in the last part of the membranes to be delivered was a saucer-shaped mass that proved to be a papyraceous fetus. It was 16 cm. long, 6 cm. wide at its broadest part, and 1.5 cm. at the point of maximum thickness. The integument was firm and grayish brown. The soft tissues had been practically all absorbed, and I was unable to distinguish any of the viscera. The skeletal structures were well preserved. From the size of the fetus, I estimated its age at about 4 months.

The cord was hard and fibrous, and attached to a small fibrotic placenta about 6 cm. in diameter. It was embedded in the membranes of the normal fetus. The entire placenta was so fibrous throughout that I was unable to find any spot that I could call an infarct. I was also unable to find any cause for the separation of this placenta.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

ARSPHENAMINE (See New and Nonofficial Remedies, 1923, p. 46).

Arsphenamine-Mallinckrodt.—A brand of arsphenamine-N. N. R.

Manufactured by the Mallinckrodt Chemical Works, St. Louis.

Arsphenamine-Mallinckrodt Ampoules, 0.1 Gm.

Arsphenamine-Mallinckrodt Ampoules, 0.2 Gm.

Arsphenamine-Mallinckrodt Ampoules, 0.3 Gm.

Arsphenamine-Mallinckrodt Ampoules, 0.4 Gm.

Arsphenamine-Mallinckrodt Ampoules, 0.5 Gm.

Arsphenamine-Mallinckrodt Ampoules, 0.6 Gm.

Arsphenamine-Mallinckrodt Ampoules, 1.0 Gm.

BARBITAL (See New and Nonofficial Remedies, 1923, p. 62).

Barbital-M. C. W.—A brand of barbital-N. N. R.

Mallinckrodt Chemical Works, St. Louis, distributor. No U. S. patent or trademark.

CINCHOPHEN (See New and Nonofficial Remedies, 1923, p. 90).

Cinchophen-M. C. W.—A brand of cinchophen-N. N. R.

Mallinckrodt Chemical Works, St. Louis, distributor.

MERCURIC CYANIDE (See New and Nonofficial Remedies, 1923, p. 194).

Mercuric Cyanide-M. C. W.—A brand of mercuric cyanide-N. N. R.

Manufactured by the Mallinckrodt Chemical Works, St. Louis. No U. S. patent or trademark.

Universal Gas Mask.—A gas mask that will give protection against all poison gases, including carbon monoxide, has been perfected by the Department of the Interior as the result of experimental work performed by the Bureau of Mines. The new mask, which is described as an "all purpose cannister," is particularly valuable for firemen and men engaged in fumigating ships or buildings. With these masks, workers in many metallurgical and chemical plants may encounter a variety of gases. The masks are smaller and lighter than others that have previously been developed.

* From the Department of Hygiene and Bacteriology, University of Chicago.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JUNE 16, 1923

WHAT CAN VITAMINS DO?

Students of the physiology of nutrition have been assiduously engaged during much of the last decade in securing facts with respect to the rôle of the vitamins. Varied manifestations of so-called avitaminosis have been recognized, and in several types the probable interrelations of cause and effect have been discovered. Probably scurvy, beriberi and rickets stand out as the most conspicuous instances in which the effect of the lack of certain food factors is almost universally admitted. It is a natural further stage in the evolution of knowledge to find interest in the question of how the protective vitamins act, now that the probability of their existence has been put on a more secure experimental basis. Do they supply an essential component in the active cells of the body—a building stone in the complex structure of an organism ever subject to change and therefore to reconstruction? Are they analogous to those organic catalysts that are recognized under the name of enzymes, and do they, like them, merely facilitate the natural reactions of the organism? Are they physiologic stimulants or inhibitory substances comparable with natural hormones or artificial drugs? These are some of the inquiries that command the attention of the thoughtful student.

On the answers must eventually depend some of the therapeutic possibilities that vitamins may or may not unfold. Park¹ of Yale University has not hesitated to say that cod liver oil—a veritable treasure of certain vitamin potencies—may act as a regulator of the mineral metabolism, at least so far as the calcium and inorganic phosphorus are concerned; and one may infer that a function of cod liver oil and also of radiant energy is to maintain the normal salt equilibrium of the body in the presence of salt combinations of different complexities which are continually being absorbed from the food. Without supplying either phosphorus or calcium, the potent factor in cod liver oil causes the organism to respond as if a requisite or almost requisite quantity

of phosphorus or calcium had been supplied. Something is furnished which, in the words of Park, makes the metabolism more effective or causes the organism to operate with increased economy. Histologic studies of the bones and chemical examinations of the blood indicate that cod liver oil and light, instead of bringing new processes into operation, rather permit the organism to have full use of processes which were natural to it all the time, but were not effective.

With respect to vitamin B, or the "antineuritic factor," one sometimes reads nowadays that it "stimulates metabolism"—assuredly a rather vague definition of function. Is the oxidative capacity of the body promoted or protected by such a food factor? Or is there derangement of some other phase of energy metabolism? Mattill² of the University of Rochester, N. Y., has put the question to a test experimentally with essentially negative results. From his data on the respiratory quotients of rats on rations with and without vitamin B, it appears that this substance is not related specifically to the metabolism of carbohydrate, since after the feeding of sucrose or glucose the quotients rose in both cases, slightly less rapidly in the vitamin-deprived group, owing probably to delayed absorption. Basal quotients were alike in the two groups; nonfasting quotients were slightly lower in the vitamin-deprived animals, thus reflecting their semifasting condition. It will be wise, therefore, for the present to avoid reference to the "stimulating" or "energizing" effects of vitamin B (which yeast claims so prominently as a characteristic component), so long as no better evidence than is now available can be offered in support of a much advertised claim.

PERIARTERIAL SYMPATHECTOMY

The results recently achieved with the operation of periarterial sympathectomy—the cutting of the nerves about the arteries—have aroused the hope of successfully attacking a group of extremely painful and disabling disorders (causalgia, trophic ulcers, vascular spasms and vasomotor neuroses) which, heretofore, have proved extremely intractable to treatment. The technic of the operation has recently been described by Halstead and Christopher³ in THE JOURNAL. Jaboulay,⁴ basing his action on the discovery by Claude Bernard that section of the sciatic nerve caused hyperemia of the foot, performed arterial sympathectomy in 1899, with excellent results in the treatment of trophic ulcers. The operation was repeated in several cases with varying success. Leriche, in 1914, with the object of more completely destroying the nerve fibers, modified Jaboulay's operation of cutting the nerves as they enter

2. Mattill, H. A.: The Utilization of Carbohydrate by Rats Deprived of Vitamine B, J. Biol. Chem. **55**: 717 (April) 1923.

3. Halstead, A. E., and Christopher, Frederick: Periarterial Sympathectomy, J. A. M. A. **80**: 173 (Jan. 20) 1923.

4. Jaboulay: Le traitement de quelques troubles trophiques du pied et de la jambe par la dénudation de l'artère fémorale et la destruction des nerfs vasculaires, Lyon méd., Aug. 6, 1899.

1. Park, E. A.: The Etiology of Rickets, Physiol. Rev. **3**: 106 (Jan.) 1923.

the sheath, and stripped off the adventitial coat of the artery, thus removing the terminal twigs of the post-ganglionic sympathetic nerves.

Leriche observed, at the time of the operation, extreme contraction of the artery, which he at first thought to be a pathologic condition of the vessel, followed a few hours later by hyperemia, with a rise in temperature of 1 or 2 degrees C., and in arterial pressure of as much as 40 mm., in the parts of the limb distad to the site of operation. This secondary hyperemia, however, is temporary and disappears at the latest in thirty days. These observations have been confirmed by some⁵ and denied by other surgeons,⁶ and most efforts to produce them in lower animals, especially in dogs,⁷ have proved futile. Leriche⁸ asserts that he has observed them in rabbits and once in a dog. He points out that the small size of the arteries renders the operation difficult, and also suggests that in hair covered animals the need for arterial regulation is not so great as in man.

The results are difficult to explain, for, as Callander has emphasized, the sympathetic fibers enter the arterial sheath from the spinal nerves throughout its course; the operation destroys the constrictor fibers only in the segment of artery that is actually denuded. Whatever the explanation, there is no question that the operation is followed in many cases by marked improvement in local nutrition—sores heal, pains disappear, partially atrophied muscles improve, and thickened skin becomes more pliable. Yet these results are not uniform, even in cases of apparently identical nature, and the measure must at present be regarded as largely empiric; much study is necessary before it will be possible to state the exact indications for its performance.

The failure to secure relief from other methods of treatment, and the painful and disabling character of the affections in question, however, seem to justify the experimental application of periarterial sympathectomy in properly selected cases. Skilfully performed, the operation seems to be devoid of serious danger, and there can be no question that it sometimes affords marked relief. Due consideration must be given to the warning of Leriche against attempts to decorticate arteries that are grossly diseased, especially in cases of senile gangrene. It is also important that every case be studied with the greatest detail in order to assist in furnishing data from which it may be possible to define the indications for and against the operation, and to explain the discordant results in apparently similar conditions.

"THE CHRONIC ABDOMEN"

Of all of the medical slang that has insulted the ear of the carefully speaking physician, no term has been seized on by the surgeon with such avidity as has the "acute abdomen." It is this term, in part, that prompts Dr. Robert Hutchison of the London Hospital to write on the "chronic abdomen," and he says of it that if the "acute abdomen" is, as we are told, a catastrophe, the "chronic abdomen" is certainly a conundrum. The patient suffering with this disease is usually a woman, generally a spinster or, if married, childless and belonging to what is commonly termed, rather ironically, "the comfortable class." The degree to which her condition seems to trouble her life permits the author, indeed, to term her an "abdominal woman." She complains of vague aches and pains of various sorts and in various places, but especially in the right iliac fossa. The reader will note that the patient is described as "she," for such cases are rather rare in men, and it has been Hutchison's experience that when the condition does occur in a man he is either a Jewish neurotic or a physician. These patients complain of "a raw feeling inside," or of a "dragging" pain. They are usually constipated, and have feelings of general weakness and torpor; headaches and insomnia occur, and frequent colds. In order to demonstrate the process by which the condition is developed, Dr. Hutchison cites several cases in his experience, and the reader will readily concur with him that "the road to chronic abdominalism is paved with operations." The first operation is usually the removal of the appendix, followed by slight improvement; and it is characteristic of such patients that almost any new treatment, especially a surgical operation, produces benefit for a time. When the symptoms return, they are credited to "adhesions," and another operation is performed to remedy this condition. "Warming to his work," says Hutchison, "the surgeon undertakes bolder and yet bolder proceedings: a complete hysterectomy is probably carried out or some short-circuiting device, or the colon is fixed, or even partially removed; but still the patient is not cured of the pains, whilst the state of the nervous system has steadily worsened." This consideration leads Dr. Hutchison to the interesting observation that Sir Clifford Allbutt, in his Goulstonian lecture, delivered in 1884, described the "abdominal woman" of that day in terms which might well be applied to the type that prevails today. The difference was merely that in 1884 the gynecologist was the operator and the uterus the organ incriminated, whereas today it is the surgeon who must bear the responsibility, and the appendix, teeth or tonsils that are the criminals accused. Said Sir Clifford Allbutt:

She is entangled in the net of the gynecologist, who finds her uterus, like her nose, is a little on one side, or again, like that organ, is running a little, or it is as flabby as her biceps, so that the unhappy viscus is impaled upon a stem, or perched upon a prop, or is painted with carbolic acid every week in the year except during the long vacation when the gynecol-

5. Halstead and Christopher (Footnote 1). Brüning, Fritz: Der Angiospasmus in der Pathogenese der vasomotorisch-trophischen Neurosen, Deutsch. med. Wchnschr. 48: 1572 (Nov. 24) 1922.

6. Callander, C. L.: Arterial Decortication, Ann. Surg. 77: 15 (Jan.) 1923. Carter, H. S.: On Causalgia and Allied Conditions Due to Lesions of Peripheral Nerves, J. Neurol. and Psychopath. 3: 1 (May) 1922.

7. Lehmann, E. P.: Periarterial Sympathectomy, Ann. Surg. 77: 30 (Jan.) 1923.

8. Leriche, René: Sur l'étude expérimentale, la technique et quelques indications nouvelles de la sympathectomie périartérielle, Presse méd. 30: 1107 (Dec. 23) 1923.

ogist is grouse-shooting or salmon-catching, or leading the fashion in the Upper Engadine. Her mind, thus fastened to a more or less nasty mystery, becomes newly apprehensive and physically introspective, and the morbid chains are riveted more strongly than ever. Arraign the uterus and you fix in the woman the arrow of hypochondria, it may be for life.

With a vitriolic pen Dr. Hutchison attacks the treatment accorded to these "abdominal patients." It would appear that our English colleagues have also met the problem of the group diagnostic clinic, and it is amusing to read this picture of a typical procedure:

The patient has been thoroughly "investigated"—possibly at a "team-work" clinic; she has certainly been provided with an x-ray picture-book of her entire alimentary canal; her teeth have been extracted and her tonsils excised; her motions have been analyzed by a biochemist and her mind by a psycho-analyst; she has had several rest cures; she has been given prolonged courses of vaccines, of intramuscular tonic injections, of intestinal antiseptics and of endocrines; she has been fed on sour milk or minced beef or raw vegetables; she has experienced various forms of massage, has been subjected to the latest kinds of electrical current, and has had her colon repeatedly washed out at Plombières or Harrogate.

Strangely, the sympathy of Dr. Hutchison is not so much for the patient or even for her family, but particularly for the physician who must give such patients not only the ordinary consideration granted to those who wish advice but even more than the usual attention. Such patients demand sympathy and understanding, and yet the demand is so constant, so incessant, that Dr. Hutchison calls the "abdominal woman" a "veritable vampire, sucking the vitality of all who come near her. . . . Half an hour with her," he says, "reduces her doctor to the consistence of a piece of chewed string, and is more exhausting to him than all of the rest of his daily visitors put together; for she has emotions, discovers fresh symptoms, will not admit any improvement in her condition, and has an objection to everything that is proposed."

What is to be the physician's course in the care of such patients? No doubt, continued study will reveal that the chief source of attack must be from the psychologic side and from the standpoint of the relation of the vegetative nervous system to the emotions. There is great hope when the patients are seen early, for at that period it is possible to halt the gradual sliding into a slough of despond, perhaps to build up the patient's morale as well as her physical system, and to call a halt on the innumerable operations which may tend to augment complaints rather than to inhibit them. From the mental side, all sorts of remedies have been attempted. The war aided a few by giving them a dominating interest apart from themselves. Feminism, with the necessity for suffrage campaigns, provided another interest. "Marriage, and the advent of a child, even an adopted one, are often potent remedies," "and the fancy religions, Christian science, Theosophy, Spiritualism, etc., may be ways of escape." On the whole, Dr. Hutchison has a feeling of despair as regards the treatment of more advanced cases of this

condition, and he is inclined to think that the less one has to do with them the better, both for one's peace of mind and one's professional reputation. "It is a bleak prospect," he concludes.

The patients described by Dr. Hutchison are a prolific source of income and nourishment to the cultists, who derive their chief support from chronic invalidism. There is a vast body of patients who are not seriously ill, who are hopeful and who seem for a time to improve under any new treatment. They pass from physician to physician, from cultist to cultist, from chiropractor to osteopath, to Abramsite, to Eddyite; and they return ever, in the words of Omar Khayyam, by the same door wherein they went. The service which scientific medicine may render them is education in health and a knowledge of their disease, that they may not be so readily the subjects of exploitation by unprincipled cultists.

Current Comment

COD LIVER OIL IN TUBERCULOSIS

There was a time, in the not far distant past, when forced feeding was regarded as an essential to good results in the therapy of tuberculosis. Krause¹ has sanely remarked, however, that the days of pride in fat, flabby, overfed patients have passed and have been replaced by a policy of attaining a gradual improvement in nutrition to a normal weight and a firm, healthy body tone. Nevertheless, recent studies in nutrition have placed in a new light some of the food materials that have long had an empiric vogue for specific efficiency in certain disorders. The reputed potency of cod liver oil in chronic wasting diseases is a case in point. In rickets its unique remedial potency has been assigned of late to some chemical factor, perhaps a typical vitamin not represented by the fats, proper which constitute the bulk of the product. Does it have a comparatively beneficial effect on the progress of tuberculosis? The question has been approached experimentally in the Hygienic Laboratory of the U. S. Public Health Service at Washington by Smith.² Although cod liver oil appears to have a definite, though slight, effect on the nontuberculous guinea-pig, especially when the latter is maintained on a diet deficient in vitamin A, the results of the experiments are negative so far as concerns the action of cod liver oil on tuberculosis of the guinea-pig. This substance has not shown itself definitely beneficial, as regards weight curve, length of life or extent of the disease process, in experimentally infected guinea-pigs kept on a normal or deficient diet. There has been no evidence of deposition of calcium in tuberculosis of the guinea-pig when this element was administered along with the cod liver oil. These investigations are, perhaps, far from sufficient to lead to a complete negation of beneficial

1. Krause, A.: Tuberculosis, in Nelson's Loose Leaf Living Medicine 1: 380.

2. Smith, M. I.: Studies on Nutrition in Experimental Tuberculosis, I, The Effect of the Fat-Soluble A Vitamine on Tuberculosis of the Guinea Pig, with Especial Reference to the Value of Cod Liver Oil in Experimental Tuberculosis, Am. Rev. Tuberc. 7: 33 (March) 1923.

therapeutic possibilities from the agents under consideration; yet they warn against unwarranted optimism, and justify critical investigation whenever calcium or cod liver oil is lauded as a specific in tuberculosis.

PASTEUR AND THE CHILDREN

In view of the intimate relationship between the discoveries of Louis Pasteur and the prevention of infant disease and the protection of child health, it is interesting to have attention called, as Dr. John Foote has recently done in "Mother and Child," to the special philosophy of Pasteur as related to children, and to the manner in which France has recognized this aspect of the great investigator's life. France has perpetuated his relationship in virtually all of the monuments raised to its greatest citizen. At Dôle, where Pasteur spent his boyhood, a mother and two sick children symbolize grateful humanity. At Arbois nearby, where Pasteur passed his boyhood, is a bronze statue looking up the street on which Pasteur walked on his way to school. At Lille, Pasteur stands on a pedestal, holding a flask, while below a peasant woman holds up to him a child in token of her gratitude. And before the Pasteur Institute stands the well known figure of the courageous shepherd boy holding off a mad dog. In the life of Pasteur, as told by Vallery-Radot, are the beautiful letters which he wrote to his children, emphasizing his humane regard for child life. Dr. Foote wisely suggests that the story of Pasteur and his work be told to every child, for in this manner may we hope for a future generation firm in its support of true science and ready to assist in the prevention of disease.

THE GOVERNMENT WOULD BUY BRAINS

At various times THE JOURNAL has called attention to the lack of judgment used in the United States Patent Office in the issuance of patents of a medical or quasimedical character. The patent that was issued for the special tapeworm trap, that which was granted for Perkins' Metallic Tractors," the one given to Quack Sanchez for his fraudulent "Oxydonor," the one, called attention to a few months ago, on a preposterous combination as an alleged cure for consumption—these and many other cases could be cited showing the lack of brains in the Patent Office. One of the reasons for this lack becomes apparent. Within the last few days the United States Civil Service Commission has sent out a notice advising the public that on June 20 there will be held an open competitive examination for assistant examiner, Patent Office. The applicants for this position will be examined on the following subjects: physics, mechanical drawing, technics, mathematics and language, with an optional subject to be chosen from the list of chemical engineering, civil engineering, electrical engineering, electrochemistry, general chemistry and mechanical engineering. The applicant must know enough mathematics to be able to answer questions in algebra, plane and solid geometry, plane trigonometry, analytics and differential calculus. He must know enough about mechanical drawing so that when given photolithographic copies

of drawings of pieces of machinery he can describe the views, the construction and the operation of the machine represented in such technical terms as would be used by a skilled draftsman in preparing an application for a patent. Further, he must have a knowledge of the grammar and idiomatic construction of both French and German. In technics he must show familiarity with the applied sciences in the field of mechanics, mechanic arts, industrial arts and processes and applied chemistry, and should have "a broad, general knowledge of these subjects." If he passes the examinations in these various subjects he will get the job of assistant examiner at the Patent Office, and be paid the magnificent salary of \$1,500 a year (less than \$29 a week), with a bonus of about \$4.50 a week additional if his services are satisfactory. Is it any wonder that the Patent Office fails to attract the brains of the nation? Some things, however, it seems, the examiners in the Patent Office do not have to know. There is nothing to indicate that even an elementary knowledge of the medical or biologic sciences is necessary—which may explain the weird conception that the Patent Office exhibits of what constitutes "new and useful" inventions in the medical sciences.

THE MILKMAN CARRIER

Within the last year THE JOURNAL has published reports of two epidemics due to milkmen who were carriers. Fifty-two persons acquired diphtheria in Austin, Texas,¹ from milk sold by a dairy, one of whose employees had a chronic diphtheric ulcer of the nose. None of these died, because antitoxin was promptly administered in effective doses. In Portland, Ore., 487 persons recently became ill with septic sore throat due to milk from a dairy in which an employee carried hemolytic streptococci in his throat. Twenty-two of these patients died, because there is no effective preventive measure for this type of infection.² These epidemics were not the first of the kind to be reported; they probably will not be the last. It seems, however, that sufficient evidence in the way of sickness and death has accrued to show the importance of the milkman and to indicate that he of all persons on whom the public depends for food should be the cleanest and the healthiest. A simple method of control would be to require him to undergo a physical examination every two or three weeks, or at least as often as once a month. Legislation to this end would be unnecessary if those who supply us with milk realized their responsibility in the matter and adopted this or some such method of eliminating carriers.

1. Graham, Malcolm; and Golaz, E. H.: Milk-Borne Diphtheria, J. A. M. A. **79**: 1300 (Oct. 14) 1922.
2. Benson, R. L., and Sears, H. J.: A Milk-Borne Epidemic of Septic Sore Throat in Portland, Oregon, J. A. M. A. **80**: 1608 (June 2) 1923.

Control of Venereal Diseases.—The diagnosis and treatment of syphilis and gonorrhea is a medical problem, but the control of the spread of these diseases is a public health problem demanding the cooperation of health officers, nurses, social workers, and all other persons and agencies interested in the health of the public, as well as the physicians. In order to cooperate intelligently with the medical profession, the lay social worker must understand the principles of diagnosis and treatment of syphilis and gonorrhea.—A. J. Casselman, *Public Health Rep.* **36**:851 (April 22) 1921.

Association News

THE SAN FRANCISCO SESSION

Program on Cancer

A public meeting will be held in Polk Hall, Civic Auditorium, San Francisco, on Sunday evening, June 24, at which the subject of cancer will be discussed. Dr. T. C. Edwards, president of the Medical Society of the State of California, will preside over this meeting. Dr. Ray Lyman Wilbur, President-Elect of the American Medical Association, Dr. T. W. Huntington and Dr. J. E. Rush will be the speakers of the occasion.

Handbooks Mailed to Delegates

The Handbook of the House of Delegates, containing the reports of officers and councils of the American Medical Association, was mailed on June 8 to all delegates whose names and addresses are known. It is hoped that before the meeting in San Francisco all delegates will study carefully the reports printed in the Handbook.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Milk Grading Ordinance Popular.—The state health department recently sent out 4,000 questionnaires explaining the proposed milk grading ordinance for Montgomery and requesting a post card vote. Of 1,200 answers received 99 per cent. favored the ordinance. Montgomery dairymen have organized the Montgomery County Milk Grading Association to cooperate with the state and city health departments in their effort to reduce infant mortality.

COLORADO

Personal.—Dr. Aller G. Ellis, Colorado Springs, will leave August 1, for Bangkok, Siam, to spend five years as visiting professor of pathology in the medical department of Chulalongkorn University, under the auspices of the Rockefeller Foundation which is aiding in the reorganization of the school.—Dr. George William Carter, Boulder, celebrated his ninety-sixth birthday, April 18. Dr. Carter is a graduate of the University of Michigan Medical School, Ann Arbor, 1853.—Dr. Florence R. Sabin, professor of histology, Johns Hopkins Medical School, Baltimore, gave an illustrated lecture before the Medical Society of the City and County of Denver, June 14, on "Some Results of the Newer Methods of Studying the Living Blood."

Colorado Congress of Ophthalmology and Otolaryngology.—The congress will be held in Denver, July 30-31. An intensive graduate course in ophthalmology and otolaryngology will be given for two weeks prior to the congress, the instructors to be from different parts of the United States. Drs. Edgar S. Thomson, New York; Harry W. Woodruff, Joliet, Ill.; Wolff Freudenthal, New York; Harold M. Hays, New York; Warren B. Davis, Philadelphia; Isaac H. Jones, Los Angeles; Henry J. Prentiss, Iowa City; Lee Cohen, Baltimore, and Harry S. Gradle, Chicago, are scheduled to deliver addresses. Registration for the course will be limited; those interested should apply to Dr. Edward Jackson, Imperial Building, Denver.

CONNECTICUT

Illegal Practitioners Fined.—The medical examining board reports that Sante Capacelatro and Ettore Capacelatro of New Haven were recently fined \$200 for practicing medicine without a license. Both men are said to have been unsuccessful in repeated attempts to pass the examinations for licensure in Connecticut, and it is thought that they may eventually try the examinations of some other state board.

DELAWARE

Wilmington's Municipal Laboratory.—A city laboratory was opened, June 1, which will be available to the physician of Wilmington for all kinds of bacteriologic work. In connection with the laboratory there will be a clinic for the examination and treatment of suspected cases of venereal disease in charge of Dr. John B. Rutherford. This clinic and laboratory will also take care of the juvenile court work.

DISTRICT OF COLUMBIA

Fifty Years of Service.—Commemoration exercises in honor of the fifty years of service of Dr. Daniel Smith Lamb in Howard University School of Medicine, Washington, were held in the Rankin Memorial Chapel, June 7-8. The honorary degree of Doctor of Science was conferred on Dr. Lamb, who is professor of anatomy at the university. Drs. Kober, Williston, Lewis, Terry and Morton addressed the assemblage.

FLORIDA

Memorial Tablet to Physicians.—The Marion County Medical Society formally dedicated a tablet at the Marion County Hospital, Ocala, May 25, erected in memory of five members of the society, who had died: Drs. S. Potts Eagleton, W. H. Powers, John M. Thompson, William V. Newson and Erastus Van Hood. The president of the county medical society, Dr. L. H. von Engelken, presented the tablet to the hospital.

Sheppard-Towner Bill Rejected.—The senate, May 25, killed Senator Butler's bill which would have brought Florida within the provisions of the Sheppard-Towner Law. The state department of health several months ago took up the maternity and child welfare work under an initial appropriation made available by the congressional act, to be used until such time as the various state legislatures could either accept or reject the provisions of the Sheppard-Towner Law.

GEORGIA

Fund for Outdoor Clinic.—An initial contribution of \$21,000 has been made by Jacob Alsas of Atlanta, to the Grady Hospital, for an outdoor clinic. The institution, which will be erected at a cost of \$50,000, will adjoin the present structure.

IDAHO

Hospital Discontinued.—The Gooding Deaconess Hospital, affiliated with the Methodist Church, at Gooding, has been discontinued.

ILLINOIS

Chicago

League for the Hard of Hearing.—The fourth annual meeting and banquet of the Chicago League for the Hard of Hearing will be held at the Congress Hotel, June 18, under the presidency of Mrs. A. L. Drum. Dr. James Kerr Love, Glasgow, will be the principal speaker. He will discuss "The Difference Between the Hard of Hearing and the Deaf Child." Dr. Max A. Goldstein, St. Louis, and Dr. Joseph C. Beck, Chicago, will also be among the speakers. This organization is one of the twenty-seven branches of the American Federation of Organizations for the Hard of Hearing, Washington, D. C.

INDIANA

Heart Disease Clinic Established.—The board of public health has established an outpatient clinic in Indianapolis, for the treatment of persons having heart disease who are unable to engage a physician. The clinic will be held every Monday morning. Drs. Charles J. McIntyre, Robert M. Moore, Edgar F. Kiser and James A. Wynn have been selected as examiners by the health board. Dr. Herman G. Morgan, city health commissioner, in announcing the establishment of the clinic pointed out that there were 720 deaths from heart disease in Indianapolis in 1922, 330 from cancer, and 292 from tuberculosis.

Hospital News.—Dr. Simon P. Scherer bought the New Highland Mineral Springs Sanatorium at Martinsville, May 26. A clinical laboratory and a diet kitchen will be added at once. Dr. Scherer was formerly professor of gastrointestinal diseases in the Central College of Physicians and Surgeons and the Indiana University School of Medicine, Indianapolis, and is associate editor of the *Indianapolis Medical Journal*.—The three new buildings of the Sunnyside Sanatorium, near Oaklandon, were dedicated, May 13. The institution, of which Dr. Harold S. Hatch is superintendent, has a total capacity of 200.

KANSAS

State Board of Health Involved in Political Dispute.—Following the resignation, on request of Governor Davis, of Dr. S. J. Crumbine, secretary of the Kansas State Board of Health, the newly appointed board, meeting in Topeka, June 7, elected Dr. W. G. Patton, Fort Scott, president; Dr. J. A. Connor, Waverly, vice president, and Dr. L. Matassarin, Wichita, secretary, for the ensuing year. The former Republican board also met and elected Dr. N. O. Neiburg, Wichita, secretary, to succeed Dr. Crumbine. It contends that the governor cannot dismiss a board except for cause. According to newspaper reports, the board of health offices have been closed by order of the state executive council and will remain closed until a court decision is rendered as to who constitute the board.

MARYLAND

Tuberculosis Clinic for Children.—The Baltimore City Health Department, in addition to the five tuberculosis dispensaries already established, has opened one entirely devoted to the care of children up to the age of 15. This clinic is located in West Baltimore and is in charge of a physician especially interested in children's diseases. The clinic is open on Tuesday and Friday of each week.

Additions to Orthopedic Clinic.—The Maryland University has recently opened special clinics which will be held on Tuesdays from 12 to 2 p. m. for arthritis, and on Saturdays from 12 to 2 p. m. for scoliosis and posture, in connection with the orthopedic clinic of the department of surgery. The staff consists of Drs. Robert Tunstall Taylor, Compton Riely, John Albert Key, William H. Daniels and Howard L. Wheeler.

Personal.—Dr. William Walter Cort, associate professor of helminthology in the School of Hygiene and Public Health of the Johns Hopkins University, has sailed from San Francisco for Peking, where he will serve as exchange professor in parasitology in the Peking Union Medical College during the next academic year. Dr. N. R. Stoll, graduate student in the School of Hygiene and a research fellow under appointment by the Rockefeller Foundation, has accompanied Dr. Cort.—Dr. Chester P. Woodward has introduced an ordinance in the Baltimore City Council authorizing the West Baltimore Medical Association to establish a general hospital at the old Hebrew Orphan Asylum. The institution will be known as the West Baltimore General Hospital. A drive for \$200,000 to equip the building will be held in September. The Elks have already pledged \$50,000 to establish a ward for the order.—Dr. Adolf Meyer, psychiatrist-in-chief, of the Johns Hopkins Hospital, has gone to Europe to visit his old home in Zurich, Switzerland, and to inspect psychiatric clinics in England, France and other European countries.—Dr. Thomas P. Sprunt and Dr. Frank S. Lynn have been appointed by Col. Claude B. Swezey, warden of the state penal institutions, to be medical consultants for the Maryland Penitentiary and the Maryland House of Correction. The two physicians will visit each institution weekly.

MASSACHUSETTS

Violations of the Harrison Narcotic Law.—According to information recently received two practicing physicians of Boston, Dr. Eusang W. Chang, a Chinese, and Dr. Benjamin E. Robinson, a negro, were brought before the U. S. District Court on a charge of violating the Harrison Narcotic Law. A plea of nolo was accepted. Dr. Chang paid \$200 in lieu of costs and Dr. Robinson's case was continued.

Personal.—Dr. Mark Hopkins Ward, Boston, has been appointed supervisor of the American Board of Foreign Missions, with headquarters in Boston. His work will be to conserve the health of the board's missionaries, at home and abroad. Dr. Ward served with the American Red Cross at Constantinople until the United States entered the war, when he became a captain in the Medical Corps of the U. S. Army.

MICHIGAN

Chiropractors Lose Damage Suit.—According to reports, Joseph Synowski, infant plaintiff in the \$50,000 damage suit against James and Margaret Connell, chiropractors of Jackson, for alleged malpractice, May 25, was awarded judgment for \$7,000 in the circuit court. The suit was the outgrowth of fifty chiropractic treatments given the child about a year ago.

Annual Clinic Week at Detroit.—The annual clinic week of the Detroit College of Medicine and Surgery was held at

Detroit hospitals, June 11-15. Among the visiting physicians who conducted clinics were: J. Bentley Squier, Jr., New York; Arthur C. Morgan, Philadelphia; Charles L. Scudder, Boston; Jennings C. Litzenberg, Minneapolis; W. Wayne Babcock, Philadelphia, and Emil Novak, Baltimore.

Society News.—At a special meeting of the Wayne County Medical Society, June 11, Dr. Arthur C. Morgan, Philadelphia, gave an address on "My Views of Tuberculosis."—Dr. George Van Amber Brown delivered the oration on surgery before the Illinois State Medical Society at its annual meeting in Decatur, May 15-17. His subject was "Practical Points in Embryology and Their Relation to Kidney Surgery."

Personal.—Dr. George W. Palm, Detroit, was shot and wounded, May 10, following a false telephone call to attend a patient.—Dr. Augustus W. Ives, professor of neurology and psychiatry, Detroit College of Medicine, has been appointed superintendent of the state public school, Coldwater, to succeed Dr. J. B. Montgomery, who has filled the position for twenty-five years.—Dr. Max Ballin, Detroit, spoke on "Spinal Cord Tumors" before the section on surgery of the Academy of Medicine of Toledo and Lucas County, at Toledo, May 25.—Dr. William T. Dodge, Big Rapids, president of the Michigan State Medical Society, gave an address on "The Relation of the Profession to the Public" before the Kent County Medical Society at Grand Rapids, May 9.

MINNESOTA

Personal.—Dr. Nels Westby was recently reelected mayor of Madison.—Drs. Kenelm H. Digby, dean and professor of medicine, Hongkong (China) Medical College, and Oskar Frankl, professor of gynecology, University of Vienna, gave Mayo Foundation lectures, May 10, before the staff and fellows of the Mayo Foundation, Rochester. Dr. Digby's subject was "The Functions of the Tonsils and Appendix," and Dr. Frankl spoke on "The Relation of Cancer of the Stomach to the Female Sexual Organs."—Dr. John C. Staley has been named as successor to Dr. Arthur B. Ancker (who died recently) as superintendent of the St. Paul City and County Hospital, which has been renamed the Ancker Memorial Hospital.—Dr. Nels G. Mortensen, St. Paul, has been appointed by the governor as a member of the state board of health.

MISSISSIPPI

Hospital Destroyed.—Fire destroyed the State Penitentiary Hospital, Parchman, May 27. The patients were removed without injury. The loss was estimated at \$68,000. A new building will be erected immediately.

MISSOURI

Personal.—Dr. C. R. Harrington, lecturer in pathologic chemistry, University College, London, was the guest of the department of biochemistry, Washington University School of Medicine, St. Louis, during May.—The Saline County Medical Society recently gave a banquet to Dr. John R. Hall, Marshall, in commemoration of the completion of his fiftieth year of practice in Saline County. Dr. David F. Manning was toastmaster.

NEW HAMPSHIRE

Health Week in Manchester.—A very successful health week was conducted in Manchester, May 21-27. Health Sunday was celebrated in all the churches, May 20. Tuberculosis Day, Merchants' Day, Mothers' Day, Clean-Up Day and Inspection Day were other attractions. An open forum meeting was held at which Dr. Timothy Leary, Tufts Medical College, Boston, gave an address. Dr. Howard A. Streeter was in charge of the week's activities.

NEW JERSEY

Chiropodists Fined.—The state board of medical examiners reports that L. J. Weiner, Red Bank, who advertised as a "Dr.," and Mrs. Mary Cox, Millville, each paid the penalty of \$200 for practicing chiropody without a license.

NEW MEXICO

Health Officers Appointed.—Dr. Frank E. Mera has been appointed as health officer of Sante Fe County, to succeed Dr. Douglas Brown, and Dr. Henry J. Abernathy, Hot Springs, fills the vacancy made by the resignation of Dr. James A. Steel, Hillsboro, as health officer of Sierra County.

NEW YORK

Aged Physician Sentenced.—According to reports, Dr. Samuel S. Kennedy, Buffalo, was sentenced, June 1, to serve from two to five years in prison for shooting his office girl, Virginia Wardinsky, in August, 1921. Dr. Kennedy is 68 years old.

Measles Prevalent This Year.—According to figures recently made public by Dr. Edward S. Godfrey, Jr., director of the division of communicable diseases of the state health department, during the first four months of this year, 16,383 cases of measles were reported in the state outside of New York City, compared with 6,238 cases for the corresponding months of last year. The average for that period for the past five years has been 14,158.

"Doctor" Arrested in Cocain Raid.—Seventy thousand tubes of cocain were seized at the Associated Pharmacy Company, Brooklyn, May 31, according to official reports. Several men were arrested, including a man who gave the name of Dr. John Harrison, charged with violating the Harrison Narcotic Law. Assistant U. S. District Attorney Burke stated that the government considered the capture one of the most important in years, as business was being done on a large scale throughout the United States.

New York City

Indian Medical Equipment Exhibited.—The equipment used by the medicine man of the Navajo Indians in the "healing" ceremony has just been added to other collections from that tribe at the American Museum of Natural History. It is the gift of the widow of the late Dr. John C. Graffin of New York, who died in Shiprock, N. M., while government physician to the Navajo Indians.

City Ready to Treat Cancer.—Bird S. Coler, commissioner of public welfare, announces that by June 15 the city will be giving radium treatment for cancer. Last year 5,495 persons died in the city from cancer. Approximately 200 beds have been set apart for the treatment of cancer in the City Hospital, while a clinic will be established in the dispensary of Fifty-Ninth Street near Third Avenue. Dr. Max Levine of Montefiore Hospital will serve gratuitously as the head of the city's clinic.

Municipal Educational Exhibit.—The Municipal Educational Exposition, commemorating the twenty-fifth anniversary of the formation of Greater New York City will be kept open for four weeks from May 28, at the Grand Central Palace. The department of health has a comprehensive exhibit showing its method of keeping records, the work of various bureaus, models of the institutions which it controls, and exhibits demonstrating phases of public health education, and its laboratory work. It is the most complete health exhibit which the department has ever opened.

Roentgenologists Must Be Licensed.—The recent amendment to the Sanitary Code requiring that all those using roentgen-ray machines be licensed by the department of health seems to have been misunderstood. According to a statement by the health department, certain physicians and dentists thought this regulation applies only to commercial and other laboratories offering facilities to the general public. To make the matter clear the editor of the *Weekly Bulletin* of the department of health asked the opinion of the corporation counsel. He states that it is evident this section of the Sanitary Code applies with equal force to individual physicians and dentists who do not hold out or advertise to the public that they maintain or conduct a roentgen-ray laboratory. Therefore all physicians and dentists using roentgen-ray machines are required to hold the board of health license permitting the use of such apparatus.

Hospital News.—Governor Smith has signed a bill recently passed by the legislature which provides "home rule" for the hospitals of New York City in the matter of reports and records. This bill amends the state charities law by leaving to the state board of charities the determination of the annual period for which reports shall be rendered by institutions subject to its visitation.—The Hospital Service of the New York Tuberculosis Association has been organized to furnish recreational diversions among tuberculous patients, and to assist in their health education. The extension of occupational therapy, the gathering of statistical information, and the arrangement of technical demonstrations for the medical staffs and of special lectures for the nurses, will also be arranged by this new auxiliary service.—The trustees of the Reconstruction Hospital have indefinitely postponed the contemplated erection of an eleven-story building to cost \$1,500,000, work on the foundations of which has already been

started.—The 100 bed Jewish War Memorial Hospital at Dyckman Street and River Road was formally dedicated, May 27. Plans are made for additional wings to increase the capacity of the institution to a 400 bed capacity ultimately.

NORTH DAKOTA

Hospital Reopened.—The Lidgerwood Hospital, Lidgerwood, which has been closed for about a year, has been reopened to the public with Dr. Ernest G. Sasse as superintending physician.

State Medical Meeting.—At the annual meeting of the North Dakota State Medical Association at Grand Forks, May 31-June 1, the following officers were elected for 1923-1924: president, Dr. James Grassick, Grand Forks; president elect, Dr. William C. Fawcett, Starkweather; vice presidents, Drs. John H. Rindlaub, Fargo, and Hugo O. Altnow, Mandan; secretary, Dr. Hezekiah J. Rowe, Minneapolis, Minn., and treasurer, Dr. William W. Wood, Jamestown.

OHIO

Society News.—At the annual meeting of the Cincinnati Academy of Medicine, May 28, Dr. John C. Oliver was elected president for the ensuing year; Dr. Alexander G. Drury, vice president, and Dr. F. Merrick McCarthy, secretary.

Vital Statistics Bureau Issues Warning.—Dr. E. J. Schwartz, chief of the state division of vital statistics has issued a warning to all physicians of the state that they must register all births within ten days. Every mother is requested to insist on a certificate from the health commissioner showing the birth has been recorded.

Chiropractors Fined and Imprisoned.—According to information received May 25, C. J. Mills and R. F. Hahn, both of Napoleon, and L. M. Nesmith, proprietor of the Nesmith Chiropractic College, Dashler, were fined \$150 each by Judge Bretz on charges of practicing medicine without a license. Mills and Hahn refused to pay and will serve a jail sentence.—O. L. Knechily and his wife, Hazel, and D. D. Owens, chiropractors of Portsmouth, were sentenced to serve terms in the county jail in default of paying fines of \$50 each, according to reports, and Dr. P. D. Parks, Portsmouth, was fined \$50, May 28.—Seven Akron chiropractors, G. H. Bellinger, L. D. Wheeler, W. J. Wenger, W. A. Ball, E. G. Whitzel, Fred F. Raulfs and D. A. Brown, were sentenced to 184 days each in the county jail, in default of paying fines of \$100 each, for practicing medicine without a license.

PENNSYLVANIA

Philadelphia

Nathan Lewis Hatfield Lecture.—Dr. Frederick G. Banting, Toronto, Canada, delivered the fifth Nathan Lewis Hatfield lecture at the College of Physicians, Philadelphia, June 6, on "The Use of Insulin in the Treatment of Diabetes Mellitus."

Personal.—Dr. James A. Irwin sailed for France, May 26, and will return to Philadelphia in October.—Dr. James H. Mason Knox, Jr., Baltimore, chief of the bureau of child hygiene of the state of Maryland, spoke on "Child Hygiene Work in Central Europe," at a meeting of the Philadelphia Pediatric Society and the Child Hygiene Association of the Children's Hospital in Philadelphia, recently.

SOUTH DAKOTA

Public Health Drive Launched.—During the forty-second annual convention of the state medical association, the South Dakota Society for Community Health and Public Instruction was organized for the purpose of promoting public health and giving information on matters of health preservation. Dr. Robert L. Murdy, Aberdeen, was elected chairman and Dr. Nelson Hopkins, Arlington, secretary-treasurer. The society will launch a campaign to have school children, whose parents cannot afford the expense, given medical and surgical attention.

South Dakota State Medical Association.—At the forty-second annual meeting of the association in Watertown, May 22-24, the following officers were elected for 1923-1924: president, Dr. Francis E. Clough, Lead; vice presidents, Drs. Robert L. Murdy, Aberdeen, William R. Ball, Mitchell, and Theodore F. Riggs, Pierre, and secretary-treasurer, Dr. Robert D. Alway, Aberdeen (reelected). One of the features of the convention was the unveiling of a portrait of the late Dr. Frederick A. Spafford, formerly of Flandreau. The picture was presented to the state and will be hung in the capitol building at Pierre.

UTAH

Utah State Medical Association.—The twenty-ninth annual meeting of the association will be held at the University of Utah, Salt Lake City, June 20-22. Among the visiting physicians who will give addresses are: John F. Erdmann, New York; Henry S. Plummer, Rochester, Minn.; Vilray P. Blair, St. Louis, and Albert J. Ochsner, Chicago.

Banquet for Dean Snow.—A farewell banquet was tendered Dr. Perry G. Snow, retiring dean of the University of Utah School of Medicine, Salt Lake City, by the students of the medical association of the University, May 24. Prof. L. L. Daines, Ph.D., acted as toastmaster. Dr. Snow, who will be succeeded as dean by Dr. Ralph O. Porter, Logan, will make a tour of the eastern medical schools.

WISCONSIN

Society News.—At a meeting of the Milwaukee Academy of Medicine, June 12, Dr. Victor C. Vaughan, Chicago, chairman of the National Health Council, gave an address on "The Future of Medicine." S. A. Barrett, director of the Milwaukee Museum, spoke on "Some Medical Practices of the Indians." This was the last meeting of the academy until October 9.

Sanitation at Summer Resorts.—The state department of health has sent letters to all summer resort owners, advising, that, because of remoteness from municipal sanitary facilities, resorts are health hazards for tourists. Methods for thoroughly cleaning and repairing all equipment on these premises were outlined. Owners of resorts are advised to send samples of water to the local health officer for analysis by the state laboratory. Persons having any communicable disease are not to be employed at summer resorts especially those who have had typhoid fever within three years, until it has been definitely determined that they are not typhoid carriers. This is a mandatory provision.

GENERAL

American Surgical Association.—At the annual meeting of the American Surgical Association in Rochester, Minn., May 31-June 2, Dr. George W. Crile, Cleveland, was elected president to succeed Dr. Lewis L. McArthur, Chicago.

American Proposals on Opium Win.—Following acceptance of the American plan to curb the traffic in opium at the meeting of the League of Nations' opium commission in Geneva, it is said the next stage in the campaign of the American government to end the narcotics menace will occur in the council and in the assembly of the league. Acceptance of the American proposals, after a bitter fight by India, who insisted that the "semi-medical usage" of opium was necessary, is regarded in official circles as a long step forward.

Southern Baptists Hospital Convention.—At the recent convention in Kansas City, Mo., it was announced that the Southern Baptists now have twenty-one hospitals with a bed capacity of 2,659. During the last year nearly 48,000 patients were treated in these institutions. The value of hospital property now in operation is \$8,300,268. New institutions are planned and others are under construction, which will raise the number to thirty-two hospitals. Five of the hospitals carry on research work.

Society News.—The semi-annual meeting of the Sioux Valley Eye and Ear Academy will be held in Omaha, July 9. —The Tri-State Hospital Association of Minnesota, North and South Dakota, Wisconsin and Iowa, met in Minneapolis, May 17-18. —A dinner conference for cancer workers will be given at the Fairmont Hotel, San Francisco, June 28, under the auspices of the American Society for the Control of Cancer, following the open forum on cancer to be held, June 24, under the joint auspices of the American Medical Association and the California State Medical Society. Dr. A. R. Kilgore is in charge of the dinner conference arrangements.

Fund to Aid German-Austrian Scientists.—Dr. Graham Lusk, treasurer, reports that the aggregate receipts of the German-Austrian Fund amounted to \$2,600, subscribed to by eighty-eight American scientists in sums ranging from \$5 to \$450. The money was distributed among thirty-three German-Austrian medical laboratories which were designated by the donors in sums ranging between \$25 and \$300. The account has been closed and has been audited by Dr. Rufus Cole. The following letter is a typical response: "Please accept my most grateful thanks for your most generous gift. Almost daily I think with gratitude of the help which my

department has received from America. I am fully aware of the fact that, but for this help, it would have been impossible to continue our classes and scientific investigations."

Bequests and Donations.—The following bequests and donations have recently been announced:

University of Michigan, Ann Arbor, Mich., for the first unit of the University Hospital, \$650,000, by Mayor Couzens of Detroit.

Lewis A. Mason Memorial Hospital, West Chester, Pa., \$600,000, by Pierre S. DuPont of Wilmington, Del.

Hospital for Joint Diseases, New York, \$200,000, by the directors. Chicago Federation of Aged and Adult Charities, \$76,025, the result of a tag day.

Overall Memorial Hospital, Coleman, Texas, \$75,000, for the erection of the institution by Mrs. M. Tye Overall.

St. Francis Hospital, Waterloo, Iowa, \$36,800, from the estate of John Corton of Waterloo.

Homeopathic Hospital, Reading, Pa., \$15,000 by William H. Luden, and \$5,000 each, by S. D. Bausher and C. E. Leippe.

Nicholasville, Ky., for a hospital building, \$10,000, and a site by Melancthon Young.

Jewish Hospital Association and the Jefferson Medical College of Philadelphia, each, \$10,000; Federation of Jewish Charities, \$2,500, and the Pennsylvania Hospital, \$1,000, by the will of Judge Mayer Sulzberger.

Johns Hopkins Medical School, Baltimore, for the department of syphilis, \$9,000, by the Interdepartmental Social Hygiene Board, and for the cardiographic laboratory, \$5,000, by Mrs. William Bingham of Cleveland.

Christ Hospital, Jersey City, N. J., \$5,000; New York University, \$1,000, by the late Dr. Henry S. Drayton of Jersey City.

Jefferson County Tuberculosis Sanatorium, Birmingham, Ala., \$2,500 each by Major E. M. Tutwiler and Richard W. Massey, and \$1,000 each, by Leo K. Steiner and W. H. Hassinger.

Beth Israel Hospital, Montefiore Hospital, and the Mount Sinai Hospital, New York, \$500 each by the will of Charles Kohlman.

St. Louis Medical Society, \$250, to defray expenses for care of indigent crippled children of the city, from proceeds of the Health Show, by Dr. Max C. Starloff.

Hospital Commission of Winston-Salem, N. C., 100 milligrams of radium by Mr. and Mrs. Bowman Gray of that city.

CANADA

Summer School Clinics.—The fourth annual meeting of the summer school of the Vancouver Medical Association will be held in Vancouver, July 3-6, at the same time as the annual meeting of the British Columbia Medical Association. Dr. Henry A. Christian, physician in chief, Peter Bent Brigham Hospital, and Hersey professor of medicine, Medical School of Harvard University, Boston; Dr. Carl B. Davis, associate professor of surgery, Rush Medical College, Chicago; Dr. Andrew Hunter, professor of biochemistry, University of Toronto, Ont., and Thomas C. Routley, assistant secretary of the Canadian Medical Association, will be among the lecturers. The registration fee for the course is \$10. Intending members should register at the Vancouver General Hospital, June 30 or July 1, and at the Normal School, July 3.

LATIN AMERICA

Practice of Medicine in Peru.—In order to keep better control over the practice of medicine, the government has placed the matter in charge of the national public health department. A commission has been appointed, headed by the director of public health, to issue regulations governing the practice of medicine.

Institute for Infant Welfare Planned at Montevideo.—The *Archivos Latino-Americanos de Pediatría* relates that the recent visit of Professor Cacace of Naples, the apostle of nipiology, to South America has inspired the Italian colony in Montevideo to plan the foundation of a complete Instituto de Nipiología. It is proposed to have it ready to present to the state in 1925, in commemoration of the independence of Uruguay. The term nipiology is from a Greek word signifying a very young infant.

Social Economy Exposition.—The Museo Social Argentino, an organization for the promotion of social and political studies and reforms, plans to hold an international exhibition of social economy in Buenos Aires during the first six months of 1924. There will be a congress of social museums and similar institutions at the same time. Delegates and exhibits from practically every country of the world are expected to attend. The Argentine Government is helping to promote the meeting and exposition.

Personal.—Dr. Fred A. Miller has returned to Bogota after a four months' trip to the United States. He has charge of the hookworm campaign in Colombia. —The "Instituto Médico Sucre" has elected as corresponding member Prof. A. Navarro of the University of Montevideo. Dr. E. L. Osorio is editor in chief of the *Revista*, published quarterly by the institute. —The Museo Social Argentino of Buenos Aires has elected, as corresponding member, Prof. E. Levi, founder and director of the Italian Istituto di Previdenza ed Assistenza Sociale. —The *Folha Medica* states that the

French government has decorated Prof. Fernando Magalhães of Rio de Janeiro, president of the Sociedade de Medicina e Cirurgia, as officer of the Legion of Honor.

FOREIGN

The Campaign Against Cancer in Italy.—Medical and scientific notables assembled from all parts of the country for a meeting in Bologna for the purpose of effecting the organization of a national federation against cancer. Professor and Senator Foa is president; Profs. M. Ascoli and R. Bastianelli are vice presidents, and Prof. G. Lusena of Genoa is secretary.

Orthopedics Congress in the Netherlands.—The Netherlands Orthopedic Society celebrated in May the twenty-fifth anniversary of its foundation with a three-day meeting at Amsterdam. Among the foreign speakers were Lorenz, Albee, Calot, Spitzzy, Biesalski and Putti. Murk Jansen presided at the meeting, and one day was devoted to discussion of rehabilitation of the disabled as practiced in France, England, Italy, Germany and the Netherlands.

Medal Awarded to Eijkman.—The *Nederlandsch Tijdschrift voor Geneeskunde* congratulates Prof. C. Eijkman and the Netherlands on the honor conferred by the awarding to him of the John Scott medal and money prize by the American Philosophical Society, founded in 1727 by Benjamin Franklin. Eijkman's pioneer work on deficiency diseases is well known. The editorial adds that the recipients of the other medals awarded at the same time were Sir Joseph John Thompson and Professor Aston of Cambridge, recipient of the Nobel prize in chemistry for 1922.

University News.—The new building for the bacteriologic department of the University of Durham College of Medicine, Newcastle-on-Tyne, was dedicated, May 25.—Dr. John S. B. Stopford has been appointed dean of the Victoria University Medical School, Manchester (England), to succeed Dr. Robert B. Wild.—A short course for the diploma in psychologic medicine will be held at the University of Cambridge, England, from July 10-August 17, if a sufficient number apply. The subjects covered will be the physiology and anatomy of the nervous system, psychology, psychopathology, mental deficiency and practical psychiatry.

Society Proceedings.—The fourth annual International Neurologic Reunion convenes at Paris, June 8-9, 1923. The subject appointed for discussion is "Compression of the Spinal Cord." The secretary is Dr. H. Meige, 35 rue de Grenelle, Paris.—An International Conference of Day Nurseries was held in London in May for two days. Delegates from France, Holland, Belgium, Italy, Sweden, Egypt, India, Japan, Canada and the United States attended the conference.—The second session of the International Association for the Promotion of Child Welfare will be held in Geneva in July. The agenda includes questions of a juridical, hygienic and general nature.—The British Medical Women's Federation held its annual meeting and first annual banquet in London, May 10, under the presidency of Lady Barrett, M.D. The membership of the federation is now 800. The constitution of the International Medical Women's Federation, which was drawn up last year at Geneva and at which Dr. Esther Lovejoy of New York presided, has been approved by the medical women of eighteen countries.

Protest Against Alcohol in Germany.—Our German exchanges publish an appeal to the authorities from the professors of hygiene in the universities, which warns of the dangers from the increasing consumption of alcohol. During the World War, the number of cases of alcoholism dropped to one sixth of the prewar figure which is now being rapidly regained. The present measures to restrict the use of foodstuffs for production of spirituous beverages and the regulations against production of strong beer, they say, are not enough. They declare that it should be forbidden to use any foodstuffs in the production of alcoholic drinks, and that the importation of liquor should be prohibited. The most effective measure would be the prohibition of production and sale of brandy and liqueurs. Until this is done, they advise strict control of drinking places, and advocate an improved Gothenberg system. The circular calls attention further to the evil effect on the mind and will power of alcohol: "In these grave times, the peoples need more than ever clear minds and resolute wills."

Personal.—Dr. Thomas S. Higgins, London, has been appointed medical officer of health for Cape Town, South Africa, to succeed Dr. Alfred J. Anderson, who resigned recently.—Dr. E. D. Wiersma, professor of psychiatry and neurology in the University of Groningen, delivered a lec-

ture on the "Psychology of Epilepsy" before the Royal Society of Medicine, London, May 24.—Sir Arthur Keith will deliver the twelfth biennial Huxley lecture on "Recent Advances in Science" at the Charing Cross Hospital Medical School, London, June 27.—Professor Mühlens of Hamburg has been asked by the Yugoslavakian government to aid in fighting malaria in Dalmatia, and has left for that country.—The Italian government has decorated three Belgian physicians, Dr. Lecrenier of Huy and Drs. Closset and Lambinon of Liège for services rendered during the war to Italian prisoners.—The French government decorated Prof. E. Malvoz of Liège on the occasion of the Pasteur centennial celebration at the University of Liège.—Dr. Luis del Rio y Lara was the guest of honor at a banquet recently at Zaragoza. He has been called to the chair of histology and anatomy at the University of Madrid vacated by Ramón y Cajal. Del Rio has been professor at the Zaragoza University for thirty years.

The Strasbourg Pasteur Celebration.—As bacteriology originated at Strasbourg, when Pasteur was professor, 1848-1854, the professors of bacteriology the world over have contributed with others to the Pasteur monument which was unveiled there May 31. The *Presse médicale* states that Belgium presented for the monument 5,000 francs; Denmark, 57,000; Great Britain, 55,000, the Netherlands, 16,000, Norway, 4,000; Peru, 6,000; Sweden, 3,000, and Switzerland, 2,000. The city of Buenos Aires donated 125,000 and the sum was raised to 200,000 francs by private subscriptions throughout Argentina. The United States was inscribed for 12,000. As already mentioned, congresses are scheduled on tuberculosis, June 2; ophthalmology, June 9; cancer, July 23; dermatology, July 25; the third international conference on leprosy, July 28, and a congress on puerperal fever, August 1. The last international conference on leprosy was held at Bergen ten years ago. In addition to these medical gatherings there will be congresses on inexpensive homes, municipal hygiene, heating and ventilation, refrigeration, milk supplies, pomology and, finally, in September, the congress of the Alliance de l'hygiène sociale. The *Presse médicale* for May 16 gives the full program of the four months' celebration in honor of Pasteur and international exposition, and of the various congresses, accommodations, etc.

Deaths in Other Countries

Dr. Mark Style, in London, May 14.—Dr. Arthur Looss, former professor of parasitology and biology at the University of Cairo; died, May 4, at Giessen, Germany, aged 62.

CORRECTIONS

The following paper was inadvertently omitted from the index of the *Journal of Experimental Medicine*, New York, 37:303-428 (March) 1923, published in THE JOURNAL, May 12, p. 1411:

Studies on Total Bile. II. Relation of Carbohydrates to the Output of Bile Pigment. P. Rous, G. O. Broun and P. D. McMaster, New York.—p. 421.

Urea Content in Saliva.—The abstract under the foregoing head (THE JOURNAL, June 2, 1923, p. 1657) should have read: "Landsberg found approximately the same amount of urea in saliva as in the blood serum."

Government Services

Army Medical School Graduation

Commencement exercises of the Army Medical School were held at the National Museum Auditorium, Washington, D. C., June 8. Thirty-one officers, majors or captains, who had successfully completed the army medical course of six months' technical and clinical graduate training at the Walter Reid Hospital and the Army Medical School in Washington, and four months' training at the Medical Field Service School, Carlisle, Pa., comprised the graduating class. The Surgeon-General plans to have all medical officers take this course, which plan will require several years to complete. The Assistant Secretary of War presented the diplomas. Capt. William D. Gill received the Hoff Memorial medal, having attained the highest standing in the class. Major Frank S. Matlack was presented with the Sternberg medal for the highest proficiency in preventive medicine by Dr. George M. Kober, dean of the Georgetown University School of Medicine, Washington.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 21, 1923

The Group Clinic

A group clinic in private practice, such as has existed in the United States for some years, has been started in London at Brook Street. The group consists of fourteen specialists, with whom are associated some experts in special subjects who are available when required. Patients are first interviewed by a general practitioner, who decides the particular consultants that the patient is to see. A roentgen-ray and a pathologic department are provided in the house. The patients are charged a flat rate for the consultation and investigation required, but the amount varies to some extent according to the requirements of the case and the necessity for prolonged pathologic examination. When the investigation is completed, the members of the group concerned meet for discussion, and the patient's own physician is invited to attend. The necessity for the group clinic was first pointed out by Sir Thomas Horder in an address to the Abernethian Society of St. Bartholomew's Hospital, in January, 1922. He considered that the conditions for which "group diagnosis" was particularly suitable were chronic toxic processes, whether microbic or metabolic, arthritis and fibrositis, many gastro-intestinal disorders, and a large group of neurasthenias. He thought that in the United States some of the clinics were too large, so that the process became mechanical and the patient was sent on a "circular tour" from which he emerged with a voluminous *dossier*, but no considered judgment as to the nature of his malady.

The School of Hygiene

In February, 1922, the Rockefeller Foundation made the munificent offer of \$2,000,000 for the building and equipping of a school of hygiene in London. The government accepted the offer and promised to furnish the upkeep. Land was acquired for the purpose in Bloomsbury. A proposal has been made to appoint provisionally a director for the school, and the foundation undertook to provide a sum not exceeding \$20,000 a year toward his salary and expenses. The minister of health, with the concurrence of the trustees of the Rockefeller Foundation, has appointed a transitional executive committee in connection with the school. The functions of this committee will be to appoint the director, arrange for amalgamation or coordination between the school and other institutions working in similar or closely related spheres, prepare plans for the school, and begin building, unless in the meantime it has been possible to set up the permanent governing body.

Crisis in the Insurance Service

The approaching revision of the terms of service of insurance physicians seems likely to result in a crisis. A good deal of dissatisfaction with the working of the system has been expressed in the press, but though the faults found are susceptible of remedy, there is one proposal that may lead to an acute struggle. During the war, the remuneration of insurance physicians, like other rates of pay, was raised in correspondence to the increased cost of living. Now there is a downward movement of prices and a general tendency to reduce salaries and wages, which is always opposed by the persons concerned if they are organized. The panel physicians have already submitted to one reduction, but their remuneration is still above the prewar level, and the increase corresponds to an additional government subsidy of about 50 cents in the capitation fee. The government is bent on

economy, and has intimated that it can no longer continue the subsidy. If this is to continue it must be paid by the insured, and the friendly societies, which represent them, have expressed unwillingness to do this. The British Medical Association is convinced that, in spite of exceptions, the present service is a good one, securing medical care for a large section of the population, such as was never previously obtainable, and under conditions, on the whole, not inferior to those of private practice. It holds that the economic value of the service is represented by a capitation fee of \$2.75, the amount fixed in 1920, and that the insurance fund in the aggregate is in the position to meet this cost without requiring any increased contribution from insured persons or subsidy from the government beyond that originally fixed. Dealing with the various complaints that have been made as to the service, it thinks that in the case of "lock-up surgeries" (offices) arrangements should be such as would enable a caller to get in touch with the physician or his deputy with promptitude. This would entail either a resident caretaker and telephonic communication with the physician's house, or, when the physician lives within a limited distance, notice visible by day and night indicating where he or his deputy can be found, or, when he lives at a distance, so that only his deputy is available at certain hours, the giving of a written notice of the arrangement to the patients. On the question of limitation of the number of insured on the physician's list, it advises that a proposal to reduce the present one of 3,000 to 2,500 should be accepted. It also favors the proposal to widen the freedom of choice of the patient, so that he can change his physician at any time.

Dr. Edwin Smith, a London coroner who is also a physician, has raised a storm by an attack on the insurance system. He described it as "a disastrous blunder and a miserable failure which puts a premium on scamped work." At a typical panel consultation, said he, the patient announced what seemed to him the most prominent symptom—a cough or a pain or the like—and instantly was given a prescription. There was no time for anything but the most perfunctory investigation, for the waiting-room was full of patients, and he was hurried from the surgery almost before he had entered it. The underlying cause of the symptoms must be missed in an immense number of cases, and a vast amount of disease overlooked, such as various forms of tuberculosis and disease of the heart or kidney. The human machine out of order did not lend itself to this lightning diagnosis and penny-in-the-slot style of treatment. Apologists for the system pointed to the infrequency of complaints, but only rarely would a patient go to the length of making a formal protest. On the whole, the worst work was done by the men drawing the largest incomes. He admitted that there were many physicians striving to do good work in the irksome and difficult conditions of panel work. As a remedy for the present system, he suggested one under which the physician was paid for actual work done and the patient freed from restrictions both in choosing and in changing his physician. Dr. Cox, medical secretary of the British Medical Association, replied to the coroner by pointing out that the majority of general practitioners were panel physicians, and therefore that he had attacked the profession at large. All the evidence that the British Medical Association had was that the system had greatly improved in the last two or three years, and that evidence of dissatisfaction was based on a few individual bad cases. The coroner was wrong in suggesting that the panel physician necessarily had a large number of cases. The average was less than 1,000 and in many districts the highest allowed was 2,500 or 2,000. The average number of attendances for each insured person yearly was 3.6. Therefore a physician with 1,000 would on an average see ten insured persons daily, and those with the

largest lists, thirty. As to the coroner's two proposals, the first had been considered by the council, which represents insured persons, and rejected, and the second had been proposed by the medical profession itself.

The Training of the Physician in Psychiatry

In a memorandum to the minister of health on medical education, Sir George Newman, principal medical officer, points out that the practitioner's approach to mental disorder should be through a twofold training, in psychology and psychopathology. The former should belong to physiology in its widest sense; the latter falls within the clinical years. Between the two, or as a part of either, may well come a brief course of a few lessons in medical psychology, with particular reference to psychoneuroses, instruction as to the examination of the patient, the practice of suggestion and persuasion, psychologic analysis and mental testing. To these courses should be added clinical work, first in a mental hospital and then in the outpatient clinic for nervous and mental disorders at the general hospital. He suggests a curriculum consisting of (1) a short course of lectures (from five to ten) in normal psychology, preferably as part of the course in physiology (reflexes, habit, instinct, emotion, intelligence, the conscious and the unconscious mind, Binet tests and investigational methods); (2) six explanatory discourses in abnormal psychology concurrently with clinical work in mental disease; (3) ten or twelve systematic lectures on mental disease concurrently with clinical work at a mental hospital, pronounced cases and the usual types of insanity, and (4) a series of demonstrations in the outpatient clinic for nervous and mental disorders at the general hospital.

MADRID

(From Our Regular Correspondent)

April 25, 1923.

Postoperative Complications—Rupture of Colon Following Injection of Pituitary Extract

Recasens, professor of gynecology and dean of the Madrid medical school, has presented to the Royal Academy of Medicine an interesting paper on "Complications Following Gynecologic Operations." He was led to write it by a truly extraordinary case. The patient was a woman with utero-adnexal inflammatory lesions. The uterus and adnexa were removed. For a few days, things progressed favorably, but on the eighth or ninth day, as the bowel movements, which had never stopped, seemed rather small, a routine injection of pituitary extract was given. In less than half an hour, the patient stated that she felt as if something had burst inside. Two hours afterward, she was dead. At necropsy, the colon was found enormously distended and "exploded," with a large quantity of hardened fecal matter, true coproliths, in the peritoneal cavity. Recasens stated that he had not found a similar instance in the literature, and while not positive as to its being due to the action of pituitary extract on the muscular fiber of the intestine, he felt compelled to report the case, as being one more addition to postoperative complications in abdominal surgery. He regretted the absence of the old cooperation between general physicians and the specialists. Nowadays the former pay too little attention to cases that require operation, and the latter disregard entirely too much the opinion of the family physician. He reported two cases of gastro-intestinal hemorrhages following gynecologic operations. In one, seven days after the operation, the patient vomited an enormous amount of blood, with much melenia. This patient eventually recovered. The other patient died three days after the operation, through the loss of blood caused by the erosion of a large vessel in a duodenal ulcer.

He recalled the death of a patient with mumps, and pointed out that when he visited the Virchow Hospital in Berlin, he noted at each bedside the necessary equipment for mouth washing and disinfecting. He was told that many patients in this way acquired the habit of cleansing their mouths. He has introduced this practice in his ward. Recasens then referred to mouth hygiene as practiced in the Mayo Clinic, where in all cases roentgenograms of the mouth are made and all teeth with focal infections are extracted.

Dr. Vital Aza stated that in his operations, better results have been obtained by following Döderlein's advice of not giving cathartics to patients before making a laparotomy, as catharsis is followed by intestinal paralysis. Professor Hernando advised that patients to be submitted to a laparotomy should not receive cathartics as a routine measure, and whenever indicated, to omit catharsis the day preceding an operation. Starvation on the operation day should be condemned, as it favors acidosis. Large amounts of starchy foods and sugar should be given to prevent acidosis and build up hepatic defenses. Alkaline waters should be administered. He warned against the use of liver extracts. A healthy liver prevents intoxication, but hepatic extracts increase it.

Malaga Against International Sanitation

At Malaga, the beautiful Andalusian city, there occurred four cases of bubonic plague which were duly diagnosed by the local sanitary inspector. As soon as the outbreak was reported, pursuant to law, the national health department declared the port infected, as required by international conventions, and reported the fact to foreign health authorities. Sanitary measures were immediately applied with sufficient vigor to eradicate the disease. What seems strange, although typical of conditions in Malaga, is the fact that all classes, including the physicians, and headed by the business element, signed a protest against the sanitary authorities of Malaga itself; the provincial sanitary inspector, who had to be transferred elsewhere, and finally, the director general of public health himself. In their eagerness to secure a statement that there had been no such disease as plague at Malaga, a committee was sent to Madrid, which even had the audacity to threaten the secretary of the interior. The secretary, however, impressed energetically on the committee the fact that Spain must fulfil its international duties.

PARIS

(From Our Regular Correspondent)

May 18, 1923.

The League of Nations and the Regulation of the Traffic in Narcotics

The opium advisory commission of the League of Nations has just met at the headquarters in Geneva of the general secretary of the league. M. Bourgeois, the French delegate, who was elected chairman, communicated to the commission a letter from a delegation sent by the government of the United States to take part officially in the work of the opium commission. In this document, the American delegation, which expressed the desire to keep in touch with the work of the commission, elucidated the point of view that it expected to take. The government of the United States holds that, in order to combat effectively the illicit traffic in narcotics, it is necessary to limit production. It will doubtless propose to the League of Nations opium commission that serious consideration be given to reduction of the amount manufactured in the various producing countries; namely, for opium, Great Britain, Turkey and Persia, and for cocaine, Peru, Bolivia and Holland.

Immediately after receiving the communication from the government of the United States, the opium commission

instructed its chairman to invite the American delegation to take part in its deliberations. This will be the first time that the United States will have been officially represented on any commission of the League of Nations. The delegation of the United States is composed of Mr. Stephen G. Porter, chairman of the committee on foreign affairs of the House of Representatives; Bishop Charles H. Brent, who, in 1919, directed the work of the Shanghai conference on the opium traffic, and Dr. Rupert Blue.

Geographic Distribution of World Disasters

Among the questions with which the League of Nations had to deal at the Genoa Conference was the draft of a constitution and by-laws for the proposed *Oeuvre internationale de secours et d'assistance aux populations frappées de calamités*. This project, which is fostered by Senator Ciraolo, president of the Italian Red Cross Society, is an endeavor to induce the signatory powers of the Geneva Convention to enter into a new agreement which would give further recognition to the Red Cross in its peace rôle, and, more particularly, in its function as an aid in great public calamities. The international organization, according to Ciraolo's plan, must be "one and universal, and must remain neutral in all matters pertaining to politics, religion and race."

Since, as a rule, great catastrophes and public calamities come suddenly, taking their victims unawares, it seems rational to establish an international society so organized as to be able to render immediate aid in case of need. The representatives of the international society will need to study the history of different peoples and the catastrophes to which they are exposed, in order to be prepared to provide adequate assistance in time of need. It has, therefore, occurred to the international committee of the Red Cross that it might be advisable to publish a map of the world showing the distribution of the various types of calamities that overtake, from time to time, different regions of the globe. This task has been undertaken by M. Raoul Montandon, president of the *Société de géographie* of Geneva, who has just published an important article on the subject in the *Revue internationale de la Croix-Rouge*. It has been found that the expense of publishing such a map in colors would be too great; for this reason M. Montandon has found it necessary to confine himself to the publication of a series of smaller maps in black and white. There will be separate maps showing the distribution of earthquakes, tornadoes, cyclones and typhoons, droughts, floods, famines, bubonic plague, cholera and yellow fever, and other calamities.

The Centenary of Pasteur at Strasbourg

In view of the fact that Pasteur was professor at the University of Strasbourg from 1848 to 1854, and recalling that here he made his first discovery in crystallography and molecular dissymmetry, it is only natural that the celebration of the centenary of the famous scientist should have assumed in this city an impressive and imposing character. May 31, the unveiling of the monument to Pasteur, erected on University Square, will take place. Later, the Hygienic Museum, intended to perpetuate the memory of Pasteur and his discoveries, will be dedicated. The same day, in the presence of the president of the republic, an international exposition, which has for its purpose the demonstration of the results of Pasteur's work in the fields of medicine, hygiene, industry and agriculture, will be opened. The exposition will last four months, and during this period there will be held in Strasbourg a large number of national and international congresses: notably, the fifth National Congress of Tuberculosis, the thirty-sixth Congress of the French Ophthalmologic Society, the second Congress of French-Speaking Dermatologists and Syphilologists, the International Congress of City

Management and Municipal Hygiene, and the third International Conference on Leprosy.

Reforms in the Medical Curriculum

The secretary of public instruction is at present working out a new plan of study preparatory to the degree of doctor of medicine. In the *Progrès médical*, Dr. J. Vanverts, professor at the *Faculté de médecine* of Lille, recently published some interesting ideas of his own on the subject. He regrets especially that purely theoretical instruction has been retained in the new curriculum. He holds that manuals and treatises on various theoretical subjects are numerous and well edited, so that the student can find discussions on all questions with which he needs to be familiar. The university professor should never be content to lecture on a field that is already well covered in the ordinary manuals. He has a more useful task to perform. During the course of his instruction, he should endeavor to establish direct relations with the student; give explanations; direct the study of anatomic and pathologic specimens, drawings and photographs, and illustrate experimental and operative procedures. The elimination of purely theoretical courses, Vanverts holds, would allow more time for personal work and preparation for the competitive examinations (externship, internship, etc.). The truth of this statement becomes evident when we read in the circular letter by the secretary that accompanied the proposed new curriculum, when it was submitted to the medical faculties, the complaint as to the excessive number of courses, and the opinion that it is impossible for the student to keep up all the drills and exercises in which he is supposed to participate.

Vanverts regrets that the new plan of study eliminates practical operative work on the cadaver. It substitutes instead compulsory service as hospital orderlies during the third, fourth and fifth years, and a demand is made that the medical faculties make some agreement with the hospital administrations whereby the students are given an opportunity to take part in emergency surgical operations in the services to which they are attached. But it may be questioned whether the student will really have an opportunity, while serving as an orderly, to perform many operations, for the reason that minor operations are usually assigned to the interns and externs, who will not willingly renounce this privilege. Under these circumstances, Vanverts thinks that it is a mistake to abolish operative work on the cadaver, which, from the standpoint of knowledge of topographic anatomy, complements dissection and gives the student practice in performing most of the simpler operations.

Privileged Communication and Declaration of Death

In most cities of any size there is a municipal medical service whose duty it is to investigate and verify reports of death. When a death occurs, the attending physician reports his diagnosis of the cause of death, in a sealed envelop, and the municipal physician, after verifying the fact of death, is usually content to transfer the diagnosis of the attending physician to his death certificate, which alone is accepted by the civil authorities as evidence. This system has several advantages. In the first place, it constitutes a protection against premature burial in certain cases of apparent death; secondly, in cases in which foul play may be suspected, it allows the inspecting physician, who is not bound by the right of privileged communication, to mention in his certificate his doubts as to the cause of death. The city of Marseilles has no medical inspectors, and it is the duty of the attending physician to make out the death certificate; he may thus find himself in an embarrassing situation. Dr. Dufour recently communicated a case of this kind to the *Société de médecine légale* of France. A young man, who was wounded

in the stomach by a shot from a revolver in the hands of a friend, was conveyed to a hospital. Before operation, the wounded youth enjoined on the surgeon the strictest secrecy, irrespective of the outcome of the surgical intervention. Laparotomy revealed four perforations of the small intestine, which were sutured. Acute peritonitis developed, and the young man died. It was the duty of the surgeon to furnish a death certificate, and he entered "peritonitis" as the cause of death. This certificate was accepted, and the body was buried. One month later, the authorities were informed of the homicide; the perpetrator of the act was arrested and confessed. The surgeon, when called as witness, stated that, by reporting in the death certificate "peritonitis" as the cause of death, he deemed that he was upholding the right of privileged communication and, at the same time, was telling the truth. If, after the word "peritonitis," the surgeon had added the words "resulting from a bullet wound of the abdomen," he would have violated the right of privileged communication.

After discussing the communication of Dr. Dufour, the Société de médecine légale declared that the lack of systematic verification of deaths by physicians acting under municipal authority, in Marseilles and a number of other large cities, was regrettable and sometimes placed attending physicians in impossible situations.

A Pavilion for Argentinian Students in Paris

In my preceding letter (*THE JOURNAL*, June 9, 1923, p. 1706) I referred to the construction of the so-called "University City." Argentina has taken a great interest in the plan, and has appointed Dr. E. V. Segura, professor at the Faculté de médecine in Buenos Aires, to inquire into the matter. The latter has already secured the cooperation of M. Otto Bemberg, former Argentinian consul in Paris, who has decided to take on himself the construction of a pavilion and rooming house combined, which will be called the "Maison des étudiants argentins." The building will be erected on ground ceded by the university to the Argentinian Foundation, to which the donor has agreed to give 1,000,000 francs. It is thought that, through an official appropriation of the Argentinian government, aid furnished by the Franco-Argentinian committee, and contributions from private individuals in Argentina, it will be possible to erect other such pavilions.

A Regional Inquiry on Goiter

Dr. Léon Bérard, professor at the Faculté de médecine in Lyons, who has been asked by the Conférence internationale du goitre (to be held in Basle in the spring of 1924) to present a report on the present distribution of goiter in the region of Lyons, recently addressed a pressing appeal to all physicians in the departments of Saône-et-Loire, Ain, Jura, Haute-Savoie, Savoie, Isère, Hautes-Alpes, Basses-Alpes, Drôme, Ardèche, Haute-Loire and Loire, begging them to investigate within their territory as to (1) the relative frequency of endemic, epidemic, familial and sporadic goiter today as compared with fifty years ago; (2) the present relative frequency of exophthalmic goiter and ordinary goiter; (3) the apparent causes of endemic goiter and the varying aspects of such endemics during the last fifty years: nature of the soil, the general conditions pertaining to public hygiene, living conditions, food, drinking water, and various infections, and (4) the action of iodine administered as a prophylactic to children of goitrous parents and to adults and goitrous adolescents before marriage.

A Memorial to Charles Infroit

A memorial plaque in honor of the roentgenologist Charles Infroit, who died, in 1920, after a long period of suffering, the victim of roentgen rays, has just been placed in the Salpêtrière Hospital, Paris.

BERLIN

(From Our Regular Correspondent)

May 5, 1923.

German Surgical Congress

To continue the report on the forty-seventh annual meeting of the Deutsche Gesellschaft für Chirurgie: (See Berlin letter, *THE JOURNAL*, June 9, 1923, p. 1708).

Professor Kümmell, who is recognized as one of the foremost German authorities in the field of surgery of the kidney, discussing "The Surgery of Tuberculosis of the Kidney," stated that this is a chronic, slowly developing, usually unilateral affection, which gradually begins to affect the bladder and the other kidney, often becomes stationary and then later presents severe exacerbations, progresses steadily and ends in death, amidst great suffering to the patient. Through early diagnosis and operation a fatal issue can be prevented. Suspicious early symptoms are: frequent desire to urinate, not yielding to rational treatment; sudden appearance of incontinence of the urine in adults; pain in the ureter, especially in women, and sudden hematuria in younger persons. The manifestations on the part of the kidney are slight. Characteristic is acid urine which contains pus but is sterile. The demonstration of tubercle bacilli in the urine cannot be taken as proof, since tubercle bacilli may be excreted by those who are suffering from pulmonary tuberculosis but not from tuberculosis of the kidney. The subcutaneous tuberculin reaction to large doses (from 5 to 10 mg.) is convincing. Cystoscopy and catheterization of the ureter (the danger from infection is usually considered slight), which may be replaced by the indigocarmine test, may be used to strengthen the diagnosis. Before the operation, the operator must convince himself that the other kidney is reasonably sound; a slight involvement is not necessarily a contraindication. The determination of the freezing point of the blood has always proved a reliable test. Kümmell is an opponent of conservative treatment, as he has not seen any good results from it, nor from tuberculin treatment. The operative removal of the diseased kidney, if the other kidney is sound and the bladder is only lightly involved, furnishes a good prognosis. Also, though the other kidney is slightly affected, if its function is preserved, the operation is indicated. In far advanced cases, nephrotomy or other palliative operations are to be considered. Of 188 unilateral nephrectomy operations, fourteen resulted fatally. Of the 174 remaining patients, 9.2 per cent. died in from six months to ten years. The late mortality up to five years was 5.8 per cent. In a number of cases, pregnancy followed nephrectomy and progressed normally without mishap.

In the discussion, Professor Küttner of Breslau reported on 103 further cases of tuberculosis of the kidney. In 90 per cent. of the cases the bladder was involved; in 40 per cent., the male genitalia, and in 2 per cent., the female genitalia. The immediate mortality from nephrectomy was 8.5 per cent., while the remote mortality, after three years, was 21.8 per cent. A number of lasting cures extending over a period of fifteen years were recorded. Thirty-five per cent. presented completely normal micturition. In half of the cases, after the operation, the tuberculous condition of the bladder cleared up completely. One woman operated on passed through three pregnancies later. Wossidlo of Berlin has of late interpreted the indications for tuberculin treatment more strictly. It is, he contends, indicated only in the early stages (with exact control of cases treated) and in bilateral tuberculosis, with a view to bringing about an operable stage. According to Professor Barth of Danzig, the lasting results are impaired by the fact that tuberculosis of the bladder frequently persists. Only about 25 per cent. of the patients remained cured over a period of nineteen years, but 50 per

cent. were improved. Twenty-five per cent. died the first year. If nephrectomy is performed in time, pregnancy is well borne. Professor Voelcker of Halle warns against exploratory splitting of the kidney. In two of his cases death resulted from miliary tuberculosis. Even though one does not at first find any evidence of disease at the time of the operation, one should have the courage to extirpate the kidney and not look for concealed foci. Professor von Haberer of Innsbruck pointed out that some cases of tuberculosis of the kidney develop and progress under the form of true nephralgias, in which the examination of the function and catheterization of the ureter leave one in the lurch. Professor Casper of Berlin performed extirpation in 170 out of 700 cases of tuberculosis of the kidney and in the last seventy cases the mortality was only 2 per cent. The cases in which no operation was performed progressed usually to a fatal issue. In cases in which, on account of a markedly contracted bladder, catheterization of the ureter is not possible, one can expose the kidneys and apply clamps to the ureters, in order to secure a specimen of the secretion from each kidney. Kümmell warned against exposure of the kidney for the purpose of diagnosis. Severe tuberculosis of the bladder, he stated, is hard to handle. In a large number of cases, however, a cure is effected by extirpation of a kidney. Internal administration of potassium iodid, or local treatment with phenol (carbolic acid) solution, iodoform or mercuric chlorid often alleviate the condition. The general therapy of tuberculosis and the use of tuberculin should also be considered. Finally, resection of the bladder and transplantation of the ureters may need to be performed.

Following these two papers, the functional diagnosis of the kidney in relation to kidney surgery was discussed, the topic being introduced by Professor Rehn of the Lexer clinic in Freiburg. On the basis of extensive animal experimentation and clinical observation, Rehn has worked out a method which makes use of modern colloidochemical researches. It consists of two parts: the determination of the acid and the alkali excretion. To ascertain the acid excretion, 20 drops of hydrochloric acid in 30 c.c. of water are given in the morning fasting. To estimate the alkali excretion, he injects intravenously 50 c.c. of a 4 per cent. solution of sodium bicarbonate. According to the results, Rehn distinguishes five different types, which lack of space prevents describing in detail. During the discussion, Renner was the only one who expressed himself on Rehn's new method. He regarded it as quite usable for the recognition of incipient renal insufficiency.

The third paper was by Professor Küttner, who discussed the subject of prostatic surgery. In hypertrophy of the prostate the formation of the tumor begins in the rudimentary portions of the gland. He distinguishes two types, endovesical (hypertrophy of the middle lobe) and subvesical (hypertrophy of the lateral lobes). In atrophy of the prostate there is no tumor formation. The mortality of the prostatic operation ranged formerly between 13 and 22 per cent., but it is now from 6 to 8 per cent. In establishing the indications for operation, age, social position, rate of enlargement of the prostate, and behavior of the kidney and bladder are to be considered. In case of total retention of the urine, the prostate should not be removed at once but a bladder fistula should first be established, after which the renal function often improves (water test and concentration test for the determination of the kidney function). As to operative methods, Küttner prefers the suprapubic operation as being technically more simple and easier in its after-treatment as compared with the technically more difficult perineal operation, although he admits the latter has its good features. With the perineal operation, rectal injuries and formation of fistulas are more common. He therefore regards the suprapubic operation, in

either one or two stages, as the routine procedure. However, if a tumor is suspected, the Voelcker method should be employed. In the two-stage method, the dilation of the bladder fistula is often very difficult; laminaria tents often cause great pain, so that the operator is sometimes compelled to choose the perineal route. A combination of the two methods is to be considered in cancer of the prostate. As compared with prostatectomy, the other operative methods, such as division of the vasa deferentia, are little used. In atrophy of the prostate, the diagnosis of which is reached only by exclusion, we are often concerned with valve formation. Here the Bottini operation, external urethrotomy and division of the obstructing buttress, as practiced often successfully by Küttner, is to be considered. Carcinoma of the prostate, which is often not discovered until the operation, is difficult to remove radically. The lasting results are unsatisfactory. Here radiotherapy enters into the problem. According to Professor Kümmell of Hamburg, the earlier the operation is done, the better the results. A great many deaths are due to renal insufficiency. In order to exclude these cases from operation, one must not rely on one method of examination but must have recourse to several. If kidney function is normal, the one-stage operation may be used. In the two-stage procedure, he was always able to dilate the bladder fistula with laminaria tents. After-treatment consisted of drainage and the application of a self-retaining catheter for twenty-four hours. The perineal method has the disadvantage of frequently causing incontinence of the urine. Professor Voelcker of Halle emphasizes the importance of the blood pressure for the prognosis of the operation. Intestinal injuries, fistulas and incontinence of the urine have never occurred in connection with his operations. He emphasized that there are cases in which the prostate is not to be extirpated from the bladder. Professor Perthes of Tübingen stressed the importance of the clinical picture of atrophy of the prostate, which may often develop a long time before the onset of senescence. The cause of the discomfort is often due to a valve in the neck of the bladder, which prevents the evacuation of the urine. Treatment consists in excision and enucleation of the atrophic prostate, or in dividing the valve, which he successfully carried out in four instances. Professor von Haberer of Innsbruck called attention to the favorable effect of vasotomy as applied to the vasa deferentia; it eliminates the danger of postoperative epididymitis and in some cases the prostatic hypertrophy will retrogress, so that prostatectomy can be dispensed with; it also causes the blood pressure to fall and the patient's general condition improves. He has not lost a case since this preliminary operation was introduced. Against the operation may be urged the fact that the patient is rendered impotent. For the after-treatment of prostatectomy he recommends drainage over a forty-eight hour period.

Marriages

ELMER FORREST MERRILL, Ann Arbor, Mich., to Miss Helen Gertrude Cliff of Jackson, June 4.

THOMAS ARTHUR JOHNSON to Miss Myrtle Elizabeth Swanson, both of Rockford, Ill., June 6.

NICHOLAS ANTON HERRMANN, Equality, Ill., to Miss Margaret Woods of Chicago, May 12.

CECIL W. CLARK, Newton, Mass., to Miss Sara C. Schlechter of Reading, Pa., April 28.

DANIEL F. HAYES, Chicago, to Miss Marie Keefe of Oak Park, Ill., June 2.

YNGVE JORANSON to Miss Irene Johnson, both of Chicago, June 9.

Deaths

William Gage Erving ⊕ Washington, D. C.; Johns Hopkins University Medical Department, Baltimore, 1902; died, May 13, in Gravenhurst, Ont., Canada. Dr. Erving was born in Hartford, Conn., in 1877. In 1904 he was appointed professor of orthopedic surgery at the Georgetown University School of Medicine and the Howard University School of Medicine, Washington, D. C. With Prof. Hiram Bingham, of Yale University, now lieutenant governor of Connecticut, he went to Peru in 1911 as surgeon to the expedition that discovered the Inca city on Machu Picchu. During the World War, Dr. Erving served in the M. C., U. S. Army, in France, with the rank of major. He was on the staffs of the Children's, Providence and Georgetown University hospitals, and a fellow of the American Orthopedic Association, the Washington (D. C.) Surgical Society, the Interurban Orthopedic Club and the Royal Geological Society of England.

Hiram Eugene McNutt, Huron, S. D.; Dartmouth Medical School, Hanover, N. H., 1872; for many years secretary of both the state and county medical societies; member of the state board of health; at one time member and secretary of the state board of medical examiners; aged 74; died suddenly, May 24, of heart disease.

Thomas R. Wright ⊕ Augusta, Ga.; University of Georgia Medical Department, Augusta, 1876; professor of surgery, and at one time dean at his alma mater; proprietor of the Margaret Wright Hospital; on the staffs of the University Hospital, and the Georgia State Sanatorium, Milledgeville; aged 68; died, May 25.

Nelson W. Bodenbender, Buffalo; Cleveland University of Medicine and Surgery, Cleveland, 1887; member of the Medical Society of the State of New York; on the staffs of the Deaconess and Homeopathic hospitals; aged 59; was drowned in Seneca Lake, near Waterloo, N. Y., May 26.

Charles Putnam Pruyn, Chicago; Rush Medical College, Chicago, 1886; founder, and at one time professor of operative dentistry, Northwestern University Dental School; past president of the Illinois Board of Dental Examiners; aged 68; died, June 10, of paralysis agitans.

LaWilla Mott Cornelius, Brooklyn; Bellevue Hospital Medical College, New York, 1891; member of the Medical Society of the State of New York; formerly on the staffs of the Long Island College and Kings County hospitals; aged 64; died, June 3, of chronic nephritis.

Alice Margaret Fasold, Pittsburgh; Woman's Medical College of Pennsylvania, Philadelphia, 1920; member of the Medical Society of the State of Pennsylvania; aged 27; was killed, May 31, when the automobile in which she was driving went down an embankment.

William Thomas Barger, Cleveland; Starling Medical College, Columbus, 1894; physician to the American Hospital of Paris, France, during the World War, and served in Siberia with the American Red Cross for two years; aged 53; died, May 28.

Charles M. Hollister ⊕ Pierre, S. D.; University of Pennsylvania School of Medicine, Philadelphia, 1895; physician to the Indian Service Pierre School; aged 56; died, May 18, at the Presbyterian Hospital, Chicago, of pyonephritis.

Frank Eugene Sleeper, Sabattus, Me.; Medical School of Maine, Portland, 1870; at one time member of the state legislature; formerly on the staff of the Central Maine General Hospital, Lewiston; aged 76; died, May 2.

David Heine Levy ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1901; attending surgeon to the Hospital for Joint Diseases; aged 46; died, May 22, of septicemia and nephritis.

Arthur U. Williams ⊕ Hot Springs National Park, Ark.; Missouri Medical College, St. Louis, 1878; member of the American Urological Association; aged 67; was found dead in his office, May 21, of heart disease.

Edward Canizares, Havana, Cuba; University of Havana, 1918; member of the New York City Department of Health; on the staff of the Riverside Hospital, New York, where he died, April 21, aged 28, of scarlet fever.

George W. Endicott ⊕ Plainfield, N. J.; Jefferson Medical College of Philadelphia, 1875; for ten years member of the board of health; on the staff of the Muhlenberg Hospital; aged 70; died, May 31.

William Suvard Blunt, Waupun, Wis.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1897; aged 51;

died, May 25, at St. Agnes' Hospital, Fond du Lac, following an appendectomy.

Hiram K. Worden ⊕ Westmoreland, N. Y.; Albany (N. Y.) Medical College, 1874; city health officer; for many years member of the school board; aged 73; died suddenly, May 20, of heart disease.

C. L. Washburn, Marion, Ill.; Missouri Medical College, St. Louis, 1882; formerly member of the school board; aged 70; died, May 18, at the Holden Hospital, Carbondale, of heart disease.

John Henry Costello, Jr., Boston; Medical School of Harvard University, Boston, 1897; member of the Massachusetts Medical Society; aged 49; died, May 24, following a long illness.

Gustave Henry Douglas, Crescent City, Calif.; Harvey Medical College, Chicago, 1904; member of the state legislature; aged 59; died suddenly, March 27, at Sacramento, of heart disease.

Robert Bruce Johnstone, Hyattsville, Md.; Hahnemann Medical College and Hospital of Philadelphia, 1887; served as city health officer for several years; aged 68; died, June 1.

John Thomas Sullivan, Milwaukee; Marquette University School of Medicine, Milwaukee, 1913; member of the State Medical Society of Wisconsin; aged 41; died, May 26.

Ledra Heazlit ⊕ Auburn, N. Y.; University of Pennsylvania School of Medicine, Philadelphia, 1897; on the staff of the City Hospital; aged 49; died, May 2, of nephritis.

Endell N. Leake, Fremont, Neb.; New York Homeopathic Medical College, New York, 1880; member of the Nebraska State Medical Association; aged 66; died, May 25.

Lewis Cass Hormell, Casselton, N. D.; Rush Medical College, Chicago, 1874; Civil War veteran; aged 76; died, May 8, in Chicago, on his way home from Florida.

John Lawrence May ⊕ Westerly, R. I.; College of Physicians and Surgeons, Baltimore, 1901; aged 50; died suddenly, May 30, of heart disease.

Charles H. Ayling, Gridley, Ill.; Northwestern University Medical School, Chicago, 1893; aged 53; died, May 23, of cerebral hemorrhage.

Hiram Smiley, Chicago; Pulte Medical College, Cincinnati, 1885; Civil War veteran; aged 83; died, May 25, at Clinton, Iowa, of carcinoma.

A. Fletcher Haynes, Huntington, W. Va.; University of Louisville (Ky.) Medical Department, 1891; aged 63; died, June 1, of influenza.

George Henry Cairnes ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1864; aged 85; died, May 28, of senility.

Ernest Schorr ⊕ Detroit; Medical Department of the University of Wooster, Cleveland, 1882; aged 62; died, May 21, of heart disease.

Edwin Grant Ogden, Chicago; New York Homeopathic Medical College and Hospital, New York, 1891; aged 55; died, June 4.

Henry E. Eldridge, Richmond, Va.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1895; aged 49; died, May 14.

Charles Nelson Hart, Marshfield, Mass.; Homeopathic Medical College of Missouri, St. Louis, 1876; aged 63; died in May.

Frederick Selden Bloss, Troy, N. Y.; Albany (N. Y.) Medical College, 1884; aged 65; died, April 7, of cerebral hemorrhage.

James L. Clark, Denver; Missouri Medical College, St. Louis, 1886; aged 58; died, May 20, of cerebral hemorrhage.

George S. Silljacks, Baltimore; University of Maryland School of Medicine, Baltimore, 1886; aged 63; died, June 1.

Benjamin F. Hudson, Montezuma, Ind.; Miami Medical College, Cincinnati, 1857; aged 97; died, May 10, of senility.

Allen Parker, Warrensburg, N. Y.; Bellevue Hospital Medical College, New York, 1880; aged 66; died, April 28.

Albert E. Teague, Indianapolis; Eclectic Medical Institute, Cincinnati, 1892; aged 65; died, May 23, of heart disease.

Joseph M. Thurston, Richmond, Ind.; Physio-Medical Institute, Cincinnati, 1866; aged 82; died, May 23, of senility.

Jabez John Bagshaw, Centerville, S. D.; Barnes Medical College, St. Louis, 1895; died, May 1, of heart disease.

Effenger R. Kline, Philadelphia; Jefferson Medical College of Philadelphia, 1882; aged 69; died, May 8.

Correspondence

"THE DANGER OF PITUITARY EXTRACT"

To the Editor:—Through an abstract that appeared in THE JOURNAL (May 12, 1923, p. 1418) our attention has been directed to the article of Pouliot and Truchard, criticizing our article: "The Dangers of Pituitary Extract" (THE JOURNAL, May 21, 1921, p. 1390). Unfortunately, we have not yet been able to secure a copy of the journal containing Pouliot and Truchard's paper; but, assuming that the abstract correctly represents it, we feel that the statements contained in it create an incorrect impression and should not be passed unchallenged.

In the abstract, it appears that the entire basis for the criticism of Pouliot and Truchard consists of the inadequacy of our "case reports" of clinical rupture of the uterus following the employment of pituitary solution. As a matter of fact, the mention of such cases in our paper was merely incidental, and constituted only a portion of the argument against the obstetric use of pituitary solution; consequently, it seems unfair for Pouliot and Truchard to ignore the remainder of our argument. Nevertheless, even if this point is disregarded, our mention of cases of uterine rupture has been so presented, in the abstract at least, as to give an entirely different impression from what was intended.

Many of the cases that we included in our paper were reported in discussions at medical meetings; the details concerning them were meager in the extreme. By their analysis, Pouliot and Truchard arrive at the conclusion that pituitary solution was contraindicated in all but one instance; and they sapiently remark: "Pituitary extracts are dangerous only in the hands of those who do not know how to use them." But who possesses this all-important knowledge? One authority believes that the drug should be used only in the case of multiparas; another contends that only the primiparous uterus can weather the storm; one holds that pituitary solution should be used to force the head into the pelvis and enable the application of low forceps; another believes that it should never be injected until the head is on the perineum. With the constantly changing views regarding indications and contraindications, it is indeed difficult to discover the report of a pituitary catastrophe where, according to some "authority," a contraindication did not exist. Whatever the present accepted contraindications are, the fact remains that, in the hands of supposedly qualified medical men, the obstetric use of pituitary solution has been attended by catastrophe on numerous occasions. Those who, with singular clarity of vision, discern the obvious contraindications after the catastrophe or who evolve new "contraindications" as a result of the catastrophe argue the safety of the drug with as much force as the Christian science healer defends his position by claiming that a "lack of faith" was responsible for the death of a patient with diphtheria.

Since the appearance of our paper, two additional cases of uterine rupture have come to our attention. One of these was reported by Langrock (*Am. J. Obst. & Gynec.* 3:656, 1922), 1 c.c. of the solution being injected after the expulsion of the placenta. At a recent staff meeting of the Retreat for the Sick in this city, Dr. A. S. Brinkley (this case will be reported in detail in the *Virginia Medical Monthly* by Drs. Brinkley and Martin) reported the case of a quadripara who was attended in labor by a capable and experienced practitioner. When the child's head had actually appeared at the vulva, the patient was given an injection of 5 minims of pituitary solution; the head disappeared and the patient went into collapse. Opening the abdomen revealed that the

uterus had performed an almost complete supravaginal amputation on itself.

Doubtless, pituitary enthusiasts will discover "contraindications" in these cases, as they would discover contraindications in the number of unreported cases (and we believe this number is not small) in which uterine rupture and death occur after the use of pituitary solution, but when, in the absence of necropsy, the unfortunate outcome is attributed to some "act of providence."

It would be interesting to secure the views of Pouliot and Truchard on the use of ergot in the early stages of labor. This practice, formerly endorsed by the leading obstetricians, is now almost universally condemned, but we have shown (*Am. J. Obst. & Gynec.* 4:608 [Dec.] 1922) that pituitary solution is much more likely than ergot to cause persistent uterine contraction, both experimentally and clinically.

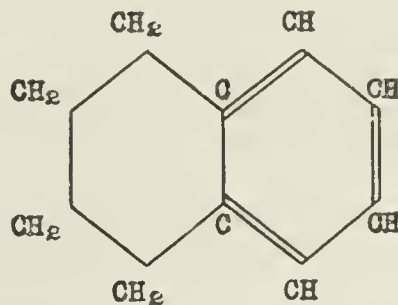
Differing from our French colleagues, we believe that we are justified in renouncing "the benefits of organotherapy" obstetrically, not on the basis of a single case, but because it may be shown both experimentally and clinically that pituitary solution is more likely than ergot to cause uterine tetanus, and because the obstetric use of the drug by licensed physicians has been followed by many instances of uterine rupture with fetal and maternal death.

CHARLES C. HASKELL, M.D.,
M. PIERCE RUCKER, M.D., Richmond, Va.

FORMULA OF TETRAHYDRONAPHTHALENE ("TETRALIN")

To the Editor:—In the editorial on the Wassermann tuberculosis reaction (THE JOURNAL, May 19, p. 1456), "tetralin" is stated to be "a naphthalene with four molecules of water of hydration."

"Tetralin," or tetrahydronaphthalene, is produced by the hydrogenation of naphthalene; that is, it is made by the catalytic reduction of naphthalene. It possesses the structural formula:



I hope that this information will make clear that "tetralin" is not a naphthalene hydrate.

W. A. HAMOR, Pittsburgh.

Assistant Director, Mellon Institute
of Industrial Research, University
of Pittsburgh.

FOCAL INFECTION—THE SEMINAL VESICLES

To the Editor:—During the last two years I have seen a number of men who suffered from toxic fibrositis, patients who obtained temporary relief from acetylsalicylic acid, but who failed to get the expected permanent relief from removal of infected teeth and tonsils, or from the clearing up of other evidently infected areas.

For some years I had recognized that my finger was not long enough to enable me to elicit satisfactory findings concerning the condition of the seminal vesicles, and I had been in the habit of depending on the well recognized genito-urinary specialists for this information. It finally occurred to me that perhaps the physical limitations of these specialists

might similarly be a bar to their efficiency in this respect, and so I sent a number of these patients to a surgeon whom nature had endowed with unusually long fingers. The results have been highly gratifying, many patients who previously had been examined with negative results by different well-trained urologists thus obtaining drainage of hitherto unrecognized pent up infected material, with consequent relief from their fibrositis.

The conclusions I would draw from my experience are that:

1. In quite a number of men patients in whom the removal of recognized focal infections does not give the expected results, a nidus of infection exists in the seminal vesicles.

2. In many instances the physical limitations of even well trained urologists prevent them from recognizing the vesicular infection, and from properly and gently massaging these structures should they discover the infection.

CHARLES MINER COOPER, M.D., San Francisco,

NEW POLISH PERIODICAL

To the Editor:—I have received a letter emanating from the State Epidemiological Institute in Warsaw, Poland, in which I am informed of the creation of a new medical publication, the *Journal of Experimental Medicine*, which will provide a medium for original publications for the Polish scientists, which is now completely lacking. In order to provide a financial basis for the undertaking, one thousand subscribers are required, of which number only 240 are available at present. It is hoped that Polish physicians in the country and also libraries will subscribe to it. Those interested should forward their names and exact addresses to Dr. Casimir Funk, 437 West Fifty-Ninth Street, New York. Medical publications which have Polish physicians among their subscribers please copy.

CASIMIR FUNK, M.D., New York.

Queries and Minor Notes

PARATHYROID GLANDS

To the Editor:—Please give me all of the available information about the parathyroid glands, their function, and especially their action, if any, on calcium metabolism. Please also tell me how one may recognize parathyroid insufficiency.

J. C. BURCH, M.D., Alto, Ga.

ANSWER.—A number of significant facts regarding the parathyroid glands have been established during the last two years. The facts are these:

1. Normal dogs, including pregnant females, can be kept alive indefinitely following complete parathyroidectomy. Complete loss of the parathyroid glands is therefore compatible with life.

2. The treatment necessary to prevent fatal parathyroid tetany early after extirpation of the glands can be discontinued after from forty to sixty days.

3. On the appearance of the estrual cycle, however, all the symptoms of acute tetany usually recur.

4. Between the periods of "heat" the animals appear perfectly normal. Under special conditions (e. g., muscular exercise and excitement), such animals may suddenly develop convulsions indistinguishable from grand mal attacks of idiopathic epilepsy.

5. The best evidence available points to the view that parathyroid tetany is due chiefly to toxins elaborated in and absorbed from the gastro-intestinal tract.

6. Two measures have been devised to prevent the tetany or rapidly control it should it occur: The dietary treatment prevents the elaboration of the toxic products in the bowel; the drug calcium lactate, when ingested in large doses, certainly preserves life. Its mode of action is not known with any degree of certainty. For the rapid control of alarming symptoms in an emergency, preparatory to either one or both of the treatments mentioned, nothing excels the free use of Ringer's solution intravenously injected, particularly if preceded by soap-suds enemas.

7. It is not certain at this time whether the low blood calcium in tetany is a cause or an effect of the tetany.

Tetany due to parathyroid deficiency or insufficiency, seen most commonly after operations on or partial resection of the thyroid gland, is characterized by intermittent clonic spasms of the skeletal muscles. Spasticity first of the hands and then of the feet, with clonic twitchings of the individual muscles, precede the spasms. Fibrillations of the skeletal muscles can always be felt and often seen. Tetanic spasms of short duration may occur in severe cases. A tetanic spasm of the diaphragm at the time of a generalized tetanic convulsion usually leads to death from asphyxia in experimental animals. In the intervals between clonic and tetanic seizures (as well as in latent tetany), one finds a marked increase in the electrical excitability of the peripheral motor nerves to a galvanic current (Erb's test); a tetanic spasm in a limb whose main motor nerves are compressed (Trousseau's phenomenon); a spasm or clonic twitching of the facial nerve (Chvostek's sign).

RECENT ARTICLES

- Luckhardt and Rosenbloom: The Presentation and Control of Parathyroid Tetany, *Proc. Soc. Exper. Biol. & Med.* **19**: 129, 1921.
 Dragstedt: The Relation of the Parathyroid Tetany to Intestinal Bacteria, *Am. J. Physiol.* **59**: 483, 1922.
 Luckhardt and Rosenbloom: The Control and Cure of Parathyroid Tetany in Normal and Pregnant Animals, *Science*, July 14, 1922.
 Luckhardt and Rosenbloom: The Control and Cure of Parathyroid Tetany in Completely Parathyroidectomized Animals During the Oestrus Cycle, *Science*, Sept. 1, 1922.
 Dragstedt, L. R.: The Pathogenesis of Parathyroid Tetany, *THE JOURNAL*, Nov. 4, 1922, p. 1593.
 Luckhardt, A. B., and Goldberg, Benjamin: The Preservation of the Life of Completely Parathyroidectomized Dogs by Means of the Oral Administration of Calcium Lactate, *THE JOURNAL*, Jan. 13, 1923, p. 79.
 Salvsen: Studies on the Physiology of the Parathyroids, *Proc. Soc. Exper. Biol. & Med.* **20**: 204, 1923.
 Dragstedt: The Pathogenesis of Parathyroid Tetany, *Am. J. Physiol.*, February, 1923.
 Luckhardt and Blumenstock: Additional Observations on Completely Thyroparathyroidectomized Dogs, *Am. J. Physiol.*, February, 1923.

KLIEG, OR CINEMA, EYE

To the Editor:—Can you give references to the literature or any information on "Klieg eye" (a condition of inflammation in the eye following the exposure to bright lights in the taking of moving pictures)?

M. W. PERRY, M.D., Washington, D. C.

ANSWER.—The so-called "Klieg eye" or "cinema eye" results from repeated continuous exposure to the intense lights used in photographing interiors in the moving picture industry. Originally, the main lights used were the Klieg lights, a twin arc using 25 amperes, encased in a tin shield lined with aluminum paint, and manufactured by Kliegel Brothers of New York. In these lights, the so-called ultra-violet carbons are used with the claim that they produce a light rich in photographic rays. We do not know whether any measurements have been made to determine whether or not such light is richer in the ultraviolet content than the light from the ordinary carbon arcs. Certain it is that the same ophthalmic picture is produced by the other lights used in the industry, such as the Cooper-Hewitt.

The condition of the eye that results from continued exposure to the light is apparently one of burn, edema of the lids, some superficial conjunctival injection, and a sensation of heat, accompanied by lacrimation and photophobia. Elimination of the light and rest are followed by complete relief of the condition in from two to four days.

This subject was discussed rather fully about two years ago at a meeting of the Berlin Ophthalmologic Society, and again in an article by Chappe (*Ann. d'ocul.* **157**: 425, 1920; *Arch. d'opht.* **5**: 37, 1920). It has never been completely determined whether the irritation is due to the excess of ultra-violet rays, or to an excess of infra-red rays, or to an excessive intensity. In all probability, the former is the exciting cause.

SEVENTEEN YEAR LOCUSTS

To the Editor:—In this section of southwest Virginia, we are having a visitation of the seventeen year locusts. Is there any basis for the popular belief that these locusts poison, by their excretions, vegetables, fruits, berries, etc., and that the drinking of water coming from exposed reservoirs, where their dead bodies may contaminate the supply, is dangerous? I see that locusts are used as a food.

THOMAS J. TUDER, M.D., Exeter, Va.

ANSWER.—Apparently there is no justification for the belief that the excretions from the seventeen year locust (*Cicada septemdecim*) render foods poisonous. At least we do not find any records of poisoning from such sources. Drinking water contaminated by the bodies of dead locusts is not more poisonous than that from other decaying animal matter.

Medical Education, Registration and
Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chrm., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, July 3. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, July 9-12. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.

COLORADO: Denver, July 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 10. Sec. Eclectic Board, Dr. James E. Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT: Hartford, July 10-11. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford.

DELAWARE: Wilmington, June 19-21. Sec., Dr. P. S. Downs, Dover.

DISTRICT OF COLUMBIA: Washington, July 10-12. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.

HAWAII: Honolulu, July 9-12. Sec., Dr. G. C. Milner, 401 Beretania St., Honolulu.

ILLINOIS: Chicago, June 18. Supt., Mr. V. C. Michels, Springfield.

INDIANA: Indianapolis, July 10. Sec., Dr. Wm. T. Gott, Crawfordsville.

KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Augusta, July 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MARYLAND: Baltimore, June 19-22. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, State House, Trenton.

NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.

NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 60 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, July 10-11. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, July 3. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Preliminary Examiner, Mr. C. D. Koch, 422 Perry Bldg., Philadelphia.

RHODE ISLAND: Providence, July 5-6. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 17. Dir., Dr. H. R. Kenaston, Bonsteel.

TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg., Dallas.

UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.

VERMONT: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 720 Anchor Bldg., Roanoke.

WASHINGTON: Seattle, June 19. Sec., Mr. Wm. Melville, Olympia.

WEST VIRGINIA: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

Arizona January and April Report

Dr. Ancil Martin, secretary, Arizona Board of Medical Examiners, reports that five candidates were licensed by reciprocity at the meeting held at Phoenix, Jan. 2, 1923. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Keokuk Medical College of Physicians and Surgeons	(1907)		New Mexico
University of Michigan Medical School	(1899)		Michigan
Washington University Medical School	(1908)		Oklahoma
Medical College of South Carolina	(1919)		S. Carolina
National School of Medicine, Mexico	(1917)*		Mexico

* Graduation not verified.

Dr. Martin also reports the written examination held at Phoenix, April 3, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the two candidates examined, 1 passed, and 1 failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Nebraska College of Medicine	(1921)		87.5

College	FAILED	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital of Chicago	(1921)		66.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University Medical School	(1903)		Oklahoma
Keokuk Medical College	(1908)		Iowa
Louisville Medical College	(1905)		Texas
St. Louis University School of Medicine	(1905)		Missouri
University of Nebraska College of Medicine	(1910)		Nebraska
Albany Medical College	(1909)		New York
Medical College of South Carolina	(1906)		S. Carolina

Connecticut March Examination

Dr. Robert L. Rowley, secretary, Connecticut Medical Examining Board, reports the written examination held at Hartford, March 13-14, 1923. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 14 candidates who took the examination, 7 passed, and 7 failed. Four candidates were licensed by special exemption. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	(1922)		84.8
Indiana Medical College	(1907)		84.2
Harvard University	(1921)		86.6
Tufts College Medical School	(1922)		79.4
Columbia Univ. College of Physicians and Surgeons	(1914)		76.6
University and Bellevue Hospital Medical College	(1920)		90
University of Vienna, Austria	(1920)*		78.8

College	FAILED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Boston	(1908)		55
University of Vermont	(1899)		42.3
National University of Athens, Greece	(1918)*		69.6
University of Budapest, Hungary	(1912)		55.8
University of Naples, Italy	(1920)*		67.1
University of Moscow, Russia	(1917)*		65.3
University of Valencia, Spain	(1916)*		62.8

College	SPECIAL EXEMPTION	Year Grad.
Johns Hopkins University	(1920)	
Harvard University	(1918)	
Columbia University College of Physicians and Surgeons	(1911)	
McGill University	(1905)	

* Graduation not verified.

Idaho January and April Report

Mr. Harry L. Fisher, director, Bureau of License, Idaho State Board of Medical Examiners, reports the written examination held at Boise, April 4-5, 1923. The examination covered 11 subjects and included 86 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Four candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Barnes Medical College	(1904)		76

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists	(1920)		California
Cooper Medical College	(1884)		Montana
Northwestern University Medical School	(1906)		Oregon
Harvard University	(1921)		Utah

Wisconsin January Examination

Dr. J. M. Dodd, secretary, Wisconsin State Board of Medical Examiners, reports the written and practical examination held at Madison, Jan. 9-11, 1923. The examination covered 19 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Eleven candidates were licensed by reciprocity, and 9 candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bennett Medical College	(1915)		76
Chicago College of Medicine and Surgery	(1915)		79
Harvard University	(1919)	85, (1921)	88
Detroit College of Medicine	(1891)		75
University of Pennsylvania	(1922)		84
University of Innsbruck, Austria	(1919)*		83
University of Odessa, Russia	(1915)*		86

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1917), (1922, 2)		Illinois
University of Illinois	(1922, 2)		Illinois
University of Minnesota Medical School	(1922, 2)		Minnesota
Washington University	(1919)		Missouri
Columbia University	(1919)		Minnesota
Woman's Medical College of Pennsylvania	(1920)		Ohio
Meharry Medical College	(1921)		Arkansas
University of Berlin, Germany	(1890)		Illinois

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Loyola University	(1916, 2)		U. S. Army
Rush Medical College	(1914), (1917)		U. S. Army
Harvard University	(1900)		U. S. Army
University of Minnesota Medical School	(1916)		U. S. Army
John A. Creighton Medical College	(1916)		U. S. Army
University of Oregon	(1914)		U. S. Army
University of Pennsylvania	(1914)		U. S. Army

* Graduation not verified.

Book Notices

DER KÜNSTLICHE PNEUMOTHORAX. Von Ludwig von Muralt. Second edition. Paper. Price, \$2. Pp. 150, with 53 illustrations. Berlin: Julius Springer, 1922.

This describes von Muralt's technic, his successes and failures, and his philosophical considerations of the subject of artificial pneumothorax. As far as we are aware, few works have attempted to cover this field. The great part of our written knowledge lies scattered in divers articles, and has not been collected and classified. This book, therefore, fills a need. The author has attacked his problem with scientific care for accuracy, and with an energy that spares no detail. From the review of the literature in the first chapter—which is not a review in the usual sense of the word because von Muralt, being a pioneer, could record rather than be forced to review—to the index, which is much more complete than we are accustomed to see in German literature, a conscientious effort has been made to note whatever might be of practical interest in relation to pneumothorax. Von Muralt fills with nitrogen. He first explores with his apparatus containing oxygen, and, when satisfied that the pleural cavity has been entered, changes to nitrogen. In America, air is generally used. This is somewhat simpler than gas, and seems about as effective. Von Muralt's technic may appear more complicated than necessary. While the book is to be commended, we should prefer, for transplantation, a work a little less detailed in some parts and a little more forceful in the emphasis of the salient features.

EXERCISE IN EDUCATION AND MEDICINE. By R. Tait McKenzie, M.D., LL.D., Professor of Physical Education and Physical Therapy and Director of the Department of Physical Education, University of Pennsylvania. Third edition. Cloth. Price, \$5 net. Pp. 601, with 442 illustrations. Philadelphia: W. B. Saunders Company, 1923.

Those familiar with the previous editions of this book will welcome the new edition, in which the work has, indeed, been "thoroughly revised." The chief differences between the present and previous editions will be found in connection with exercise as a test, and in the treatment of diseases of the circulation, in which an extensive experience during the war with the so-called "soldier's heart" has given the author still greater confidence in the value of exercise in these conditions than he dared to express before. It has been found that "murmurs, especially systolic, were almost valueless as a basis for prognosis. . . . Displacement of the apex was an untrustworthy guide. . . . Reliance was placed on distress, rapid action with slow return to normal, and precordial pain after exercise. Exercise proved to be the only sound clinical test of the heart's ability to perform its work. It was shown that irregularities and intermittence are not signs of heart disease and do not incapacitate, except in that very disorderly type which does not disappear when the heart is accelerated during or immediately following exercise. This is due to the fibrillation of the auricles and is a serious condition happily rare [in military practice, no doubt, but not in that of the internist or general practitioner] and easily recognized. . . . It was found that digitalis has a constantly adverse effect on the symptoms, and it was discontinued." The latter statement is in line with the modern view regarding the special efficiency of digitalis in auricular fibrillation, in which vigorous exercise is not well borne and digitalis very helpful. For very sane and sensible advice regarding the exercise treatment of heart patients, even when they are confined to bed, the reader must be referred to the book. Another addition, occasioned by the pathetic contribution of the war maimed and crippled, has been the development of new and simple devices for muscular reeducation; and those that have proved their value in the great hospitals of the army and navy are described and pictured. The only criticism that can be found is that already stated in the review of the first edition (*THE JOURNAL*, Jan. 8, 1910, p. 154), that there is danger of the lay physical culturist considering himself competent to prescribe and apply exercise in the treatment of various conditions or diseases. That this is not the case is not sufficiently stressed by the author. However,

physicians have themselves to blame when, because of their lack of interest in this important branch of therapeutics, lay enthusiasts invade this field, helping many and harming a few. The remedy for this condition is to institute courses in physical therapy in our medical schools in which medical students can at one and the same time be given the educational and hygienic benefits of gymnastics, while being taught their therapeutic application. Such a department in a medical school might also train nonmedical teachers in physical education, of whom there exists a dearth in this country, occasioned by the rapidly growing appreciation of the value of physical training as a result of the revelations of preventable disability brought out by the draft.

INVESTIGATIONS INTO THE OCCURRENCE AND CLASSIFICATION OF THE HAEMOGLOBINOPHILIC BACTERIA. By Martin Kristensen, Chief of Department at the State Serum Institute, Copenhagen. Paper. Pp. 272, with illustrations. Copenhagen: Levin & Munksgaard, 1922.

This monograph contains an excellent historical review of work on the hemoglobinophilic bacteria, and a detailed account of the author's investigations of these organisms. There is an extensive bibliography. In the section on comparison of the Pfeiffer bacillus with other hemoglobinophilic bacteria, the author has missed the important differential character of nitrate production, discovered by Jordan and confirmed by Stillman and Bourne. River's work, pointing to the occurrence of a definite variety in meningitis, is also overlooked. On the whole, however, the review contains a very fair and complete statement of our knowledge of the Pfeiffer bacillus and related organisms at the present time. The author concludes, from his own work, that there are some strains that must be classed as Pfeiffer bacilli, although the satellite phenomenon is poorly developed, or completely absent. In accordance with the work of several observers in this country, identical agglutinative varieties were rarely found in cases of fatal influenzal pneumonia in the same epidemic. The author concludes: "From my own experience and that of others, . . . in all probability Pfeiffer's bacillus is not to be looked upon as the primary specific virus of influenza."

A TEXT-BOOK OF OBSTETRICAL NURSING. By Alice Weld Tallant, A.B., M.D., Professor of Obstetrics, Woman's Medical College of Pennsylvania. Cloth. Price, \$2.25. Pp. 291, with 116 illustrations. Philadelphia: Lea & Febiger, 1922.

This small volume should prove to be enjoyable as well as helpful to all nurses who practice this branch of their profession. Dr. Tallant has stated the subject matter in a clear and concise manner, and in her brevity has emphasized the important points in each subject. The book is logically divided into ten chapters. The paper is of good quality, the print fairly large, and the text free from errors. It is amply supplied with illustrations which have been judiciously selected from standard works, such as those of Bumm and Cragin. Each subject is epitomized, and for the most part represents the accepted views of the day. The description of sterilization must be criticized. On page 222, under the caption of cesarean section, the author properly states the occasional necessity of sterilizing the patient after the delivery. "This is usually done by tying each tube in two places with linen thread and cutting between the ties." The foregoing quotation from the text should be stricken out, as all obstetricians know that pregnancy has occurred shortly after such treatment. The accepted procedure today is cornual excision of the tubes.

CUNNINGHAM'S TEXT-BOOK OF ANATOMY. Edited by Arthur Robinson, M.D., F.R.C.S., Professor of Anatomy, University of Edinburgh. Fifth edition. Cloth. Price, \$11. Pp. 1,577, with 1,111 illustrations. New York: William Wood & Co., 1923.

This textbook has long been a standard guide for students in anatomy. In the present edition several sections have been rewritten, notably those on the ductless glands and on the peripheral nervous system. Many of the sections have been entirely recast, and there are numerous new illustrations. One of the especially noteworthy features is the extensive index of more than 100 pages, which makes reference to the vast amount of anatomic knowledge contained in the book relatively simple.

Miscellany

THE MAKING OF WILLS BY PERSONS IN EXTREMIS*

FREDERICK A. FENNING, LL.M.

Member of the Bar of the District of Columbia
WASHINGTON, D. C.

The active professional man has always found that some knowledge of other callings is essential to obtaining a good measure of success in his own work. The physician, the lawyer, the engineer all find the points of contact, the instances when it is useful to have at least some general idea of the underlying principles and the accepted practices of the other professions.

The drafting of wills is a function of the lawyer, but this is one of the contact points on which the physician should have general knowledge. In this paper I shall consider the general knowledge which a physician should have to enable him to draft a will in emergency and to enable him to determine whether he will witness a will of a moribund person and, having done so, be able to justify his act.

With respect to the average patient, there is sufficient time for the physician to recommend that a lawyer be called, if the making of a will is deemed desirable or necessary. There are, however, the so-called deathbed cases, which require prompt action and which do not permit of obtaining the advice that otherwise would be secured. Such a situation may confront the physician practicing in a country district, and it may as readily present itself to the city physician while on vacation in a remote and sparsely settled section. Blackstone says in this connection, "It would be useful if the medical attendant were acquainted with at least the formal part of executing wills; in the moment of danger and distress when all around the bed of death are confused with fear or overwhelmed with affliction, the physician, probably a confidential friend, whose duty and habit insures self-possession, may be the only person competent to advise."

While the knowledge on the part of the physician should extend, as just quoted from Blackstone, to "at least the formal part of executing wills," it is highly desirable also that the physician have a general idea as to the requirements entering into the making of a valid last will and testament. So many cases are constantly arising which involve the construction of wills and the mental capacity of testators that the physician may at first blush regard the requirements of a valid last will and testament as highly technical. It is probable that such an understanding is due to the use of legal phraseology. These requirements, however, are not highly technical, and, indeed, they can be understood very readily by men outside the legal profession.

By far the largest number of will contests turn on questions of fact, such as whether or not there was undue influence and whether or not there was mental capacity; and do not grow out of any alleged informality in the preparation or execution of the will. The number of wills, however, which are found to be improperly drawn or improperly or insufficiently executed, is larger than it should be. Accordingly, the physician who advises in the execution of a will or who witnesses one should be somewhat conversant with the general essentials of such a document. Moreover, he should endeavor to satisfy himself that there has been no undue influence and that there is testamentary capacity. As a usual thing, the witnesses to a will do not, at the time, concern themselves with the question as to whether or not undue influence has been exercised. The

medical man who acts as such witness will do well, for reasons which will be elaborated as we proceed, to satisfy himself on this point.

ESSENTIAL REQUIREMENTS

Let us, then, first consider what a will is and the essentials that go to make a valid last will and testament. A will is a disposition of property to take effect on or after the death of the person making the will. The right to make a will of real estate is not a common law right, but has grown up under the statutes of the various states and, of course, the requirements in each jurisdiction are fixed by the statutes of such jurisdiction. The fundamental requirements do not vary. The testator or testatrix must be of sufficient age. This, in the District of Columbia, for the purpose of will making, is 21 years for a male and 18 years for a female. The instrument must be signed by the testator or by some other person by his request and by his direction, and it must be so signed in the presence of the attesting witnesses and they must affix their signatures in the presence of the testator and in the presence of one another. The instrument must be dated on the date of its execution and it must be read by or to the testator. As to the number of witnesses, the general requirement is for two, but some jurisdictions require three witnesses. The person named as executor in the will should not act as an attesting witness, nor should any person act as witness who may be a beneficiary or legatee under the will. The testator must not be under duress, must not be subject to undue influence, and must have sufficient mental capacity to understand the full nature of the instrument and its contents; and he should inform the witnesses that it is his last will and testament and that he wishes them to sign as attesting witnesses.

TESTAMENTARY CAPACITY

Having described, in brief, the essential requirements for the making of a valid last will and testament, we proceed with a discussion of the particular question on which the medical man should satisfy himself with respect to the wills of persons in extremis. The medical man need have no great difficulty as to the general requirements as just discussed. His real difficulty will be with the question whether the testator has what the law calls "testamentary capacity." It has been said that testamentary capacity means the ability to make a will, not the ability to make a particular will in question. This means, of course, that the testator must have a somewhat comprehensive idea of the essentials which enter into the making of a disposition of his property to become effective after death. He should know, for example, that an attempt to disinherit a wife cannot bar her of dower rights. He should be able, on being questioned, to defend and justify the disposition that he is undertaking to make in the will as against other seemingly reasonable and plausible dispositions. Every testator has the opportunity to leave his estate to a variety of persons in various amounts and under an almost endless number of conditions if he so desires. His will is an indication and a mandatory expression of the selection that he has made, both with respect to who shall be the beneficiaries of his estate and in what amount and manner they shall inherit. The explanation that he gives as to the selections he has made and as to the amounts and conditions may at once strike the questioner as logical and in every way reasonable; on the other hand, they may create a suspicion, if not clearly indicate a mental condition which has been imposed on by designing persons.

In the making and execution of the average will, its terms are known to only the testator and the counselor who drafts the instrument. It is not required nor is it usually the fact that the witnesses have any knowledge as to the disposition of the estate as directed in the instrument. However, for the reasons more fully set forth in this paper, if a physician

*Read before the Medical Society of the District of Columbia, April 25, 1923

entertains doubt as to testamentary capacity, he can very properly decline to witness the document until he has read its contents. With respect to a will made in extremis, the surrounding circumstances are such that it is highly essential that medical men, when asked to witness such a paper, interrogate the testator, not only for the purpose of ascertaining his mental condition and of ascertaining whether there is undue influence, but also to determine the extent to which the testator can justify the disposition of his estate as provided by the will. To do this, the careful medical man will possess himself of as much information as to family history as is available and he will privately interrogate the testator with respect to the contents of the will about to be executed. No one is obliged to witness a will simply because he has been asked to do so, and the physician, if he is wise, will thoroughly satisfy himself along the lines as indicated before he will witness such a paper.

Numerous so-called "tests" for testamentary capacity have been laid down from time to time. In Hadfield's case, Lord Erskine, in 1800, held that the "delusion test" was the proper method of determining sanity or insanity of a testator. It was said that if the testator had a delusion he lacked testamentary capacity; otherwise he was competent. This has long since passed into the discard. Other tests have arisen and from time to time have been followed.

Clouston, one-time medicolegal authority, advised that the physician ascertain: "First, 'Is the patient free from the influence of drink or drugs and in his usual state?' Then, 'Does he know the nature of the act that he is to perform and the effect of the document he is to sign?' The next thing is to find out that he is not influenced in the doing of it or in regard to any of its provisions by insane delusion or by an insane, morbidly enfeebled state of mind. Then ascertain if there is infirmity of mind from bodily weakness or any other cause or undue influence being exercised from without. The next thing is to make the intending testator go over the particulars of the disposition he wishes to be made, without prompting or suggestion or leading questions. And he should be made to do this twice, with certainly a quarter of an hour's interval between the two statements."

The Supreme Court of the United States has said that "one may be insane to the extent of being dangerous if set at liberty and yet have sufficient mental capacity to make a will."

I make bold to advance another test to be used by the physician in seeking to determine whether one possesses testamentary capacity. Mercier said, a number of years ago, that "the highest faculty of mind is the ability to choose." In making a last will and testament, a testator is simply undertaking to record in legal form his choice with respect to the disposal of his worldly goods. If the physician is given a clear statement of facts and then applies to such facts the choice as indicated by a testator, he will be able to arrive at an independent conclusion which will be based on his own best judgment. In other words, he may then determine, at least to his own satisfaction, whether the choice as made by the testator appears to be a rational one.

In the last analysis, it boils down to this: The physician must make such a test as takes into consideration the normal mental condition and habits of the particular individual who is about to make a will and then determine to what extent, if any, the illness of this particular individual has influenced him in the making of this particular will and whether in the making of the will he has been subjected to undue influence.

The fact that a patient is desperately ill will naturally make the subscribing witnesses cautious, but too much weight must not be given to the mere fact that the patient is in extremis. A recent New York case (*In re Cohen*, 176 N. Y. S. 689) distinctly held that there was no presumption against a death-bed will. Likewise it has been held in Georgia (*Hall v. Hall*,

18 Ga. 40) that one in a dying condition has testamentary capacity if, when his attention is aroused, his mind acts clearly and with discrimination. The particular form of disease does not seem to be of itself a controlling factor. For instance, in the matter of Kiedaisch (13 N. Y. Sup. 255), a paretic was held to have testamentary capacity; and in the matter of Loewenstine (2d Misc. N. Y. 323), which, it will be noted, is also a New York case, a paretic was held not to have testamentary capacity. Of course, the distinguishing factor was the individual characteristics of the particular cases, and so we find epileptics declared both competent and incompetent, the decision in one case (*Matter of Rapp Lee*, 66 Hun N. Y. 558) indicating that great weight was apparently given to the fact that the testator, though an epileptic, did not execute the will "during a fit."

In the case of *Robinson v. Duvall* (27 D. C. Appls. 535), in which the decision of the trial court was affirmed by the court of appeals, and the latter was in turn affirmed by the Supreme Court of the United States, the court of appeals discussed at some length the particular weight to be given to the evidence of a subscribing witness to a will. The trial court had instructed the jury that "the testimony of such witnesses, other things being equal, is entitled to more weight" than that of other persons not present at the execution of the will. In endorsement of this, the court of appeals said, "The attesting witnesses are considered in the law as placed round the testator to protect him against fraud in the execution of his will and to judge of his capacity, and it is their duty to inform themselves of his capacity at the very time he was executing the will." The court further pointed out that the subscribing witnesses had opportunity to form an opinion of the testator's capacity "at the moment when he executed his will."

In view of this language of an appellate tribunal, some consideration should be given to the desirability of having a family physician act as a witness to a last will and testament, and it would certainly seem that such a witness might form a more favorable opinion as to the testator's capacity at the moment when he executed his will than a nonprofessional witness. It can be conceived that a testator can go too far in this direction; for example, should a testator deliberately invite three alienists to be the witnesses to his will, it is likely that on the will's being offered for probate, the question would be raised as to why three such experts appeared as witnesses. Contention might be made that a person admittedly of sound and disposing mind would not adopt such a course and that the alienists had been used as witnesses because of the questionable mental condition of the testator and because of an anticipated attack on the instrument. It can be readily understood that such objection would have little basis with respect, for example, to the will of a physician employed in a hospital for the insane who asked some of his brother physicians to act as witnesses. The contention might be made, however, with considerable force respecting the will of a layman or one not immediately or intimately associated with the witnesses.

THE MEDICAL WITNESS

We come now, very naturally, to a consideration of the prohibition placed by statutes of many jurisdictions on the medical witness. In the District of Columbia, this prohibition is contained in Section 1073 of the Code, which reads:

In the Courts of the District of Columbia no physician or surgeon shall be permitted, without the consent of the person afflicted, or of his legal representatives, to disclose any information, confidential in its nature, which he shall have acquired in attending a patient in a professional capacity and which was necessary to enable him to act in that capacity: Provided, That this section shall not apply to evidence in criminal cases where the accused is charged with causing the death of or inflicting injuries upon a human being, and the disclosure shall be required in the interests of public justice.

In substantially the same form, this prohibition is very generally incorporated into the statutes of the various states.

It will be observed that this prohibits a physician from testifying as to information gained in a professional capacity and which was necessary to enable him to act in that capacity. The single exception is that such testimony can be given with the consent of the patient or his legal representatives. The question arises whether, the patient being dead and no legal representative of his estate having been appointed, a physician who witnessed the will of the deceased can give this testimony as to the execution of the instrument. It has been said on good legal authority (*In re Mullin*, 110 Calif. 52) that the physician is competent to testify in such a case. This is perfectly logical, as the patient undoubtedly waives his privilege and gives his implied consent to such testimony when he asks his physician to witness a will.

There is in the District of Columbia and also in many of the states a statute providing that bequests to ministers, public teachers and religious sects or orders are invalid unless they be made more than one month (and in some instances a longer period) prior to the death of the testator. The reason for such statutes is clear, as it is readily recognized that one approaching death is apt to entertain feelings toward persons of the classes described which he would not entertain or be influenced by were he in good state of health. It is not unusual that such statutes include the testator's physician or medical advisers. It is important, however, that the physician in attendance on a patient, particularly a patient in extremis, have very clearly in mind the advantageous position that he occupies and that he give heed to the fact that a bequest to him from such testator will be under suspicion. While such a gift is not bad per se, nevertheless the burden in such a case is on the physician to show that he did not take advantage of his position and that the bequest was made without the patient's being subjected to influence from any source; that it was a reasonable bequest and was not due to any sentimental idea of the patient growing out of his relations with one in attendance on his severe illness.

It will be recalled that, at the outset of this paper, attention was called to the desirability of calling a lawyer for the making of a last will and testament whenever time would permit. It is important that emphasis be given to this feature. It has been commonly believed by many persons that anyone of intelligence can draft a will. Many small stationery establishments still continue to sell blank forms of wills. So far as some of these printed forms apply to a particular situation, they can safely be followed. The folly of the use of such forms by persons not trained in drafting wills lies in the fact that no general form can meet any considerable number of cases. Physicians know that, with respect to two patients showing identical symptoms, the treatment in one case is not necessarily the precise treatment in the other case, and this is due to the differences in the general organic make-up of the individuals. These differences are always considered by the physician, and his treatment is dictated not only by the symptoms of a sick man, but also by an intelligent appreciation of the condition of the particular individual under treatment. In the drafting of a last will and testament, the lawyer must know the provisions of law with respect to the descent of property in every jurisdiction in which the will may be operative; he must know the rights of dower and curtesy; he must know the provisions of law with respect to trusts, and it is of the highest importance that he should know the United States estate tax laws and the estate and inheritance tax laws of all the states in which the property of the testator is located and in which corporations in which he holds stock or registered bonds are incorporated. It will readily be seen that this makes necessary the consideration of a particular state of facts as applied to a particular estate, just as the facts pertaining to the physical condition of a particular indi-

vidual must guide the physician in any treatment that is prescribed for that particular individual.

A testator who, for reasons of economy, prepares his will on a blank form or prepares it with the advice of an unqualified person simply invites trouble for his widow and children or such others as may be designated as his beneficiaries. Such a practice, however, is not always dictated by reasons of economy, for many persons surround the making of such an instrument with the very highest degree of secrecy. Such an individual believes that he is the only person who should have any knowledge concerning its provisions. Such persons, however, must consult physicians from time to time, and on such occasions make known their physical condition. They must know that such information as their physician receives is protected in confidence; and, by the same token, the information imparted by client to lawyer is guarded with the same professional secrecy. As a matter of fact, information given to a lawyer for the drafting of a will usually is forgotten after the will is made and executed, and it is the experience of many lawyers when later called on by a client for the purpose, for example, of making a codicil to a will previously executed, to find that they have entirely forgotten the provisions of the original instrument.

However, as was pointed out in the beginning of this paper, there are occasions when a lawyer cannot be called for the drafting of a will, and if in the course of the professional experience of a medical man he finds it necessary to assist in the drafting of such an instrument, he should at least have a comprehensive idea of the service which he is to perform. And with respect to wills drawn by legal men for persons in extremis, the physician who witnesses such a paper will do well to give some attention to the requirements of the situation in order that he may in the future justify and defend his course.

1420 New York Avenue.

OSTEOPATHS HELD TO BE "REGULAR PRACTICING PHYSICIANS" AND AS SUCH EXEMPT FROM PODIATRY LAW

In *Howerton v. District of Columbia*, the court of appeals of the district has just decided that an osteopath is a regular practicing physician and as such is exempt from the provisions of the law governing podiatry. The plaintiff in error, Howerton, who was not a licensed physician nor an osteopath (there being no provision in the laws of the district for licensing osteopaths), and who apparently admitted that he had practiced osteopathy in the district for twelve years, was charged with unlawfully practicing podiatry. Podiatry is defined by an act to regulate the practice of podiatry, approved May 23, 1918, as "the surgical, medical or mechanical treatment of any ailment of the human foot, except the amputation of the foot or any of the toes; and also the use of an anesthetic other than a local one." Howerton claimed that as an osteopath he had treated the feet of his patients in the District of Columbia since 1909, whenever he found it necessary to do so. In the case at bar he had treated a "sprained foot" by manipulation with his bare hands, and later by using a rubber nodule held in the palm of the hand by means of a leather band. The court found that the method used was one common among osteopaths, and that in using it Howerton was practicing osteopathy, not podiatry. The court pointed out, however, that if Howerton could be said to have practiced podiatry in the present instance, then his practice of the same methods before the passage of the podiatry act was likewise the practice of podiatry, and as such it entitled him to continue without a license in the practice of podiatry, under that provision of the act that exempted from its operations podiatrists practicing prior to its passage.

The court stated, further: "The science of osteopathy has become sufficiently established to justify the classification of

its practitioners within the exception of the [podiatry] act, 'regular practicing physicians.' . . . Plaintiff in error was merely pursuing the practice of his profession within the lawful limits and was guilty of no infringement of the law." The phrases "lawful limits" and "the law," used in that portion of the decision just quoted, have been looked on by some persons outside the legal profession as referring to all law whatsoever, including the medical practice act; but inasmuch as the case at bar was brought under the podiatry law, it is probable that they are to be construed as relating to that law alone. The decision can hardly be looked on as authority for the statement that osteopaths practicing medicine in the District of Columbia are exempt from the provisions of the medical practice act.

Medicolegal

Validity of Food Ordinance Requiring "Medical Examination"

(*Ex parte Vaughan* (Texas), 246 S. W. R. 373)

The Court of Criminal Appeals of Texas, in refusing the relator's application for a writ of habeas corpus, and in remanding him into custody, says that he called in question the validity of his conviction for a violation of an ordinance of the city of Dallas. The complaint charged that he was the proprietor of a meat market, in which he worked more than five days "without a certificate from some reputable physician of the city of Dallas attesting that the bearer had been examined at any time within the last six months before the filing of this complaint and had been found free from infectious and contagious diseases." Many grounds were specified in the application for the writ of habeas corpus, but the court thinks that none need be adverted to except such as were necessary in deciding whether there was a valid ordinance of the city of Dallas on which the complaint could be lawfully based. The ordinance in part reads:

Hereafter it shall be unlawful for any person, firm, organization or corporation, operating a food products establishment, to work, employ or to keep in their employ, any person infected with or affected by any infectious or contagious disease. It shall be unlawful for the proprietor to work in such an establishment, if he is infected with or affected by any infectious or contagious disease, and all proprietors shall be subject to the medical examination hereinafter provided for.

It shall be unlawful for any individual, firm, corporation or organization operating any food establishment to employ any person to work in such establishment who, at the time of their employment, had not in his or her possession a certificate from some reputable physician attesting the fact that the bearer has been examined by such physician within one week prior to the time of employment, and that such examination discloses the fact that such person to be employed was free from any and all infectious or contagious diseases.

In its charter, the city is given "the power to enact and enforce ordinances necessary to protect health, life, and property, . . . to protect the lives, health, property of the inhabitants of said city, . . . and it shall have and exercise all powers of municipal government not prohibited by this charter, or by some general law of the state, or by the provisions of the constitution of the state."

That the enactment of suitable legislation to protect the public health against the use of impure food is within the general scope of the police power is not an open question.

The use of the term "medical examination" in the ordinance does not vitiate it on account of the rule against indefiniteness in criminal laws. The ordinance says that "all proprietors shall be subject to the medical examination hereinafter provided for." In interpreting the words "medical examination," it would be proper to consider the language "examined by such physician within one week prior to the time of employment, and that such examination discloses," etc. It would seem, taking the ordinance complete, that it would not be indefinite or confusing, but that its fair interpretation is that by the term "medical examination" is meant "an examination by a reputable physician disclosing that the person in question is free from all infectious or contagious diseases."

It was suggested that the ordinance is in conflict with the state law on the same subject. If so, it must be confessed that the court has been unable to discover it, and that it was not pointed out.

Power to Prescribe Qualifications for Examinations

(*State ex rel. Bond v. State Board of Medical Examiners* (Ala.), 95 So. R. 295)

The Supreme Court of Alabama says that the relator applied to the circuit court for mandamus to the state board of medical examiners to compel that board and its members to permit her to register and make application for and to take the examination for a certificate of qualification to treat diseases of human beings or to practice medicine. The reason assigned why she was not permitted to register and take the examination in question was that she was not a graduate of a medical college of the grade or class prescribed by the rules of the medical association of the state. These rules, so far as pertinent, required that the class of applicant of which the relator was should be a graduate of a medical college which required two years' college work in addition to high school work—of a college having the facilities required by the rules and regulations of said medical association. The relator demurred to the answer, and, her demurrer being overruled, took a nonsuit and an appeal. Her counsel admitted that under the Code of 1896 the medical association had the right to prescribe the standard of qualification for admission to practice medicine and "the method or system of practitioners of medicine"; but the act passed in 1907 to regulate the practice of medicine did not contain Sections 3261-62, as they were embodied in the Code of 1896.

It is established on unquestioned authority that a state may regulate the practice of medicine, using that word in its most general sense. The legislature may also by statute delegate to agencies of government or officers thereof the authority to perform administrative functions, which the legislature might perform, and may authorize such officers in such administration to exercise "legislative discretion."

The supreme court has examined carefully the statutes in question (Code of 1907, Section 1627 and following sections) as constituting the system provided by legislative sanction and authority, for the subject and objects in view, and the court is of the opinion that the authority exercised by the medical society and its board of examiners was a reasonable exercise of the discretion and authority reposed in it and them by law. Neither the statute nor any provision of the code attempted to deprive the medical association or its state board of examiners of any right or power to prescribe reasonable rules and regulations for the examination of applicants; and the statute and its codification recognize such authority and power by declaring that applicants for license must conform to such rules and regulations. Nor, as was insisted by the relator, is the allowance by the legislature of the express power to pass on the moral qualification of applicants a denial to the medical association, or to its duly constituted boards, of the right to prescribe other reasonable rules, qualifications, or requirements governing the admission of applicants for the certificate of qualification to practice medicine and surgery. The history and purpose of the statutes regulating and safeguarding the practice of such professions, the importance of this branch of science, and the agency and duty of the state in relation thereto and to the general public to be served and affected thereby, require that a liberal construction be given the statutes having application to attain the purpose of the enactment. This is done without violating fundamental or statutory rights. No right guaranteed to the relator under the Fourteenth Amendment to the federal Constitution has been abridged. She has not been deprived of her property right to earn a living in her chosen avocation or profession, without due process of law; nor does the reasonable regulation to which she has been compelled to conform deny to her the equal protection of the law. The supreme court is of the opinion that the act of the medical society and its board of examiners was within legislative authority, and that the judgment of the circuit was without error. The judgment is affirmed.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

American Ophthalmological Society, Colorado Springs, June 19-21. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.

American Proctologic Society, Los Angeles, June 22-23. Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass., Secretary.

American Psychiatric Association, Detroit, June 19-22. Dr. C. Floyd Haviland, Drawer 18, Capitol Station, Albany, New York, Secretary.

American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.

American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.

American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.

American Therapeutic Society, San Francisco, June 22-23. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.

Arizona Medical Association, Grand Canyon, June 21-22. Dr. D. F. Harbridge, Goodrich Bldg., Phoenix, Secretary.

Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.

Association of American Teachers of Diseases of Children, San Francisco, June 26.

California Medical Society of the State of, San Francisco, June 21-23. Dr. W. E. Musgrave, Balboa Bldg., San Francisco, Secretary.

Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.

Montana Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.

National Tuberculosis Association, Santa Barbara, Calif., June 20-23. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.

New Jersey Medical Society of, Atlantic City, June 21-23. Dr. William J. Chandler, South Orange, Secretary.

New Mexico Medical Society, Albuquerque, June 19-21. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Secretary.

Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.

Pacific Northwest Medical Association, Seattle, June 19-21. Dr. F. Epplen, 422 Paulsen Building, Spokane, Secretary.

Radiological Society of North America, San Francisco, June 21-22. Dr. M. J. Sandborn, Appleton, Wis., Secretary.

Utah State Medical Association, Salt Lake City, June 20-22. Dr. W. L. Rich, Boston Building, Salt Lake City, Secretary.

Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.

Wyoming State Medical Society, Laramie, June 20-21. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Seventeenth Annual Meeting, held in New York, May 22-24, 1923

DR. WILLIAM D. ELSEVER, Syracuse, in the Chair

SYMPOSIUM ON DIABETES

The Routine Treatment of Diabetes with Insulin

DR. ELLIOTT P. JOSLIN, Boston: This paper was published in THE JOURNAL, June 2, p. 1581.

Clinical Use of Insulin

DR. JOHN R. WILLIAMS, Rochester: I began to use insulin one year ago. To whom should insulin be given? Obviously only to patients with diabetes. As many as 150 persons have been sent with a conjectural diagnosis of diabetes, simply because there was slight trace of reducing substance in the urine. These are not true cases of diabetes and are not suitable for insulin treatment. The fundamental requirement is that there should be hyperglycemia. A person may be suffering from diabetes with normal blood sugar and no glycosuria, yet there may be evidence of acidosis in the expired air. In another patient there may have been a great ingestion of sweets, and temporary high blood sugar, so these cases call for careful examination. Can insulin be given by mouth? It has been given by mouth, by rectum and by duodenal tube, but there is no effect at all from the drug unless it is given subcutaneously or intravenously. How should insulin be administered? A complete examination of the patient is made, and his basal requirement estimated. Thirty calories per kilogram of body weight are allowed. We give 1 gm. of protein per kilogram, and 50 gm. of carbohydrate, and make

up 8 calories with fat. Before giving insulin clinically, we give a very small test dose to see if there are any anaphylactic phenomena. One unit of insulin is given for every 5 gm. of urine sugar excreted. The first day, 15 units is given, 10 before breakfast. The blood sugar is low for four hours, showing the duration of the effect of the drug. It is necessary to know the variations of the blood sugar curve in each patient, the highest point, and the lowest point. The normal blood sugar level is 0.11 per cent. After the first treatments, patients usually go home improved. At this time it is necessary to (1) increase the diet; (2) decrease insulin dosage, or (3) redistribute the doses. The family physician should watch for reactions, or for excretion of sugar, and note the time these occur. This will give a basis for redistributing the dose so as to forestall these occurrences. In some patients the blood sugar curve is high in the morning, and in some it reaches its height at midnight. The insulin should be given in accord with this individual curve of the patient. Must dietary regulations be continued? I would say, Yes. We have had twenty cases of coma. One patient died. Patients should be treated at the earliest possible moment, no matter how severe the cases. Insulin will not affect infection or gangrene, but it will control the diabetes. We had three fatal cases with complete anuria. I do not know whether the extract administration had anything to do with that, but if the patient is dying one must try something. An intravenous dose of 50 units is the best measure in extreme cases. In cases of gangrene, the possibility of more conservative operations is opened up by the use of insulin. We had ten cases with eight recoveries. After a few months, it appears that the pancreas regains some tendency to natural secretion. There are no bad effects if necessary care is taken. The general practitioner can regulate the cases at home by regulation of the food, observing the renal threshold, and teaching the diet to the family and the patient. Quantitative examinations of the urine for sugar should be made to determine glucose utilization, and the patient's weight must be charted. In answer to the question, Is this an economic necessity? I will say that one man, a skilled mechanic, is able by spending \$2 a day to work full time and earn \$45 a week. He is ahead \$30, and the price of the drug is coming down, while he is advancing in his work. I think that is sufficient answer.

DISCUSSION

DR. HERMAN O. MOSENTHAL, New York: Treatment by insulin is not easily and smoothly accomplished. The knowledge of what has gone before is as necessary as treatment by insulin. An incredible amount of work has been done in the last ten years and we cannot discard this or do without the knowledge thus gained. We can distinctly say that acidosis is caused by faulty carbohydrate metabolism and that certain mixtures of carbohydrate, fat and protein have helped our patients. Dr. Joslin knows how to manage carbohydrates and proteins, so that he can manage very small doses of insulin, but the rest of us cannot do it so well. I believe if we discard the proper proportional ratios of carbohydrates and proteins, it is only a question of time before we come to grief. I shall have to disagree with Dr. Joslin in one thing: diabetes is not a mild disease. The mortality figures show that it is not mild, and it consequently deserves all the thought and study that can be given to it, in regard to diet as well as in regard to insulin. Insulin shock is brought about in different individuals at different levels. Some patients can get severe symptoms with apparently normal sugar levels. When the blood sugar is rapidly reduced, the osmotic processes in the blood are changed, and symptoms are produced. The same can be said of the renal threshold. It is not constant. In starvation it is lower, and sugar will go through. We cannot be iconoclastic in this matter and we cannot judge from urinary sugar alone and yet be perfectly safe. Another point is that after a little time in which insulin has been used, the blood sugar is reduced, and yet the diet is about the same. We would either increase the diet or decrease the insulin. We may get careless about this and get a hypoglycemic reaction in the patient. In regard to acidosis: the treatment of glycosuria and of hyperglycemia is the same as before insulin was used. Whether

we can reduce this to normal level is still an open question. In children who have a renal threshold of 110 to 120 mg. blood sugar we cannot always keep the urine free with the use of insulin. In adults with a figure of 250 mg., insulin can be used with a certain degree of impunity. Another point is that the patient must cooperate with the physician. There is no routine treatment. Each individual must be treated for himself and himself alone. In regard to pruritus vulvae, the sugar containing urine is the irritating factor. If sugar is eliminated, this symptom disappears. Whether the general itching is a specific symptom of diabetes, I do not know, but I do not think it is. The polyuria tends to cause a dry scaly skin, which is cured with relief of symptoms. Sometimes sodium chlorid administration does away with the dry skin and consequent itching. In children there is a more pronounced reaction with a unit of insulin, per pound of body weight, than with adults. The effect is proportionately greater, and caution should be the watchword.

Problem of the Leukemias

DR. THOMAS ORDWAY, Albany: The general conception of the leukemias and leukocythemia is that it is a disease of the blood-forming tissues, manifested by marked hyperplasia, showing, when fully developed, a great increase in white blood cells, accompanied by splenic and glandular enlargement. The white blood cells are pathologically immature cells which gain access to the blood stream, and it is their immaturity that distinguishes the condition from leukocytosis. This classification needs some modification because leukemias have been seen without abnormal blood pictures, so that cellular hyperplasia is a more exact criterion of leukemia than the blood picture. Further, the blood pictures in purpura hemorrhagica, in scurvy, and in acute and chronic leukemia may look very much alike. There is no special staining differentiation. Leukemias have been classed among tumors, but experimental work does not bear out this theory. Chicken leukemia has been produced experimentally by regulated doses of the bacillus of fowl typhoid, which suggests that leukemia is an unusual response of the blood to infective agents. It is difficult to separate acute and chronic leukemias, as there are many intervening stages. The former is rapidly fatal. When the course is longer, it tends to become subacute or chronic. Acute myelogenous leukemia and acute lymphatic leukemia are difficult of differentiation, and need careful staining investigations. The embryonic cells of both types look much alike. Metabolism is above normal, as shown by intolerance for heat. In treatment radium has been used with better success than other agents, although results are not permanent. The urine shows marked changes from autolysis of abnormal tissue. The phagocytic power of the white cells is feeble, though more marked in the polymorphonuclears. As it has been suggested that complement is due to white blood cells, it was thought that this function would be perverted in any abnormality of the cells. The serum was studied in regard to complement content in both lymphatic and myelogenous leukemia, but was not found to be increased. A leukolytic serum has been produced in rabbits by injecting plasma from myelogenous leukemia. The degree of specificity has not been determined. A proteolytic ferment capable of digesting fibrin is shown. There is an enzyme in the leukocytic cells which is absent in the lymphogenous cells, thus giving an important differentiation for these cell groups. This is essential in the distinction between myelogenous and lymphatic leukemia. The term leukemia, or mixed leukemia, should be discarded. The types should be differentiated by careful staining methods. There are atypical types approaching pernicious anemia, which represent unusual response to infection. Chloroma seems to bear a close relation to leukemia, as oxidase and peptic ferments have been demonstrated in the cells in this disease as well as in leukemia. Radium is the best means of therapy at present. The results of irradiation of the spleen are of varying duration, sometimes lasting for months only, sometimes for years. The results obtained after splenectomy do not justify the supposition that the spleen is the most important organ in the production of leukemia. The more primitive the white blood cells, the greater their destruction by radium. The least dose used was 25 mg., the optimal dose 100 mg.

Treatment of Anemia by Transfusion

DR. W. W. G. MACLACHLAN, Pittsburgh: The whole blood method of transfusion has no great advantage, while both donor and recipient profit by the ease of the citrated mode of transfusion. Any untoward reactions which arise in the latter are due to poor technic and too rapid introduction. In regard to tests, blood matching is more exact, but is time consuming. Typing is quicker, but we cannot be sure that there are not more than four types of blood. If all the reactions from transfusion are attributable to agglutinin reactions, we should return to individual matching, as being safer, but some of the phenomena seen, pain in the lumbar region, constriction of the thorax, flushing of the face, rapid pulse, and hemoglobinuria, remind us of anaphylactic phenomena when seen at second transfusion. Benefit from transfusion is less when the reaction is severe, but this is not proved. Data on this question would be interesting and useful. Another point is that sometimes a blood of different type has been given in emergencies, without any ill effect. The question of the value of transfusion in pernicious anemia may be raised. Does it do more than nature does in this disease? If given when a remission is due it seems to hasten it. There is often appearance of general improvement, with disappearance in symptoms and steady increase in the red cells; but how much of this is due to transfusion we cannot say. In cases with nervous system involvement it is practically useless. Vital staining with careful counting will give some idea of improvement. Increase of reticulated red cells after transfusion indicates likelihood of a remission. These cells are a more reliable sign of bone marrow activity than nucleated reds. If they are not increased, further transfusion will not benefit. Sometimes just before death the nucleated reds go up to 30 or 40 per cent., which represents the last crisis of bone marrow activity. It would seem wiser to give small amounts of blood, thus imitating Nature's method in causing a remission. It is certain that transfusion has a far more definite value in secondary anemias, in which there is a definite and marked response than in primary anemias in which its value is theoretical.

DISCUSSION

DR. NELSON G. RUSSELL, Buffalo: Dr. Ordway's paper leads one to think that the diagnosis is not often in question, although he states that the cells are usually abnormal. I could cite instances in which diagnosis was not so easy. The association of Vincent's organisms with leukemia cannot be ignored. Cases of acute mononucleosis are often overlooked and a high leukocyte count is disregarded. As to treatment, our success has not been great with radium, perhaps on account of different technic. The mental effect of treatment on the patient has some bearing in these cases. In regard to pernicious anemia: We are all trying to do something, and if one man does not use transfusion, another will. The patient wants us to make some effort, and giving small amounts of blood is about as harmless as anything one can do. Remissions do follow transfusions in some cases, and the patient's peace of mind is worth considering. When, however, the blood is destroyed and very rapidly eliminated, there is no use going on. The use of hydrochloric acid certainly makes the patient more comfortable.

DR. H. R. BROWN, Rochester: There are some subordinate groups of the four types. I use individual matching, with minimal bad effects. The sodium citrate used should be chemically pure; if it is, there will be no ill effects from citration of the blood.

DR. BALDWIN MANN, Buffalo: Whole blood is superior to the citrated blood. I used the citrated method for a year, but discarded it. While the reactions were not serious enough to affect the final result, they were more numerous after citrated blood. One point that is important is to strain the citrated blood before introducing it into the recipient. If this is done, a good deal of fibrin will be caught which might block the apparatus or go into the recipient. A certain amount of skepticism is justified in considering the benefit of transfusion in pernicious anemia. Some men have questioned whether there is not an earlier exhaustion of the bone marrow from repeated transfusions. I believe, however, that

in properly selected cases it is of benefit, especially when the patient is exhausted and discouraged.

DR. E. G. STILLMAN, New York: In the tests for compatibility of the blood, possibly both direct and indirect methods should be used, by matching and by typing. There is practical advantage in the blood grouping in the management of professional donors; on the other hand, the universal donor group cannot be used indiscriminately without getting some disagreeable reactions, and direct matching is advantageous in some cases. Another point is that when the patient is in very bad condition, direct matching may fail to show incompatibility, because the agglutinins may be so few that they do not show clumping of the donor's corpuscles. We had one fatal result following transfusion, owing to this difficulty. No matter what methods we follow, I think we shall not be able entirely to avoid reactions after transfusion, certainly not until our knowledge of the processes entailed is much increased. I do not think the new groups suggested by Guthrie would upset our present grouping of donors so that this method can still be used.

DR. THOMAS ORDWAY, Albany: In regard to Dr. Russell's remarks concerning the diagnosis of leukemia, there is no difficulty in the great majority of the cases; but in certain instances of acute mononucleosis there is considerable doubt. It is sometimes impossible to make a diagnosis unless by special histologic staining methods which bring out the presence of leukocytic hyperplasia in the tissues, which is the final criterion. As to the presence of Vincent's organisms as an etiologic factor, these are so frequent in ulcerative and hemorrhagic conditions of the mouth that one would hesitate to say that they play a part in the etiology. In regard to radium, it is important not to overirradiate. I have seen rapidly fatal termination in Hodgkins' disease because irradiation was carried on till the glands in the neck entirely disappeared. We should be satisfied with moderate reduction of the size of the glands. In regard to prognosis: These patients do not seek advice until enlarged abdomen or glands call their attention to the disease, and this is a late stage; therefore our reports on frequency and results rest on insecure data.

(To be continued)

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Eighth Meeting, held at Atlantic City, N. J., May 1-2, 1923

(Continued from page 1727)

Insulin in Diabetic Coma

DR. N. B. FOSTER, New York: No cases of diabetic coma developed under our supervision, but forty-five cases have come to us from other hospitals. Eight patients recovered completely, and five are still living. We have used insulin to combat acidosis, combined with alkalis to protect the tissues from acid intoxication. The first dose of insulin was given in the emergency ward. The primary object in giving insulin is to start the combustion of glucose by interrupting the abnormal catabolism. We do not know the blood sugar figures or the amount of insulin necessary, but we give a large dose and watch for the first signs of insulin shock (seen only in one case). The glucose can be administered by the rectal drip. As soon as the patient recovers consciousness, glucose and orange juice can be administered by mouth. The amount of insulin needed was very variable: the smallest quantity given within twelve hours was 70 units, and the largest amount, 240 units. In one case, 300 units was not sufficient. One important factor is the treatment of the desiccation of the tissues and the dryness of the pharynx. Even if acidosis is overcome, desiccation may lead to death, so that it is necessary to give fluids by every avenue of approach: by rectum—using a solution with 5 per cent. glucose and 3 per cent. sodium bicarbonate—by mouth, and, if the latter is impossible, by hypodermoclysis. In two cases fluid was administered peritoneally with apparent success. Alkalis are given intravenously, but only in small quantities. Large quantities of fluid are absorbed by rectum. Death is often due to cardiac failure in these cases, and the patient should be watched carefully.

If signs of heart failure intervene, digitalis and caffeine should be given to support the failing heart.

Insulin in Diabetes in Children

DR. H. RAWLE GEYELIN, New York: Insulin can be used in the severest forms of diabetes that we see clinically, especially those in children. We have treated seventeen cases. Nutrition was allowed to the extent of 2 or 3 gm. of protein per kilogram of body weight, and carbohydrate equal to or above the protein intake. Fat is given to bring the total caloric intake up to 50 per cent. over and above the basal requirements. Unfortunately, our insulin supply has been restricted. On an average, the amount of insulin required to oxidize 2 gm. of carbohydrate was 1 unit. This was not constant in all cases, but tended to become so over a long period of time. It was noted that the children required less insulin for a given amount of carbohydrate after long treatment than when first under observation, thus showing evidence of less strain on the pancreas. The amount of insulin required was determined by blood sugar and urine sugar examinations. The glycosuria amounted to excretion of from 1 to 10 gm. of an intake of 125 gm. of carbohydrate. The patients gained in weight and height. Before insulin was started, some of them were so weak that they could not stand without being supported. They are now able to go to school and lead the life of a normal child.

Experiments with Insulin

DR. F. M. ALLEN, New York: It seems that we are inclined to work out the problems of insulin entirely with reference to carbohydrate metabolism. We have now to learn whether the internal secretion of the pancreas is related to glucose metabolism alone, or whether there is any connection with protein metabolism. The tests will vary according to blood sugar and glycosuria, but any test will serve if time enough is allowed. The tests will be quicker in result if carbohydrate is allowed, and will take longer in the case of ingestion of fat, alcohol, etc. A high proportion of fat in the diet raises the insulin requirement. Glycosuria is affected most by carbohydrate, next by protein and lastly by fat; but if enough fat is added, more insulin will be needed to handle it. Protein does not act quickly in preventing hypoglycemia. Sugar or starch act more powerfully in preventing hypoglycemia collapse. Carbohydrate is thought responsible for glycosuria resulting from too high fat, but there is not enough carbohydrate derived from 100 gm. of fat to correspond to 7 units of insulin. Experiments with high additions of fat (150 gm.) showed that it required 22 units of insulin to handle the fat. These results confirm the findings in the under-nutrition treatment. If the body weight is kept low, less insulin is required.

DISCUSSION

DR. RUSSELL WILDER, Chicago: The problem of balancing diet in young children calls for careful handling, especially when complicated by infection. The balance between hypoglycemia and hyperglycemia in a child is so narrow that it is easily upset either way. I believe that it is as well to interpose a buffer in the way of some glycosuria and hyperglycemia in children under 8 years, which leaves a margin of safety, rather than keep them sugar free. This may mean large doses of insulin, but I think it is safer. Dr. Allen fails to take into account the total calories of food in the experiment. The ideas are not justified unless one takes into consideration the food requirement. He knows what the patient is getting but he has no idea at all of what the patient is burning.

DR. REGINALD FITZ, Boston: In dealing with hospital patients, the disease is a severe economic drain on the patient and on his family, necessitating, as it does, special equipment and food, and meaning progressive loss of strength. What are we to advise these patients? Is insulin to mean to them a luxury or a necessity? Are they to mortgage their farms and possessions to procure enough insulin to bring them back to a normal economic status? This is a very serious practical problem.

DR. ALFRED STENGEL, Philadelphia: I believe that when the patient has been greatly reduced in weight, an increase of diet to the point of a little spilling over of sugar might

be advantageous; but it is as well generally to reduce the blood sugar and keep the urine as sugar free as possible. In regard to Dr. Allen's observations, I think that there is a possibility of considerable digestive upset in suddenly throwing large quantities of fat into the diet. To raise 800 calories suddenly to 2,000 calories is not a very fair test of metabolic processes. In a series of fifty cases, in the adolescent types, we have put the patients on a diet 50 per cent. above maintenance requirement, so as to regain strength, and then have taken up the problem of gradual restriction so as to be able to send them home sugar free with a minimal dose of insulin necessary to keep them at that status.

DR. E. P. JOSLIN, Boston: Infection is the worst risk to the patient with diabetes. If he gets to the hospital alive, we can take care of him. If the surgeon thinks the patient can stand operation, it is done that night. In regard to coma, I agree with Dr. Foster in every detail. It is important to treat the dryness of the patient. Coma is a terribly serious disease, and we should not lose any time. The patients should have liquids right away. This can be done by injection of 1,000 c.c. of salt solution and then gradually working in fluids. The first hour is worth more in treatment than the next twenty-four hours. In regard to hyperglycemia and glycosuria, these patients in middle life die from the complications, and if we prolong their lives only to get complications later from high blood sugar, we are not doing the best for them. I believe in keeping them sugar free not only by insulin, but by proper dietary restriction and slow improvement of the patient. In regard to insulin as a luxury versus a necessity, that is a very important point. School teachers can work with insulin, when they cannot without it, so that is an economic benefit to them. We should all collect data on this question. I have not been giving alkalis since 1917. If I have had results without insulin and without alkalis, it is interesting to look forward to what will happen with the help of insulin.

DR. N. B. FOSTER, New York: In regard to the economic questions arising in connection with the use of insulin, patients are able with its help to work and support their families, while without it they could not work at all. In regard to raised diet and insulin, a man on 1,000 calories was reduced to 110 pounds (50 kg.). He is now receiving 15 units, and can take 2,200 calories and weighs 140 pounds (63.5 kg.).

DR. H. R. GEYELIN, New York: In regard to the cost, with continued dosage, a smaller amount of insulin is necessary to oxidize the same amount of carbohydrate. The cost of insulin does not equal the cost of the special diabetic diet and its burden on poor families. I believe, therefore, that we can regard insulin not as a luxury, but as an absolute necessity from an economic standpoint. In the poorer families the added cost of special food is eliminated, and the patient can live on the same ration as the rest of the household; moreover, adults are brought back to increased earning capacity, and the burden of illness and unemployment is removed. In regard to allowing sugar to show in the urine, most of the high peaks of glycosuria were concomitant with some minor infection, and control was kept when there was no such process going on. In a series of experiments in which urines were analyzed both during the day and at night, there were cases in which the urine and the blood sugar were normal during the day and began to go up at night and until 4 a. m.; but the period over which hyperglycemia and glycosuria existed was not very long. There is no positive evidence that hyperglycemia is conducive to concomitant infections, but we have assumed that it is so. Another point of human interest is that of the expression of joy on the faces of these kids when they are at last allowed to eat bread and mashed potato. It shows that insulin is worth while.

DR. F. M. ALLEN, New York: This is a question of tolerance. If the patient's tolerance rises, one can increase the diet. With increased weight he needs more insulin because it is burning his own body fat as well as the increased diet. There are no digestive troubles when the patients get this increased fat diet. If the protein was not absorbed, the results were even more striking. In regard to the economic question, the patients get insulin and can increase the diet; then they

go back to work. I believe in keeping the patients sugar free, and blood sugar normal. Those with high blood sugar are likely to develop arteriosclerosis and gangrene as they get older.

Case of Myelogenous Leukemia

DR. SOLOMON SOLIS COHEN, Philadelphia: I have studied three cases of acute leukemia showing early and transitional cells. These cases show that it might be well to give serious consideration to the classification of Caillot. The first patient, a woman, aged 36, came with a diagnosis of bronchopneumonia, but routine blood examination revealed a different condition. Hemoglobin was 79 per cent.; red blood cells, 4 million, white blood cells, 30,000, 90 per cent. being of a special mononuclear type. Some authorities call these primary cells, but I prefer to designate them "early cells." They are round or oval cells, staining more deeply than myelocytes with the oxydase stain, and showing many granules. There were many transitional forms. Clinically, the case was characterized by fever and mouth infection. The patient died three months after the onset of the illness, and at necropsy myeloid infiltration was found in the spleen and in the femora. In the second case, a woman, aged 56, the blood count showed 90 per cent. of basal cells. Bacteriologic examination of the mouth disclosed three strains of streptococci. The third patient, a middle aged woman, came with a diagnosis of uterine hemorrhage. Her blood count showed 80 per cent. lymphocytes. I believe from a study of these cases that we must make three divisions of the acute leukemias: (1) the early cell acute leukemia; (2) that with transitional forms and Türck cells, and (3) that with cells tending toward lymphocytes, or lymphatic leukemia.

The Hemolytopoietic System

DR. E. B. KRUMBHAAR, Philadelphia: This system is as definite in its function as the respiratory system, and I have named it the hemolytopoietic system. The spleen is the only organ of this system which can be removed, although various tissues take part in the activity of this function, i. e., bone marrow, spleen, liver and lymph nodes. The reticular endothelial system is very closely related. Sudden changes in this system are met promptly, as when removal of the spleen is soon balanced by other factors of the system. Various parts have different functions: The bone marrow forms erythrocytes; the spleen forms blood cells in embryo, stimulates the bone marrow and aids in blood destruction; the liver forms blood cells in embryo and aids in destruction of the blood cells; the lymph nodes aid in blood destruction; the reticulo-endothelial cells, or Kupffer cells, are found in the liver, spleen, bone marrow and suprarenals, and aid in destruction by phagocytosis. Thus, in dogs made plethoric by repeated transfusions, the Kupffer cells are engorged with red blood cells and broken down cells. Under stress, the organs can take up the work of forming blood cells. Islands are found in the spleen and liver when the bone marrow is destroyed, and the bone marrow can take on lymph formation after splenectomy. It is believed that in selected cases splenectomy is very valuable in cases of hemolytic jaundice, and good results can be obtained thereby.

DISCUSSION

DR. A. S. WARTHIN, Ann Arbor, Mich.: The reticular endothelial cells of the hematopoietic system have a scavenger function and will take up anything in the blood or lymph stream. The Kupffer cells have been found loaded with broken down lymphocytes. It is well known that these cells take up pigment. I think that their function is a protective one, and that the rôle of scavenger is only part of their activity. It is misleading to ascribe the greatest prominence to this, which is only one of their functions.

DR. G. B. WEBB, Colorado Springs, Colo.: In regard to the marrow producing lymph elements, many years ago it was noted that at high altitudes lymphocytosis was increased on account of the hyperplasia of the marrow. Hyperemia would bring about the same result. Even putting on garters would cause an enormous lymphocytosis—about 80 per cent. We were never able to describe these cells. Ehrlich hesitated to give a name to them; they appeared like transitional cells.

It is interesting to know that the bone marrow takes part in the lymphoid elements.

DR. E. B. KRUMBHAR, Philadelphia: I quite agree that these cells have a broader function than that of hemolysis. I think that applies to the Kupffer cells. Collargol-stuffed animals failed to get jaundice because the cells were already stuffed with collargol. There are many functions that are known, and I hope by this introduction to stimulate interest in this system in regard to the activities of the cells.

Massive Collapse of the Lung

DR. NORMAN GWYN, Montreal: It is said that massive collapse of the lung occurs so rarely as to be of little clinical interest, but I believe that it is found in proportion as it is looked for. I have found eleven cases in one year, and seven cases during another. The symptoms are usually obscured by some other diagnosis. If a pneumonia patient has dyspnea, cyanosis and rapid pulse, we think of heart failure; but a careful analysis will show some particular features which will differentiate the case from other cases. The etiology is still very obscure, and no one cause can be cited. Emboli have been suggested, and also tracheal and bronchial obstruction. In a child that died under operation for papilloma of the larynx, both lungs were found collapsed. In another case, necessitating ligation of the facial artery, the man had bronchitis with acute dyspnea and collapse of the lung. In these cases there is a pushing in of the side of the chest from atmospheric pressure. In pneumonia cases and also after abdominal operations, the patient sometimes shows acute respiratory distress, and disappearance of breath sounds, and the roentgen ray shows disappearance of the heart into the shadow. This occurs very suddenly, and the emphysema on the sound side is so extreme that pneumothorax is frequently diagnosed. No exact cause can be stated for this condition, but it may be due to vasomotor disturbance of the pulmonary circulation.

DISCUSSION

DR. F. T. LORD, Boston: These cases have generally been reported as rarities; but if all cases were recognized, they would not be so very infrequent. I believe that this condition is not uncommon in suppurative lesions of the lung. There are signs of atelectasis at the base, with diminished whisper, voice and breathing. There is also displacement of the heart toward the affected side. Some cases are more insidious than the obvious cases described by Dr. Gwyn. In pneumonia they occur at the base, coincident with atelectasis. In 558 cases of pneumonia, there was displacement of the heart toward the side of the pneumonia in fourteen cases, in spite of effusion toward the affected side, probably by collapse of the lung in this region. The roentgen ray gave evidence of the displacement and subsequent return of the heart to its normal position. It may be an inflammatory process. There is developed of exudate in the bronchi, with absorption of air into the passages, and then inflammatory reaction with consequent atelectasis.

Abscess of the Lung

DRS. JAMES A. MILLER and ADRIAN VAN S. LAMBERT, New York: Abscess of the lung may occur without previous pneumonia. The interstitial tissues may become infected and break down. A secondary abscess may develop in the opposite lung. This problem was originally approached from the surgical standpoint, but the results of opening and draining the abscess were so poor that rest and postural drainage were substituted, with great improvement in results. Pneumothorax was established in seven cases. Bronchoscopy and lavage were tried in one case, which was exceedingly trying to the patient. It is not free from risk, and we believe that it is indicated only in foreign body cases. The mortality in surgical treatment was 55 per cent.; under medical treatment it was 38 per cent.

DISCUSSION

DR. C. P. HOWARD, Iowa City: What do you think as to the advisability of aspiration of the abscess?

DR. THOMAS McCRAE, Philadelphia: I should like to emphasize the value of bronchoscopy and drainage. I have seen a series of cases treated by this method, and it has revolutionized my ideas. The results are marvelous.

DR. F. T. LORD, Boston: Formerly we operated in all lung cases, and now we are treating them medically. Seven patients recovered spontaneously. In our hands, operative mortality proved to be so high that we were induced to try medical treatment, and we have found that a very much larger proportion of the patients have recovered.

DR. JAMES A. MILLER, New York: Aspiration of the lungs is a difficult procedure. The pleura is very resistant to infection. As far as bronchoscopy and drainage are concerned, perhaps we have not given this procedure a fair trial. A man who has undergone bronchoscopy once would rather submit to any sort of operation than go through it again.

The Pathologic Lesions in the Various Organs Occurring in Epidemic Influenza

DRS. S. BURT WOLBACH and CHANNING FROTHINGHAM, Boston: Certain pathologic lesions seem to be characteristic of epidemic influenza, such as: (1) congestion of the upper respiratory tract; (2) the lesion in the muscles known as Zenker's degeneration, sometimes with abscess formation; (3) lesions of the cortex of the suprarenals with degeneration of glandular tissue; (4) disease of the testes with disappearance of spermatazoa; and (5) lesions in the lung, consisting of desquamation of epithelium, dilatation of air spaces and hemorrhage into the air spaces of the bronchi with formation of hyaline membrane in the air spaces, caused by the air meeting with exudate under certain physical conditions of pressure. These lesions are due to the virus of the disease or to complicating organisms in the lung. There is a definite type of bronchopneumonia in the clinical picture. The characteristic lesions of influenza are recognizable at necropsy.

DISCUSSION

DR. W. G. MACCALLUM, Baltimore: These pictures correspond very precisely with my own. There is nothing especially characteristic of infection of the lung by pneumococci, but there is of influenza infection. The interstitial bronchopneumonia is associated exclusively with infection by the influenza bacillus, and is almost exactly the same form as that by *Streptococcus hemolyticus* after measles. That gave rise to the question whether the measles epidemic was really influenza. Some workers said that it was. I think that measles is often followed by a streptococcus infection of the lung. I do not think that the pathologic picture is a precise one or that it is exclusively recognizable as one of influenza, with, perhaps, the exception of the hyaline deposit in the bronchioles.

DR. CHANNING FROTHINGHAM, Boston: It would be skating on rather thin ice to base a diagnosis on the lung picture. The dilatation of the air spaces and the hyaline line are characteristic, however.

The Therapeutic Effects of Visible and Ultraviolet Rays of Various Wave Lengths

DR. ALFRED F. HESS, New York: Ultraviolet rays possess remarkable therapeutic power in tuberculosis and in rickets of both human beings and animals. Cod liver oil can be given as a specific in rickets, and with the addition of ultraviolet ray therapy it seems certain that rickets can be rooted out from our large cities before many years have passed. It does not matter whether the ultraviolet rays proceed from natural sunlight or from the carbon arc lamp or other sources. Experiments have been made to discover the particular radiation that brings about this result. The dosage with the carbon arc lamp is given at a distance of 3 feet for three minutes. Black material absorbs more ultraviolet light than white material, and window glass placed in front of the rays prevents them filtering through, so that a child might just as well be in a cellar as behind window glass when exposed to sunlight. In winter, a very much smaller amount of protective rays is received, so that it does not make so much difference whether the child is kept outside or not. Rickets is more or less of a seasonal disease, and reaches its peak in March, gradually diminishing during the summer. New York receives twice as much sunlight as London for every month of the year.

DISCUSSION

DR. HAVEN EMERSON, New York: We have no estimations on the actual amount of sunlight in this country, but it is calculated that, in English cities, 50 per cent. of sunlight is obscured by smoke. In Pittsburgh, 40 per cent. of sunlight is excluded on account of smoke. There must be a similar prevention, to a lesser degree, in New York and Cleveland. In regard to the amount of soot fall in large cities, this varies from 300 tons to 1,300 tons yearly to each square mile, in five of the largest cities. Forty-six tons is represented as finely divided tar. So far there have been no studies made bearing on the incidence of disease in relation to the amount of smoke cloud. City health authorities should make some study of the specific relationship between disease and pollution of the air. The air must be cleaned out as we clean out the water supply. That is the only utility that we have not cleaned out.

Hyperglycemia and Hypertension

DR. W. W. HERRICK, New York: In the average case of diabetes mellitus, the blood pressure is low; but in the elderly obese patient with arteriosclerosis, the blood pressure is high. From 10 to 25 per cent. of these people show a definite hyperglycemia, and constitute the borderline between hypertension and diabetes. They have a high sugar threshold. These are different from the essential hypertension cases. I have been impressed with the fact that these cases of obesity with hyperglycemia have often arisen from an ill balanced diet. These patients have been told that they must have diminished protein, and consequently they ingest more starchy foods. The effect on elderly persons with poor tolerance for glucose is dangerous. A condition of arteriosclerosis arises, with overstrain of the pancreas. These people are usually ambulatory office patients with circulatory embarrassment on account of obesity. If they are put on the diet that maintains the blood sugar at a normal level, loss of weight will result and there will be lowered blood pressure and less cardiovascular strain. An interesting point in blood chemistry is that the concentration of crystalloids in the blood is related to blood pressure. In plotting the curves of glucose and chlorid content of the blood, there is a definite relation between the two. There is a precise inverse concentration of chlorids and of sugar. Protein has heretofore borne all the odium in hypertension cases, but the possibility of overfeeding with carbohydrate in a certain class of cases has not been mentioned.

DISCUSSION

DR. H. O. MOSENTHAL, New York: We are gradually getting to the point of view that there may be an effect on the nervous system which stimulates the heart and arteries to increased action, thereby producing increased blood pressure. There is a tendency in diabetes to increased blood pressure. The question of compensatory rise and fall in the crystalloids of the blood, so that when the sugar declines, the salt content rises, is a fascinating field for study. A careful study of the crystalloids of the blood may show that control of the blood sugar may have far-reaching effects.

DR. W. S. THAYER, Baltimore: The problem that confronts the clinician, when these overfat, hypertonic people come to him, is to get them in the best possible physical condition, with reduction of weight and improvement of muscles. Most of them say that they have had all red meats cut out of the diet. If this person is rubbed, massaged and exercised, and the diet cut down till he loses weight, he feels much better. We are likely to think too much in terms of one article of food. We do not know everything about any one article of food.

DR. SOLOMON SOLIS COHEN, Philadelphia: I had a woman under my care from her sixty-eighth to her seventy-sixth year of age. Her complaint was sciatica. Examination showed that she had glycosuria and hyperglycemia and a very high blood pressure: systolic, 250; diastolic, 125. The woman was very obese. The blood sugar and glycosuria were controlled by diet. The blood sugar was never less than 13, however. The glycosuria disappeared. This woman was subject to recurrent attacks of pulmonary edema, controllable only by powerful doses of aconite. The minute the drug was

withdrawn, the attacks returned. At the age of 72, she had acute bronchopneumonia, from which she recovered, and for two years the pressure remained at 150. It then went up to 200, and she finally died. The interesting point is the effect of the pneumonic poison in reducing the pressure, and the continued reduced pressure after the pneumonic poison had been withdrawn.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

165: 469-624 (April) 1923

- Histologic Changes in Lymph Glands Following Exposure to Radium. J. C. Mottram, London.—p. 469.
- Permeability of Intestinal Mucosa to Certain Types of Bacteria, Determined by Cultures from Thoracic Duct. C. S. Williamson and R. O. Brown, Rochester, Minn.—p. 480.
- *Study of Bile Obtained by Nonsurgical Biliary Drainage, with Especial Reference to Its Bacteriology. G. M. Piersol and H. L. Bockus, Philadelphia.—p. 486.
- *Experiences with Nonsurgical Biliary Drainage (Meltzer-Lyon Test). E. Hollander, New York.—p. 497.
- *Studies of Exophthalmic Goiter and Involuntary Nervous System. II. Clinical Manifestations of Disturbances of Involuntary Nervous System (Automatic Imbalance). L. Kessel and H. T. Hyman, New York.—p. 513.
- *Spontaneous Variability of Blood Pressure and Effects of Diet on High Blood Pressure, with Special Reference to Sodium Chlorid. H. O. Mosenthal and J. J. Short, New York.—p. 531.
- Diabetes Insipidus Following Epidemic Encephalitis with Enormous Polyuria. G. W. Hall, Chicago.—p. 551.
- Disfiguring Scars. Prevention and Treatment. G. M. Dorrance and J. W. Bransfield, Philadelphia.—p. 562.
- *Trichiniasis, Endemic and Sporadic; Review of Present Status of Treatment of Disease. M. E. Alexander, Waterbury, Conn.—p. 567.
- *Blood in Myxedema. E. S. Emery, Jr., Brookline, Mass.—p. 577.
- Cancer of Colon. R. P. Sullivan, New York.—p. 583.

Nonsurgical Biliary Drainage Valuable Diagnostic Aid.—Piersol and Bockus believe that the method of biliary drainage instituted by Lyon and based on the hypothesis of Meltzer is a useful and practical procedure, and that there is every reason for the belief that the bile obtained in this way is derived from the common bile duct, the gallbladder, the hepatic duct and the biliary capillaries in the order given. The diseased condition of the gallbladder and the bile ducts can be recognized in this way by a microscopic and bacteriologic study of the bile, which under pathologic conditions shows significant alterations. However, the information obtained by nonsurgical biliary drainage is only a diagnostic adjunct, and in no sense should take the place of a careful history and complete physical examination.

Value of Meltzer-Lyon Test: Nonsurgical Biliary Drainage.—The practicability of the test is presented by Hollander in seventeen operative cases. He believes that in many cases the definite diagnosis of gallbladder disease cannot be made by any other method. Since gallbladder disease, with its protean clinical manifestations, is a frequent cause of intra-abdominal symptoms (second only to disease of the appendix), this test should be included as a routine in the study of gastro-intestinal cases. Because of its bland action on the duodenal mucosa, 5 per cent. peptone is suggested for diagnosis in preference to strongly hypertonic magnesium sulphate solutions. Attention is drawn to the condition of "ampullospasm" in relation to gallbladder stasis.

Autonomic Imbalance.—A study of the clinical manifestations of autonomic imbalance is presented by Kessel and Hyman. The symptoms are strikingly similar to those in exophthalmic goiter. In autonomic imbalance there is never a distinct and continuous elevation of the basal metabolism. This serves as a crucial differential point from exophthalmic goiter. Autonomic imbalance can rarely be arrested permanently. Usually the symptoms may be alleviated, but the diathesis persists.

Spontaneous Variability of Blood Pressure.—According to observations made by Mosenthal and Short, marked "spon-

taneous" variations occur in the blood pressure of all persons. In cases of hypertension a very great diminution of arterial pressure usually occurs during periods of mental and physical relaxation. Protein foods do not increase blood pressure. Starchy foods may increase blood pressure indirectly by bringing about obesity. There is no definite evidence in the literature that sodium chlorid raises blood pressure. The level of the blood chlorids bears no relation to blood pressure. In a series of experimental observations, the ingestion of 10 gm. of salt failed to raise the blood pressure in cases of hypertension.

Trichiniasis Epidemic.—A small outbreak of trichiniasis is reported by Alexander, affecting thirty-five persons. A clinical analysis is made of fourteen of the more severely ill patients. Blood and other laboratory findings are given with tabulations. High eosinophil blood counts and free, unencysted trichina embryos were found in persons who had partaken of the trichinous pork and yet presented no clinical symptoms of the disease. The author draws attention to the comparative frequency of the disease and to the absolute importance of thorough cooking of pork.

Blood in Myxedema.—Fourteen cases of myxedema, in which the history and basal metabolic rate leave no doubt as to the diagnosis, are analyzed by Emery. Of the eleven cases in which red blood cell counts were done, three had essentially a normal number of red cells. Of the eight cases with anemia, the red blood cell count varied from 4,070,000 to 2,280,000, of which seven had a count of about 4,000,000 cells. The hemoglobin was reduced in all the cases, varying from the highest value of 96 per cent. to the lowest value of 65 per cent. In four cases the color index was 1 or over; in six cases it was less than 1. The white cell count varied from 18,000 cells per c.mm. to 4,850 cells. The polymorphonuclear neutrophilic cells fell slightly below the normal values in nine cases. The lymphocytes were normal in number in four cases and decreased in two cases. Eight cases showed both a relative and absolute increase in the small lymphocytes. The eosinophils and basophils seemed to be about normal. Slight anisocytosis and slight poikilocytosis were also reported. There was no relationship between the degree of anemia and the metabolic rate, nor between the degree of anemia and the duration of the disease.

American Journal of Public Health, Detroit

13: 355-440 (May) 1923

- Recruiting of Sanitarians for Future Service of State. C. E. A. Winslow, New Haven, Conn.—p. 355.
Medical Profession and Laity from Standpoint of Health Officer. W. S. Rankin, Raleigh, N. C.—p. 360.
Albert's Toluidin Blue as Routine Stain for Diphtheria Bacilli. C. A. Palmerlee, Battle Creek, Mich.—p. 363.
Identification of Bacillus Botulinus and Its Toxin in Culture and Canned Foodstuffs by Serologic Methods. R. A. Kelser.—p. 366.
Decline in Infant Mortality in United States Birth Registration Area, 1915 to 1921. R. M. Woodbury.—p. 377.
Value of Milk Powder Agar in Bacteriologic Laboratory. H. F. Zoller.—p. 384.

American Journal of Roentgenology and Radium Therapy, New York

10: 259-342 (April) 1923

- *Pneumoperitoneum. H. H. Carelli, Buenos Aires, Argentine.—p. 259.
*Case of So-Called "Marble Bones"; Review of Literature. W. G. Alexander, Evanston, Ill.—p. 280.
Errors in Interpretations of Lesions of Sinuses. F. M. Law, New York.—p. 301.
Standardization of Roentgen-Ray Exposure Identification. E. S. Blaine, Chicago.—p. 303.
Biologic Coefficient for Aluminum Filter. F. B. Sheldon, Fresno, Calif.—p. 307.
New Device for Retubing Radium Emanation. W. Stenstroem, Buffalo.—p. 311.
*Principles of Radiotherapy of Carcinoma, Especially of Uterine and Mammary Carcinoma. E. Opitz, Freiburg, I. B., Germany.—p. 312.

Pneumoperitoneum of Great Diagnostic Value.—Carelli relates his experiences in more than 800 cases of pneumoperitoneum. He has found the method of great diagnostic value and entirely harmless when performed with an appropriate technic, including the procedure adopted in making the pneumoperitoneum and the manner of taking the roentgenograms.

Marble Bones.—Alexander's patient is the oldest (43 years) of the eight cases of this disease now on record. In fact, all but two of the eight cases have occurred in children.

So-Called "Carcinoma Dose" of Roentgen Rays.—A "carcinoma dose," according to the definition of Seitz and Wintz, that is to say, a curative action on every variety of cancer by a dose of rays of from 90 to 100 per cent. of the erythema skin dose, Opitz asserts, does not exist. However, in the majority of cases of mammary and uterine cancers, retrogression may be expected from the administration of this dose. Experience teaches that frequently repeated irradiations with a dose which does not quite reach the amount of the carcinoma dose are productive of the best permanent results. The most favorable results are observed from a combination of radium and roentgen rays. Over dosage is especially dangerous because it weakens the local as well as the general defensive forces of the body. The best results are only obtainable if the method of irradiation is adjusted to the particular conditions of each individual case.

Annals of Clinical Medicine, Baltimore

1: 141-210 (Nov.) 1922

- Diseases of Spleen. W. J. Mayo, Rochester, Minn.—p. 141.
Pathology of Spleen. W. C. Chancy, Rochester, Minn.—p. 146.
Clinical Lecture on Diseases of Blood. H. Z. Giffin, Rochester, Minn.—p. 151.
Radium in Treatment of Leukemia. M. B. Bonta, Rochester, Minn.—p. 155.
General Aspects of Early Diagnosis of Pernicious Anemia. T. L. Szlapka, Rochester, Minn.—p. 157.
Neurologic Aspects of Early Diagnosis of Pernicious Anemia. H. W. Woltman, Rochester, Minn.—p. 159.
Wassermann Reaction. A. H. Sanford, Rochester, Minn.—p. 161.
Primary Carcinoma of Liver: Report of Three Cases. J. A. Lichty and D. G. Richey, Pittsburgh.—p. 164.
Advantages of Examining Fasting Stomach in Gastro-Intestinal Diagnosis. E. G. Gaither, Baltimore.—p. 170.
Specific Hypersensitiveness as Common Cause of Illness. W. W. Duke, Kansas City, Mo.—p. 178.
Antenatal Care of Pregnant Women. W. N. Rowley, Rochester, Minn.—p. 196.
Significance of a Routine Examination of Eye Grounds. W. L. Benedict, Rochester, Minn.—p. 200.
Breasts of Mothers of Newly Born. L. R. DeBuys, New Orleans.—p. 204.

1: 273-335 (March) 1923

- *Human Botulism: Studies in Outbreak of Twenty-Nine Instances. B. R. Corbus, M. Wells and F. P. Currier, Grand Rapids, Mich.—p. 273.
Palpation in Outlining of Organs and Determining Pathologic Conditions Causing Different Degrees of Density in Same Organ: Light Touch Palpation. F. M. Pottenger, Monrovia, Calif.—p. 294.
Mongolism. Importance of Early Recognition and Treatment. N. P. Barnes, Washington, D. C.—p. 302.
Paroxysmal Angiospasm Dolorosa. J. H. Comroe, York, Pa.—p. 313.
*Auricular Flutter in Case of Mitral Stenosis. W. J. Wilson, Detroit.—p. 322.
*Life Expectancy with Mitral Stenosis. F. A. Willius, Rochester, Minn.—p. 326.

Epidemic of Botulism.—There is reported by Corbus et al. an outbreak of twenty-nine cases of botulinus intoxication among persons who had eaten canned spinach in which type A botulinus toxin was present. A brief historical account of the occurrence of symptoms, and a rather detailed report of the onset and duration of the principal symptoms is made, including systematic neurologic examinations. A contribution to knowledge of the pathology of botulism in man is made in the report of the pathologic findings in the brains of the three fatal cases. The use of polyvalent botulinus antitoxic serum and also of the type A serum is described, with the conclusion that this specific agent is of definite value in the treatment of such cases. The use of pituitary extract hypodermically is reported as a valuable adjunct in the treatment of the severe constipation occurring in many of these cases, which is seemingly not relieved by castor oil and other usual procedures. The mortality in this group of cases was 10.3 per cent.

Auricular Flutter in Mitral Stenosis.—A case of auricular flutter is reported by Wilson which occurred in a patient suffering from mitral stenosis, who presented voice changes evidently due to engorgement of the pulmonary artery and consequent impingement on the left recurrent laryngeal nerve. The value of squills was demonstrated in this case, when

digitalis, unaided, failed to alter the rhythm after 120 minims had been given for five days, for, on addition of 3 drams of squills, the ventricular rate dropped to 72, and hereafter the rate was controlled by smaller doses of digitalis. No period of auricular fibrillation was observed during the course of treatment. Both percussion and roentgen-ray study demonstrated that during the period of flutter, the heart area as a whole was markedly reduced.

Life Expectancy with Mitral Stenosis.—The cardiac mortality with mitral stenosis in Willius' series of cases was as follows: Complete series, 470 cases, cardiac mortality, 36.8 per cent. after an average of 15.7 months. Mitral stenosis with auricular fibrillation, 116 cases, cardiac mortality 56.6 per cent. after an average of 22.8 months. Mitral stenosis with presystolic or diastolic apical murmur, 253 cases, cardiac mortality 29.0 per cent. after an average of 17.1 months. Mitral stenosis with presystolic or diastolic and apical systolic murmur, 197 cases, cardiac mortality 45.5 per cent. after an average of 13.7 months. Significant T wave negativity, fifty cases, cardiac mortality, 62.5 per cent. after an average of 12.1 months.

Annals of Surgery, Philadelphia

77: 385-512 (April) 1923

Lymphangioma of Neck. Report of Two Cases. J. E. Thompson, and V. H. Keiller, Galveston, Texas.—p. 385.

Ligation of Inferior Thyroid Artery. J. L. De Courcy, Cincinnati.—p. 397.

Empyema Thoracis. H. P. Brown, Jr., Philadelphia.—p. 401.

*Experimental Production of Peptic Ulcer. F. C. Mann, and C. S. Williamson, Rochester, Minn.—p. 409.

Relationship Between Certain Forms of Intestinal Obstruction, Chronic Peritonitis and Chronic Multiple Serositis. C. N. Dowd, New York.—p. 423.

Case of Gastrocolic Fistula. G. P. Pratt, Omaha.—p. 433.

Sliding Hernias of Cecum and Appendix in Children. V. C. David, Chicago.—p. 438.

Massive Ventral Hernia with Fecal Fistula. H. S. Villars, Washington, D. C.—p. 445.

Double Kidney. D. N. Eiscndrath, Chicago.—p. 450.

*Sarcoma of Uterus. P. J. Reel and P. H. Charlton, Columbus, Ohio.—p. 476.

Case of Separation of Upper Epiphysis of Tibia. A. Gibson, Winnipeg, Canada.—p. 485.

Spondylolisthesis. Report of Case. S. Kleinberg, New York.—p. 490.

Experimental Production of Gastric Ulcer.—Experiments were devised by Mann and Williamson for diverting the secretions which neutralize the gastric juice as it leaves the stomach to another portion of the intestine removed from the point of emergence of the acid. Under such conditions typical subacute or chronic peptic ulcers, quite comparable pathologically to that found in man, developed in the intestinal mucosa just adjacent to the gastric mucosa in a high percentage of cases.

Sarcoma of Uterus.—Of the eleven cases forming the basis of Reel and Charlton's study, nine presented grossly the picture of definite multiple fibroids. The gross section of these revealed in the majority of instances an area of apparent sarcomatous change enclosed within one of the fibroid masses. It was not uncommon to find a multinodular uterus with but one nodule showing sarcomatous transformation. This would tend to strengthen the contention that a sarcoma may arise in a preexisting fibroid. One of the remaining two was found to be a distinct globular mass, protruding into and occupying most of the cavity of the uterus. The consistency of this tumor was soft, friable, and on gross section it presented the typical yellowish color which seems to be characteristic of the endometrial or mucosal type of sarcoma. The remaining specimen presented a diffuse growth involving the anterior and lateral walls of the uterus, with a marked invasion of the peri-uterine structures, which was of the above-mentioned yellowish hue.

Archives of Occupational Therapy, Baltimore

2: 87-170 (April) 1923

*Occupational Therapy for Men in Convalescent Period. F. Brush.—p. 87.

Form of Occupational Therapy Chart. J. S. Plant, Boston.—p. 99.

Workshop in a General Hospital. W. Brainerd, Chicago.—p. 109.

Ward Work in a General Hospital. E. Hassenstein, Chicago.—p. 115.

Occupational Therapy for Convalescents.—Brush's report is based on the convalescent treatment of nearly 20,000 men

and boys in a country institution for a term of seven years. The kind of patient grades from the moderately defective up to persons of high breeding and ability. Almost every ailment and subnormal condition is represented. The average stay is under twenty days, and varied from one to ten weeks, as determined by frequent study of the individual, and to some degree by his preferences, home calls, etc. A preliminary rest reduces the average application time of this therapy to about two weeks only. All regular occupation is for one hour only, from 10:30 to 11:30 a. m. Cottage routine adds another half hour. The prescription is for one of five details—"out," "light out," "sitting," "shops," or as "aides." "Out" means work about the gardens, grounds or buildings. "Light out" is picking up of litter, vine and grass trimming, some gardening, weed digging, and the like. "Sitting" refers to basketry, small cement ware, library, studio, toy making, vegetable preparation, etc. The "shops" are for carpentry and general repair, toys, painting, cement goods, canvas hammocks, tailoring, cobbling and barbering. The patient aides are carefully chosen for cottage helping, policing, athletic and group leadership, mail handling, assistance in the surgery and offices, errands, etc. Pay occupation, of from three to five hours daily, is given (often urged or prescribed) to a few for special curative reasons.

Arkansas Medical Society Journal, Little Rock

19: 205-222 (April) 1923

Mobilization of Stiff Joints. W. C. Campbell, Memphis, Tenn.—p. 205.

Rational Vaccine Therapy in Ear Infections. L. H. Lanier, Texarkana.—p. 207.

Peptic Ulcer. J. H. Phipps, Clarendon.—p. 211.

Constipation Treated by Excitation of Anal Reflex.—p. 213.

California State Journal of Medicine, San Francisco

21: 97-144 (March) 1923

Pasteur's Contribution to Chemistry. C. Alsberg, Washington, D. C.—p. 97.

Some of Fundamental Contributions of Pasteur to Bacteriology. W. L. Holman, Palo Alto.—p. 99.

Pasteur's Contribution to Anthrax, Vaccination and Evolution of a Principle of Active Immunization. J. G. Fitzgerald.—p. 101.

Pasteur's Discovery of Preventive Treatment for Rabies. W. H. Kellogg, Berkeley.—p. 104.

Necessity for More Accurate Data in Surgeon's Permanent Disability Report. F. E. Raynes, San Francisco.—p. 109.

*Alienist and Expert Testimony. E. H. Williams, Los Angeles.—p. 111.

Gonorrhea in Women. G. K. Herzog, San Francisco.—p. 113.

So-Called Chauffeur's Fracture. P. Stephens, Los Angeles.—p. 115.

Removal of Pus Tubes and Saving of Ovaries, and Suspension of Uterus. F. P. Canac-Marquis, San Francisco.—p. 117.

Preoperative Examination. F. F. Gundrum and J. B. Harris, Sacramento.—p. 121.

*Epigastric Tug. M. L. Emerson, Oakland.—p. 123.

Suicide. J. T. Fisher, Los Angeles.—p. 126.

Alienist and Expert Testimony.—Williams urges as a remedy for the present inadequate, ineffectual procedures in presumably insanity cases that a law be passed, as suggested repeatedly by legal, medical and lay organizations, providing that in cases of suspected insanity, criminal or otherwise, the actual condition of the patient is to be determined, not by a jury of laymen, but by a commission of trained observers who are competent to judge in such matters and who are appointed by a judge to determine the one point as to whether or not the patient is insane. The physicians would receive the same remuneration, whatever their decision, so that there could be no question about their opinions being influenced by a monetary consideration. Williams says that there seem to be four very explicit reasons why such a law always gets clogged and sidetracked in the legislative machinery and fails to get through. These four reasons are: (1) The opposition of certain influential criminal lawyers who would be deprived of an opportunity to show their skill and oratory if such a law were passed; (2) the sensational physician, who is in effect a professional witness, and who would lose the glamour and publicity of a court trial if his statements were confined to an unobtrusive report, confided to a judge; (3) a certain class of judges in the criminal courts who glory in the publicity given by the newspapers in public trials; and (4) the general indifference of the public at large to anything that concerns insanity, except on those sporadic occasions when insanity is the defense in some notorious trial.

Epigastric Tug.—Epigastric tug, according to Emerson, is not uncommon but frequently it is unrecognized. Neither the patient's symptoms nor the physical findings fit the more commonly thought of surgical pictures. The pain and discomfort are entirely disproportionate to what sometimes can be demonstrated, yet the lesions disclosed at operation, and the subsequent relief, are sufficient proof that epigastric tug on the falciform ligament may be responsible for pain more often than one might imagine. Examination reveals only a small subcutaneous tumor in the linea alba, between the umbilicus and ensiform cartilage. These small tumors are sometimes spoken of as epigastric hernias, or preperitoneal areolar tumors, or simple lipomas. The condition, however, is not an epigastric hernia. It is a small areolar tumor coming through the linea alba between the umbilicus and the ensiform cartilage. The fibers of the linea alba run longitudinally, obliquely and transversely. The transverse fibers are the strongest, and not infrequently have gaps between them. The openings, or gaps, between the transverse fibers of the linea alba are the site of the type of hernia responsible for the tug, and they allow the subperitoneal fat to escape but not always to return. At operation the herniated fat is found to have a constricted pedicle firmly grasped by the fibers of the slit in the linea alba. The peritoneum does not protrude and is separated from the linea alba by the transversalis fascia, but between the two is a certain proportion of fat, and it is this, the next adjacent tissue to the weak spots in the linea alba, that forces its way through and becomes entrapped. Emerson is of the opinion that the first cause of the small areolar tumor in the upper linea alba is encouraged by the blood vessels passing through the transversalis fascia and aponeurosis of the linea alba. Prolongations of the fascia follow these blood vessels, later followed by small globules of fat from the areolar tissue which, gradually accumulating in number, sooner or later become a recognized mass. As this mass of fat globules increases in size, it then becomes organized with either cicatricial or semifibrous bands, often forming a glistening capsule and simulating a true hernial sac. The mass flattens out in a button-like or mushroom shaped head, causing resistance to the constant tugging of the flexible falciform ligament, and this, under the strain of the more violent intra-abdominal stress, causes the so-called epigastric tug, with more or less severe or intermittent pain referred to this region.

Endocrinology, Los Angeles

7: 225-378 (March) 1923

- *Absence of Prostate Associated with Endocrine Disease, Notably Hypopituitarism; Histories of Eighteen Cases. H. Lissner, San Francisco.—p. 225.
- *Diagnosis and Treatment of Thyroid Disease as Controlled by Metabolic Rate. A. H. Rowe, Oakland, Calif.—p. 256.
- Experiments on Endocrinology of Sexual Glands. K. Sand, Copenhagen.—p. 273.
- Biologic and Anatomic Studies of Nuptial Excrescence and Bidder's Organ of Toad (*Bufo Bufo Japonicus-Schlegel*). N. Takahashi, Japan.—p. 302.
- *Pilocarpin and Atropin Tests in Functional Exploration of Visceral Nervous System. P. Escudero, Buenos Aires.—p. 305.
- *Calcium Content of Blood of Thyroidectomized Animals. M. Parhon, Jassy, Roumania.—p. 311.
- Correlation Between Creatinin and Total Nitrogen Elimination in Dystrophia Adiposo-Genitalis. J. W. Rauth, Washington, D. C.—p. 313.

Absence of Prostate with Endocrine Disease.—Lissner reports eight cases of preadolescent hypopituitarism of the Levi-Lorain type of infantilism; five cases of preadolescent hypopituitarism of the Froehlich type—dystrophia adiposogenitalis; two cases of dyspituitarism (gigantism and infantilism, Neurath-Cushing Type), and three cases of eunuchoidism in which the prostate was either absent or very small. Lissner states that the prostate is large enough normally in childhood to be easily felt, and pediatricians especially are urged to make rectal examinations in boys who show stigmata of infantilism.

Metabolism in Thyroid Disease.—After the constant use of basal metabolic rate determinations for a period of more than three years, Rowe is convinced of their value in the diagnosis and treatment of both hyperthyroid and hypothyroid states. The borderline cases especially can be diag-

nosed, and the etiology arrived at, far earlier than would be possible without its aid. As a guide for medical, surgical, or roentgen-ray treatment in hyperthyroidism, the metabolic rate is indispensable. As a means of determining the advisability of thyroid treatment in cases of obesity and in hypothyroid states, as well as regulating the amount of thyroid given, indirect calorimetry has given an invaluable guide. Finally, in investigation, it already has yielded much information about thyroid secretion and disease which is of great aid.

Action of Pilocarpin on Nervous System.—Escudero summarizes his observations as follows: Pilocarpin acts on both sections of the autonomic nerve system; it provokes increased salivary secretion through parasympathetic and sweating through sympathetic nerve fibers. Sweating provoked by the injection of 0.01 gm. pilocarpin is no proof of parasympathetic innervation of the sweat glands. Parasympathetic irritability must be examined by injecting only 2 mg. pilocarpin; it is considered increased when this dose provokes 50 c.c. or more salivary secretion. Subcutaneous injection of 0.001 gm. atropin does not modify the pulse rate in normal cases. An increase of pulse rate from 10 to 40 per minute is observed in cases of diminished vagus tone. Paradoxical reaction is evidenced in cases of vagotonia.

Calcium Content of Blood of Thyroidectomized Animals.—Parhon investigated the calcium content of the blood of three sheep thyroidectomized at the age of 6 weeks. The blood for analysis was taken one year after operation. The calcium was determined according to Neumann's method. It was found that the calcium content of the blood in the thyroidectomized animals is less than that of the normal controls. This calcium diminution in the blood of the thyroidectomized animals may explain in part the tendency to hemorrhage in thyroidal insufficiency. Likewise, one can attribute to calcium deficiency such disorders as urticaria, pruritus and eczema which have developed on a hypothyroid terrain. These disorders disappear on thyroid opotherapy, which apparently regulates the calcium, or the organism in determining its retention, a result also attained by treatment with calcium salts.

Florida Medical Association Journal, St. Augustine and Jacksonville

9: 160-175 (April) 1923

- Vaginismus. G. H. Edwards, Orlando, Fla.—p. 163.
- Endocrines. W. C. Box, Graceville, Fla.—p. 164.

Johns Hopkins Hospital Bulletin, Baltimore

34: 109-140 (April) 1923

- *Experimental Surgery of Thoracic Esophagus. R. T. Miller, Jr., and W. D. W. Andrus, Baltimore.—p. 109.
- *Closure of Granulating Wounds with Reverdin-Halsted Grafts. K. Schlaepfer, Baltimore.—p. 114.
- Observations on Total Lung Volume and Blood Flow Following Pneumectomy. W. D. W. Andrus, Cincinnati.—p. 119.
- Changes in Fallopian Tube During Ovulation Cycle and Early Pregnancy. F. F. Snyder, Baltimore.—p. 121.
- Examination of Spinal Accessory Nerves from Case of Bilateral Acquired Spasmodic Torticollis. C. M. Byrnes, Baltimore.—p. 125.
- *Existence of More Than Four Iso-Agglutinin Groups in Human Blood. C. G. Guthrie and J. G. Huck, Baltimore.—p. 128.

Experimental Surgery of Thoracic Esophagus.—The work reported on by Miller and Andrus demonstrates (a) the feasibility of sutures of the esophagus in the dog, (b) a fairly satisfactory substitute for at least the lower two-thirds of the tube, and (c) the presence of a well developed submucosa in the human esophagus. With these facts at hand it would seem that efforts to develop the obvious surgical possibilities are to be encouraged and that persistence may well be rewarded by success in the management of cancer of the human esophagus.

Use of Reverdin-Halsted Grafts.—Schlaepfer asserts that every infected wound not suitable for secondary closure can be successfully covered with a very resistant, elastic skin by means of the Reverdin-Halsted transplantation. A thorough preliminary treatment with surgical solution of chlorinated soda, persisted in until relative sterility is obtained, is followed by grafting with small, deep grafts. This method is the technic of choice in treating defects following extensive

laceration of the soft parts with secondary necrosis and suppuration, the grooves resulting from sequestrotomy for chronic osteomyelitis, and some cases with granulating areas after unsuccessful plastic operations for empyema. This method has also proved efficacious in the treatment of roentgen-ray burns and of trophic nonspecific ulcers of long standing which have proven refractory to all other measures.

Third Iso-Agglutinin and Iso-Agglutininogen.—Guthrie and Huck present evidence that the popular belief concerning the existence of four, and only four, iso-agglutinin groups is incorrect. The presence of only two iso-agglutinins and two iso-agglutininogens in human blood is inadequate to explain their findings. By direct tests and by absorption experiments, the existence of a third iso-agglutinin and a third iso-agglutininogen has been demonstrated. Although recognizing the possibility that there may be still other iso-agglutinins and iso-agglutininogens in human blood, the authors have found nothing thus far to indicate their existence; their observations have shown, however, that there are at least three of each. With three iso-agglutinins and three iso-agglutininogens, twenty-seven combinations are biologically possible. It is believed that these findings have a practical bearing on transfusion and furnish a plausible explanation for some of the hitherto unexplained posttransfusion reactions.

Journal of Industrial Hygiene, Boston

4: 501-536 (April) 1923

- Therapeutic Use and Toxicity of Picric Acid: Report of Two Toxic Cases. G. T. Pack, New Haven, Conn.—p. 501.
Effect of Aniline Black Dyeing on Factory Workers. R. Williamson, Manchester, Eng.—p. 507.
Treatment of Constipation. F. W. Derheimer, Cleveland.—p. 518.
Jet Dust Counting Apparatus. J. S. Owens, London.—p. 522.

Journal of Laboratory and Clinical Medicine, St. Louis

8: 425-492 (April) 1923

- *White Mice and Assay of Insulin. D. T. Fraser, Toronto, Can.—p. 425.
Clinical and Laboratory Procedures in Pediatrics. A. Levinson, Chicago.—p. 429.
*Safety of Local Anesthetics: with Particular Reference to Cocain and Butyn. C. Nielsen and J. A. Higgins, Chicago.—p. 440.
*Atresia of Pulmonary Artery in Congenitally Defective Heart. W. B. Stewart, Rochester, Minn.—p. 454.
Increase in Virulence of Nonpathogenic Micro-Organism by Chemical Substances. R. H. Lee and L. Arnold, Chicago.—p. 462.
*Influence of Intravenous Administration of Mercury Benzoate on Wassermann Reaction of Apparently Normal Persons. A. Strickler, Philadelphia.—p. 465.
Diagnostic Value of Kahn Test for Syphilis. M. S. Grant, Ft. Wayne, Ind.—p. 468.
*Large Mononuclear Index in Chronic Appendicitis. L. O. Dutton, Memphis, Tenn.—p. 473.
Employment of Vegetable Extracts in Wassermann Reaction. E. Weiss, Chicago.—p. 476.
Wassermann Systems. A. Faller, Cincinnati.—p. 480.

Assay of Insulin.—The correlation of the unit as determined by the use of rabbits with the unit as determined by the use of mice has been attempted by Fraser; 0.0025 c.c. is approximately the equivalent of 5 (rabbit) units per c.c.

Treatment of Poisoning by Local Anesthetics.—Various drugs were investigated by Nielsen and Higgins for their detoxication action in the treatment of poisoning by the local anesthetics of the so-called "cocain group" (alkamin esters of aromatic acids). Pituitary solution appeared to be superior to the other drugs investigated, and holds out promise both as a preventive of undesirable symptoms from sublethal doses as well as an antidote in poisoning by fatal doses of these local anesthetics. Judging from the experiments, small therapeutic subcutaneous doses of pituitary solution, injected simultaneously with the local anesthetic, are sufficient to eliminate the fall in blood pressure from therapeutic doses as well as the convulsions from higher doses, and death from fatal doses. Used as an antidote when convulsions had already set in, it was effective only when administered intravenously. It should, of course, not be used in pregnant women or in high blood pressure cases.

Case of Congenitally Defective Heart.—A case of congenital atresia of the pulmonary artery, pulmonary valve, and infundibulum of the right ventricle is described in conjunction with other developmental anomalies: origin of the aorta from the right ventricle; presence of a patent ductus arteri-

osus, and defective ventricular and auricular septums; complete cleft palate and right harelip. The ascending aorta, as far as the opening of the ductus arteriosus, thus served as both a pulmonary artery and an aorta, the ductus arteriosus conveying blood from the aorta to the lungs through the widely patent right and left branches of the atretic pulmonary artery. The child lived four and one-half months in fairly good health, and died only after a plastic operation. Prior to operation she had shown intermittent cyanosis and attacks of strangulation.

Effect of Mercurials on Wassermann Reaction.—It is Strickler's belief that the intravenous administration of the mercurials does not influence the Wassermann reaction. As many as thirty-seven injections were given to a patient without producing a positive complement fixation test. In one instance, in which the Wassermann reaction was 4 plus before treatment was instituted, the administration of twenty intravenous mercurial injections failed to influence the Wassermann reaction. A patient suffering with psoriasis, developed a 4 plus reaction after the fourth mercurial injection and this reaction persisted after eighteen injections of the remedy. The hypothesis offered by Strickler in explanation of his findings is as follows: It is generally admitted that the arsenicals have an affinity for the liver. It is also generally believed that whatever the nature of the substance which causes a positive Wassermann may be, it is probably a substance of lipoidal nature. It would appear probable that the arsenicals in their action on the liver cells may so alter their functions, as to cause either a change in the lipoids, or the lipoidal substance may flood the blood stream so that the serum, when examined at that particular time, produces a positive complement-fixation test. On the other hand, it has definitely been established that the mercurials have a great affinity for the kidney structure. The mercurials do not profoundly influence the liver structure. As a result, the administration of the mercurials does not influence the Wassermann reaction of normal persons in a positive manner.

Diagnostic Value of Mononuclear Count in Chronic Appendicitis.—A series of cases of chronic appendicitis were studied by Dutton to determine the value of an increased mononuclear count as a diagnostic aid. In 47.5 per cent., or perhaps 55.9 per cent., of these cases, the large mononuclears were increased in number, whereas only 15 per cent. of acute cases showed a mononuclear increase. To determine the possibility of a mononuclear increase being selective for a chronic infection of any site, rather than of the appendix only, two series of cases were studied (one of salpingitis and one of cholecystitis), revealing that 30.5 per cent. and 46.6 per cent., respectively, of these cases showed a mononuclear increase of more than 5 per cent. In these series of cases the large lymphocytes were studied. In one series (cholecystitis) it was found that ten, or 58.8 per cent., of the seventeen chronic cases showed high large lymphocyte counts, and this suggested the possibility of a significance of some kind. However, none was established in the other conditions as the lymphocyte count was too variable.

Journal of Parasitology, Urbana, Ill.

9: 109-180 (March) 1923

- Normal and Pathologic Histology of Ventriculus of Honey Bee, with Special Reference to Infection with *Nosema Apis*. M. Hertig.—p. 109.
Morphology and Life Cycle of *Crithidia Gerridis* Patton in Water-Strider, *Gerris Remigis* Say. E. R. Becker.—p. 141.
Intestinal Flagellate of Trout. H. S. Davis.—p. 153.
*Effects of Bite of *Latrodectus Mactans* Fabr. W. J. Baerg.—p. 161.
Limberneck of Fowls Produced by Fly Larvae. F. C. Bishopp.—p. 170.
Telosentis, A New Genus of *Acanthocephala* from Southern Europe. H. J. Van Cleave, Urbana, Ill.—p. 174.
Degenerating Cestode Cysts in Mackerel. E. Linton.—p. 176.
Skate Trypanosome from Woods Hole. R. Kudo.—p. 179.

Effect of Spider Bite.—Personal experience in the treatment of this spider bite, has convinced Baerg that the hot water bath, as hot as the patient can endure, is by far the best measure in treatment. He recommends a hot bath, from three to four times in twenty-four hours, even if the patient must have assistance to get to and from the bathroom. It is important that the region where the bite took place be kept in hot water during the bath. If the bite is on the hand or foot, it might be well to bathe in hot water much oftener.

The treatment with potassium permanganate had no perceptible effect. The evidence presented shows that the bite of the Black Widow is likely to cause decidedly unpleasant, and under certain circumstances, dangerous results.

Journal of Social Hygiene, New York

9: 193-256 (April) 1923

- Marriages of Unmarried Mothers. M. D. Mudgett, Minneapolis.—p. 193.
International Efforts for Prevention of Traffic in Women and Children. B. Johnson.—p. 200.
Community Education in Social Hygiene. T. W. Galloway.—p. 216.
Social Service Ward for Women and Children: Partial Solution of Problems of Venereal Diseases. V. C. Pedersen, New York.—p. 227.

Journal of Urology, Baltimore

9: 289-395 (April) 1923

- *Renal Counterbalance. Significance of Disuse Atrophy. F. Hinman, San Francisco.—p. 289.
Megalo-ureter: Importance of Uterovesical Valve. J. R. Caulk, St. Louis.—p. 315.
*Grave Renal Hematurias Due to Blood Vessel Changes in Papillae. Report of Unusual Case Requiring Nephrectomy. G. MacGowan, Los Angeles.—p. 331.
*Bone Suppuration the Basic Cause of Renal Calculus Following War Wounds. H. E. Paul, Toronto.—p. 345.
Pyonephrosis. I. Simons, Nashville.—p. 367.

Significance of Renal Disuse Atrophy.—Three points are emphasized by Hinman: (1) It is useless to attempt preservation or repair of an unilateral injury, in the face of a healthy and complete compensatory hypertrophy on the opposite side. Therefore, attempts to repair must be made before anatomic compensation is complete, and in distinctly unilateral lesions the outcome is always questionable because even a partial compensation of a healthy kidney may, in time, become complete through the competitive elimination of its less efficient repair mate. It is only in those conditions in which the competition between the two sides is equalized qualitatively by the conservative repair procedure on the diseased side that a cooperate counterbalance can be expected. (2) In bilateral conditions conservation of renal tissue should always be given the greatest consideration. (3) In a case of bilateral injury with a successful unilateral repair, but in which there has been delay in the second operation, the problem may closely simulate that of unilateral injury with opposite compensatory hypertrophy, and in place of a conservative procedure, as originally planned, radical nephrectomy may be to the best interest of the patient.

Hematuria Due to Renal Papillary Varix.—MacGowan reports a case of unilateral exhausting and painful hematuria, in which the kidney was removed. The lesions were very similar to those reported as renal papillary varix, following chronic inflammation of the pyramids.

Bone Suppuration as Cause of Renal Calculus.—In the twenty cases reported by Paul, there was a very definite etiologic relationship between an existing bone suppuration and the formation of renal calculi. Approximately 90 per cent. of these cases showed definite signs of infection in the urine from the affected kidney, which in Paul's opinion, is fairly good presumptive evidence that infection is a definite contributing cause, if not the most important cause, of renal calculi. Lack of drainage in the upper urinary tract is seemingly not an important primary cause of the formation of renal calculi following such a systemic infection as osteomyelitis. Sedentary habits of life, have direct relationship to calculus formation, when such formation follows a systemic infection such as osteomyelitis. If every case of nephrolithiasis could be investigated with sufficient thoroughness, Paul is convinced that a history of a preceding systemic infection could be elicited.

Laryngoscope, St. Louis

33: 241-327 (April) 1923

- Radical Operation in Chronic Suppurative Otitis Media. E. B. Dench, New York.—p. 241.
Blood Transfusion for Otologic Diseases. L. J. Unger, New York.—p. 250.
Id. H. Hays, New York.—p. 253.
Case of Tumor of Cerebellum that Gave Negative Results to Tests of Labyrinth and Labyrinthine Tract. B. Rosenbluth, New York.—p. 257.

Nicotin Poisoning of Inner Ear; Preliminary Report from Animal Experimentation and Microscopic Findings. O. Glogau, New York.—p. 262.

Chronic Catarrh of Nasopharynx. D. J. G. Wishart, Toronto, Ont.—p. 267.

After-Results of Different Methods of Tonsillectomy, with Special Reference to La Force Operation as Compared with Ordinary Dissection with Snare. Critical Review of 200 Cases. R. Patterson, Knoxville, Tenn.—p. 280.

Two Cases of Descending Retro-Esophageal Abscess with Phlegmon of Neck and Threatening Mediastinitis. External Operation Through Vascular Route. Prophylactic Collar Mediastinotomy. Recovery. O. Glogau, New York.—p. 290.

Iowa Pitch Range Audiometer and Its Uses. C. E. Seashore, Washington, D. C.—p. 295.

New Septal Chisel. S. L. Olsho, Philadelphia.—p. 308.

Study of Tonal Ranges in Lesions of Acoustic Nerve and Its End Organ. L. W. Dean and C. C. Bunch, Iowa City.—p. 309.

New York Medical Journal and Medical Record

117: 517-584 (May 2) 1923

- Mitral Stenosis. J. Barr, London.—p. 517.
Minimum Symptoms and Signs Necessary to Make Diagnosis of Organic Heart Disease. W. S. Thayer, Baltimore.—p. 525.
Morphology and Function of Capillaries. E. P. Baas, New York.—p. 528.
Present State of Our Knowledge of Quinidin Therapy in Treatment of Fibrillating Auricle. L. F. Bishop, New York.—p. 532.
Blood Pressure in Angina Pectoris. A. Blackhall-Morison, London.—p. 535.
Factors Concerned in Production of Heart Sounds and Murmurs. E. I. Fogel, Cincinnati.—p. 536.
Cardiospasm Associated with Esophageal Diverticula. P. P. Vinson, Rochester, Minn.—p. 540.
Circulatory System in Tuberculosis. F. M. Pottenger, Monrovia, Calif.—p. 541.
Use of Digitalis in Hearts with Regular Rhythm. L. T. Gager, New York.—p. 543.
Heart Disease in Relation to Marriage and Pregnancy. W. W. Herrick, New York.—p. 546.
Quinidin in Auricular Fibrillation. D. Felberbaum and O. Brenner, New York.—p. 548.
Control of Paroxysmal Tachycardia by Quinidin Sulphate. C. C. Wolferth, Philadelphia.—p. 552.
Myocardial Degenerations and Their Treatment. A. E. Roussel, Philadelphia.—p. 554.
Examination of Heart for Life Insurance. F. W. Price, London.—p. 559.

Oklahoma State Medical Association Journal, Muskogee

16: 109-137 (May) 1923

- Study of Records with Special Reference to Cause of Death. L. J. Moorman, Oklahoma City.—p. 109.
Inoperable Carcinoma of Cervix; Report of Three Cases in Which Radiotherapy Arrested Disease. S. D. Neely, Muskogee.—p. 113.
Cancer Metastasis. A. L. Blesh, Oklahoma City.—p. 121.
Case of Renal Hematuria Apparently Cured by Distension of Kidney Pelvis. J. Z. Mraz, Oklahoma City.—p. 122.
Case of Reflex Vomiting. Large Cystic Ovary. D. D. Paulus, Oklahoma City.—p. 123.

Rhode Island Medical Journal, Providence

6: 67-82 (May) 1923

- Biologic Aspects of Hay-Fever. H. S. Bernton, Washington, D. C.—p. 67.
Chiropractic Philosophy. M. W. Thewlis, Providence, R. I.—p. 78.

West Virginia Medical Journal, Huntington

17: 465-520 (May) 1923

- *Abdominal Pregnancy with Living Child. J. E. Rader, Huntington.—p. 465.
Radium in Inoperable Carcinoma of Uterus. J. E. Hubbard, Huntington.—p. 473.
Premature Labor. H. G. Steele, Bluefield.—p. 478.
Focal Infections and Systemic Disease. A. Arkin.—p. 480.
Diagnosis and Treatment of Stomach Diseases from Standpoint of General Practitioner. O. F. Covert, Moundsville.—p. 486.

Abdominal Pregnancy with Living Child.—In Rader's case a full term live baby was delivered by abdominal section. The placental attachment was extensive and widespread over the intestines and pelvic organs. The membranes had not ruptured. The mother had had slight bleeding once or twice, at about the first and second months. Cramplike pains caused her to call her physician at about the eighth month, and he diagnosed "abdominal pregnancy." Rader saw the woman in consultation and advised immediate operation but she would not consent. About ten days later, when the patient finally consented to operation, and all arrangements had been made to transfer her, she was in what appeared to be labor. The laparotomy was performed in her home.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

27: 289-320 (March) 1923

Association of Surgeon and Radiologist in Bone Grafting. S. J. D. Buston.—p. 289.

Method for Opaque Meal Examination of Stomach. S. G. Scott.—p. 304.

*Pathologic Changes Produced in Those Rendered Unconscious by Electrical Shock and Treatment of Such Cases. B. Spilsbury.—p. 316.

*Id. S. Jellinek.—p. 316.

Cause of Death in Electric Shock.—The most reasonable explanation of deaths occurring from electric shock, Spilsbury says, is that they are due to a sensory stimulation causing paralysis of the respiratory center. This justifies the use of artificial respiration. Certainly, there must be some cases—and there might be many—in which death is only apparent, and in which real death only supervenes from the lack of some means of carrying on the essential function of the body.

Id.—From the point of view of time four types of death are recognized by Jellinek: (1) instant death (*décès instantané*); (2) slow death (*décès lente*); (3) interrupted death (*décès interrompu*); (4) retarded death (*décès retardé*). From the point of view of mechanism, or succession of disturbances that follow on the electric shock, four types can again be recognized: (1) death by shock; (2) death by excessive irritation or paralysis of nervous system; (3) death by paralysis of the heart; (4) death by paralysis of the respiratory system. Many victims, rendered unconscious and apparently dead for the longest time, make a recovery, showing that the lesions are not so severe as to make recovery impossible. Artificial respiration should be resorted to at once as it is of the greatest importance, not only for the lungs, but also for the heart and its circulation.

British Journal of Medical Psychology, London

3: 81-152 (April) 1923

"Reality-Feeling" in Phantasies of Insane. H. Devine.—p. 81.

Ontogenesis of Introvert and Extrovert Tendencies. A. G. Ikin.—p. 95.

Reliability of Psycho-Analytic Findings. G. Bose.—p. 105.

Psychoneurotic Aspects of Miners' Nystagmus. H. W. Eddison.—p. 116.

British Medical Journal, London

1: 705-746 (April 28) 1923

*Pancreatitis and Association with Cholecystitis and Gall Stones. G. Barling.—p. 705.

*Treatment of Diabetes Mellitus. O. Leyton.—p. 707.

*Influence of Insulin on Normal Metabolism in Man. C. H. Kallaway and T. A. Hughes.—p. 710.

*Some Problems of Diabetes Mellitus. L. B. Winter and W. Smith.—p. 711.

*Administration of Insulin by Inunction. S. V. Telfer.—p. 715.

Subcutaneous Rupture of Intestine. Two Cases. R. P. Rowlands.—p. 716.

*Case of Intestinal Stasis. C. D. Maitland.—p. 717.

Treatment of Strangulated Obturator Hernia. A. R. Short.—p. 718.

Meningitis Due to Pfeiffer's Bacillus. E. N. Butler.—p. 719.

Catarrhal Jaundice Caused by Pancreas Inflammation.—The condition which occurs not infrequently in young people and which is spoken of as catarrhal jaundice and is ascribed to plugging of the common duct by inspissated mucus, Barling believes to be caused by an inflammation of the head of the pancreas compressing the common bile duct.

Treatment of Diabetes Mellitus.—Leyton says that man can live fairly comfortably on 30 gm. of carbohydrate with unlimited protein and fat. If a person with severe diabetes be given enough insulin to ensure his utilizing 30 gm. of carbohydrate he will escape the symptoms of diabetes mellitus, but his blood sugar will be above 0.15 per cent. during the greater part of the twenty-four hours, which will cause overstimulation of the small amount of pancreas which he still possesses and gradual deterioration. The final stage will be total destruction of the pancreas; then the patient will have to rely for all the sugar burning material on

supplies from the outside. In case these fail, life would be extremely short. This is the danger which should be avoided by strictly correlating the diet with the amount of insulin available from the pancreas of the patient together with that injected.

Influence of Insulin on Normal Man.—Kallaway and Hughes contend that the rise in respiratory quotient is due, in part at least, to transformation of glucose into some complex poorer in oxygen, and that the metabolic rate, as calculated from the oxygen used and the respiratory quotient is much above its real value.

Yeast Extract in Diabetes Mellitus.—Experimental evidence has convinced Winter and Smith that extract of yeast has an effect similar to that produced by insulin, when tested on animals and on diabetic persons. Insulin convulsions in rabbits may be relieved, and the animals restored to normal, by injection of epinephrin.

Administration of Insulin by Inunction.—The chief conclusion reached by Telfer appears to be that insulin can be introduced into the blood stream by means of inunction, but this method of administration necessitates the use of much larger quantities of the drug than those required to produce comparable effects by subcutaneous injection. It is worthy of note, however, that in estimating the effects produced account must be taken chiefly of the duration of the hypoglycemia. A sudden reduction, followed by an abrupt rise in the blood sugar, indicates a transient effect. The ideal method of utilization would appear to be indicated by a prolonged period of hypoglycemia maintained by slow absorption. The results also suggest that advantage might be taken of this method to utilize crude insulin extracts. At the present time, the cost of isolating the drug in a pure and active state for the purpose of hypodermic medication is such as to restrict seriously its application on a large scale. It is possible that more liberal use of cruder materials might, with advantage, be made by means of inunction.

Intestinal Stasis.—The points of special interest in Maitland's case were: (1) an unduly long and mobile pelvic colon; (2) Lane's "last" kink; (3) a descending mesocolon; (4) proptosed dilated cecum and ascending colon with mesocolon; (5) Jackson's membrane, and its remarkable density; (6) inability of the cecum and ascending colon to propel their contents.

Journal of Laryngology and Otology, Edinburgh

38: 229-284 (May) 1923

Meat and Fish Bones Impacted in Esophagus. T. Guthrie.—p. 229.

Operative Procedures in Treatment of Stenosis of Larynx Caused by Bilateral Paralysis of Abductor Muscles. I. Moore.—p. 236.

Treatment of Chronic Middle Ear Suppuration by Electric Ionization. S. Young.—p. 245.

Two Cases of Injury to Ear Following on Operation for Acute Mastoiditis. F. G. Wrigely.—p. 252.

Journal of Obstetrics and Gynecology of the British Empire, Manchester

30: 1-116 (Spring No.) 1923

*Improved Method of Prophylactic Treatment of Eclampsia. Stroganoff.—p. 1.

Sounds of Fetal Heart. G. A. Stephens.—p. 32.

Food Deficiency Disease Simulating Pregnancy Toxemia. J. P. Maxwell.—p. 34.

Primary Carcinoma of Vagina Treated by Hysterovaginectomy. D. Drugal.—p. 38.

Case of Primary Carcinoma of Vagina. E. Holland.—p. 40.

Squamous Epithelioma of Vagina. T. G. Stevens.—p. 42.

Adenoma of Vagina Fornix Simulating Cancer of Cervix. H. R. Spencer.—p. 44.

Occlusion of Lower Part of Rectum Due to Administration of Simple Enema During Labor. W. F. Shaw.—p. 47.

Case of Abdominal Pregnancy. A. E. Pinniger.—p. 49.

Prophylactic Treatment of Eclampsia.—The fundamental idea of Stroganoff's method, which he first described in 1897, is that the spasmodic fits play a preeminent part in the results of the disease, that the number of the fits must be decreased, and that every possible thing must be done to prevent their repetition, since every successive fit brings the patient nearer death. The greater the number of fits the greater the mortality. Assuming that eclampsia is the result of the reciprocal

action of two factors—(1) the appearance of toxins in the blood of a woman which act on the nervous system, (2) the reaction to them by the nervous system—treatment must be directed to lessening the toxins in the blood, and to diminishing the irritability of the nervous system. Stroganoff recommends the removal, if possible, of all sources of irritation from the patient, or reducing them to the minimum. To reduce the fits gradually, or if possible to prevent their recurrence altogether, he applies narcotics, morphin hydrochlorid, chloral hydrate, and chloroform, in the following order: At the beginning of the treatment, hypodermic injections of 0.015 gm. morphin hydrochlorid under chloroform. In one hour's time: 2.0 gm. chloral hydrate in addition to from 200 to 250.0 c.c. of saline solution per rectum, and, when conscious, by mouth, with from 100 to 110 c.c. of milk. In three hours' time from the beginning of treatment, hypodermic injections of 0.015 gm. morphin, usually under chloroform. After seven hours from the beginning of treatment: 2.0 gm. chloral hydrate. After thirteen hours from the beginning of treatment: 1.5 gm. chloral hydrate without chloroform if there have not been fits for twelve hours and there are no prodromata. After twenty-one hours from the beginning of treatment: 1.5 gm. chloral hydrate without chloroform if there have not been fits for twelve hours and there are no prodromata. Thus during one day the patient receives from 5.0 to 9.0 gm. chloral hydrate, and from 0.02 to 0.04 gm. morphin under the skin and repeated administration of chloroform together with 500 c.c. of milk and 500 c.c. of saline solution. In exceptional cases, if the patients were very strong, such quantities were given for twelve hours if the fits continued, or if there were symptoms of them. In the majority of cases failures are due to insufficient dosage at the beginning of treatment.

Journal of Physiology, London

27: 113-252 (March) 1923

- Influence of Carbon Dioxid on Interchange of Ions Between Corpuscles and Serum of Blood. J. Mellanby and C. C. Wood.—p. 113.
- *Pituitary Secretion. W. E. Dixon.—p. 129.
- Variations in Carbon Dioxid Content of Blood Constituents in Relation to Meals. E. C. Dodds and J. McIntosh.—p. 139.
- *Effect of Lactation on Ovulation. M. Ross-Johnson and E. E. Hewer.—p. 143.
- *Nature of Histamin Action. R. J. S. McDowall.—p. 146.
- Respiratory Centers in Cat. T. Lumsden.—p. 153.
- Studies in Muscle Activity. I. Static Effort. E. P. Cathcart, E. M. Bedale and G. McCallum.—p. 161.
- Photographic Kymograph. J. B. Haycraft.—p. 175.
- Situation and Extent of Purely Yellow Zone in Spectrum. G. Fr. Gothlin.—p. 181.
- Simple Apparatus for Producing Mechanical Hemolysis and Its Practical Use. D. J. de Waard.—p. 195.
- Effect of Concentration of Red Blood Corpuscles on Dissociation Curve of Blood. J. Barcroft and K. Uyeno.—p. 200.
- Studies of Respiration and Circulation in Cat. III. Effect of Rise of Body Temperature. K. Uyeno.—p. 203.
- Analysis of Production of Heat in Certain Muscles of Hedgehog. W. Hartree and R. J. S. McDowall.—p. 210.
- Part Played by Ducts in Pancreatic Secretion. L. K. Korovitsky.—p. 215.
- *Change in Nature of Blood Sugar of Diabetics Caused by Insulin. W. D. Forrest, W. Smith and L. B. Winter.—p. 224.
- *Influence of Nutritional Condition of Animal on Hypoglycemia Produced by Insulin. N. A. McCormick, J. J. R. Macleod, E. C. Noble and K. O'Brien.—p. 234.

Pituitary Secretion.—The conditions which cause secretion of the pituitary gland to meet the needs of the animal economy are discussed by Dixon. He summarizes as follows: The pituitary gland secretes into the cerebrospinal fluid. Pituitary extract injected into the circulation causes the gland to secrete. Pituitary extract injected into the cerebrospinal fluid rapidly causes the ordinary systemic effects by passing into the general circulation. A balance is struck between the amount in the blood and cerebrospinal fluid. Ovarian extract specifically excites the gland to secrete. The effect is immediate and lasts only two or three minutes. The active substance is not in the corpus luteum. Duodenal extract causes a secretion after one hour, but neither so much nor so constant as that caused by ovarian extract; the effect, however, is more prolonged. Some suggestions as to its significance are offered. Pituitary extract increases tone in the small intestine, and diminishes tone in the large intestine.

Effect of Lactation on Ovulation.—Johnson and Hewer are convinced that ovulation does occur during lactation in the albino rat. In all their experiments the mother was allowed to suckle her young, and was killed three weeks after the birth of the litter. The appearance of the ovaries was very constant, and in all, young corpora lutea were found. Some old corpora lutea were found, more or less well preserved, some vacuolar; these probably originated from the ovulation directly following labor.

Nature of Histamin Action.—The parallelism between the disappearance under deep anesthesia of the rise of pressure in the pulmonary artery and the rise of venous pressure which occurs as the result of the injection of a small dose of histamin, McDowall believes suggests that they are both due to the same cause, namely, pulmonary constriction which is effected by the anesthetic. Other results are given which support this view.

Change in Nature of Diabetic Blood Sugar by Insulin.—The lowering of the blood sugar of diabetics caused by injections of insulin is held by these authors probably to be due to a change in the equilibrium between alpha-beta and gamma glucose in the blood tending to increase formation of glucose which can then be stored or utilized. Forrest, Smith and Winter have made some observations to determine how far this reactive form of glucose can be detected in diabetic blood after injections of insulin. The insulin used was prepared by Collip's method. Owing to the difficulty of obtaining sufficient pancreas of any one animal, those from the ox, sheep, and pig were mixed. All cases were of a severe type, and in every case the sample taken before administration of insulin showed that the polarimetric value of the final sugar solution was in excess of that obtained by the copper reducing method, thus confirming previous results. With one exception, determinations after insulin show that this ratio has been reduced materially. While the ratio is by no means comparable to that obtained from normal persons, it shows that there must be considerably more normal blood sugar present after the administration of insulin. As was previously found, the curve of polarimeter readings in the cases before the insulin tended, if anything, to fall; after insulin injections the curve rose definitely in three cases. A possible explanation of the action of insulin advanced by the authors is that it causes shifting of the equilibrium in the direction of increased gamma glucose formation. The increased amount of gamma glucose available is then stored or utilized. The increased utilization of sugar by the diabetic after injection of insulin may be put down to the increased formation of gamma glucose. The difference in the ratio polarimeter to copper reduction of the sugars of diabetic blood which the authors found after insulin is in support of this view. The severity of diabetes is probably inversely proportional to the amount of gamma glucose which the body is capable of forming. When excessive amounts of insulin are administered the lowering of the blood sugar may take place to an excessive degree. That a continual supply of insulin is necessary for the working of the enzyme is shown by the fact that the blood sugar invariably rose between the insulin injections.

Influence of Nutrition on Insulin Hypoglycemia.—The features of the results of the experiments made by the authors that stand out most prominently are: the immediate onset in the decline in blood sugar, its practical constancy during the half-hour following the injection of insulin, and the variability, both in the time of onset and in the rate of recovery, which afterward occurs. Facts are cited which show that it is impossible to make a precise physiologic assay of insulin by determining the percentage of blood sugar at varying periods following its injection. An approximate assay can best be arrived at by measuring the blood sugar ninety minutes and three hours following the injection in animals from which food has been withheld for twenty-four hours. When considerable doses of insulin are given, toxic symptoms (convulsions) may not appear until the percentage of blood sugar has fallen considerably below the level of 0.045 at which they most frequently occur with weaker doses. The occurrence of convulsions cannot, therefore, be depended on as an exclusive method of physiologic assay.

Lancet, London

1: 883-938 (May 5) 1923

*Diagnosis and Treatment of Angina Pectoris. C. Allbutt.—p. 883.

*Some Gynecologic Operations in Relation to Life Assurance. A. E. Giles.—p. 885.

Treatment of Clavicle Fracture by Indirect Violence. F. Romer.—p. 889.

*Renal Function in Patients with Retinitis and High Blood Pressure. A. W. M. Ellis and J. R. Marrack.—p. 891.

Germicidal Qualities of Sodium Di-Iodosalicylate (Diosal). W. M. Crofton.—p. 893.

*Etiology of Bakers' Dermatitis. O. De Jong.—p. 894.

Effect of Detoxicated Vaccines on Persistence of Diphtheria Bacillus. W. T. Benson.—p. 895.

Angina Pectoris.—The chief postulates advanced by Allbutt are: (1) that in the very large majority of cases, say 90 per cent., angina pectoris is due to disease of the thoracic aorta, and especially of its outer investment wherein lie the sensory end-organs that regulate blood pressure; (2) that death in angina pectoris is due ordinarily to vagus inhibition; that is, to the shock of the pain; (3) that the coronary arteries and the myocardium have nothing to do with the pain of angina, but much to do with its mortality. In younger persons, in whom the myocardium is healthy, the heart usually survives the inhibition, so that in them angina, as often as in the case of syphilitic aorta, for example, may be a terrible, if not a fatal, disease. Angina proper is rare in women. On the other hand, the so-called "pseudo-angina" is frequent among women, more frequent by far than in men. It seems to be a storm in the brachial plexus, intercosto-humeral, Wrisberg and phrenic nerves. The angina patient again is generally, though not always, pallid or pallascent; the pseudo-anginose are flushed in the face. And these patients are for the most part young, or not elderly, under middle age, or but little beyond it, and the attacks may be determined by annoyance, the catamenial period, or other upset. The heart and pulse are not, as in angina proper, tranquil, but throb rapidly, often with an irregular rhythm. The heart may be felt as if leaping out of the body. Palpitation in angina proper does not occur. Between the attacks, the physician will fail to detect any sign of disease or degeneration, or none, at any rate, suggestive of cardio-arterial disease. If such signs can be detected the diagnosis must be revised. It is more difficult to distinguish between simulations of angina and its slighter degrees (angina mitis), or eccentric manifestations of a true angina. Allbutt's principle of cure in angina is to treat the case as if it were one of aneurysm—by absolute rest proportionate to the severity and stubbornness of the case, with due modification of diet as may be required for the healing of the injured vessel.

Gynecologic Operations in Relation to Life Insurance.

In view of the extension of the practice of life insurance and of sickness insurance among women, and of the great increase of gynecologic operations during the last thirty years, it is natural that medical referees of insurance companies should wish to know the influence of such operations on subsequent health and expectation of life. Giles' inquiry as to the state of health after operations, in about 800 women on whom he has operated, has shown that about 70 per cent. of patients regain normal health. The highest proportion is found in cases of conservative procedures and of complete removal of organs. Unilateral operations on the uterine appendages show the lowest proportion of complete recoveries, the chances of complete cure being subordinate to the preservation of the functions of womanhood. There is a disturbance of the nervous system, shown especially by the affection of memory, and in most cases temporary, in a proportion varying from 18 per cent., of cases in which the operation was of short duration, to 50 per cent. in the case of long operations. There is a risk that further operations may be required, which may be put down as a 10 per cent. risk, comprising direct sequelae of the operation and independent conditions in about equal proportions. The risk is greatest after operations for inflammatory disease of the tubes and after unilateral operations on the tubes and ovaries; and it is lowest after the operation of hysterectomy for benign conditions. Expectation of life, as to cases of operation for malignant disease must be regarded as bad, the risk of recurrence varying from 10 to 75 per cent. After operations

for inflammatory disease the expectation of life is fairly good, but it is impaired by the liability to sequelae. Patients who have had benign tumors removed may be considered as good risks, as the chance of complications that may lead to a fatal result is negligible. Lastly, patients who have had operations that prevent further pregnancy have had an adverse factor in the expectation of life eliminated.

Retinitis Associated with High Blood Pressure and Renal Disease.—An analysis of nineteen cases of retinitis associated with high blood pressure and renal disease was made by Ellis and Marrack. In this series of cases, nine were patients with chronic interstitial nephritis, and ten were patients with hyperpiesis. The cases suggest that hyperpiesis is a more common cause of retinitis than chronic interstitial nephritis. The authors believe that hyperpiesis is the more common disease of the two. Whether the cause of retinitis is the same in both conditions and what is its nature they are unable to say. The only common factor in the two conditions would appear to be the high blood pressure. All of the first group died and five of the second group died.

Salt Is Cause of Bakers' Dermatitis.—DeJong suggests that salt may justifiably be regarded as the direct cause of bakers' dermatitis, but the patient must display an idiosyncrasy for the salt as the condition is not found in all bakers. It is interesting to note that dermatitis occurs in people other than bakers who are habitually engaged in the handling of salt—for example, herring salters and packers, and rock salt workers. A man suffering can be cured under simple treatment on being removed from his work if there are no secondary symptoms, but on his return to work he will relapse.

Medical Journal of Australia, Sydney

1: 309-336 (March) 1923

*Bacillus Coli Vaccine Intravenously in Rheumatoid Arthritis. H. Laurie.—p. 309.

*Behavior of White Blood Corpuscles After Intravenous Bacillus Coli Communis Therapy. G. E. Foreman.—p. 314.

*Diagnosis of Pulmonary Syphilis. S. W. Patterson.—p. 316.

Colon Bacillus Vaccine in Rheumatoid Arthritis.—Laurie has used colon bacillus vaccine intravenously in various types of cases of rheumatoid arthritis and ascribes good results to its use. In cases of acute rheumatoid arthritis, recovery from the attack was more or less rapid and complete and the patients were finally discharged without any disability. Of eleven cases of subacute rheumatoid arthritis, eight cleared up entirely. Three could be classed as merely improved. Fifteen patients with chronic rheumatoid arthritis improved so far as pain, stiffness and range of movement were concerned, the acute and subacute conditions clearing up. The method of treatment was used in a few cases of uncomplicated osteo-arthritis with little or no result. In this series of cases, 426 injections were given and in only one case were there any alarming symptoms. In this case there were cyanosis and dyspnea at the height of the reaction.

Effect of Colon Bacillus Therapy on Leukocytes.—The effect of injections of colon bacillus vaccine, as shown by a study of the blood cells, according to Foreman, are: (1) diminution of polymorphonuclear cells; (2) consequent reaction in the shape of a leukocytosis, the predominant cells being of an embryonic type. This suggests a rapid response by the hematopoietic system to the introduction of the vaccine into the blood stream.

Syphilis of Lung.—In a series of patients with symptoms of intrathoracic disease suspected to be hydatid, Bryce and Patterson found that the serum, while failing to react to the hydatid complement fixation test, reacted to the Wassermann test. This led to an analysis of the ultimate diagnosis. One case proved to be hydatid disease in a syphilitic, in which "hydatid antibody" in the blood was not detected. Three were probably cases of aneurysm of the aorta. Four were cases of tuberculosis of the lungs in syphilitic patients. Further studies were then carried out on patients in hospital and at postmortem examination. A brief account of the pathology and symptomatology of pulmonary syphilis is given, based on an analysis of a series of eighteen cases coming to postmortem examination and of the clinical histories of fourteen other patients; all of these showed evidence of dis-

case of the lung and their blood serum reacted to the Wassermann test. Five patients who were subjected to intensive antisyphilitic treatment, showed considerable improvement.

Medical Journal of South Africa, Johannesburg

18: 191-222 (March) 1923

- Review of Some New Landmarks in Public Health. A. J. Orenstein.—p. 192.
Use of Simple Cow's Milk Mixtures in Infant Feeding. E. P. Baumann.—p. 197.
Epidemiology of Malaria and Blackwater Fever in Portuguese East Africa Between 1901-1920. L. Soromenho.—p. 201.
*Suppression of Bladderworm and Tapeworm Disease. W. Watkins-Pritchford.—p. 207.

Treatment of Tenia Infestation.—The following routine treatment has always proved successful in Pitchford's experience, both with *Tenia solium* and *T. saginata*. Ninety minims of liquid extract of male fern, not more than 12 months old, are stirred into 1½ ounces of milk and placed by the patient at his bedside in readiness to be taken on the following morning. No food is eaten after 8 p. m. Calomel, 1 grain, is taken at bedtime. One third of the male fern draught is taken at 5 a. m., one at 6 a. m. and one at 7 a. m. Calomel, 1 grain, is taken at 8 a. m. A light breakfast may be taken at 9 a. m.

Annales de l'Institut Pasteur, Paris

37: 229-328 (March) 1923

- *Vaccination Against Sheep-Pox. J. Bridré and A. Boquet.—p. 229.
Culture Media for *Pyocyaneus* Bacilli. A. Liot.—p. 234.
*Atoxyl in Treatment of Sleeping Sickness. Ouzilleau and Lefrou.—p. 275.
Idem. Lefrou.—p. 294.
Research on the *Streptococcus* Equi. Brocq-Rousseu et al.—p. 322.

Ten Years of Vaccination Against Sheep-Pox.—The sensitized virus has been used to vaccinate 8,000,000 sheep in Algeria and half a million in France and Spain. Italy and Greece have also adopted this method of vaccination against sheep-pox. It confers immunity in forty-eight hours which lasts for a year. Its action is solely preventive, but has proved reliable and harmless. Any epizootic of sheep-pox can thus be stamped out in two weeks, the authors reiterate.

Treatment of African Sleeping Sickness.—Ouzilleau and Lefrou have found most effectual atoxyl in large doses, given during the first stage of the disease. If the disease has reached the second stage, there is little hope from any treatment. Conditions then are analogous to those with general paralysis. The essential point is to cure the first stage and not allow the second stage to develop. In the six cases of injury of the eyes from the atoxyl, the patients were all in the second period, that is, they already showed the dreaded meningeal reaction.

Annales de Médecine, Paris

13: 189-288 (March) 1923

- Blood Pressure Sign of Old Injury to Head. Villaret and Théodoresco.—p. 189.
*Treatment of Pleurisy with Effusion. Krummenacher.—p. 204.
Flexion Paraplegia of Cerebral Origin. Alajouanine.—p. 243.
Charcot's Crystals in Eosinophilia. De Jong and Romieu.—p. 276.

Calcium Chlorid in Treatment of Pleurisy with Effusion.—Krummenacher has confirmed Blum's statements in regard to the remarkable action of calcium chlorid in inflammatory affections of the serous membranes. It hastens resorption of the effusion and reduces the temperature promptly while promoting diuresis. In acute cases of pleurisy, it sometimes restored conditions to clinically normal in twenty-four hours. The ten cases described in detail show that the drug has to be given in large doses: 15 gm. of the dry calcium chlorid in twenty-four hours, repeated the second day if the fever persists, and reduced by one half if the fever subsides. This treatment should not be kept up for more than five or six days; if kept up too long, the general condition suffers, the mineral balance becoming too much upset. The taste is disguised by giving two spoonfuls of the concentrated solution (30 gm. of the dry salt in 100 gm. of water) in coffee, and drinking a little coffee afterward. The effect does not seem much better when given by the vein except when there is a very large effusion. For intravenous infusion, the dose has to be more than 2 or 2.5 gm. in a 5 per cent. solution.

In one case an intravenous infusion of 3 gm. had a remarkably prompt and permanent curative action, but in a case of septic bronchiopneumonia, thrombosis in the brachial vein developed two days after the injection by the vein. Otherwise none of the patients presented any by-effects, and the general condition improved. There was no flaring up of any tuberculous process in the lung. It is important to have salt dropped entirely or partially from the diet during the calcium treatment, and for two or three days thereafter.

Annales des Maladies Vénériennes, Paris

18: 177-256 (March) 1923

- *Deforming Spondylitis of Gonorrheal Origin. E. Ramel.—p. 177.
Bursitis of Olecranon from Sleeping Embraced. Belgodère.—p. 214.
Fistulas from Soft Chancre. Goubeau.—p. 217.

Gonorrhea and Spondylitis.—Ramel believes that ankylosis of the vertebrae and even rhizomelic spondylosis are very frequently caused by gonococcus infection. It is necessary to think of this possibility since the prognosis depends on early and intensive treatment.

Archives Franco-Belges de Chirurgie, Brussels

26: 193-310 (March) 1923

- Technic for Detaching the Duodenum. Vautrin and Fourche.—p. 193.
*Reconstruction of Fractured Olecranon. A. Hannecart.—p. 199.
Fractures of Head of Radius. G. Ferry.—p. 201.
*Tardy Ulnar Paralysis. P. Guibal.—p. 207.
*Surgical Physiology of the Large Intestine. C. Lefebvre.—p. 215.
General Anesthesia with Ethyl Chlorid-Alcohol. R. Reding.—p. 223.
Armless Woman: Ectromelia and Phocomelia. Verdet and Forton.—p. 236.
Obstetric Depression of Parietal Bone. A. Marique.—p. 242.
*Cicatricial Contracture. M. van Neck.—p. 245.
Bilateral Fracture of the Patella. Bourgom.—p. 258.

Fixation of Fractured Olecranon.—Hannecart, in three cases, has successfully applied a wire loop to hold the fragments of the olecranon in place, the wire passing through the triceps tendon and around the radius below the coronoid process. Roentgenograms show the technic.

Tardy Paralysis of Ulnar Nerve After Fracture of the External Condyle of the Humerus.—The roentgenograms in a typical case demonstrated that the ulna had become displaced, like the astragalus in a Dupuytren fracture, and in consequence the ulnar nerve was stretched and irritated. Shifting the nerve to the front of the condyle leaves it exposed to further irritation. The simplest and most effectual treatment is by resection of a wedge from the humerus above the condyle. This corrects the valgus deformity, restores practically normal conditions for the ulnar nerve, and the paralysis subsides.

Surgical Physiology.—Lefebvre contends that the cecum, and the ascending and the right half of the transverse colon are needed in digestion, a kind of extension of the stomach. They should not be sacrificed except as a last resource. The distal colon is much less important; it serves chiefly as a receptacle.

Cicatricial Contractures.—Van Neck discusses the mechanical principles involved in correcting deformity from cicatricial retraction, saying that it requires patience and perseverance on the part of both patient and surgeon. If no benefit is apparent after a month of elastic traction, the cicatricial tissues must be excised. But it is remarkable how many apparently rigid contractures, especially of the fingers, yield to the devices for elastic traction which he illustrates.

Archives des Maladies du Cœur, Paris

16: 161-240 (March) 1923

- *Examination of Nervous System of Heart. Daniélopou and Carniol.—p. 161 and 181.
*Electrocardiogram in Gallop Rhythm. Bordet et al.—p. 205.
Survey on Ligation and Suture of Arteries. Heitz.—p. 216.

Atropin Test and Orthostatic Tachycardia in Examination of Nervous System of Heart.—Daniélopou and Carniol use atropin by intravenous injection, repeated until the subject shows no increased tachycardia. They determine the orthostatic tachycardia, then inject a small amount (0.5 mg.) of atropin to see its action. After this they establish the dose that is necessary to paralyze the vagus, and finally they study the orthostatic tachycardia in this condition. They find val-

uable information regarding the state of both vagus and sympathetic. The method permits classification of disturbances of the vegetative nervous system into six groups: The increased or decreased tonus of one of the cardiac nerves and the more frequent changes of both (amphotony and hypamphotony), are the criteria. Many patients usually classified as pure sympathicotonics or vagotonics belong in reality to the amphotonic group with predominance of one or the other nerve.

Electrocardiograms in Some Cases of Canterg Rhythm.—In six patients with cantering rhythm, Bordet, Yacoel and Giroux found a slower auriculoventricular conduction and a shortening of diastole. Electrocardiography allows a more correct prognosis and gives hints for treatment. In severe disturbance of conduction, strophanthin should be preferred, while in modifications of rhythm, digitalis is indicated.

Bulletin Médical, Paris

37: 417-444 (April 14) 1923

- *Treatment with Whole Blood or Serum. G. Lyon.—p. 423.
- Surgery of Goiter. V. Pauchet.—p. 427.
- Bulbar Paralysis After Viper Bite. A. Alexinsky.—p. 430.
- Ovarian Extracts. C. Bru.—p. 430.

37: 445-474 (April 21) 1923

- Psychotherapy. P. E. Lévy.—p. 445.
- Chronic Intestinal Stasis. A. C. Guillaume.—p. 463.

Serotherapy and Hematotherapy.—Lyon reviews the many indications for treatment with whole blood or blood serum. It may succeed in desensitizing, in hemorrhagic conditions, infections and certain skin affections after other measures have failed. The reason why it succeeds in some cases and fails in others apparently identical, is still a mystery.

Encéphale, Paris

18: 73-144 (Feb.) 1923

- *Condition of Sex Organs in Dementia Praecox. F. W. Mott.—p. 73.
- Postencephalitic Parkinsonian Syndrome. Claude and Schaeffer.—p. 85.
- *Dysthymia in Children. S. de Sanctis.—p. 88. Cont'n.
- *Applied Experimental Psychology. J. Abramson.—p. 94.
- Senile General Paralysis. Riser and Gay.—p. 101. Conc'n.
- *Melancholia with Asthenia and Melanoderma. H. Damaye.—p. 111.
- Splanchnic Neurosis; Psychoanalysis and Cure. Martin-Sisteron.—p. 114.
- Oculocardiac and Solar Reflexes. H. Claude et al.—p. 127.
- The Vegetative Nervous System in Respect to Intoxications. Garrelon and Santenoise.—p. 134.
- Study of Nitrogen Differences in Melancholia. Aubel and Badonnel.—p. 135.
- Cholesterolemia in Mental Diseases. R. Targowla et al.—p. 138.

Conditions of the Sex Organs in Dementia Praecox.—Mott has been studying since 1910 the findings in the reproductive organs in mental disorders, particularly dementia praecox. In thirty-four cases of general paralysis, spermatozoa were found nearly always present, while in thirty-seven cases of dementia praecox, spermatozoa were found in only two cases out of three. The reproductive organs are closely connected with other endocrine glands and his research on suprarenal glands has demonstrated that the medulla of these glands in dementia praecox shows vast deficiency in the genetic formative impulse.

Dysthymia in Children.—De Sanctis says that typical melancholia is never present in growing children. On the contrary, it is entirely absent from this period because these symptoms are proper to the third, fifth and sixth decades. Manic-depressive psychoses in a fully developed stage are also rare in children, but simple depressive and agitated conditions, symptomatic of epilepsy, of infectious diseases, etc., are frequent, as are also phrenasthenia and psychasthenia.

Applied Experimental Psychology.—Abramson says that teachers are apt to confound two very different things: comprehension and memory, the automatic function. In visiting schools in Germany she noted that there were more boys in the classes for defectives, and more girls in those for the specially gifted. This is not due to greater intelligence on the part of the girls, but to greater application. All agree on the advantages of individual education, but it exists only in theory. Dependence on memory—automatism—is the chief enemy of the abnormal child. The segregation of the back-

ward children has been a great gain for the normal children, to say nothing of the backward themselves. Setting aside clinical causes for the deficiency, which are highly important, she analyzes the features that the teachers can hope to modify. She charts the mental functions for the purpose of discovering the cause for the retarded development. Those occupied with the care of abnormal children complain of their lack of judgment. The automatic memory which stores images without assimilating them is well developed. In some backward children, the lack is not in the intelligence but in the character. In Germany, backward children are often educated by manual training and mathematics, subjects requiring the greatest exactness, which may be termed a treatment of causes instead of symptoms. Binet calls training of this kind "mental orthopedics." It allows children to be grouped by their capacity for development.

Depressive Melancholia with Asthenia and Melanoderma.—Damaye's necropsy on the body of a woman who had had melancholia and who had died from pulmonary tuberculosis, showed an adenoma and some tubercles in the suprarenals.

Gynécologie et Obstétrique, Paris

7: 193-272 (March) 1923

- Tuberculosis of Ovaries and Pregnancy. Vautrin.—p. 193.
- *Prevention of Tuberculosis of New-Born. R. Debré.—p. 199.
- Pelvic Varicocele. G. Cotte and D. Jezditch.—p. 205.
- *Diagnosis of Tubal and Angular Pregnancy. Douay and Rochat.—p. 216.
- *Pulmonary Tuberculosis Associated with Pregnancy. L. Cleisz.—p. 224.

Prevention of Tuberculosis in the New-Born.—Debré publishes five observations on infants who were only a short time (thirteen to forty-two days) with their tuberculous mothers. Though the contact was not very intimate, all of these babies died from tuberculosis. He emphasizes the importance of absolute separation from birth.

Diagnosis of Tubal and Angular Pregnancy.—Douay and Rochat admit the difficulty of diagnosis between tubal pregnancy and cases with the fetus in an angle of the uterus. The flexion of the normal pregnant uterus, which might simulate it, disappears in the Trendelenburg position. This is more advisable than to attempt a diagnosis by straightening the uterus. An important sign of angular pregnancy is the lateral or anterolateral position of the pregnant side, while in tubal pregnancy the tube falls backward into the retro-uterine cavity. The differences in the consistency of the pregnant corner and the rest of the uterus do not occur in tubal pregnancy. If the woman can be kept at the clinic, one should wait and observe; otherwise exploratory laparotomy is advisable.

Therapeutic Indications in Pulmonary Tuberculosis Associated with Pregnancy.—Cleisz gives an extensive review on this question, which was the topic of discussion at the Academy of Medicine.

Médecine, Paris

4: 405-480 (March) 1923

- Recent Progress in the Pathology of Heart, Vessels, Kidneys and Blood. P. Ribierre.—p. 405.
- *Auricular Fibrillation. A. Clerc.—p. 414.
- Affection of Aortic Valve in Syphilitic Aortitis. Gallavardin.—p. 419.
- *Prognosis of Angina Pectoris. Ribierre and Leconte.—p. 422.
- *Obesity and Hypertension. C. Aubertin.—p. 431.
- *Early Radiologic Diagnosis of Aortitis. E. Bordet.—p. 434.
- *Pathogenesis of Musical Murmurs. A. Hanns.—p. 438.
- Benign Form of Mercuric Chlorid Poisoning. Achard and Rouillard.—p. 444.
- *Chronic Nephritis without Albuminuria. F. Rathery.—p. 450.
- *Phenolsulphonephthalein Test. P. Merklen.—p. 455.
- *Banti's Disease. J. Rieux.—p. 458.
- *Sudden Variations of Leukocyte Formula. J. Tinel.—p. 463.
- Hemostatics. M. Perrin.—p. 467.
- Action of Deep Roentgen Radiation on the Blood. Mouquin.—p. 473.

Pathogenesis and Treatment of Auricular Fibrillation.—Clerc agrees with Lewis in attributing the manifestations of complete arrhythmia to a "circus movement" of the excitation in the muscular fibers of the auricle. This phenomenon requires: (1) a sufficiently long circular road; (2) a shortened refractory period, and (3) comparatively slow speed of propagation of the stimulus, because otherwise the stimulus would fail to find, on its return, a tissue ready to respond.

Quinidin diminishes the excitability of the heart muscle, and lengthens the refractory period. Hence its beneficial action on auricular fibrillation. It should always be preceded by cardiotonics. Strophanthus may be preferable to digitalis, because it tends to diminish the number of auricular oscillations.

Prognosis of Angina Pectoris.—Ribierre and Leconte point out that the severity of subjective symptoms is not proportional to the severity of the prognosis. Even slight symptoms are important. Angina following exertion is a sign of aortitis. Its prognosis, especially in syphilitics, is less serious than in angina in the supine position, which indicates dilatation and insufficiency of the strained heart. Some patients have no other clinical symptoms, but a change in the depth of the aortic shadow may be found by radiology. The distinction between a true angina and a pseudo-angina is inexact and dangerous. Its only use is to calm the patient, whose condition might be seriously impaired if he should hear the diagnosis of "true angina pectoris." A sudden change of position during the examination (from standing to lying) may provoke an attack, and should be avoided.

Obesity and Hypertension.—Aubertin has frequently found hypertension in stout persons. It is a complication, not a sequela of obesity, and may be the cause of severe incidents (apoplexy, sudden death).

Early Radiologic Diagnosis of Aortitis.—Bordet sometimes found changes in the opacity of the aorta the earliest sign of aortitis, preceding even subjective symptoms.

Pathogenesis of Musical Murmurs.—Hanns finds that anatomic lesions are not the cause of the musical murmurs of the heart which resemble the cheeping of chickens. These murmurs depend only on tachycardia and equalization of the pressure on the two faces of the vibrating body.

Chronic Nephritis Without Albuminuria.—Rathery warns against declaring the kidneys healthy because of absence of albuminuria. Even a severe nephritis may exist without it. Albuminuria is of little value for diagnosis and prognosis.

Phenolsulphonaphthalein Test.—Merklen recommends the phenolsulphonaphthalein test in nephritis and cardiac disturbances.

Actual State of the Problem of Banti's Disease.—Rieux reviews the diagnosis of Banti's disease, and believes that late hereditary syphilis plays an important part in the etiology.

Sudden Variations of Leukocytic Formula from Physiologic Causes.—Tinel emphasizes the influence of local conditions on the number and differential count of white cells. Refrigeration of a finger lowers the number; heating increases it. Position of the hand may be an important factor, as also vasomotor changes. Electric stimulation of the ulnar nerve, inhalation of amyl nitrite, compression of the veins, change the number and differential count of white cells. With Santenise he found a typical hemoclastic crisis produced in a vagotonic by compression of the eyes.

Paris Médical

13: 193-224 (March 3) 1923

Survey on Venereal Diseases in 1923. Milian and Brodier.—p. 193.

*Bone and Joint Manifestations of Syphilis. P. Gastou.—p. 200.

Subcutaneous and Intramuscular Injections of Arsphenamins. Petges.—p. 205.

*Syphilis in the Beginning of Pregnancy. M. Pinard.—p. 206.

Bismuth in Conjugal Syphilis Resistant to Arsenic. Gougerot and Geray.—p. 209.

Aminoarsenophenol Intramuscularly in Syphilis. Sézary and Pernet.—p. 212.

*Treatment of Syphilitic Hemiplegia. G. Milian.—p. 218.

*Hyperalbuminosis in Cerebrospinal Fluid. Bloch.—p. 221.

Manifestations of Syphilis in Bones and Joints.—Gastou describes the osteo-articular manifestations of syphilis, and emphasizes the necessity for testing serologically patients with osteophytes and thickening of the periosteum of the long bones and joints.

Recognition of Syphilis in the Beginning of Pregnancy.—Pinard demonstrates by clinical histories the frequent mismanagement of "syphilis of decent women." Unexplained natural miscarriages are due to syphilis. The serologic

examination should be extended to the husband and even to the parents. Hydramnion, premature delivery, univitel-line twins, large babies with large placentas, hypertrophy of the placenta over one sixth of the body weight of the infant should make the physician suspect syphilis. "If a baby nursed at the breast of the mother cries day and night, if it has green diarrhea, habitual vomiting, convulsions, or loses in weight in spite of sufficient milk, look for syphilis and you will find it." The pregnant woman stands mercury and bismuth less well, but arsenic better than other patients. She should receive a series of eight weekly intravenous injections, increasing to 0.6 gm. of arsphenamin. After a rest of two to three weeks a second and after another rest a third series. Less vigorous treatment, especially mercury by mouth, is only a concession to conventional hypocrisy and a menace to the outlook for the infant.

Treatment of Syphilitic Hemiplegia.—In spite of Ehrlich's warning, Milian considers energetic treatment with arsphenamin, starting with 0.3 gm. of neo-arsphenamin, and increasing every fifth day by 0.015 gm. up to 1.05 gm. of neo-arsphenamin, the treatment of choice. No time should be lost. To avoid nitritoid crises, he injects 1.5 mg. of epinephrin subcutaneously half an hour and five minutes before the injection of arsphenamin.

Monosymptomatic Hyperalbuminosis in the Cerebrospinal Fluid of Syphilitics.—Bloch finds an increase in the protein content of the cerebrospinal fluid above 0.03 per cent., without other signs, not infrequently in syphilis. It can be considered as a symptom only if all other possible causes are excluded. In syphilis, it may be simply a remnant of a cured disease, but such cases should be kept under observation. If the syphilis is recent, the treatment should endeavor to banish the anomaly.

Presse Médicale, Paris

31: 341-352 (April 14) 1923

Eczema of Scalp. R. Sabouraud.—p. 341.

*Meningitis of Otitic Origin. H. Aboulker.—p. 342.

Nonparasitic Cysts of Biliary Apparatus. Sèneque.—p. 346.

Meningitis of Otitic Origin.—Aboulker warns that the fate of the patient with ear disease is in the hands of the general practitioner. In his own experience, of 21 cases in which the cerebrospinal fluid was sterile, 6 patients succumbed, while among the 18 recoveries there were 3 septic cases. In some cases the meningitis proved fatal although the spinal fluid was free from micro-organisms, leukocytes and albumin. The findings in the spinal fluid may be entirely different three hours later, demonstrating anew that a biologic reaction is a fragile basis on which to build solid conclusions. Clinical examination will distinguish between a straw fire and a true conflagration. He has had cases in which a large intracranial abscess had persisted for a year at least without interfering with the occupation, and cases of meningitis and phlebitis may be ambulant for months. The clinical picture of Menière's disease is sometimes traceable to a diffuse chronic meningitis of the cerebellopontine angle, and this can be cured by a retromastoid decompression operation. He has found it practicable in dogs to "rinse out the meninges" by leaving the lumbar puncture needle in place and withdrawing small amounts of the fluid at intervals, replacing it with a suitable isotonic solution. He has published a clinical case in which this procedure was applied. There are many reasons, as he explains, why the decompression operation should be at some distance from the infectious focus, preferably in the squamous bone.

Revue Franç. de Gynécologie et d'Obstét., Paris

18: 65-112 (Feb. 10) 1923

*Uterine Fibroma as a Cause of Death. L. Dartigues.—p. 65.

Sedimentation of Blood Corpuscles in Gynecology. P. Gaifami.—p. 87.

Fibroma of the Uterus as Cause of Death.—Dartigues, differing from a number of authors who refer to fibroma of the uterus as a benign tumor, says it is a serious affection which, through its complications, may cause death without timely surgical intervention. Death may result through such complications as hemorrhage, cachexia, cardiopathy, fibroma-

tous emboli, local and general infections, sloughing, compression and occlusion, cancerous degeneration, or various complications in pregnancy, and obstetric accidents. Cardiac symptoms, from simple palpitation to fatal syncope, have been observed in 40 per cent. of fibroma patients. Whether radium or surgery should be used in treatment is at this time an open question, but after the great number of successful hysterectomies he has seen performed in cases where radium had failed, he thinks surgery the safest method. The surgical intervention should be preceded and followed by a course of medical treatment.

Pediatrics, Naples

31: 289-352 (March 15) 1923

Inaugural Lecture of Pediatrics Course. G. Caronia.—p. 289.

*Syphilis in Four Generations. C. Martelli.—p. 305.

Cutis Laxa. R. Vaglio.—p. 321.

*Rectal Treatment with Arsphenamin in Syphilitic Children. E. Modigliani and V. Castana.—p. 324. Conc'n.

Syphilis in Four Generations.—Martelli describes several well founded observations in syphilis in grandchildren and their progeny.

Rectal Treatment with Arsphenamin in Syphilitic Children.—Modigliani and Castana report extensively on their favorable experiences with rectal administration of neo-arsphenamin in children.

Policlinico, Rome

30: 265-327 (Feb. 26 and March 5) 1923

*The Doll's Eye Phenomenon. O. Cantelli.—p. 265. Conc'n p. 302.

*Three Cases of "Eruptive Fever." P. Filippella.—p. 270.

Punctures to Reveal Spirochete of Syphilis. Podestà.—p. 273.

Chronic Appendicitis without Acute Stage. C. Romiti.—p. 297.

*Syphilitic Diabetes Mellitus. P. A. Meineri.—p. 307.

The Doll's Eye Sign.—Cantelli says that the doll's eye sign in diphtheric paralysis, described in 1921 by Widowitz, is not the same sign described by this name earlier in the same year by himself. The Widowitz sign consists in protrusion of the eyeballs and sluggish movements of the eyeballs and eyelids accompanying them. Cantelli used the term in almost the opposite sense, namely, to express a dissociation between the movements of the head and eyes: As the head is raised the eyes are lowered, and the reverse. He claims that only his sign is new. In cases where the dissociation is between the vertical movements of the head and eyes, the lesion is located in the voluntary muscles, and the sign can be elicited only in voluntary movements of flexion and extension of the head. On the other hand, if the phenomenon is visible only during passive movements, this suggests that the lesion is located in the motor innervation of the muscles of the neck. If it is evident both in voluntary and passive movements, there is reason to suppose that the lesion is located in the posterior longitudinal bundle. From what is known and what can be deduced from theories, it appears probable that only a lesion of this tract can produce the pure doll's eye sign.

Research in Three Cases of Eruptive Fever.—Filippella reports further research on the clinical condition to which Carducci, in 1920, gave the name "eruptive fever," an infectious disease of the nature of measles, scarlet fever and typhus. It seems to have the closest analogy with Brill's disease. In the last of his three cases, the response to *Proteus* X 19 was beyond anything yet witnessed with typhus. This he regards as highly significant. Examination of blood showed neither leukocytosis nor leukopenia.

Syphilitic Diabetes.—Meineri relates an unusual case of diabetes mellitus of syphilitic origin in a man, aged 46, the fifth year after infection with syphilis. He had taken courses of calomel during these years, but then symptoms of diabetes developed, with symptoms of neurosyphilis. Under intensive arsenical-mercurial-iodid treatment the whole subsided. Treatment as for diabetes had no effect, but under the specific treatment the glucose in urine dropped from 88 to 44 gm. and finally disappeared entirely during the last week of the course. He cites Villaret's recent case in which symptoms of diabetes appeared a few days after the primary chancre. The glycosuria of 422 gm. and the acetonuria rapidly subsided under

mercurial treatment. In his case he ascribes the diabetes to syphilitic lesions in the central nervous system. The cerebral symptoms disappeared first, then the glycosuria, but the Wassermann reaction was still strongly positive two months later.

Riforma Medica, Naples

39: 169-192 (Feb. 19) 1923

*Biologic Demonstration of Paternity. L. Lattes.—p. 169.

*Tracheal Displacement in Pulmonary Tuberculosis. A. de Martini.—p. 173.

Bacteremia with Pseudo-Diphtheria Bacilli. C. Ninni.—p. 177.

Poisoning from Carbon Monoxid in Miners. A. Jona and A. Lussa.—p. 180.

Removal of Tumors from the Colon. E. Aicvoli.—p. 181.

Biologic Demonstration of Paternity.—Lattes and his collaborator Mino, on the basis of later experiments, confirm the value of Ottenberg's theory that if the child's blood has the correct grouping for the alleged parents, then the child may (but not necessarily must) be their offspring. The latest Italian research has shown that the exceptions to this rule amount to only 1 per cent. The discovery can therefore be used in a practical way to settle medicolegal questions of heredity.

Displacement of the Trachea in the Course of Pulmonary Tuberculosis and Its Clinical Symptomatology.—De Martini found lateral anterior or posterior displacement of trachea in 36 per cent. of his cases of chronic pulmonary tuberculosis. It is due to the force of the cicatricial contraction after a process of hyperplastic pleuritis. The obliquity of the laryngotracheal axis, Williams' tracheal tone, and the tracheal respiration are the most important clinical symptoms of such displacement.

Brazil-Medico, Rio de Janeiro

1: 187-200 (April 7) 1923

*Bacillary Dysentery at Rio. Gomes de Faria and Gencio Pacheco.—p. 187.

*Ethyl Chlorid in Treatment of Myiasis. Antonio Pedro.—p. 190.

Influenza and the Micro-Organisms of the Air. S. C. da Silva.—p. 190.

Recent French Work on Gastro-Intestinal Pathology. Antoine.—p. 194.

Bacillary Dysentery at Rio.—In seventy-seven cases of diarrhea in children, bacilli of the dysentery group were found in 16.8 per cent., and in 32 per cent. of twenty-five cases in adults.

Treatment of Myiasis.—Pedro relates the prompt action of ethyl chlorid in clearing the nose, ear or other passage from the larvae of flies. Myiasis is common in Brazil. The myiasis in the nose in one man had induced violent delirium, but four applications of ethyl chlorid resulted in a complete cure. In infested wounds the cure is instantaneous.

Archivos Latino-Amer. de Pediatría, Buenos Aires

17: 81-160 (Feb.) 1923

*Asthma, Tuberculosis and Syphilis. M. Acuña and Garrahan.—p. 81.

Error in Diagnosis of Hydatid Cyst of Lung. Navarro.—p. 90.

Infant Welfare Work at Montevideo. J. A. Bauza.—p. 96.

Emphysema in Child with Tuberculous Bronchopneumonia. Pelfort.—p. 115.

*Toxic Paralysis of Leg. J. M. Jorge and M. Gamboa.—p. 119.

*Desquamating Erythrodermia. R. Berro.—p. 122.

Pneumococcus Meningitis; Four Cases. N. Leone Bloise.—p. 129.

Acquired Syphilis in Children. M. A. Jáuregui.—p. 139.

Relations Between Asthma, Tuberculosis and Syphilis.—Acuña and Garrahan conclude from five years of research that tuberculosis has no causal connection with asthma. Only 28.8 per cent. of 59 children with asthma responded positively to tuberculin tests, while the general average of positive responses in the apparently healthy was 49.4 per cent. A positive Wassermann reaction was noted in 21 of 31 children with asthma, but specific treatment had a curative action on the asthma only in a very few cases. Inherited syphilis may prepare the soil for the development of asthma.

Toxic Paralysis of the Leg.—The boy, aged 7, took a spoonful of a solution of mercuric chlorid, and after two days of anuria the right leg became paralyzed. Under massage, electricity and heliotherapy the use of the leg was regained toward the ninth month, but the muscles still give the reaction of degeneration. Toxic poliomyelitis seems the probable explanation.

Desquamating Erythrodermia.—In Berro's four cases, the Leiner-Moussous syndrome in the young infants had developed suddenly but seemed to be subsiding after a few days. Then suddenly the symptoms became aggravated, with a septicemic course. The affection finally yielded to treatment, but the appearance of this series of four cases all within a few days, and all in private homes, was peculiar.

Prensa Médica Argentina, Buenos Aires

9: 881-906 (March 30) 1923

- Case of Suprapubic Varices. R. A. Marotta.—p. 881.
Hydatid Cyst of Lung in Boy. Jacinto Moreno.—p. 883.
Right Pleural Effusion with Heart Disease. Alessandrini.—p. 886.
*Cholesterol in Eyc. E. Adrogué.—p. 889.
*Adenoids and Physical Development. A. Levene.—p. 890.
Biopsy. S. Mazza and M. Balado.—p. 899. Cont'n.
*Treatment of Vagotonic Vomiting. Raul Ortega Belgrano.—p. 904.

Cholesterol Crystals in Anterior Chamber of the Eye.—Adrogué gives a photomicrograph showing the numerous flat, square crystals moving around in the anterior chamber with the two currents in the vitreous humor. The patient was a man, aged 51; the eye showed a cataract with atrophy of the iris.

Adenoids and Physical Development.—Levene has been able to follow for years the physical development of 100 children who had had adenoid vegetations or enlarged tonsils removed. He gives data for thirty-two of the children: all had developed remarkably after the operation, gaining more in height and weight than the average for their years. Among the 3,896 children entering the children's clinic for any cause, adenoids were found in 41.27 per cent., but only 50 per cent. have had their adenoids removed. Among 7,800 recruits examined, 25 per cent. were exempted on account of physical defects, and 33.5 per cent. in this group presented constitutional debility. Much of this is undoubtedly due to the evil effects of adenoids in childhood. In the school for weakly children, 43 per cent. were found to have adenoids. These gained only 1 kg. in weight during the year while the others gained 2 kg. Adenoids were found in 35 per cent. of the general school population.

Treatment of Vagotonic Vomiting.—Ortega Belgrano reports two cases presenting an array of symptoms indicating excessive irritability of the vagus center. A period of intense headaches and uncontrollable vomiting, with pulse of 52, was arrested at once on inhalation of amyl nitrite. The action of this drug was prolonged with belladonna, and the hypertension was combated with 30 per cent. solution of glucose. Another patient developed uncontrollable vomiting and bradycardia of 40 after excesses. Both were syphilitic, but the vomiting was not influenced by specific treatment. It yielded at once to the drug that inhibits vagus action.

Revista Médica del Uruguay, Montevideo

26: 93-124 (March) 1923

- *Hydatid Cysts of the Liver. G. Arrizabalaga.—p. 93.
Appeal for Coordination in Medical Education and Production in Latin America. J. Pou Orfila.—p. 104.
Intra-Urethral Simple Chancre. J. May.—p. 119.

Hydatid Cysts in the Liver.—Arrizabalaga injects a solution of formaldehyd to sterilize the cyst and then aspirates the contents. The walls of the empty sac collapse, aided by pressure on the abdominal wall. Then he fastens the wall of the sac to the parietal peritoneum, and keeps the patient under observation for two months. If the sac fills up again it is thus easily tapped, and if suppuration occurs, the sac can be fastened to the skin. Marsupialization became necessary in only 15 per cent. of his seventy cases; 60 per cent. promptly recovered after a single puncture, and 25 per cent. after repeated punctures.

Semana Médica, Buenos Aires

1: 577-620 (March 29) 1923

- *Diathermy in Treatment of Sterility. Castaño and Gómez.—p. 577.
Fracture of Supernumerary Bone in Tarsus. C. P. López.—p. 580.
Prophylaxis of Venereal Disease in the Navy. A. B. Ribeyrolles.—p. 584.
Coma from Acute Insufficiency of Liver and Kidneys. L. Goldemberg.—p. 600.

- *Hernia of Brain in Wound of Frontal Bone. C. Fernicola.—p. 603.
Splénomegaly with Cirrhosis of Liver. H. Eppinger.—p. 604.
The Faenza Group of Paratyphoid Food Poisoning Cases. A. Lama.—p. 608.
Hygiene for Wage-Earners. V. Delfino.—p. 610.

Diathermy in Treatment of Sterility.—Castaño and Merlo Gomez apply diathermy for thirty or forty minutes on alternate days. The course is twenty sittings, and it is repeated if necessary after an interval of a month in treatment of hypoplasia of the uterus, the most common cause of sterility. They regard inherited syphilis as responsible for hypoplasia of the uterus and cystic sclerosis of the adnexa; the diathermy should be supplemented by appropriate treatment. In every one of their ten cases the cavity of the uterus increased by 2 cm. in length and one woman has since borne a healthy child.

Hernia of Brain Tissue in Wound of Frontal Lobe.—The boy, aged 10, had a smooth clinical recovery after resection of the soiled brain tissue that protruded after a kick from a horse.

Deutsche medizinische Wochenschrift, Berlin

49: 335-368 (March 16) 1923

- Exophthalmic Goiter. Goldscheider.—p. 335.
Surgical Treatment of Exophthalmic Goiter. O. Hildebrand.—p. 338.
*Pluriglandular Insufficiency. H. Zondek.—p. 339.
Oral, Conjunctival and Nasal Infection of Guinea-Pigs with Tubercle Bacilli. B. Lange.—p. 343.
Enhancement of Bactericidal Remedies by Intravenous Injections of Hypertonic Solutions of Glucose. S. Silberstein.—p. 345.
Combined Treatment of Psoriasis. Hübner.—p. 348.
"Transmigration Peritonitis." N. Müller.—p. 351.
General Principles of Balneotherapy. F. Müller.—p. 352.
General Principles of General Anesthesia. Fessler.—p. 353.
Free Medical Treatment and the Future of the Health of the German People. Stier-Somlo.—p. 357.

Pluriglandular Insufficiency.—Zondek publishes several observations on pluriglandular insufficiencies with the necropsy findings. He finds two opposite types: obesity and cachexia, which may be due to opposite disturbances of the same endocrine organs. Cachexia may follow the obesity. He found high metabolic figures in the obesity and low in the cachexia. The endocrine glands play an important part in the accommodation of different animals to seasonal changes, especially hibernation. He finds a similarity in human pathology: Persons with disturbances of the endocrine glands, especially of the thyroid gland and vegetative nervous system, may have sudden changes in weight and deposition of fat without changing their diet, coincident with the seasons. He quotes the history of a young vagotonic girl with distinct degenerative stigmata, who deposited fat regularly with the beginning of the hot season and lost it in winter.

Klinische Wochenschrift, Berlin

2: 429-476 (March 5) 1923

- *Etiology of Epidemic Encephalitis. A. Schnabel.—p. 429.
Pathogenetic Problems of Epidemic Encephalitis. F. Stern.—p. 433.
*Bile and Purin Metabolism. K. Harpuder.—p. 436.
*Skin Reactions in Children to Cerebrospinal Fluid. G. Usbeck.—p. 438.
Action of Normal Serum in Experimental Diphtheria. Ratnoff.—p. 440.
Malaria in Germany in Relation to Arphenamin. Gordon.—p. 442.
Affections of Epiphyses in Growth Period. Engel.—p. 444. Conc'n.
Superinfection in Experimental Syphilis of Rabbits. Steinfeld.—p. 446.
Noiseless Inductorium for Alternating Currents. F. Scheminzky.—p. 448.
*Experimental Typhoid in Guinea-Pigs. Friedberger and Meissner.—p. 449.
Changes of Blood in Anaphylaxis. E. Wittkower.—p. 450.
Separation of Bodies Producing and Inhibiting Fibrinolysis and Their Relative Amounts in Body Fluids and Extracts of Organs. M. Rosenmann.—p. 450.
Pathogenesis and Treatment of Retroflexion of Pregnant Uterus. E. Vogt.—p. 451.
Periodic Examination of Apparently Healthy. Weiss.—p. 456. Conc'n.

Etiology of Epidemic Encephalitis.—Schnabel reviews the etiology of epidemic encephalitis and deals especially with his and Doerr's hypothesis on its identity with the virus of herpes. He inoculated himself with encephalitis virus after passage through the brains of rabbits. The virus produced a lethal encephalitis in rabbits, but only herpetic vesicles in the author.

Bile and Purin Metabolism.—Harpuder found uric acid in some bile samples examined. He does not think it justifiable

to attribute any part in purin metabolism to the bile. Similar traces may be found in sweat and saliva.

Cutaneous Reactions in Tuberculous Children with Cerebrospinal Fluid from Tuberculous and Nontuberculous Meningitis.—Usbeck confirms the usual absence of cutaneous reaction to their own cerebrospinal fluid in children with tuberculous meningitis. This fluid injected in other tuberculous children caused local reactions, which however were produced also by other cerebrospinal fluids. They are therefore nonspecific and without practical value. The same considerations apply to Wildbolz' reaction with urine.

Pathogenesis of Experimental Infection of Guinea-Pigs with Typhoid Bacilli.—Friedberger and Meissner believe that the only sign which is lacking to prove the etiologic action of Weil-Felix' *Proteus* X 19 for typhus fever is the impossibility of cultivating the bacilli from guinea-pigs infected with the virus of typhus fever. Their working hypothesis was that the bacillus changes in the animals into an invisible and uncultivable form. To strengthen this hypothesis by showing that the phenomenon is not limited to typhus, they inoculated guinea-pigs with organs of a patient who had died from typhoid fever. The organs of these animals (especially the brain) were inoculated in others. The passage animals showed only an increase in temperature about ten or fourteen days after inoculation. Beginning from the second passage, no typhoid bacilli were cultivated from the animals. The inoculation protected them against intraperitoneal injections of typhoid bacilli, and the organs of the guinea-pigs taken during fever induced in rabbits the formation of agglutinins against typhoid bacilli. They conclude that the antigen of typhoid bacilli appears in two forms: a phanero-antigenic, which may be seen and cultivated, and a crypto-antigenic form of the virus.

2: 477-524 (March 12) 1923

- Significance of Vegetative Nervous System in Heat Regulation and Metabolism. E. Toenniessen.—p. 477. Cont'n p. 525.
Significance of Eye Movements for Orientation. Koellner.—p. 482.
*Glycolysis in Blood. Rubino and Varela.—p. 484.
*Hay's Sulphur Test as Liver Function Test. H. Simon.—p. 488.
*Constitution and Convivability. S. Bondi.—p. 490.
Needle Electrodes for Electrocardiography. R. Stahl.—p. 492.
Significance of Placenta for Term of Confinement. A. Seitz.—p. 493.
Suprapubic Prostatectomies: Eighty Cases; One Fatal. Oppenheimer.—p. 496.
Treatment of Laryngeal Tuberculosis by Paralyzing Recurrent Nerve. Leichenring.—p. 498.
Observations on Wassermann's Reaction. R. Strempel.—p. 499.
Reticulo-Endothelial System and Trypsin Poisoning. H. Pfeiffer and F. Standenath.—p. 499.
Intravital Deposits in the Reticulo-Endothelial System. Boerner-Patzelt.—p. 500.
Central Mechanism of Tetany and Its Relation to Decerebrate Rigidity. Spiegel and Nishikawa.—p. 500.
Orogenous Abscess of Cerebellum. T. Szász and H. Richter.—p. 501.
Thoracoscopy and Laparoscopy. Unverricht.—p. 502.
Noetic Sources of the Physician. H. Plessner.—p. 503.
Innervation of Sweat Glands. E. Schilf.—p. 506.

Action of Hydrogen, Calcium and Mercuric Ions on Glycolysis in Blood.—Rubino and Varela found that addition of calcium chlorid in certain amounts increases the glycolysis in blood. Further addition inhibits it. Removal of free calcium from the blood did not inhibit glycolysis. Very small amounts of mercuric chlorid increased, larger amounts inhibited glycolysis. In defibrinated blood of dogs, after a marked fall in reducing power in the first hour, they observed a rise in the second hour which they consider as due to other substances formed. The glycolysis continued in the third hour.

Clinical Use of Hay's Sulphur Test as Liver Function Test.—Simon finds that Hay's test with flowers of sulphur is practically as useful as stalagmometry for determination of the presence of surface-active bodies. Yet it has no value as a liver or heart function test, because it is very frequently due to substances other than bile salts.

Constitution and Convivability.—Bondi defines convivability as the change of qualities in an individual that come with increasing age. A physician who based a prognosis on a "habitus phthisicus" may be surprised a few years later to find his patient a "broad type."

Medizinische Klinik, Berlin

19: 299-332 (March 11) 1923

- *Puerperal Infection and Its Treatment. W. Sigwart.—p. 299.
Significance of Smoking for Diseases of Throat. Terbrüggen.—p. 304.
*Tonsils as Portal of Infection. Fein.—p. 306.
Attempted Abortions in Extra-Uterine Pregnancy. Hellendall.—p. 311.
Disinfecting Action of Heavy Metals on Urogenital System. Frank.—p. 313.
Pituitary Treatment in Constipation and Meteorism. J. Krausz.—p. 314.
Technic of Ponnendorf's Cutaneous Inoculations. Koester.—p. 314.
Intravenous Injections of Concentrated Arsphenamin. Schlesinger.—p. 315.
Hemoclastic Crisis in Internal Diseases. Rösler.—p. 315.
Gynecology of Practitioners. E. Runge.—p. 318. Cont'n.
Results of Cancer Research. O. Strauss.—p. 319.

Puerperal Infection and Its Treatment.—Sigwart emphasizes the dangers of active procedures. Even bimanual palpation of the uterus may disturb the equilibrium between the streptococcus and the resistance of the organism. Only if the uterine smears show a mixture of bacilli practically without streptococci, and if the whole findings speak for a simple retention of lochia, should the uterus be washed out. Otherwise, expectant treatment with hot applications is indicated. The possibility of retention of remnants of placenta should be well founded before trying to remove them, once the fever is established. The removal is dangerous, and no curet should be used. After it, rinsing the uterus does no further injury, since there has already been an intrauterine operation. Serum treatment gives results if started early. A further important point is to watch out for a beginning diffuse peritonitis, which can be ascertained if necessary by punctures. Infusions of ether into the infected peritoneal cavity reduce the mortality.

Tonsils as Portal of Infection, and Indications for Radical Operations.—Fein considers it impossible for an acute infectious process, capable of inducing septicemia, to remain for weeks or months in the tonsil without causing visible signs of inflammation or subjective symptoms. He quotes Schottmüller, who states that even alveolar abscesses or infectious foci in the pulp of teeth have not the properties of a septic focus. This applies still more to accumulations of detritus in the tonsils, which are sometimes mistaken for abscesses. The recovery from distant symptoms that sometimes follows removal of tonsils is not as frequent as recovery without operation. Therapeutic failures after extirpation of tonsils are the rule. Proof of causal relation between a general disease and the tonsils (except in real inflammations) is not yet at hand. He recalls a similar fad for nasal operations for "reflex neuroses," which flourished not so long ago. The tonsils should be extirpated only if they are too large, if they are really diseased, or in cases of recurrent tonsillitis.

19: 333-370 (March 18) 1923

- Varices and Phlebitis of Lower Extremities. K. Büdinger.—p. 333.
*The Antianaphylactic Stage. J. Caspari.—p. 338.
Significance of Uric Acid for Diffuse Nephritis. Aufrecht.—p. 340.
Diagnostic Curettement in Extra-Uterine Pregnancy. Hellendall.—p. 341.
Treatment of Cachectic Conditions. H. Hirsch.—p. 344.
Necessity of Rational Breathing Gymnastics. Ide.—p. 346.
Action and Use of Santal Oil on Male Sexual Organs. A. Perutz.—p. 348.
*Retention of Inorganic Iron in Perfused Liver. Matsuoka.—p. 351.
No Influence of Fracture of Femur on the Development of Pulmonary Tuberculosis. H. Engel.—p. 352.
Review of Psychotherapy and Sexology. W. Stekel.—p. 355.

The Antianaphylactic Stage.—Caspari examined daily the speed of sedimentation of the erythrocytes of children who had serum sickness. He found interesting changes in the stability of blood colloids, which may be of value for the explanation of the action of injections of proteins.

Retention of Inorganic Iron in Perfused Liver.—Matsuoka found that a perfused liver is able to retain a large proportion of inorganic iron.

Münchener medizinische Wochenschrift, Munich

70: 229-258 (Feb. 23) 1923

- What is Meant by Constitution? P. Mathes.—p. 229.
*Pigment Production in Addison's Disease. Bittorf.—p. 230.
Variation in Hydrochloric Acid Content After Test Breakfast. Spiethoff.—p. 232.
Silica in Shock Treatment. G. Zimmer.—p. 233.
Serous Meningitis of the Brain. H. Pette.—p. 236.

Tuberculosis with Picture of Spastic Hemiplegia. O. Herz.—p. 238.
Leukemia Simulating Anemia Infantum Pseudoleukemic. Reichmann.—p. 239.
Cystic Enlargement of Vesical End of Ureter. Baumann.—p. 240.
Question of Preventive Arsphenamin Treatment. A. Poehlmann.—p. 241.
Parathyroid Treatment of Parkinson's Disease. Bergmann.—p. 243.
Treatment of Relapsing Fever and Malaria. M. Kireeff.—p. 244.
History of Discovery of Circulation of Blood. W. v. Brunn.—p. 245.
Advice in Neurologic Diagnosis. H. Curschmann.—p. 247.

Pigment Production in Addison's Disease.—Bittorf maintains that the production of pigment in bronzing is due to increase of the oxydases in the skin. Vitiligo is the result of deficient oxydase.

The Question of Preventive Arsphenamin Treatment.—Poehlmann reports a singular case in which the wife of a syphilitic with a mixed chancre had been infected by streptobacilli but not with spirochetes.

Parathyroid Treatment of Parkinson's Disease.—Bergman says that Lundborg's theory of a connection between the parathyroids and paralysis agitans has not been supported by experiments. The inoculation of parathyroid substance in two cases of genuine paralysis agitans and in four cases of parkinsonian symptoms—sequelae of epidemic encephalitis—all proved negative.

70: 321-352 (March 16) 1923

*Plight of German Children. M. Pfaundler.—p. 321.
*Rheumatic Endocarditis. A. Krogius.—p. 325.
Diagnosis of Malaria. W. Strakosch.—p. 327.
*Ambulatory Treatment of Pulmonary Tuberculosis. K. H. Blümel.—p. 327.
Life, Stimulus, Disease and Inflammation. Ranke.—p. 330. Cont'n.
Migration of Bullet from Thorax into Pelvis. Steichel.—p. 334.
*Generalized Psoriasis Following Injection of Formic Acid. Malten.—p. 336.
Case of Endometritis After Abortion. Goebel.—p. 336.
Daily Hour of Gymnastics. L. Hoeflmayr.—p. 337.
Multiple Sclerosis. H. Curschmann.—p. 338.

The Plight of German Children.—Pfaundler deals objectively with both the alleged and the real distress of German children. He sees the need to "mobilize money abroad," but emphasizes the importance of keeping to the truth—which is bad enough—in the attempt to get it. Unfounded assertions, like the alleged 50 per cent. tuberculous morbidity of Berlin children and 80 per cent. of severe undernutrition hurt the cause. Not all Germans have lost by the war: the number of those who have gained by it, especially among the farmers, must not be underestimated. Exportation of foods, especially of milk products, which he says is being carried on—should not be tolerated. The dictatorship of organized producers of food and utilities is the real cause of the distress of the children of the unorganized minorities.

Is Rheumatic Endocarditis a Complication of Acute Rheumatism or the Primary Disease?—Krogius demonstrates the advantages of assuming the endocarditis in real acute polyarthritis to be primary. The peculiar recurrence and other features are explained by this assumption.

Causes of Failure of Ambulatory Treatment of Pulmonary Tuberculosis, and Their Remedy.—Blümel finds that part of the responsibility lies in the lack of special training of physicians. The greater part is in the patient, who neglects treatment as soon as he feels better. "The tuberculous man dies from his character." Most of the money of working men goes for pleasure and luxury. The tuberculous should be taught to spend it for food.

Generalized Psoriasis Following Injection of Formic Acid.—Malten's patient received an injection of formic acid for gout. The injection was followed the next day by urticaria and in a few days by a generalization of the old, localized psoriasis.

Wiener klinische Wochenschrift, Vienna

36: 139-156 (Feb 22) 1923

*Treatment and Prophylaxis of Goiter. J. Wagner-Jauregg.—p. 139.
Intraspinal Arsphenamin Treatment of Syphilis. K. Schreiner.—p. 142. Cont'd.
Roentgen Diagnosis of Duodenal Ulcer. A. Plenk.—p. 145.
Treatment of Syphilis with Bismuth. F. Mraz.—p. 146.
Growth of Dry Seeds After Exposure to Roentgen Rays. F. Weber.—p. 147.
*Treatment of High Blood Pressure by Purgatives. F. Kisch.—p. 148.

Treatment and Prophylaxis of Goiter.—Wagner-Jauregg observed four children treated for goiter by adding from 4 to 8 mg. of potassium iodid per kg. to the salt they consumed. All were cured. On the basis of 10 gm. salt per day for an adult, less for children, the child had received less than 0.04 mg. of potassium iodid a day. Bayard tried feeding a population of 1,200 in two Swiss villages with 0.004 gm. of potassium iodid per 1 kg. salt, with favorable results. In one of the villages the trial was continued during a year, the dose being increased from 0.01 during the first six months, to 0.02 per 1 kg. salt during the second half of the year. The goiters which had not reacted to the small dose, disappeared after the large, without unfavorable consequences. This iodized salt is prepared by spreading 400 kg. of salt from the Rhine fields in a shallow receptacle and shoveling it, while 200 c.c. of a 1 per cent. solution of potassium iodid is sprayed on it from an apparatus. He predicts that cretinism will disappear.

Systematic Purging in Treatment of Permanently High Blood Pressure.—Kisch has used systematic purging with success in 147 cases of what he calls the "cardiac-intestinal symptom-complex." This, he says, though rare in women, is so frequent in men after the age of 40, that it should have a special designation. The symptoms are: permanently high blood pressure; constipation; abnormal collection of gas in the digestive tract, forcing up the diaphragm and pushing the heart into a more transverse position; precordial oppression, frequent skipping of a heart beat, and tendency to angina pectoris. He has also found this treatment effective in arteriosclerosis, particularly of the coronary, cerebral and peripheral vessels, but only occasionally in atheroma of the aorta. He uses neutral mineral salts, in the form of alkaline-saline carbonated mineral water, or sodium sulphate, or artificial Carlsbad salts. Sodium sulphate facilitates individual dosing; it causes no irritation to the intestines, as its action depends on physical molecular characteristics, and it acts quickly. He uses the purgatives even when there is no constipation, but much gas.

36: 177-194 (March 8) 1923

*Present Status of Metasyphilis. E. Redlich.—p. 177. Cont'n p. 197.
*Urea in Blood in Diphtheria. Glesinger-Reischer and Glesinger.—p. 181.
*Specific and Nonspecific Action of Proteins. Hayek and Wieser.—p. 183.
*Pathogenesis and Treatment of Cardiac Asthma. S. Peller.—p. 184.
Perforative Peritonitis from Excessive Eating of Asparagus. H. Lorenz.—p. 185.
Endemic Goiter in Austria. J. Geringer.—p. 186.

Metasyphilis.—Redlich reviews the history of research on the etiology of tabes and general paralysis which has been cleared up by the Wassermann reaction and Noguchi's investigations. He believes that the Jahnke method will allow the finding of spirochetes in the brain of every person with general paralysis. The old question as to whether the changes in general paralysis are inflammatory or degenerative has been decided in favor of both theories. The changes are chiefly due to the toxic influence of the spirochetes. The main difference between general paralysis and other syphilitic affections of the nervous system lies in the different tissues that are affected. General paralysis is an affection of the brain proper (ectodermal), which gives no specific reaction. Neurosyphilis affects the mesodermal structures, especially the vessels, and injures the brain only secondarily. Tabes presents conditions similar to general paralysis though there are marked differences. Pathogenesis and especially the significance of the Obersteiner-Redlich area in the posterior roots are discussed. It is established that spirochetes invade the central nervous system early, as Fournier suspected long ago. Treatment does not seem to prevent metasyphilis.

Urea in Blood in Diphtheria and Its Changes in Specific Treatment.—Glesinger-Reischer and Glesinger found a moderate increase in blood urea in three quarters of their twenty-one cases. Antitoxin injections were followed by a decrease in the blood urea in diphtheria, but not in four patients with tonsillitis of other origin.

Specific and Nonspecific Action of Proteins.—Hayek and Wieser emphasize the large quantitative differences between

reactions of tuberculous subjects to tuberculin and to non-specific proteins. There are also qualitative features in the course of the reaction. Nonspecific proteins never cause revival of previous cutaneous specific reactions, while tuberculin may do so even after months.

Pathogenesis and Treatment of Cardiac Asthma.—Peller recommends inducing venous stasis in one or more extremities. The action of this "bloodless venesection" seems to consist partly in the direct resistance in the ligated extremity, as Eppinger, Papp and Schwarz demonstrated, partly in a reflex general vasoconstriction.

Zeitschrift für urologische Chirurgie, Berlin

12: 403-516 (April 14) 1923

- *Contents of Seminal Vesicles Just After Death. Brack.—p. 403.
- Diagnosis and Treatment of Diverticula of Bladder. Rosenberg.—p. 449.
- Traumatic Rupture of Both Kidneys. M. Rehbein.—p. 455.
- *Transplantation of Testes. Brandt and Lieschied.—p. 460.
- *Surgical Treatment of "Nephritis." E. Wehner.—p. 467.

Seminal Vesicle Contents in the Cadaver.—Brack relates that no spermatozoa were found in 57.7 per cent. of 26 male cadavers under 25, nor in 56.5 per cent. of 26 between 36 and 45, nor in 36.5 per cent. of 52 between 65 and 75. He examined a total of 200 cadavers in 1920 and 300 in 1922. No spermatozoa were present in 47 per cent. of the total. He classifies the cases under different headings, and emphasizes the instructive findings for the diagnosis and prognosis during life when the secretion massaged from the seminal vesicles shows pathologic characteristics. One important practical conclusion from his research is that spermatozoa may be absent from the sperm, even in the young, much more frequently than hitherto supposed; this has a medico-legal bearing.

Transplantation of Gonads.—Brandt and Lieschied report four cases in which a testis was transplanted. No influence was apparent in two of the young men and the man, aged 52, but the fourth man, aged 29, was improved, but only transiently. Experiments on dogs confirmed degeneration of the testis into a cicatricial tissue.

Surgical Treatment of Nephritis.—Wehner gives ten pages of bibliographic references, set solid, on the surgical treatment of nephritis and more than two pages of titles on the surgical treatment of the kidneys in eclampsia, and summarizes the authors' views. Rovsing, among others, has been converted to the advantages of decapsulation in chronic nephritis: some of his patients have been free from kidney symptoms for ten years and more, and Kummell, in 1920, reported 11 apparently cured in 34 cases of Bright's disease. Rovsing now has a record of 37 women and 40 men: All of the 26 with interstitial nephritis with pain and hematuria, but no albumin in the intervals, and 19 of the 32 with albumin were cured; also 4 of the 8 with diffuse parenchymatous nephritis and the 2 unilateral cases in the 3 of glomerulonephritis. Others are reporting a few equally favorable results, but Wehner declares that surgical treatment of chronic nephritis is still in the experimental stage. Karo asserts that 4 of his 5 patients with severe uremia, anuria and extreme edema from Bright's disease, owe their lives to decapsulation. In 2 of 7 other cases, the cure seems complete; the urine is now free from albumin and tube-casts; four have regained full earning capacity. In one young woman with 1.2 per cent. albumin, fatal anuria followed bilateral decapsulation. The main task, he says, is to overcome the prejudices of the internists.

Zentralblatt für Chirurgie, Leipzig

50: 553-584 (April 7) 1923

- Köhler's Disease and Perthes' Disease. Axhausen.—p. 553.
- *Inguinal Route to the Bladder. K. Mermingas.—p. 558.
- Tumors of True Pelvis with Femoral Hernias. Bardenheuer.—p. 560.
- *Two-Stage Resection in Gastric Cancer. Ziegner.—p. 562.
- Apparatus for Bolstering Patients in Operations on Gallbladder and Bile Ducts. H. Simon.—p. 563.
- The Rammstedt Operation Applied to Infants. W. Merckens.—p. 565.
- Pointed-Oval Windows for Drainage. Nölle.—p. 566.
- "A Substitute for Kehr's Drainage of Hepatic Duct." Flörcken.—p. 566.

The Inguinal Route to the Bladder.—Mermingas recommends the inguinal route for prostatectomy and other operations in the region of the bladder (lithotomy, fistula, tumor excision). He has followed the inguinal route in four cases. He makes the incision a fingerbreadth above and parallel with the middle third of Poupart's ligament. The aponeurosis of the external oblique muscle is divided in the same direction (the spermatic cord is not exposed). Blunt dissection upward of the lowest fibers of the internal oblique and the transverse abdominal muscle is done. Retraction outward of the inferior epigastric artery, notching of the insertion of the rectus muscle, division of the transversalis fascia, and removal of the preperitoneal fat tissue follow. The bladder is brought up from its position and the operation is completed. If it should prove necessary to operate again on the bladder, the incision may be made on the opposite side.

Two-Stage Resection of the Pylorus in Advanced Carcinoma of Stomach.—Ziegner recommends a two-stage operation in advanced conditions of carcinoma of the pylorus: first a vertical posterior retrocolic gastro-enterostomy, and a few weeks later the final resection. Results show that the reasoning that prompted the application of this method was, on the whole, well founded. Nearly all patients, after the enterostomy, gained, in a short time, from 14 to 20 pounds, though the carcinoma was still present. The main advantages of the two-stage procedure are: (1) the primary mortality is reduced, and (2) in many apparently inoperable cases an operation may still be performed.

Hospitalstidende, Copenhagen

66: 185-224 (March 7 and 14) 1923

- *Pulmonary Tuberculosis in Greenland. S. Rohleder.—p. 185. Begun p. 169.
- Expulsion of Tenia After Neo-Arsphenamin. Lundsgaard.—p. 190.
- Experimental Optic Nystagmus. G. V. T. Borries.—p. 201.
- *Tests of Kidney Functioning in Prognosis. J. Riising.—p. 210.

Tuberculosis in Greenland.—Practically the same article was summarized on page 1549 when published elsewhere.

Functional Tests in Prognosis of Kidney Disease.—Riising relates that all his patients with retention of water (output of 450 c.c. or less from half an hour to four and a half hours after drinking 1 liter of water, fasting) died in a few months afterward, only two surviving for two years. He tabulates the findings with various tests applied to numbers of kidney patients. None of the other tests showed any constant connection with the outcome.

Svenska Läkaresällskapets Handlingar, Stockholm

49: 1-72 (March 31) 1923

- Instruction in the History of Medicine. E. Nachmansson.—p. 1.
- *Systematization of Kidney Diseases. H. Bergstrand.—p. 26.

Nephrosis and Glomerulonephritis.—Bergstrand agrees with Volhard and Fahr in dividing diffuse kidney diseases into nephrosis, glomerulonephritis and nephrosclerosis, but objects to the division of nephrosis into four stages. Under their system the so-called genuine nephrosis, formerly included with parenchymatous nephritis, would be ranked with such kidney changes as those due to phosphorus and diphtheria toxin, and would be called the second stage. Nephrosis should be a collective term, not corresponding to any particular pathologic picture. Acute glomerulonephritis has not generally been differentiated from acute embolic nephritis. Herxheimer recently published twelve cases of glomerulonephritis of which only two deserved this name. Embolic nephritis, including Fahr's focal glomerulonephritis, appears principally in ulcerative endocarditis, but also with other septic conditions. The main stress should not be laid on the mechanical embolic changes, but on the fact that bacteria are carried into the kidneys; and there cause glomerulitis, resembling glomerulonephritis. True glomerulonephritis, on the other hand, is nonbacterial diffuse disease. The pathologic anatomy in glomerulonephritis must be based on uncomplicated cases and not on examinations of kidneys in ulcerative endocarditis, erysipelas, purulent meningitis, etc., which have shown clinical kidney symptoms.



Ray Lyman Wilbur.

PRESIDENT AMERICAN MEDICAL ASSOCIATION, 1923-1924





ROBERT H. IVY, Philadelphia
Chairman Section on
Stomatology



JOHN O. McREYNOLDS, Dallas, Tex.
Chairman Section on
Ophthalmology



JOHN A. FERRELL, New York City
Chairman Section on Preventive and
Industrial Med. and Pub. Health



BORDEN S. VEEDER, St. Louis
Chairman Section on Diseases
of Children



HARRY S. CROSSEN, St. Louis
Chairman Section on Obstetrics,
Gynecology and Abdominal Surgery

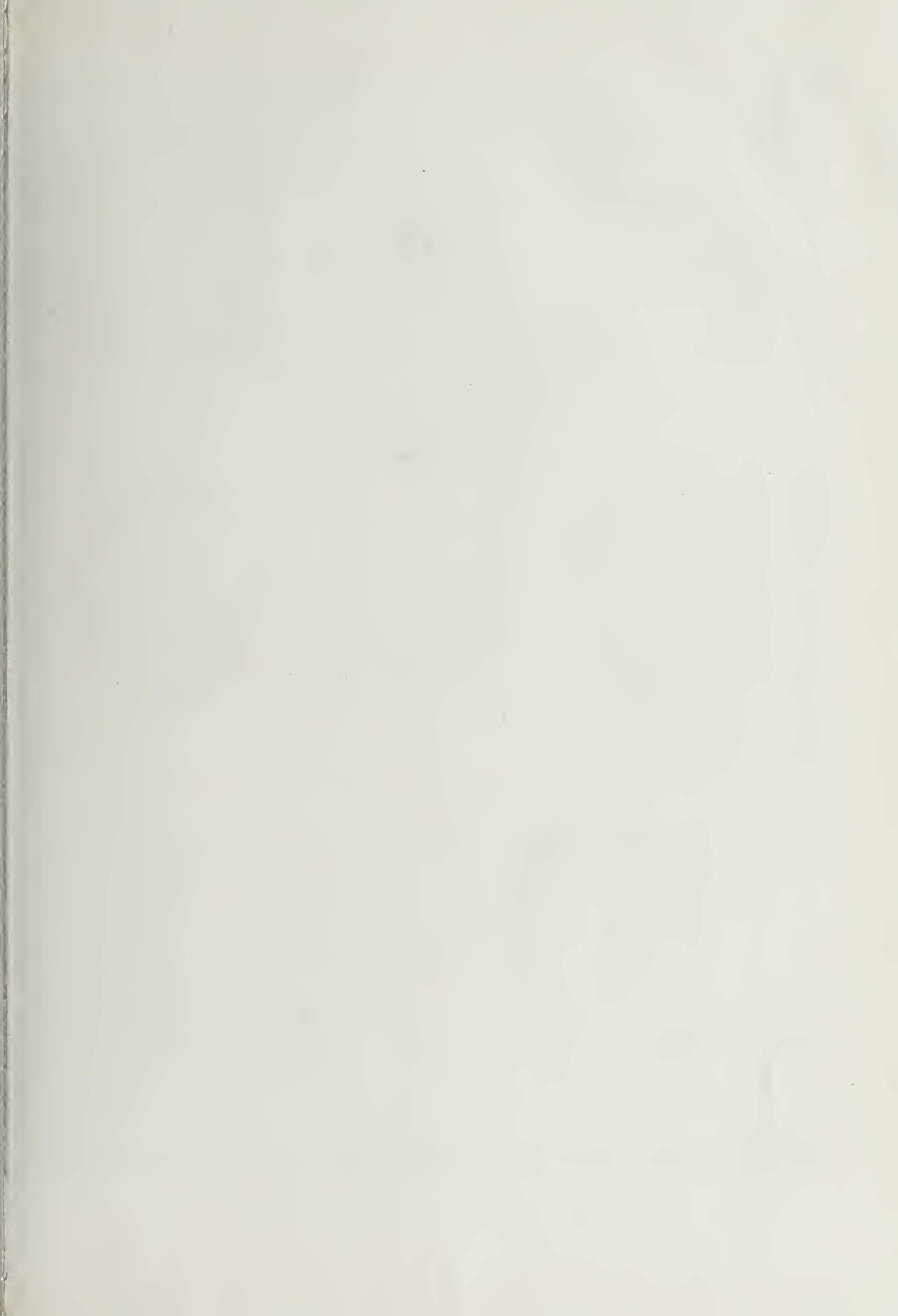


ARNO B. LUCKHARDT, Chicago
Chairman Section on Pathology
and Physiology



MARCUS HAASE, Memphis, Tenn.
Chairman Section on Dermatology
and Syphilology

SOME OF THE SECTION OFFICERS—1923





HENRY G. BUGBEE, New York City
Chairman Section on Urology



WALTER TIMME, New York City
Chairman Section on Nervous
and Mental Diseases



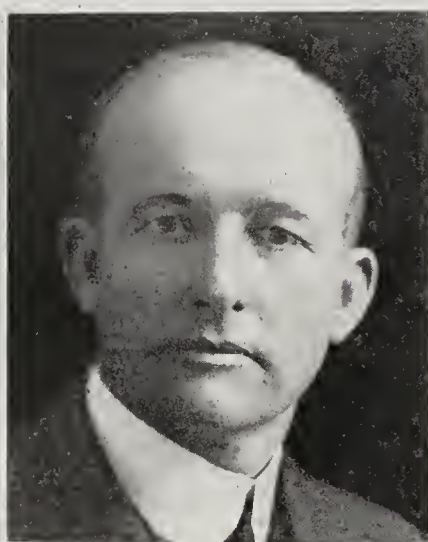
J. ARCHER O'REILLY, St. Louis
Secretary Section on Orthopedic
Surgery



W. C. CAMPBELL, Memphis, Tenn.
Chairman Section on Orthopedic
Surgery



SAMUEL IGLAUER, Cincinnati
Secretary Section on Laryngology,
Otology and Rhinology



E. S. KILGORE, San Francisco
Secretary Section on Practice
of Medicine



SIDNEY K. SIMON, New Orleans
Secretary Section on Gastro-
Enterology and Proctology

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 25

CHICAGO, ILLINOIS

JUNE 23, 1923

RECENT PHASES OF THORACIC SURGERY*

EVARTS A. GRAHAM, M.D.
ST. LOUIS

The development of the surgery of the thorax has been slower than that of any other field. Although operations for drainage in cases of empyema were carried out by the ancients, it is only in very modern times that any extensive surgical procedures have been undertaken within the thorax. The newness and the present undeveloped state of the surgery of this region are reflected not only in the high mortality of some of the procedures, but also in the lack of any sort of uniform agreement as to what constitute operative indications in many of the conditions. Thoracic surgery is now passing through the period of high mortality and indifferent results which characterized the field of abdominal surgery twenty-five years ago, and of the surgery of the brain even more recently. In the future it will unquestionably be made safer by a better understanding of the physiology and pathology involved, by a more precise drawing of operative indications, and by a closer cooperation between the internists and surgeons, which will permit the carrying out of operative procedures at a time when they may prove of real benefit with a minimum risk instead of being last resorts in patients who are already nearly dead.

Physiology and pathology must always be the foundations on which surgical progress will be developed. Perhaps no other factor has retarded the development of thoracic surgery so much as a misconception of the physiologic principles which underlie an opening into a pleural cavity, regardless of whether that opening is a surgical one or an accidental one. The old fear that death would almost inevitably follow a surgical incision into a free pleural cavity led to the invention of various cumbersome appliances to permit the surgeon to carry out an intrathoracic operation without losing his patient on the table from asphyxia. The very complicated nature of the contrivances precluded little development for this kind of work, for successful surgery must be simple surgery. Then came the war, and to the confusion of previous conceptions vast numbers of men were seen with wounds that caused extensive pleural openings; but, *mirabile dictu*, they did not all die of asphyxia. The logical conclusion was therefore drawn that a man could withstand a relatively large surgical opening into his chest without a fatal asphyxia.

The lack of harmony between these observations and the previous conceptions of the dangers of an open pneumothorax led to much confusion. Was it actually possible that the pleural cavity could be opened with impunity? This was a frequently recurring question to any one whose experience preceding the war had led him to observe in some cases alarming disturbances in respiration following an incision into the pleural cavity. But notwithstanding the apparent disagreement between these observations, it is possible to reconcile both in the light of newer work.

In 1918, R. D. Bell and I,¹ while members of the U. S. Army Empyema Commission, attempted to find out by direct experiment what actual changes are produced when a free opening is made into a pleural cavity. Recourse to the simple expedient of recording the pressures in both pleural cavities after air had been injected into one sufficed to demonstrate that the usually accepted ideas of the mechanics of open pneumothorax were incorrect; for these ideas had been based on the conception that a more or less rigid partition exists between the two pleural cavities. Instead of a rigid partition, however, the mediastinum in a normal subject is actually so mobile that any alteration in pressure on one side of it is accompanied by an alteration in pressure on the other side to almost the same extent. With a slight alteration of pressure in one pleural cavity, the pressure in the opposite pleural cavity becomes practically the same, differing only by 0.5 or 1 cm. of water (0.4 or 0.8 mm. of mercury).

In the case of a great alteration of the pressure, however, the agreement between the pressures of the two sides becomes less close, as a result, doubtless, of the fact that, as the mediastinal pleura becomes stretched, its resistance becomes greater. Thus, for example, if air is forced into the left pleural cavity until a pressure of 5 cm. of water exists in that cavity, the pressure reading of the opposite pleural cavity will be practically the same, differing only by about 0.5 cm. of water pressure. If the injection of air is continued until a pressure is obtained equal to that of 10 cm. of water on the injected side, the pressure in the opposite pleural cavity will differ by only 1 or 2 cm. of water. If, however, the injection is continued until the very great pressure of 27 cm. is obtained, then the pressure in the opposite pleural cavity will register only 18 cm. In these respects, the thorax of the dog does not differ materially from that of man. The dog seems, therefore, to be a suitable animal for experimental work in pneumothorax, contrary to the state-

* From the Department of Surgery, Washington University Medical School.

* Read before the California Academy of Medicine, San Francisco, Feb. 10, 1923.

1. Graham, E. A., and Bell, R. D.: Open Pneumothorax: Its Relation to the Treatment of Empyema, *Am. J. M. Sc.* **156**: 839 (Dec.) 1918.

ments of Matas,² Duval³ and Yates,⁴ who, for some unexplained reason, have stated that in the dog a communication exists between the pleural cavities. I have carefully examined twenty-five dogs to see whether such a communication exists, and I have tested most of these with injections of air or water into one pleural cavity to see whether it would pass to the other side. In not a single dog have I been able to find the alleged opening. The accompanying roentgenograms clearly demonstrate that an artificial pneumothorax in the dog remains unilateral if it is properly made.

It is to be strongly emphasized that the conditions just discussed hold true only in the normal thorax. Obviously, if adhesions are present, or if there is thickening of the mediastinal pleura, different relationships exist.

As a development from the fundamental principle previously discussed, it was possible for us to derive a mathematical expression which permitted an approximate calculation of the maximum opening of the chest wall which could occur in the normal subject without causing death from asphyxia. For the details of this, reference may be made to some of my former publications. One of the most important factors in the expression was the vital capacity. Individuals with large vital capacity determinations could theoretically withstand much larger openings in the chest wall than those with small vital capacities.

The importance of these experimental results lay in what seemed to us to be their wide applicability to the whole field of thoracic surgery. They seemed, for example, definitely to establish on a rational basis the importance of avoiding an open drainage in cases of empyema during the acute pneumonic stage, a period in which not only is the vital capacity of the patient low, but in which there is also likely to be an absence of stabilizing adhesions, conditions which therefore would make even a small, free opening in the chest likely to result in a fatal asphyxia. I believe that this principle is now universally accepted in this country. Moreover, these results seemed to provide a sound basis for harmonizing all the conflicting conceptions relative to whether or not a free opening in the pleura is a source of immediate danger to the patient; for it at once became clear that the differences in danger in this respect in different patients must be

very great. Obviously, young athletic individuals with large vital capacities can withstand much larger openings than those whose vital capacities are low. The rabbit cannot withstand a pleural opening so large as that of a dog chiefly because, since it is a smaller animal, its vital capacity is very much less than that of the dog. Obviously, also, a healthy young soldier who suddenly receives a wound in the chest can withstand a larger opening than a patient who, from a long illness, has a low vital capacity. Moreover, it becomes apparent that, if adhesions exist, or if the mediastinum is stabilized by induration, the individual may have no effects whatever from an enormous opening.

In our first publication on this subject, on the basis

of what was then considered to be the average vital capacity (3,700 c.c., as given by Howell⁵), we calculated that the maximum nonfatal opening of the chest wall in an average normal human being would be 8 square inches, or 51 square centimeters. Later work, however, by Peabody and his associates⁶ has shown that the average vital capacity is much greater than 3,700 c.c., and that in some persons it may be so high that, on the basis of our formula, a theoretical calculation of the maximum nonfatal opening of the chest would be 15.6 square inches, or 101 square centimeters. Unfortunately, we apparently failed to make clear in our various publications that these mathematical calculations were intended to be only approximately correct. Some subsequent writers (for example, Lockwood,⁷ Richter⁸ and Duval⁹) have seized on the actual figures in our first publication, calculated as giving a maximum nonfatal opening of the chest in an average normal adult, and have misinterpreted the whole principle which the work carried with it. This attitude has been due chiefly to the fact that they feel sure that they have seen life continue with openings which

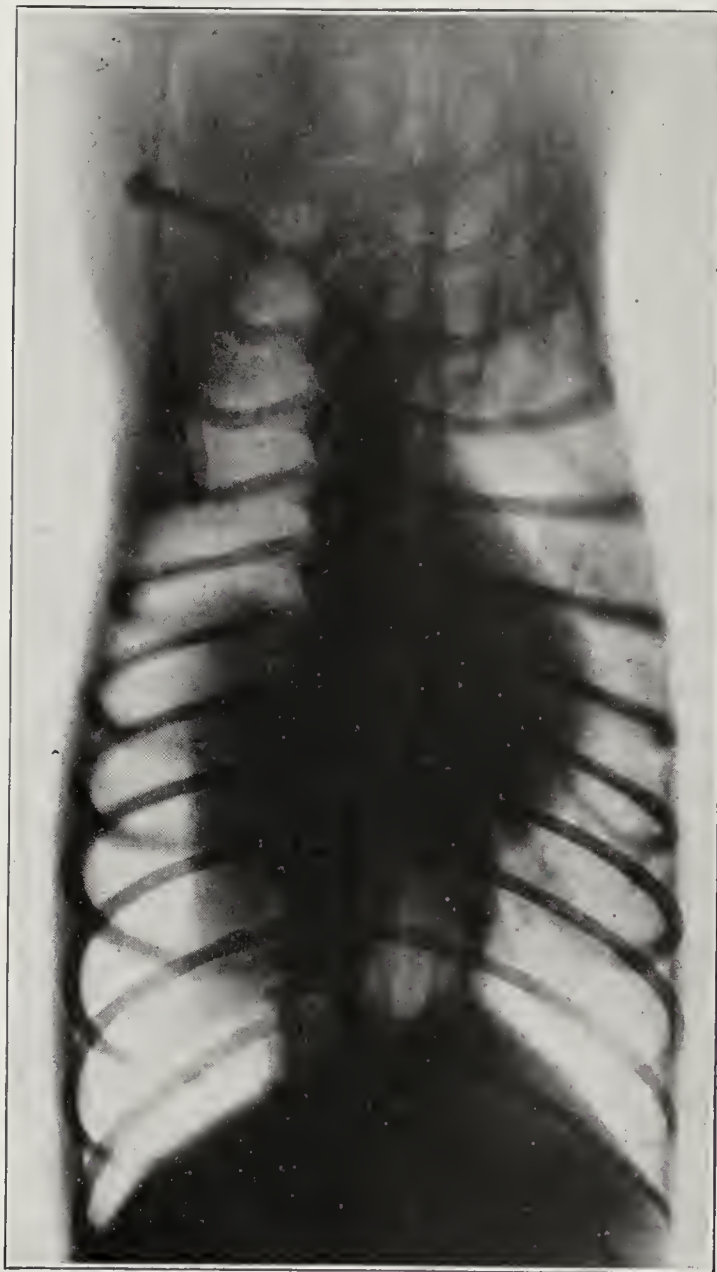


Fig. 1.—Lungs of dog, showing unilateral pneumothorax on the left side with the heart pushed over to the right side; this indicates clearly that there is no communication normally between the two pleural cavities of the dog.

were actually larger than the figures given. I wish to reply that:

1. It was distinctly stated that the original calculations of 8 square inches, or 51 square centimeters, were given as representing the maximum nonfatal opening in an average normal adult, based on what was incor-

5. Howell: Textbook of Physiology, Philadelphia, 1911, p. 646.

6. Peabody, F. W., and Wentworth, J. A.: Clinical Studies of the Respiration, IV, The Vital Capacity of the Lungs and Its Relation to Dyspnea, Arch. Int. Med. **20**: 443 (Sept.) 1917.

7. Lockwood, A. L.: Developments and Possibilities of Thoracic Surgery, S. Clin. N. Am. **1**: 1425 (Oct.) 1921.

8. Richter, H. M., in discussion on Eggers, Carl: The Relative Value of Various Operative Procedures Employed in Acute Empyema, J. A. M. A. **75**: 1000 (Oct. 9) 1920.

9. Duval, P.: Les données actuelles de la chirurgie intrathoracique unilatérale en plèvre libre, Presse méd. **30**: 409 (May 13) 1922.

2. Matas, Rudolph: The Value of Artificial Aids to Respiration in Acute Operative Collapse of the Lungs, Arch. Surg. **5**: 110 (July) 1922.

3. Duval, P.: Les données actuelles de la chirurgie intrathoracique unilatérale en plèvre libre, Presse méd. **30**: 409 (May 13) 1922.

4. Yates, J. L.: Effects of Acute and Chronic Pneumothorax: A Preliminary Report, Am. J. M. Sc. **165**: 1 (Jan.) 1923.

rectly given in textbooks of physiology as the normal average vital capacity; the fact that some individuals can withstand openings larger than these figures really has not very much to do with the question.

2. The size of an incision and the size of an opening are not synonymous terms if there is anything in the incision, whether it be the operator's hand, gauze packs, a delivered lung, or what not; it is astonishing how this simple discrepancy has led to confusion in the minds of many; is a hole that is filled up any longer a hole, or can an opening in the chest wall into which gauze has been inserted be as large as the area of the original incision?

3. It becomes really a matter of minor importance whether the actual nonfatal maximum opening is 8 square inches or 18 square inches; the important points to remember are that a unilateral opening may be made of sufficient size to kill the patient, and that some persons whose vital capacities are low will not be able to withstand an opening of any appreciable size unless adhesions are present or unless the mediastinum has been made rigid by induration.

4. Finally, any one whose experience in thoracic surgery in civil life has been at all extensive knows only too well that the statements made by overenthusiastic war surgeons about the innocuousness of open pneumothorax in all cases should be completely discredited. It is a curious fact, psychologically, that many of these enthusiasts, while denying the dangers of open pneumothorax, themselves unconsciously resorted to measures which minimized these dangers. Thus, when possible, they would deliver the lung out of the incision; they would pack gauze into the opening, and frequently they would have one or both hands in the incision; moreover, there was unanimous agreement that an open sucking wound should be closed as soon as possible.

The fundamental principles of the work on pneumothorax which I have discussed above have been corroborated by several recent investigators. Thus, for example, Stivelman, Hennell and Golembe¹⁰ state, from their extensive experience with artificial pneumothorax, that "Graham and Bell touched the heart of the subject, when they came to the conclusion that: 'From the standpoint of pressure relations, the thorax may be considered as one cavity instead of two. Any change in pressure in one pleural cavity will affect also the other one almost equally.' . . . The results of

our own experiments . . . also support this view. . . . In the presence of a flexible mediastinum, the intrathoracic equilibrium in pneumothorax is very delicately adjusted, and any disturbance in the intrathoracic pressure on the treated side will have a proportionate effect on the intrathoracic pressure on the untreated side." Experiments both by Simon¹¹ and by Betchov¹² on animals have likewise corroborated the truth of our fundamental conclusions. Lenhart,¹³ from experiments on rabbits, came to the same conclusion, and he states that his results tend to confirm the conclusions drawn by us.

It is unfortunate that it seems necessary to become so controversial on the various points concerning open pneumothorax. My reason for assuming a controversial attitude is merely that the importance of having a clear understanding of the mechanics of open pneumothorax is so great that it seems advisable to call attention to certain misunderstandings and misquotations of our work on this subject. A better theory of the mechanics of open pneumothorax than that which has been summarized here will be very welcome. Up to the present time, however, this has seemed not to have been offered.

When one considers the question of acute empyema, it seems to me that nothing explains so simply the remarkable reduction of mortality accomplished by the avoidance of an open drainage during the acute pneumonic stage. Can any one now doubt the wisdom of this plan of treatment? From a statistical standpoint, the evidence seems overwhelming. At Camp Lee, the Empyema Commission saw the mortality drop from a rate of more than 40 per cent. to one of less than 5 per cent. when early open drainage was given up. Stone, at Fort Riley, showed a correspondingly remarkable re-

duction in mortality after the abandoning of open drainage during the pneumonic stage. He divided his cases as follows:

1. First series: Early operation (Oct. 20, 1917, to Jan. 21, 1918), eighty-five cases; mortality, 61.2 per cent.
2. Second series: Early aspirations and late operation (Jan. 12 to Aug. 10, 1918), ninety-six cases; mortality, 15.6 per cent.
3. Third series: Early aspirations and late operation (Oct. 18, 1918, to Feb. 14, 1919), ninety-four cases; mortality, 9.5 per cent.

11. Simon, S.: Effect of Artificial Pneumothorax on Collateral Lung, *Am. Rev. Tuberc.* **5**: 620 (Oct.) 1921.

12. Betchov, N.: Ueber den Einfluss des einseitigen Pneumothorax auf die Spannungsverhältnisse in der anderen Lunge, *Schweiz. med. Wchnschr.* **51**: 15 (Jan. 6) 1921.

13. Lenhart, C. H.: Open Pneumothorax: An Experimental Study of the Functional Pathology of Sucking Chest Wounds, *Arch. Surg.* **1**: 336 (Sept.) 1920.

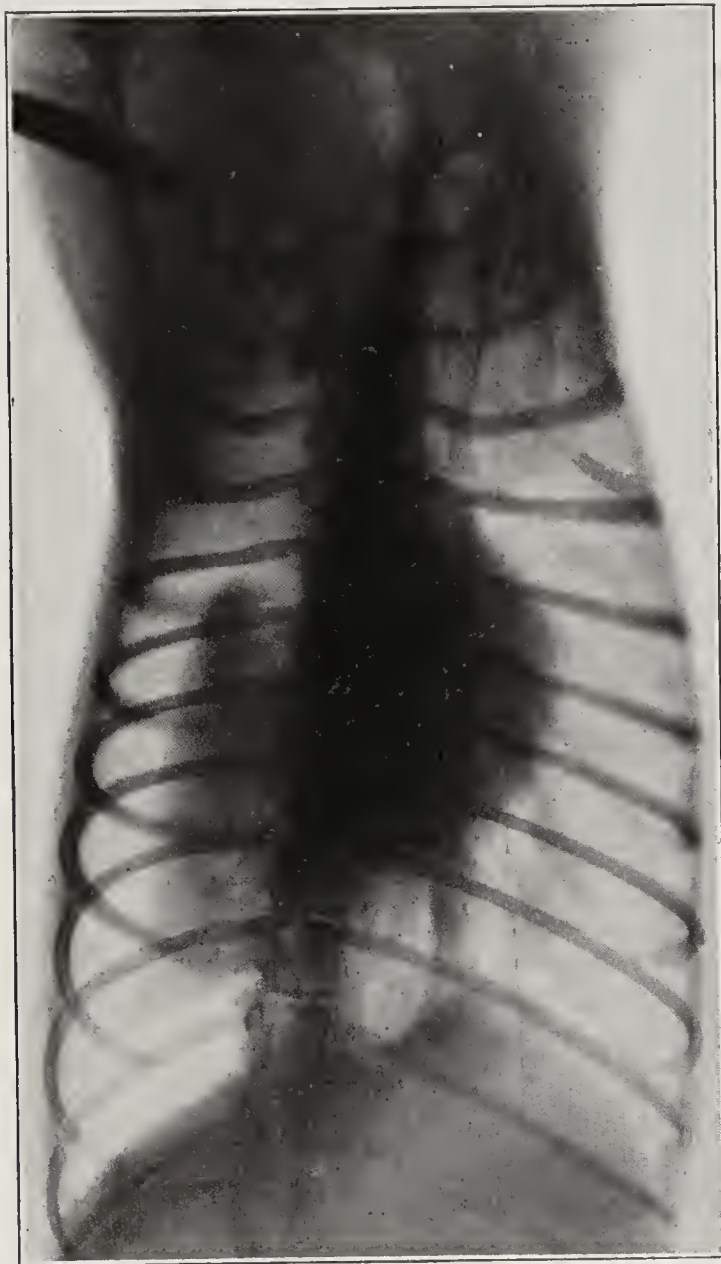


Fig. 2.—Lungs of another dog, showing left-sided pneumothorax with the heart pushed over to the right.

10. Stivelman, B. P.; Hennell, Herman, and Golembe, Harry: Clinical Significance of Altered Intrathoracic Equilibrium in Pneumothorax, *J. A. M. A.* **78**: 1450 (May 13) 1922.

At the St. Louis Children's Hospital, since September, 1919, eighty-three cases of acute empyema have been treated by a plan of repeated aspirations during the pneumonic stage to be followed by free drainage. In this series there have been ten deaths, but not a single case has been fatal which was not accompanied by serious complications, such as suppurative mastoiditis or meningitis. This mortality of 12 per cent. compares very favorably with that quoted by Holt¹⁴ of a mortality of 54 per cent. in 126 cases of acute empyema in children. Holt's report was made before the war, and it represents, therefore, a plan of treatment based on the older ideas.

A subject of great discussion at the present time concerns the question of the necessity for apparatus for differential pressure in performing intrathoracic operations. Some of the overenthusiastic war surgeons have claimed that the experience with war wounds has shown that it is never necessary, forgetting that "never" is a dangerous word to use in surgery. It is beyond argument that intrathoracic operations can be performed on many patients with a disregard of any form of apparatus for differential pressure. These are the patients who have extensive adhesions or rigid mediastinal pleurae or those whose vital capacities are high. Others, however, notably those whose vital capacities are low and who have no adhesions, will go through intrathoracic operations much more safely if some auxiliary agent is present to assist in inflating the lungs if necessary. For this purpose, I have found that Gwathmey's suggestion to use an ordinary nitrous oxid machine with a tightly fitting inhaler is eminently satisfactory. As a general rule, I believe that the anesthesia of choice in thoracic work is local anesthesia combined with nitrous oxid and oxygen. At any time that may be necessary during the operation, the lungs can then be inflated. Also in children, even in cases of empyema, much of the fright and terror which accompany an operation under local anesthesia can be avoided in this way. In any event, whether or not apparatus for differential pressure is used, it is wise for the surgeon to remember that too large an opening may cause death, and that the surest way to avoid a fatal asphyxia is to close the opening, by plugging it with a lung delivered out of the incision, with gauze compresses or in any other way.

THE MECHANISM OF FORMATION OF PLEURAL EXUDATES

The rapidity with which fluid accumulates in cases of infection of the pleura with the hemolytic streptococcus suggested the idea that, with a very edematous pleura, fluid may actually be sucked out by the negative pressure during the act of inspiration. In cases of dyspnea in which there is increased depth of inspiration, the intrapleural pressure is correspondingly reduced (made more "negative"), and, accordingly, more fluid is likely to be aspirated into the pleural cavity. In cases of pneumonia due to the streptococcus, dyspnea is often marked; the patient makes a maximum respiratory effort to get air into his lungs, and it is not surprising, therefore, that a large amount of fluid should collect rapidly in the pleural cavity, because the conditions are right for a markedly negative intrapleural pressure. This idea was put to the test of experiment by the construction of an artificial thorax with a bell-jar and a pair of lungs. When the air in the bell-jar around the

lungs was aspirated, the lungs would inflate in a manner similar to an ordinary inspiration. When edematous lungs were used, either those from a case of pneumonia in the human being, or dogs' lungs made edematous by pouring into the trachea water containing a little dilute acetic acid, pleural exudate could be seen to pour from the lung surface with each imitated act of respiration. Contrary to the expectation, however, the fluid poured out more rapidly during the act of expiration than during inspiration. The explanation seemed to be that during inspiration the pleura became saturated, and then with the sudden decrease of surface produced by the act of expiration, the fluid was literally squeezed out. So far as I know, this is the only attempt that has been made to study the actual mechanism of the production of pleural exudates. The problem needs more study.

PROGRESS IN CLINICAL CONDITIONS

A note of decided pessimism is expressed by Robinson¹⁵ in his recently published address before the American Association for Thoracic Surgery. It is to be regretted, of course, that progress in this branch of surgery has not been more rapid, but yet I cannot fully agree with Robinson in his pessimistic attitude. There are many hopeful signs, of which the great advance in the treatment of empyema is only one.

PULMONARY SUPPURATION

Possibilities of an early and an accurate diagnosis of lung abscess have enormously advanced in recent years, chiefly as the result of progress in the use of the roentgen ray. Likewise, we have learned of the definite etiologic relationship of tonsillectomy and other operations in the mouth. The combination of these two facts will unquestionably lead to the earlier recognition and the more prompt treatment of the pulmonary suppuration. The tonsillectomy patient who develops a cough and a fever will be regarded with more suspicion as possibly having a lung abscess than would have been the case even a few years ago. Increasing development in the art of bronchoscopy and an increase in the number of skilled bronchoscopists have, by permitting the removal of foreign bodies in this way, prevented many lung abscesses and have led to the prompt healing of many cases which otherwise would have become chronic.

Surgical drainage is not necessary in all cases of acute lung abscess. Proper postural drainage and artificial pneumothorax in certain cases will give results just as satisfactory as surgical drainage. An important problem, at present, is to define more accurately the indications for surgical drainage. Postural drainage will be of value only in those cases in which the abscess communicates with a bronchus. Artificial pneumothorax should be reserved for relatively small abscesses without adhesions. It should be emphasized, furthermore, that this method is not without danger; Wessler¹⁶ has reported two deaths from artificial pneumothorax.

Surgical drainage should certainly be employed in large acute abscesses, and probably in any abscess with increasing toxic symptoms. If the lung is not adherent to the chest wall, a two-stage operation is to be preferred. The aspirating needle should be used only at the time of operation and under conditions that insure against the infection of the

14. Holt: The Siphon Treatment of Empyema in Infants, *Am. Med.* 19: 381, 1913.

15. Robinson, Samuel: The Present and Future in Thoracic Surgery, *Arch. Surg.* 6: 247 (Pt. 2) (Jan.) 1923.

16. Wessler, Harry: Suppuration and Gangrene of the Lung; a Study of One Hundred Cases, *J. A. M. A.* 73: 1918 (Dec. 27) 1919.

pleural cavity by the escape of pus along the needle track from the lung. Let me strongly emphasize that under no circumstances should the aspirating needle be used unless one is prepared to go ahead with the operation immediately. Lockwood¹⁷ has proposed a method of free intrapleural exploration followed by delivery of the affected portion of lung out of the incision; after the lung has been sutured to the chest wall, the whole abscess-containing portion of lung is then excised. This method seems very attractive for the handling of some cases, but its applicability must be exceedingly limited and out of question in those cases in which the abscess is near the hilum.

Abscess of the lung constitutes one of the most difficult conditions to treat satisfactorily that occur in the category of nonmalignant affections. The unfortunate victim of pulmonary suppuration may survive the period of danger while the abscess is acute, only to become a chronic invalid subject to frequent attacks of fever, with offensive breath and sputum, and more or less frequently recurring pulmonary hemorrhages. If he does not die of pulmonary hemorrhage, he may end his unhappy existence with a brain abscess or meningitis. The present undeveloped state of thoracic surgery is clearly shown not only in the wide differences of opinion that exist concerning the best methods of dealing with acute lung abscesses, but also in the inadequacy of the measures for coping with the late results of abscess. The ease with which a rib may be resected and an opening made into an adherent lung has made the treatment of lung abscess appear as a simple matter to the uninformed. Fortunately, there are some cases that respond to this treatment in a gratifying manner. But there are many others, on the contrary, in which the patients pass into a condition of chronic invalidism, even although they have been relieved of a large collection of pus. Any one who follows up patients on whom operation has been performed is aware of the full truth of this statement.

In the chronic lung abscess, surgical drainage with a tube is usually of little avail, because of the pathologic condition that is present. There no longer exists a single cavity of pus which can be drained off. Instead, the lung may be honeycombed with several collections of pus, some of which may not communicate with either a bronchus or with a previously established drainage channel. The portion of lung involved is fibrotic. The bronchioles are dilated and thickened; their lumina contain granulation tissue that bleeds easily. The whole lobe may be contracted as a result of nature's unsuccessful attempt to obliterate the suppurating cavities.

In most of these cases, the patient must either be content with a life of chronic invalidism, or submit to a radical surgical procedure. The only procedure that will be effective in most cases is removal of the diseased lung tissue. But the operation of lobectomy is still a most formidable undertaking. I would suggest that any one who has never performed it should read Robinson's vivid account of its difficulties before attempting it. Lilienthal¹⁸ has had the most extensive experience of anybody in the world with resection of the lung. In twenty-four cases, he has removed one or more lobes. Of fourteen cases in which one lobe was removed, six patients died, a mortality of 42.8 per cent. Of ten cases in which more than the removal of a

single lobe was accomplished, seven patients died, a mortality of 70 per cent. In his series, therefore, there has been a total mortality of 54 per cent.

Bronchiectasis is the condition for which a resection of the lung has been done most frequently. In twenty-one of Lilienthal's cases, resections were performed because of this diagnosis. Of this number, seven patients (33 per cent.) were reported as well; twelve (57 per cent.) died, and, of the remaining two patients, one was reported as convalescent and the other as still having cough and expectoration, although his wound was healed. Also, one of the patients classified as well still had a small fistula. Six patients, therefore, of Lilienthal's series of bronchiectasis may be considered as having had completely satisfactory results, by which I mean complete relief from symptoms and complete healing of the wound. I¹⁹ recently reported my own experience of lobectomy in bronchiectasis, consisting of one completely successful result and two deaths. A study of the literature which I reviewed showed that, including my own three cases, there were reports of forty-eight cases of bronchiectasis in which lobectomy had been performed. Of this number, twenty-five patients have died, presumably as a result of the operation, a total operative mortality, therefore, of 52 per cent. Probably, however, isolated fatalities have occurred here and there which have not been reported, so that the operative mortality has perhaps been actually higher than 52 per cent. Furthermore, not all of the patients who have survived the operation can be considered as being well. In 1917, Smith and Mudd²⁰ carefully analyzed the cases reported up to that time, and they considered that only three could be regarded as complete successes, two of Lilienthal's and one of Robinson's. It would appear now, however, that in six cases of Lilienthal's complete series, and in one of my own, there have been perfectly satisfactory results. This, then, would make eight complete successes out of forty-eight cases in which resection has been performed. In other words, in only 17 per cent. have complete successes occurred.

The natural query, therefore, is: Should the operation be considered a justifiable one? Until some other more satisfactory method of treating these patients is found, I believe that it is justifiable in properly selected cases, because the misery of many of those afflicted with the condition is beyond description. In most of the advanced cases, the patients are social outcasts, unable to find employment or to enjoy ordinary human associations. To many of them death would come as a welcome relief from their misery, and, indeed, some of the patients threaten suicide if they cannot be given relief. In a series of twenty-seven cases of bronchiectasis studied by Dr. J. J. Singer and myself, no less than six patients have implored us to perform a resection in spite of being fully informed as to its dangers. In three of the cases we refused because we felt that the proper indications were not present.

In an attempt to avoid the heavy mortality of lobectomy, we have recently tried in two cases of chronic lung abscess a procedure which promises much hope and which seems to be well tolerated by the patient. From a modest series of two cases, however, we cannot state what its dangers may be, but the results have been particularly gratifying in view of the fact that

17. Lockwood, A. L.: Abscess of the Lung, *Surg., Gynec. & Obst.* **35**: 461 (Oct.) 1922.

18. Lilienthal, H.: Resection of the Lung for Suppurative Infections, with a Report Based on Thirty-One Operative Cases in Which Resection was Done or Intended, *Ann. Surg.* **75**: 257 (March) 1922.

19. Graham, E. A.: The Surgical Treatment of Bronchiectasis, *Arch. Surg.* **6**: 321 (Pt. 2) (Jan.) 1923.

20. Smith, E., and Mudd, H.: A Modification in Method of Pneumotomy for Bronchiectasis, *Tr. A. Am. Phys.* **32**: 313, 1917.

both patients were middle-aged and would have been poor risks for an ordinary type of lobectomy. The method consists, briefly, of freely exposing the diseased portion of lung and burning it out with an actual cautery heated to a dull red heat. To be effective, the whole diseased part must be burned away. The procedure amounts to a lobectomy performed with a cautery. It is not at all comparable with the well-known use of the cautery merely to open an abscess cavity. Further details of the operation will be published later in another article. The advantages of this procedure over the usual methods of performing lobectomy seem to lie in the ease with which it is tolerated, as compared with the usual stormy postoperative course in a case of lobectomy. It will be applicable, however, only to cases in which strong adhesions exist between the lung and the chest wall, but it seems possible that it may be as effective in cases of bronchiectasis as in those of chronic lung abscess. There will exist the danger of late hemorrhage, but this complication has not occurred in my first two cases; and, moreover, I doubt whether the danger in this respect is any more real than after lobectomy performed in the usual way. Only additional experience will decide this point. In the first case, that of a patient referred to me and studied by Dr. J. J. Singer, the result has been very gratifying. Within a few days after operation the patient was entirely relieved of cough and sputum, her fever and pain disappeared, and her appetite and strength returned. On the tenth postoperative day, she was up and walking around. During the course of the operation, two abscesses were encountered, each of which contained about 10 c.c. of foul-smelling pus. Neither one of these communicated with the existing drainage track. The second patient, who also had a chronic abscess, referred to me by Dr. Singer, was operated on only a few weeks ago, but the result so far is gratifying.

CARCINOMA OF THE ESOPHAGUS

Cancer of the esophagus continues to be one of the most baffling therapeutic problems in the whole field of medicine. The possibility of the accomplishment of successful results by radiotherapy, of which there seemed to be some hope a few years ago, seems now not to exist. Likewise, the optimism that followed the report of the patient successfully operated on for a carcinoma of the thoracic portion by Torek²¹ of New York, in 1913, who is still alive and free from recurrence, which optimism was still further encouraged by the successful result of Zaaier,²² rapidly faded with a succession of failures. Hope has been revived again, however, by Hedblom's²³ gratifying result, and also by Lilienthal's²⁴ case. In the latter, apparently a successful operative result was obtained, although the man died several weeks later. The points of particular interest in Lilienthal's case were that he used the approach through the posterior mediastinum, one which had already been developed somewhat by Rehn²⁵ and Kirschner, and that he tried to guard against infection of the mediastinum by using a cuff of skin to restore the lumen of the resected esophagus. The principal

danger in these operations has always been that of infection of the mediastinum. A method that seems to be a great improvement over Lilienthal's "skin cuff" is one worked out recently in our laboratory by Dr. Duff S. Allen.²⁶ He has used a double cuff of fascia lata in a two-stage method. The first stage consisted of the isolation of the esophagus and the placing of a double cuff round the portion to be excised. Two weeks later, the portion of the esophagus to be excised, with the inner layer of fascia lata, could be readily removed. The outer layer of fascia lata had become vascular, could be promptly sutured over, and, in a series of fourteen experiments on dogs, only two died with evidence of leakage. Of this series, there were five thoracic resections, with one death. The rest were resections of the cervical portion. The method has not yet been tried in man, but it seems to be a feasible method for attacking a carcinoma of the thoracic portion of the esophagus. The recent experimental work on this subject has been summarized by Fischer.²⁷

SURGERY OF THE HEART VALVES

The possibility of extending surgical relief to those who suffer from stenotic lesions of the mitral and other valves of the heart has recently been opened up by a new method, which has been described by Dr. Allen and myself.²⁸ An instrument has been devised which permits the cutting of one or more leaflets of a heart valve under direct vision. At first thought, it would seem impossible to be able to see within the heart because of the presence of the opaque blood. On the contrary, however, if the convex lens of the cardioscope is in contact with a leaflet of a valve or with the heart wall, the blood is pushed away and a clear vision is possible. It is fascinating to watch the functioning of the valves through the instrument. The heart is entered through an auricular appendage, the rhythm is not impaired, there is no hemorrhage, and there is no need of great haste. Up to the present time, we have used the method only on dogs, but its application to the dog is so simple and so free from shock that it seems as if it might well be possible to extend its use at some time in order to convert a mitral stenosis in the human into a regurgitation. At least, we feel that the method will permit a new type of physiologic experimentation on animals which may be of value. At first we were afraid that perhaps a valve that was cut might heal again so promptly that the cutting of it would be of little permanent value. We are convinced now, however, that the healing over of an artificially made cut in a valve leaflet is not likely to occur, since we have several dogs alive now whose mitral valves were cut nearly a year ago. These dogs still have regurgitation murmurs which are clearly audible. Other dogs which have been killed and examined at postmortem several months after the operation have also shown that the cut valves have not healed over again.

I regret that, because of lack of space, I cannot discuss other interesting new features of thoracic surgery, particularly the work on pulmonary tuberculosis, tumors of the mediastinum and of the lungs, and mediastinal suppuration. I hope that I have made it clear that the surgery of the thorax is making definite progress. Its future will depend to a considerable

21. Torek, Franz: The First Successful Resection of the Thoracic Portion of the Esophagus for Carcinoma, *J. A. M. A.* **60**:1533 (May 17) 1913.

22. Zaaier: Erfolgreiche transpleurale Resektion eines Kardiakarzinoms, *Beitr. z. klin. Chir.* **83**:419, 1913.

23. Hedblom, C. A.: Combined Transpleural and Transperitoneal Resection of the Thoracic Oesophagus and Cardia for Carcinoma, *Surg., Gynec. & Obst.* **35**:284 (Sept.) 1922.

24. Lilienthal, H.: Carcinoma of the Thoracic Oesophagus; Successful Resection, *Ann. Surg.* **74**:259 (Sept.) 1921.

25. Rehn: Operationen an dem Brustabschnitt der Speiseröhre, *Arch. f. klin. Chir.* **57**:733, 1898.

26. Allen, D. S.: Experimental Reconstruction of the Oesophagus with Autogenous Fascia Lata Transplants, *Ann. Surg.* **76**:157 (Aug.) 1922.

27. Fischer, Hermann: Surgical Treatment of the Esophagus, *Arch. Surg.* **6**:256 (Pt. 2) (Jan.) 1923.

28. Allen, D. S., and Graham, E. A.: Intracardiac Surgery—A New Method, *J. A. M. A.* **79**:1028 (Sept. 23) 1922.

extent on an encouraging attitude of mind on the part of the internists toward those who, by pioneer work in this field, are trying to make life more pleasant for posterity.

7 West Madison Street.

CALCAREOUS DEGENERATION OF THE DORSAL AND LUMBAR AORTAE AS A CAUSE OF BACKACHE

JOHN RIDLON, M.D.

AND

E. J. BERKHEISER, M.D.

CHICAGO

Within the last few years, much attention has been given to the disabilities and painful conditions of the feet as a result of disturbance of the circulation in them, which has been termed intermittent claudication. Much has also been written and said about various etiologic factors in the production of backache. Pain in the back as a result of pathologic conditions arising from disease or from traumatic factors is easily explained to the clinician, but in certain cases in which there is no evidence of pathologic change to be found in the roentgenograms of the bones and joints, it is more difficult to explain the cause of the symptoms. In most of the literature on this subject, the writers have devoted most of their time to explaining the cause of the so-called idiopathic backaches on the basis of some abnormalities within the pelvic viscera in the female and of sacro-iliac disturbances in both the male and the female.

Since it has become generally recognized that discomfort in the feet is due to an impaired circulation, we have thought it fair to assume that discomforts in other parts of the body as well may be due to impaired circulation in the muscles of the particular part.

The factors entering into the cause of pain and stiffness in the back are many, and far from easily recognized. We trust that the addition of one more factor will not add to the confusion, but will, on the contrary, let into the darkness one small ray of light.

For years, we have known that circulatory disturbances were associated with muscular pain and stiffness. For a few years, we have understood the significance of the so-called "intermittent claudication." But only comparatively recently have several orthopedic surgeons, working independently, recognized calcareous degeneration of the arteries in the feet as a cause of pain in the feet, and, recognizing the cause, they have been able to relieve the sufferers from the additional

painful burden of metal arch-supports and flat-foot plates. We recognize the relation between arthritic spurs on the bones of the feet and calcareous arteries in the feet. Bone spurs are a cause of sensitiveness to pressure, and, when in close relation to joints, to movement; but they are not a cause of pain: pain is due to the circulatory changes. In the same way in the back, bone spurs and bridges cause sensitiveness and stiffness, but it is the circulatory changes that are responsible for the pain. This is not a new thought, but we believe that heretofore it has not been demonstrated that the calcified arteries are connected with back pain, although it was suggested as a possibility by J. R. Hunt.¹ This is what we have to show in this paper.

From the beginning, we were very skeptical of "slipped" and "strained" sacro-iliac joints as a cause of low back pain, but we recognized, of course, arthritic changes in those joints. We have long recognized congenital malformation at the lumbosacral junction as a local element of weakness and a basis for complaint particularly following muscular and ligamentous strains from traumatism; but there are very large numbers of painful backs for which one is unable to account satisfactorily, except by such vague terms as "rheumatic" and "arthritic." We have known that bone spurs during the process of formation, and before they can be demonstrated by roentgenograms, may be more sensitive to pressure and to movement than after they are readily demonstrable; but there is no reason to suppose that they are a cause of pain unless impinging on some nerve, a fact to be inferred from the distribution of pain.

Pain, then, must arise mainly from circulatory changes; changes that give loss of expansibility and contractibility, and hence to ischemia of the musculature. Seeking diligently for the cause of pain among our cases, we have been able to demonstrate, at least to our own satisfaction, calcareous degeneration in both the thoracic and the abdominal aorta without other roentgen-ray evidence of pathologic conditions of bone or joint as a cause of backache. We present herewith three cases.

REPORT OF CASES

CASE 1.—Mrs. R. M., aged 58 years, Jewish, had had backache for twelve years. It came on without known cause. Several months previously, she had been under the care of Dr. Maury of Memphis, Tenn. She had never had rheumatism or tonsillitis. She had five children, and had never had trouble after childbirth. All of the teeth had been extracted a year previously. A roentgenographic report of



Fig. 1.—Calcified aortic walls in Case 1. The arrows were supposed to indicate osteo-arthritic changes in the vertebral column.

1. Hunt, J. R.: M. Rec., 1905.

June 7, 1921, by Dr. Conley of Memphis, Tenn., read: "Region requested: The lumbar, lower dorsal and sacro-iliac regions. There is a chronic osteo-arthritis involving the spine from the lower dorsal region down including the sacro-iliac. You will note a distinct loss of bony salts: In the lower lumbar segment there are areas of increased bone density. Exostoses are present in quite a number of regions being seen as high as the eleventh dorsal. There is decided displacement of the fourth lumbar vertebra on the fifth toward the left, with a distinct rotation causing quite a sinistral scoliosis. The sacro-iliac joints present fairly definite evidence of disease, more decided, perhaps, on the right. There appears to be some enlargement of the right kidney."

Our reading of the roentgenogram (Fig. 1) does not entirely agree with this interpretation. We do not see any bone spurs typical of osteo-arthritis, and areas indicated by arrows made by the roentgenologist do not, to us, confirm his opinion. We do, however, observe calcification of the aorta to a marked degree.

Examination.—There was no deformity of the vertebral column except a little bowing to the left in the lower lumbar region. The lower portion of the spine was somewhat stiff to voluntary bending forward. There was no discomfort on raising either limb with the knee straight or bent.

We advised consultation with an internist, to whom we reported our findings.

CASE 2.—History.—An unmarried woman, aged 68 years, examined for Dr. Wilbur E. Post, April 2, 1922, at the Presbyterian Hospital, Chicago, and who was so extremely deaf that it was not possible to get a satisfactory history of her condition, had stumbled and fallen about a year and a half before, and since that time had suffered from pain and stiffness in the lumbosacral region.

The record at the hospital reads: "Prior to October, 1919, she had been perfectly well, but at that time had entered the hospital on account of weakness. The diagnosis was 'arterial hypertension and secondary anemia.' In September, 1920, she twisted her back, when she stumbled. She was in bed four or five months, after which she became quite well, except that on one occasion, on reaching to the floor for a handkerchief, she was unable to straighten up. During 1921, she became worse and, following a 'cold' in January, 1922, the pain in the back became aggravated."

Examination.—When the patient stood, there was no spinal deformity. The back was quite stiff, making it difficult to bend in any direction. The patient could sit up in bed only when the legs were hanging over the side. Lying face downward was difficult, and in this position the spine was rigid and there was resistance in the psoas muscles on both sides. Roentgenograms show two vertebrae, one apparently the sixth dorsal and the other the upper lumbar, and possibly the second lumbar, somewhat wedged, being thinner in front. Nothing abnormal was seen in the lower lumbar region. The transverse view showed the aorta calcareous throughout the entire length of the region (Fig. 2).



Fig. 2.—Calcification of the aorta in Case 2.

CASE 3.—History.—A man, aged 31, a fireman, referred by the Drs. Blim, Chicago Heights, Ill., Dec. 9, 1922, for about four years, had had backache, which was steadily growing worse. No pain was present when the patient was at rest, but it developed on movement. The patient had typhoid prophylaxis in 1918; and the back began to give him trouble about two months later. No history of venereal disease or any other diseases since childhood was elicited. The tonsils were removed four years previously. Nine teeth were extracted one year previously without relief of the back symptoms. The patient was not constipated.

Examination.—The patient was a large, muscular man. No real deformity of the spine could be seen when he was standing, stripped. Voluntary bending from side to side was restricted one half. When he lay face downward, the dorsal spine was bowed somewhat backward. This we believed to be due to his occupation. Neither thigh could be hyperextended freely, and the entire spine was quite rigid to passive bending.

Roentgen-Ray Report (Dr. Hollis E. Porter.)—"There are slightly decreased inter-spaces, but no great sign of arthritis between the vertebral bodies. Looking through the bodies at the lateral articulations, however, the bone bordering all joint surfaces is very ragged as if the arthritis involved these joints only. The lateral film of the neck gives one the same impression. The sacro-iliacs show a very pronounced mottled appearance, particularly on the right side. The joint is unusually visible and ragged."

In addition, we observe the calcareous degeneration of the thoracic aorta, as shown in Figure 3.

COMMENT

Etiology.—Etiologic factors predisposing to arteriosclerotic changes are: (1) syphilis; (2) advanced age; (3) alcoholism; (4) gouty diathesis; (5) nicotineism, and (6) diabetes.

Pathology.—Any condition which tends to diminish the caliber of the blood vessels and thus diminishes the volume of blood supply to the muscles is a predisposing factor. The more important changes in the vessels, which diminish the lumen are: (1) obliterating endarteritis; (2) periarteritis; (3) vasculomotor disturbances with spasm of the arterioles, and (4) senile calcification.

Symptomatology of Intermittent Claudication.—The onset of the condition is insidious and intermittent, with periods of freedom from discomfort. There is a general weakness of the part involved, with associated paresthesia. Pain is not present when the affected part is at rest, but is gradually increased to such a degree of severity with use that the patient is compelled to rest. The characteristic feature of pain in the muscles from ischemia is that it rapidly

disappears with a few minutes' rest, only to return again with the use of the muscles.

The symptomatology in cases of ischemia of the musculature from calcareous blood vessels is somewhat different, the patient complaining of stiffness, muscular



Fig. 3.—Calcareous degeneration of the thoracic aorta in Case 3.

weakness, paresthesias, aches, soreness and pain of the part involved. This pain is somewhat exaggerated with use, but it is constantly present over longer periods of time, weeks or months, when it may disappear and the patient be comfortable for a long time.

These periods of freedom from discomfort may be due to the establishment of a better collateral circulation.

CONCLUSIONS

No examination of a painful back is complete and conclusive without an examination of the circulatory system.

The treatment of many painful backs ought to be directed by the internist and not by the orthopedist.

The routine employment of girdles, braces and plaster jackets and extension in bed is worthy of our earnest skepticism in the treatment of painful backs.

7 West Madison Street.

Reflex Symptoms in Chronic Appendicitis.—Pain and tenderness in the right iliac fossa do not necessarily mean appendicitis. Constipation, nervous apprehension of appendicitis in a half-educated public, too solicitous, and deep palpation on the part of conscientious medical men, and pyelitis are common causes of these symptoms. An actually inflamed "chronic appendix" is, in fact, a rare condition, though even thickened and pus containing organs may be present for long periods and give rise to dyspepsia and colic attacks, often with slight fever. Careful examination for reflex signs during or just after these attacks may be helpful in deciding the diagnosis.—J. A. Ryle, *Clin. Jour.* 52:139 (March 21) 1923.

HEMORRHAGIC OSTEOMYELITIS

REPORT OF CASE

MAX STRUNSKY, M.D.

Orthopedist, Beth David Hospital and Hospital for Joint Diseases
NEW YORK

This case has a direct bearing on the differential diagnosis of joint diseases. Though excellent surgeons attended the patient, a correct diagnosis was not made for at least half a year. In the meantime the patient not only suffered from the excruciating pain and lameness in the knee as incidents of the disease, but also suffered from the indifferent diagnosis and the empiric treatment.

REPORT OF CASE

History.—A woman, aged 30, in good health, fell off a street car and struck her knee with considerable force on the car rail. She felt at the time that she was seriously hurt; but, after a short period of rest, the swelling subsided and apparently she fully recovered. She remained perfectly well for two months. One day she felt a pain in the knee. This continued to grow worse. She also noticed that she was tilting her body instinctively to favor the affected limb. This made her walk lame. She consulted, as it happened, a number of excellent surgeons. One of them placed the limb in a plaster case for about six weeks. When the cast was removed, she found that the pain recurred, and that during the interval the limping grew worse. She then went to another surgeon, who gave her a course of antisyphilitic treatment. This proved futile. Finally, she applied for treatment to an institution, where she was treated with baking, massage and the high frequency current. In spite of faithful treatment with physiotherapy, however, she was rapidly growing worse. At this stage she began having paroxysms of pain in addition to the deep, burrowing, gnawing but remittent pains she described as having had before. When these paroxysms seized her, she

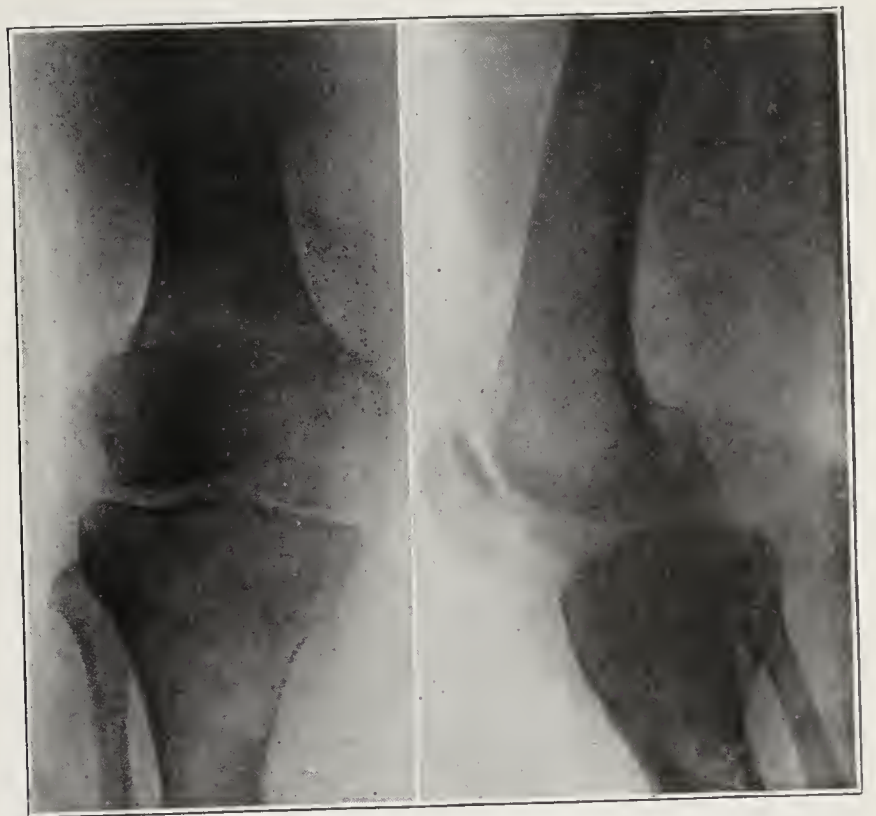


Fig. 1.—Hemorrhagic osteomyelitis occupying entire upper part of tibia.

suffered cruelly. As she was obliged to put less weight on the affected limb, her lameness grew worse. This became especially manifest when she attempted to walk up the stairs, which she could do only by clutching the banister with both hands and dragging herself up by the aid of her arms and the sound leg. Walking down the stairs was impossible.

Examination.—At this stage, I saw her. I was able to elicit few physical signs, in spite of the pitiful complaint by

the patient. The body examination was negative. The knee was not enlarged, looked normal, and had good motion. Were it not for the subjective symptoms, the knee could have been pronounced normal. In fact, the patient said that on several occasions the knee was declared normal by physicians. On closer examination, however, a fulness and a sense of tenseness on the inner and upper part of the tibia were noticed. The roentgenogram showed a cavity occupying the entire upper part of the tibia. In some parts of the wall of that cavity the cyst wall was ballooned, undoubtedly because of the intracystic pressure on the frail wall, while in other parts the cyst wall was worn to thinness. Malignancy was excluded by the fact that the cavity was circumscribed and that there was no break in the periosteum.

Operation and Result.—April 10, 1920, an incision was made on the upper and inner part of the tibia. At that point the tibia was trephined. A large cavity filled with viscid degenerated, bloody material was revealed. By the aid of a large curet, the contents were scooped out. Later the curettage was continued with gauze, as it was feared that an instrument would penetrate the walls, which were found to be very thin. The cavity was so large that I could have easily inserted two fingers. The cyst was swabbed with iodine and alcohol. The incision was then enlarged over the entire length of the tibia. With the circular Albee saw, parallel cuts were made and the entire crest of the tibia removed. Then the graft was cut into fragments and dropped into the cavity.

In spite of the large portion of bone removed, only about one third of the cavity was filled. The crest of the tibia of the healthy side could easily have been made use of, and even then the cavity would not have been filled; but this was not thought advisable. Besides a few skin stitches getting loose, a slight hemorrhage and oozing of serum, the subsequent history was uneventful. At no time was there pus formation. The patient's pain gradually wore off, and she was able to put more weight on her limb. It took eighteen months for the complete regeneration of bone. At the end of that time the patient recovered entirely. She felt well, and walked and ran as well as ever.

COMMENTS

1. Undoubtedly, some surgeons will disagree with the radical manner in which the operation was done. The late Dr. George Berrie, who witnessed the operation, told me that I uselessly sacrificed the crest of the tibia, and that the patient would have recovered with a less radical operation. However, the action of each individual is influenced by his own experience. I have observed a number of failures from conservative surgery in this disease. A typical case was that of a man with osteomyelitis of the radius. The operation performed on him was the cutting of a window into the

cyst, curettage of the contents, traumatization of the wall of the cyst and the swabbing of the cavity with iodine and alcohol. Then the incision was enlarged, and with an instrument especially devised for the purpose, bone shavings were cut and dropped into the cavity. Either the bone shavings were too thin and were easily washed away by the blood current, or for some other reason the expected osteogenesis failed to take place. The roentgenogram of the cyst taken eight months after the operation was about the same as the one taken just before the operation. The same cavity persisted. This case and a number of other cases, and the fact that the bone cyst was an unusually large one, perhaps the largest osteomyelitis case affecting the tibia

on record, impelled me to decide on the more radical procedure.

2. This is purely of academic interest, and relates to the behavior of the bone fragments in the cavity as studied by a series of roentgenograms taken at intervals throughout convalescence. In this case the fragments acted as a bridge over which new bone grew. Furthermore not only did the fragments retain their original shape and contour, but their position had not changed the slightest from the chance position they occupied at the time they were first thrown haphazard into the cavity, except that new bone grew over and around the fragments. There is a difference in density between old and new bone, and this made the lines of the original fragments stand out in broad relief. Osteogenesis, even at the end of two years, did not completely fill the cavity. There were still empty spaces left, and a number



Fig. 2.—Eighteen months after operation: Cavity converted into bone, though numerous spaces still persist; crest of tibia regenerated.

of interstices between the fragments persisted. Clinically, however, the patient recovered entirely, much before the osteogenesis converted the cyst into bone. It took about one fourth of the time to regenerate the tibial graft as compared with the cyst itself.

I discovered a roentgenogram taken about a year before I saw the patient. Besides showing a slight atrophy of bone, this certainly gave no hint of the gross pathologic changes which the roentgenogram taken of the same parts only a year later was destined to show.

Many hemorrhagic osteomyelitis lesions exist without symptoms. Their discovery is often purely accidental, being brought about when a patient sustains a fracture caused by a comparatively slight trauma. The roentgen ray shows that the reason for this disproportion of trauma and damage is a cyst which has thinned

URTICARIA CAUSED BY LIGHT

PRELIMINARY REPORT

W. W. DUKE, M.D.

KANSAS CITY, MO.

This case of urticaria caused by exposure to light is reported because of its minute resemblance to the urticaria that occurs as a result of allergy. It is not reported as a case of allergy because of doubt as to whether it is actually an example of altered reactivity in the stricter sense of the word. It is possible that it is a case of normal reactivity toward a substance not ordinarily produced in the skin under the influence of light.

Examples of sensitiveness to light are well known in medical literature, especially in relation to the diseases

hydroa vacciniforme, xeroderma pigmentosa, and pellagra. The reaction has been attributed by many observers (Pfeiffer,¹ Betz and others) to the presence in the blood or tissues of photodynamic substances, such as hematoporphyrin.²

It was discovered accidentally by Raab that many fluorescent substances, such as eosin, fluorescein and hematoporphyrin, are photodynamic; that is, under the influence of light, they possess certain remarkable qualities that they do not possess in the absence of light. Photodynamic substances, harmless in the absence of light, may be highly toxic to human beings or animals under the influence of light, and may destroy bacteria or protozoa, modify the activity of enzymes, or even alter the structure and reactions of proteins. As an

interesting illustration of the latter action, Dr. W. H. Howell reports that a solution of fibrinogen, if mixed with eosin or hematoporphyrin and exposed to the light, becomes incoagulable with heat at 90 C., and incapable of forming fibrin, after the addition of thrombin to the solution.

The type of case that I report, although very rare, is not unknown in medical literature, and on account of the striking peculiarity of the illness, I do not doubt is described in the very early literature. The earliest description which I found, however, after a casual search, is that of Ward,³ who, in 1905, reported the case of a patient who, during a period of four years,



Fig. 1.—Large area of angioneurotic edema which appeared in five and one-half minutes after exposure of the skin to sunlight for two and one-half minutes. The irregularities in the figure were due to a shadow cast by the hands holding three pieces of square colored glass in contact with the skin. The shape of the shadow cast by the hands was modified slightly by the artist to illustrate better how closely the edema followed the outlines of the colored glass.

One should be on guard when trauma is followed by an apparent recovery and followed again by symptoms.

236 West Seventieth Street.

The Hospital and the Family.—Of the greatest importance in this scheme of education will be the acceptance by the hospital of the family as its unit of responsibility. The fact that the hospital wards represent but one piece of the machinery in any health program, that the dispensary, the health station and all their scientific equipment, with their varied and adequate personnel, even the home, the occupation, and the recreation of the individual case are part of this project, will insure that case technic not less than case experience shall be included, throughout the professional preparation of the nurse. There must be such provision of paid staff for the care of the patients as will enable each student to secure a complete cycle of experience and a reasonably close correlation of theory and practice as expressed in nursing procedures, problems of nutrition, etc.—A. W. Goodrich, *Hospital Social Service* 7:172 (March) 1923.

1. Pfeiffer, H.: Der Nachweis photodynamischer Wirkung fluoreszierender Stoffe am lebenden Warmbluter, in Abderhalden's Handbuch der biochemischen Arbeitsmethode 5:563.

2. An excellent review of the literature is given by Senear, F. E., and Fink, H. W.: Hydroa Vacciniforme, Arch. Dermat. & Syph. 7:145 (Feb.) 1923.

3. Ward, S. B.: Erythema and Urticaria with a Condition Resembling Angioneurotic Oedema Caused Only by Exposure to the Sun's Rays, New York M. J. 81:742, 1905.

became increasingly sensitive to sunlight and whose skin reacted with the formation of itching hives similar to my case, even in the detail that she was sensitive only to rays at the violet end of the spectrum. A similar case was reported by Ochs,⁴ in 1910.

Interesting in this connection is a report by Betz, who, in studying hydroa vacciniforme, sensitized himself to light by the intravenous injection of 0.2 gm. of hematoporphyrin. Immediately afterward he found himself so sensitive to light that he dared not expose himself to direct sunlight for more than a few moments at a time. Shortly after the injection, typical absorption bands of hematoporphyrin were found on spectroscopic examination of the blood serum and urine. Hematoporphyrin disappeared from the blood serum and urine after a few days, so that, to account for his sensitiveness to light, which persisted for several months longer, he assumed that a portion had remained in the tissues.

Immediately after the injection, Betz exposed a small area on his arm to the Finsen ray. A marked reaction followed shortly, which ended eventually in a deep ulcer, which healed slowly and produced a scar. This reaction he thought analogous to the eruption of hydroa vacciniforme. Shortly afterward he exposed his face to sunlight, with the result that an itching, edematous eruption appeared which almost obliterated his features, and did not subside for several hours. For several months after this, exposure of his skin to sunlight invariably caused edema and itching, the duration of which varied according to the length of exposure to the light. His sensitiveness to light disappearing during the winter, several months after he had given himself the injection.

My patient became sensitive to light without apparent cause; but the case seemed similar in other respects to that of Betz, produced artificially with hematoporphyrin, and, as previously mentioned, resembled closely the urticarial reaction of allergic individuals occurring as a result of contact with substances to which they are hypersensitive. In view of Betz' report, however, one might object to this illness being considered allergic in origin, for in his case hypersensitiveness to light appeared in an apparently normal man immediately after treatment with hematoporphyrin.

REPORT OF CASE

History.—A woman, aged 43, married, had always been robust and well until four years before I saw her, when she noticed that she was sensitive to sunlight. This condition became worse each year until now she cannot stand one minute's exposure to summer sunlight without paying a penalty.

Two of seven brothers and sisters of the patient are subject to seasonal hay-fever. Several nieces and nephews are subject to hives, to the patient's knowledge. The family history is otherwise of no interest. The father died when the patient was young, and the mother had no marked evidence of allergy so far as the patient knew. The past history was negative except for scarlet fever as a child, and slight arthritis.

At about the time of onset of the patient's illness, her face, neck and arms were exposed to sunlight for several minutes when she was swimming. Severe itching, redness and edema of the exposed parts caused her to seek shade as quickly as possible. The swelling persisted through the night and through the following day, and was associated with chilly sensations, marked weakness and malaise. After she remained in the house forty-eight hours, the skin became natural again in every respect, and she felt well. She had a similar experience later, after answering the telephone when thinly clad. She had not noticed at the time that the sun was shining on her. For the last two years she has protected herself with the greatest care from light, wearing black gloves and

a heavy black veil whenever she goes out of the house. In spite of this care, some of the more thinly clad parts of her body are often sufficiently exposed to cause itching, redness and swelling, which often persist for several hours. She has noticed that after the skin has been exposed and reacted to sunlight, further exposure on the same day causes less or little ill effect in the areas previously exposed. On one occasion, after exposure of the face to sunlight she was momentarily blinded, and following this all objects appeared yellow for several minutes.

Examination.—This was negative except for a slight grade of obesity, a slightly enlarged thyroid gland, and bad tonsils. Urinalysis was negative. Neither the color nor the absorption spectrum of alkaline hematoporphyrin was found in the urine on several examinations. Blood

examinations were negative. The Wassermann reaction was negative. No hematoporphyrin was found in the serum on several examinations. Roentgen-ray examination of the teeth, sinuses and gastro-intestinal tract were negative.

Intracutaneous tests with all the common meats, vegetables, dairy products, fruits, sea foods, nuts, condiments, grains, bacteria, pollen and extracts from animal hair and feathers were negative.

The application of mechanical irritants (rubbing, scratching and intracutaneous injections) and chemical irritants (even chloroform applied to the skin and covered with the hand until it caused pain) produced no perceptible effect on the skin.

Exposure of the skin to sunlight over any area which was usually covered by clothing gave rise in two and one-half minutes to marked itching and erythema. This progressed without additional exposure to a typical itching hive covering the entire area exposed in five and one-half minutes (Fig. 1). The redness and edema would appear with almost clocklike regularity if the time of exposure was sufficient (two and one-half minutes or more of afternoon sunlight during the month of March). The reaction differed from a hive only in the lack of a tendency to spread indefinitely. The edema never spread over areas not exposed to light. In this respect the reaction resembled dermatographia more than it did urticaria.



Fig. 2.—Hives which appear after short exposures of the skin to sunlight; these became confluent on longer exposure, resembling the area illustrated in Figure 1.

4. Ochs, B. F.: Case of Urticaria Caused by the Sun's Rays, M. Rec. 78: 193, 1910.

Exposure of the skin to the light of a 500 watt nitrogen lamp gave rise to a similar reaction, but more time was required. Sunlight filtered through colored glass, except violet glass, had no perceptible effect on the skin after ten minute exposures. Sunlight, filtered through violet or colorless glass, produced a hive in the same manner as the unfiltered light, except that a little more time was required. Exposure of the skin to heat, roentgen ray, or ultraviolet ray as produced by a mercury vapor quartz lamp, and sunlight filtered through Wood's nickel oxid glass, produced no visible effect on the skin after exposures of from three to five minutes.

An application of sunlight to the skin for two and one-half minutes produced a wheal which would disappear after one or two hours. Application of light to the skin for ten minutes produced a wheal which would not disappear sooner than from six to eight hours. The foregoing data applied to skin areas which were covered by clothing and for this reason were not ordinarily exposed to light. Exposure of the face and neck and arms and hands gave a little different reaction. Exposure of the forearm, for example, gave rise first to discrete hives which, on further exposure, would become confluent (Fig. 2). Exposure of the face for one minute gave rise to a red, blotchy appearance which was very disagreeable to the patient and which was followed for forty-eight hours by small, painful spots. She did not allow us to repeat this experiment. I believe that a longer exposure of the face to light would give an eruption analogous to hydroa vacciniforme.

Tolerance for Light.—To determine whether or not tolerance for light could be increased by repeated exposure, several skin areas were exposed to light for varying periods of time on successive days. Light was applied over two areas in doses too small to have an effect on the skin; that is, for one minute and for two minute exposures on three successive days. This gave rise to slightly increased tolerance for light so that on the fourth day an exposure of three minutes produced no perceptible effect on these particular areas. The skin surrounding them, however, was sensitive as before. The tolerance gained in this way was completely lost after several days, so that future exposures of two and one-half minutes gave rise to the usual reaction. Ten minute exposures on three successive days gave rise to an erythema and a hive in each instance. The hive, however, was delayed in its time of appearance after the last exposure, and the reaction, on the whole, was much less intense and disappeared more quickly.

An area of skin on the left arm was exposed during a period of twenty-four days thirteen times, varying from five minutes to twenty-five minutes. The reaction became successively less intense. The erythema and itching appeared at the usual time, however, in two and one-half minutes. Discrete hives appeared even after the last exposure, but did not give rise to the same confluent area of brawny edema as caused originally by an exposure of three minutes, and also disappeared much more quickly. The arm became slightly eczematous after these repeated treatments, and the study was discontinued. After a period of two months, the tolerance thus gained was completely lost.

In view of the fact that exposure of the face for one minute gave rise to a painful reaction instead of the usual erythema, edema and itching, and in view of the fact that repeated exposures on the arm did not give rise to more complete tolerance, it seemed rather a useless and possibly a harmful experiment to carry this study further. We were actually fearful that repeated long exposures might give rise to a condition similar to hydroa vacciniforme. We concluded that, although relative tolerance for sunlight could be obtained through repeated exposure to light, the tolerance gained in this way was not sufficient to be useful to the patient.

Serum Studies.—Defibrinated blood, untreated blood serum, and serum to which was added eosin, quinin and methylene blue was allowed to stand in the sun for periods of time varying from two hours to twenty-four hours. Each preparation was then injected intracutaneously into normal individuals, the patient, and patients with pollen allergy, with no noteworthy reaction resulting.

To the patient's serum, normal serum, and the serum of a patient with pollen allergy, and to solutions of pollen, horse dander and egg albumin was added hematoporphyrin to a strength of 1:10,000. Each was allowed to stand in the sunlight for from one minute to twelve hours, and, after different intervals of exposure, was injected intracutaneously into the patient, normal patients, and patients with pollen allergy. No noteworthy reaction was produced in normal individuals. Small, itching hives followed the injection of the treated serums (not the other proteins) in the patient. The degree of reaction was not constant. The cause of this has not as yet been worked out. Small hives were obtained by similar injections into several but not all of the other allergy patients. They were not comparable in size, however, with reactions produced with other substances to which they were sensitive. This study is as yet incomplete.

Hematoporphyrin in 1:1,000 dilution was injected intracutaneously into myself, two normal assistants, a number of patients with pollen allergy, and into the patient reported above. No noteworthy effect was observed in any instance except after the area injected was exposed to sunlight. In the case of normal subjects and pollen cases, an intense intermittent stinging sensation followed a two and one-half minute exposure, which became very marked and disagreeable at the end of six minutes. In the case of the patient described above, no noteworthy reaction was observed until the skin was exposed to dim diffuse light. After an exposure of three minutes, a small hive (1 cm. in diameter) appeared at the site of injection. The surrounding skin was not affected by this exposure to light. This reaction, tried many times, was quite constant.

The foregoing two experiments—that is, the ones made by the intracutaneous injection of hematoporphyrin followed by exposure to diffuse light, and the intracutaneous injection of serum after treatment with hematoporphyrin and sunlight, were the only ones in which I succeeded in producing anything in the patient which resembled a hive except by exposure to light as described in the previous paragraphs.

The patient was studied carefully for fluorescence by the use of light from a 500 watt nitrogen light filtered through a Wood's nickel oxid glass filter in a dark room. This filter allows the penetration only of near ultraviolet light, and makes most objects fluoresce. The crystalline lens, sclera, teeth, nails and skin of the patient were observed, and their fluorescence compared with the same tissues of normal subjects. Whereas there was some difference in fluorescence noted, the difference was not striking, and, in several instances, normal persons showed greater fluorescence than the patient.

The patient's blood serum and urine were also studied for fluorescence and compared with those of normal subjects. No constant noteworthy increase was observed. The fluorescence of the patient's serum was not nearly so great as normal serum to which was added a trace of hematoporphyrin, quinin or eosin.

Exposure of the skin to sunlight under a glass slide pressed on the skin so firmly as to render the skin almost bloodless gave about the same reaction as that produced in the uncom-pressed area surrounding the glass slide.

It was concluded that, although the blood might possibly contain some photodynamic substance that could render it toxic, the chief source of the reaction probably resided in the tissues.

This condition seems to be a clinical entity, and for it the name "solar urticaria" is suggested.

SUMMARY AND CONCLUSIONS

The case here reported is interesting in that a woman with a family history of allergy spontaneously became so sensitive to light that on exposure of the skin to the direct sunlight of a winter month for two and one-half minutes typical itching hives, associated with erythema of the skin, invariably appeared over the entire area exposed. The reaction differed from the urticaria of allergic individuals after contact with substances to which they are hypersensitive only in the fact that it had no tendency to spread with pseudopod formation

beyond the area exposed to the irritating agent. This reaction was produced only by the blue violet rays of light.

Constitutional symptoms were felt on two occasions when a large area of skin was exposed to light.

A considerable degree of tolerance was developed by repeated exposure of the small areas of the skin to light. The tolerance gained in this way, however, was lost after a comparatively short time, so that this method of treatment did not appear a rational remedy for the condition.

Efforts to produce lives in this patient by agents other than direct exposure to light failed except in two instances, namely, by the intracutaneous injection of serum which had been treated with hematoporphyrin and exposed to sunlight, and by the intracutaneous injection of hematoporphyrin followed by exposure of the injected area to diffuse light for a short time.

This case may be an example of allergy caused by specific hypersensitiveness to a substance produced in the tissues under the influence of light. Further study will be directed toward clarifying this point.

Waldheim Building.

LATE RESULTS IN THE TREATMENT
OF SYPHILIS

H. H. HAZEN, M.D.

Professor of Dermatology, Georgetown University School of Medicine
and Howard University School of Medicine
WASHINGTON, D. C.

The literature contains very few references to the late results obtained in handling syphilitic cases. An article by Irvine¹ is practically the only one that occurs in the American literature. It would seem worth while to trace our cases and find out exactly what the results have been.

Up to the time when this study was begun, 230 syphilitic patients had been under treatment in my office for a considerable space of time. Patients coming in for one or two visits are not included. Table 1 shows during what stage of the disease the patients were first seen, the number which were lost sight of, and the cases which were followed. A considerable number of patients are still under active treatment or observation, and these, of course, cannot be referred to in this article.

TABLE 1.—Condition of Syphilitic Patients Seen

	Number of Cases	Chancre	Secon- daries	Late	Central Nervous System	Congen- ital
Lost sight of.....	230	29	60	103	25	13
Followed.....	109	16	23	54	7	9
	77	8	24	32	12	1

The results in these cases are shown in Table 2. Some explanation of the headings is demanded. By cured is meant that for two years since the last treatment the patient has been asymptomatic, with the Wassermann reaction negative, and that the spinal fluid is negative. By clinically and serologically well is meant the same thing except that the spinal fluid has not been examined. The patients considered as clinically well are those who have not had Wassermann tests of the spinal fluid or the blood. Clinically arrested is the term applied to patients suffering from syphilis of the

central nervous system, and simply means that the disease process has been stopped, although, of course, the old damage to the central nervous system has not been repaired. A number of patients have died from diseases other than syphilis, and it is impossible in some instances to say whether or not this disease is indirectly responsible. It is, of course, realized that the word "cure" is misleading, for at present there are no satisfactory criteria as to a real cure. Fordyce has told

TABLE 2.—Results

Stage of Disease	Cures	Clini- cally and Sero- logically Well	Clini- cally Well	Clini- cally Ar- rested	Pro- gres- sive	Dead from Syphilis	Dead from Disease Other Than Syphilis
First.....	3	...	...	...	...	1	...
Second.....	10	7	1	...	...	...	...
Third.....	4	3	3	...	...	3	6
Central nervous system.....	...	...	1	6	2	2	1
Congenital.....	...	...	...	...	...	...	1

me of one patient who remained asymptomatic and Wassermann negative for seven years, only to relapse at the end of that time. Even while this paper was being prepared, one of my late cases, in which the patient had apparently been both clinically and serologically well for six years, has serologically relapsed.

It will be noted that out of eight chancres treated, only three were cured. In seven instances, the patients suffering from an initial lesion were treated with: (1) eight injections of arsphenamin, or, much more rarely, a few scattered injections of neo-arsphenamin at three-day intervals; (2) mercury in the form of weekly intramuscular injections of mercuric salicylate; (3) from six to eight injections of arsphenamin at intervals of from five to seven days, and (4) intramuscular injections of mercury or inunctions for four months. The three patients who were cured had this treatment. Four of the patients who were not cured also had the same treatment. In two instances, there was both a clinical and a serologic relapse within one month after discontinuance of treatment. This may be assumed to be due to the fact that the arsphenamin was started before the patients had a chance to build up any natural immunity, and that when the spirocheticidal drugs were withdrawn, latent organisms promptly developed without any resistance on the part of the hosts. In the third case, a speedy serologic relapse was discovered to be due to an infection in the central nervous system. This patient received his first treatment within three days after the appearance of the chancre. This proves that infections of the central nervous system can take place by the time the initial lesion is manifest, and that early spinal puncture is imperative in order to discover such a condition. In the fourth instance of failure, the patient suffered a serologic relapse eighteen months after her last treatment. The fifth instance of failure is especially interesting. The patient's chancre was diagnosed within two weeks of its appearance, and the patient received, by way of treatment, seven injections of arsphenamin at weekly intervals, and mercury, for one year. For the following two years, he gave neither clinical nor serologic signs of the disease. A provocative Wassermann test was then done and found negative; however, a luetin reaction was suggestive. Within three weeks, he suffered from an attack of neurosyphilis consisting of a sixth nerve paralysis. Under intravenous and intraspinal treatment he completely recovered from this, but six months after treatment was discontinued, he suddenly fell dead, and

1. Irvine, H. G. Two Hundred and Fifteen Cases of Syphilis After Five Years, J. A. M. A. 77: 1620 (Nov. 19) 1921.

necropsy showed that death was due to a ruptured cerebral vessel. This case will illustrate the need for routine spinal puncture, and not only the fallibility, but also the positive danger, of a provocative Wassermann test.

The results of the treatment of early secondary syphilis are surprisingly good. Out of our twenty-four cases, there are ten which have filled the criteria of cure; seven in which the patients are clinically and serologically well, and one in which the patient is clinically well, while there are up to the present time six known failures. All of the cured or well patients, save two, received treatment which was practically identical with that described under chancre, except that the second course of arsphenamin consisted of eight instead of six arsphenamin injections, and that a third course of mercury was given two months after the cessation of the second course. Two cured patients were treated only with arsphenamin. One patient received ten injections of neo-arsphenamin at weekly intervals, and in the second case the patient received one monthly injection for eight months. Of the six failures, only one patient received a full course of treatment. The other five received only a single course of arsphenamin and a course of mercury varying from three to twelve months in duration. This would seem to show that arsphenamin is more important than mercury in the cure of syphilis; that patients can be cured by arsphenamin alone, and that those who received two full courses of arsphenamin did much better than those receiving but one.

None of the cases of late syphilis were treated with the idea of radical cure; hence, many different methods of therapy were employed. A few were treated with mercury alone, while the majority were handled by alternating courses of arsphenamin and mercury, from four to six injections of the former being given in a course at weekly intervals. The results of treatment were extremely discordant. Some of the patients who received a very limited amount of treatment did extremely well, and some who were thoroughly and persistently treated speedily relapsed. Four patients are listed as cured. One of these received four injections of arsphenamin and three months of mercury injections. He has been well five years. Another received two injections of arsphenamin and six months of mercury. He has been well for eight years. Another received but one injection of arsphenamin, and yellow mercurous iodid pills for three months. She has been well for nine years. A fourth patient was treated six months with mercury injections, and has been well for nine years. Among the clinical and serologic cures, it may be found that three patients received six injections of arsphenamin, and that they have been well for four years. However, these results must not be taken too seriously, for another case which was to be included in this category, after being followed for six years, has just shown a serologic relapse. Among the sixteen failures, we find that one patient was treated only with mercury, that two received only arsphenamin, and that the remainder received both mercury and arsphenamin. The only conclusion that can be drawn from this group of cases is that it is apparently possible to cure certain cases of late syphilis, and that in a few instances a cure can be effected by almost any type of treatment, whereas in many other cases, the most thorough treatment will be followed by a more or less speedy relapse. Apparently, however, the more thorough the treatment,

the longer the asymptomatic and Wassermann-negative period.

In the handling of the central nervous system infections, the principles laid down by Fordyce have been followed. A number of cases have been seen which refused to respond to intravenous therapy and which were speedily cured by Swift-Ellis treatment, the cure being evidenced by the return of the spinal fluid to normal, and a freedom from clinical disturbances, although, of course, certain changes in the reflexes usually persisted.

In view of the fact that only one case of congenital syphilis was followed, it is naturally impossible to discuss the results of treatment in these cases.

DEATHS

The deaths from syphilis naturally demand analysis. Of seventy-seven patients, fourteen are dead, which is considerably more than one would naturally expect. Table 3 shows the causes of death.

Two of the cases of the central nervous system and one with syphilis of the mediastinum were greatly advanced when the diagnosis was first made. The patient with an aneurysm lived for four years after the treatment was instituted. The death of one patient who was first seen with a chancre has already been discussed.

Four patients died as the indirect result of syphilis. One of these had arteriosclerosis, and died from a

TABLE 3.—Causes of Death

Stage of Disease	Ruptured Aneurysm	Cirrhosis of Liver	Cerebral Hemorrhage	Mediastinal Pressure
First.....	...	...	1	...
Second.....	...	...	...	1
Third.....	1	1	...	1
Central nervous system...	...	...	2	...

mercurial nephritis; the second died from cancer of the tongue secondary to a syphilitic glossitis; a third committed suicide shortly after learning that he was suffering from syphilis; the fourth patient died from a meningitis occasioned by a lumbar puncture.

Four patients died from intercurrent disease; two from myocarditis; one from a probable lymphosarcoma, and one baby with congenital syphilis, from pneumonia.

Only one patient who died from syphilis had anything like adequate treatment. Not one of the others received more than two injections of arsphenamin, and two or three months of mercury. Hence overtreatment can hardly be said to be responsible for any of these deaths.

CONCLUSIONS

There are no satisfactory criteria as to the cure of syphilis. The relapses may occur after a patient has remained asymptomatic and Wassermann negative for six or seven years.

Not all cases of early chancre are cured by modern methods of treatment. In certain instances it is possible that the early and intensive administration of arsphenamin may prevent a patient from developing a natural immunity, and a relapse will occur very shortly after treatment is discontinued. From this it might be argued that treatment should not be begun within the first few days of the appearance of a chancre, but the majority of syphilologists would undoubtedly contend that treatment should be instituted at once, with a view of preventing the possible spread of the disease.

Cerebrospinal syphilis can develop by the time the chancre is manifest.

Every patient should have a routine spinal puncture done, preferably just before the second course of arsphenamin is administered.

A provocative Wassermann reaction may be misleading. It may be distinctly dangerous to the patient, in that a relapse may follow it. It is certain that insufficient treatment could produce the same results.

A luetin reaction done under proper precautions may be of some value as a criterion of cure.

The results of treatment in early secondary syphilis are surprisingly good.

Arsphenamin alone may effect a cure.

Apparently arsphenamin is more important than mercury in effecting a cure, for there has been a much higher percentage of cures when two courses of arsphenamin were employed than when but one course was used.

A few cases of late syphilis can be cured, occasionally by a small amount of treatment.

In the vast majority of instances, late syphilis cannot be cured.

Apparently, in some instances, syphilis is a mild infection and is readily cured; in other instances, it is a severe infection and cannot be cured.

Intraspinal therapy will often yield results when intravenous therapy fails.

Syphilis is not a benign disease. Many deaths are due to it either directly or indirectly.

1912 R Street.

INTRACUTANEOUS REACTIONS IN PERTUSSIS *

THOMAS G. HULL, PH.D.

AND

RALPH W. NAUSS, M.D., DR.P.H.

SPRINGFIELD, ILL.

The reports of Modigliani and de Villa¹ and of Orgel² in the diagnosis of pertussis by intracutaneous reactions encouraged the medical world to hope that progress was being made in the control of this disease.

Modigliani and de Villa made intracutaneous injections of a suspension containing a loopful of pertussis culture in 1 c.c. of distilled water. No reaction was obtained in diseases other than whooping cough, while an inflammatory reaction formed constantly in thirty-eight children with pertussis. Normal children gave negative reactions. Three children who had been exposed to the disease, but as yet showed no symptoms, gave a positive intracutaneous reaction, and a few days later developed whooping cough.

Orgel used a suspension of pertussis bacilli in salt solution, 2,000 million organisms per cubic centimeter.

Among twenty-five children in various stages of pertussis, all but one reacted positively, this one being in the incubation period. Among thirty children suffering with other troubles, including bronchitic coughs, no positive reactions were obtained. Readings were taken within six hours, and daily thereafter for a week.

Recently, Riesenfeld³ reported the results of investigations covering a period of four years. Using pertussis vaccine containing 8,000 million organisms per

cubic centimeter for the test material, and salt solution for the control, he obtained in fifty-two whooping cough patients positive reactions, while among 112 children apparently immune (either exposed and not developing the disease, or having had the disease), sixty-five reacted positively. Several other test materials were likewise used—vaccines containing 4,000, 8,000, 16,000 and 32,000 million organisms per cubic centimeter, solutions of pertussis "toxin," autolyzed pertussis cul-

TABLE 1.—Results After Administration of Freshly Prepared Pertussis Vaccine, Heat Killed

	A		B	
	Positive	Negative	Positive	Negative
Whooping cough.....	4	0	3	1
Recovery from whooping cough..	8	0	6	2
Recovery from bronchitis.....	10	1	9	2
Normal subjects	4	1	6	0

tures, and pertussis antigen extracts. In all, 464 children were tested. The author concludes:

No specific reactions were obtained by the use of various preparations of Bordet-Gengou bacilli injected intracutaneously to prove the presence of the disease or a natural or an acquired immunity. Positive and negative results alike were obtained in children having the disease, in children with an immunity, and in children developing the disease after the injection.

In the investigations undertaken by us, nine different preparations were used and 341 injections made intracutaneously. The work was done at an institution housing about 2,000 patients, at which an epidemic of whooping cough was at the time developing. The ages of the children tested in most instances were from 8 to 12 years.

Preparation A consisted of freshly grown strains of pertussis bacilli containing both of Krumwiede's serologic types. The preparation was killed by heat at 60 C. for one hour, and preserved with 0.1 per cent. tricresol. The dosage was 0.5 minim.

Preparation B was likewise a freshly prepared product, being but 3 weeks old. It contained seven strains of pertussis bacilli, killed by heating at 53 C. for thirty minutes, and preserved with 0.5 per cent. tricresol. The strength was 2,000 million organisms

TABLE 2.—Results After Administration of Preparations C and D *

	Test C		Control D	
	Positive	Negative	Positive	Negative
Whooping cough	4	0	2	2
Normal subjects	6	0	1	5
Recovery from whooping cough..	7	1	6	2
Recovery from bronchitis.....	8	0	7	1

* Pertussis and influenza bacilli killed without heat.

per cubic centimeter, the dosage being 1 minim. In Table 1 are shown the reactions obtained with these two materials in definitely known cases of whooping cough, in cases of recovery from whooping cough, in cases of recovery from bronchitis, and in normal children just admitted to the institution and still in the receiving ward. In most instances, the reactions were strongest at the end of five hours, decreasing slightly in twenty-four hours and rapidly disappearing in forty-eight hours. There was no uniformity of results. Nearly all of the children showed positive reactions, but some of the whooping cough cases were negative.

Preparation C consisted of freshly grown pertussis bacilli killed by the use of chemicals, no heat being

* From the Illinois Department of Public Health, Springfield, Ill.

1. Modigliani, E., and de Villa, S.: The Intracutaneous Reaction for the Early Diagnosis of Pertussis, *Pediatrics* **29**: 337 (April 15) 1921; abstr. J. A. M. A. **77**: 74 (July 2) 1921.

2. Orgel, S. Z.: A Method for the Early Diagnosis of Pertussis, J. A. M. A. **79**: 1508-1509 (Oct. 28) 1922.

3. Riesenfeld, E. A.: Intracutaneous Reactions in Pertussis, J. A. M. A. **80**: 158-160 (Jan. 20) 1923.

employed. The dosage consisted of 1 minim containing 3,000 million organisms per cubic centimeter. As a control, preparation D was obtained from the same manufacturers, consisting of influenza bacilli prepared after the same manner as C.

In Table 2 are given the results of the tests on twenty-six persons. As a rule, the C pertussis material gave a distinct reaction in five hours, still continuing for twenty-four hours, but much lessened in forty-eight hours. The D influenza material gave its strongest reaction in five hours, disappearing in most instances in twenty-four hours. It will be noted that only one person was negative with the C preparation, while ten were negative with the D. Furthermore, the reactions with D, when they did appear, went away much more quickly than with C.

Two more preparations were used, consisting of vaccines that had been killed by heat and allowed to stand for a considerable period and autolyze. The first preparation, E, consisted of a single strain of the pertussis bacillus killed by heating for one hour at 60 C., and preserved with 0.1 per cent. tricresol. It was more than a year old when used. The second preparation, F, contained five strains of pertussis bacilli killed by heating at 54 C. for thirty minutes, and preserved with 0.4 per cent. tricresol. It was 3 years old when used.

In Table 3 are given the results of tests made with F on patients with whooping cough, and on suspects, as

TABLE 3.—Results After Administration of Preparation F*

	Positive	Negative
Whooping cough	7	0
Whooping cough suspects.....	16	1
Bronchitis	0	12

* Old pertussis vaccine killed by heat.

well as on other subjects with cough. In this experiment, all of the bronchitis cases were negative. The reason for this apparent discrepancy with tests in other nonwhooping cough cases that gave a high percentage of positive reactions cannot at present be explained. In Table 4 are the results of both of the old vaccines E and F. Some of these subjects are the same as those included in Table 3. Whether there is the possibility of sensitization, as suggested by Riesenfeld, which would cause a higher percentage of positives in the second test, cannot be stated. However, since practically all of these were positive the first time, this factor can be ruled out. In fact, the one negative test with F in the whooping cough case (Table 4) had given a strong reaction previously with F.

In order to determine what factor in the pertussis vaccine was responsible for the skin reaction, some of the old vaccine (the same as used in F) was heated at 100 C. for thirty-five minutes (Preparation G). The results as shown in Table 5 would indicate no thermolabile material in the product, at least so far as skin reactions are concerned. Some of the same original material was then centrifugated at high speed to clear it of organisms, and the supernatant fluid, which was in reality an autolysate of pertussis bacilli, was injected (Preparation H in Table 5). The results were identical with the inactivated whole vaccine G. Some of this autolysate was then inactivated by heating at 100 C. for twenty minutes, and centrifugated at high speed to throw down any precipitate (I). Only a few patients were given Preparation I, but the results in Table 5 show that practically all subjects reacted. It is appar-

ent, therefore, that whatever substance in the vaccine was responsible for the skin reaction, it was in solution and was not destroyed by heat.

All of the tests described so far were made on children of from 6 to 10 years of age. It was desirable to determine whether adults also reacted similarly to pertussis vaccine, such adults being in a normal state of health. Of six adults so tested with Preparation F, four were entirely negative, while two gave reactions

TABLE 4.—Comparison of Results After Administration of Preparations E and F (Old Pertussis Vaccines)

	Test E		Test F	
	Positive	Negative	Positive	Negative
Whooping cough cases.....	11	0	10	1
Whooping cough suspects.....	11	0	10	1

persisting for ten days. Two of the adults were retested with the same material, F, G (the same material inactivated) being used as a control. One of the subjects who was positive previously reacted this time also with both materials, while the other one who was negative previously, did not react with either material.

This adult reactor then was tested with Preparations B, C and D, and typhoid-paratyphoid vaccine. In every instance, a distinct reaction took place promptly, and persisted for several days. It would seem, therefore, that the reaction is due to an idiosyncrasy of the individual to bacterial substances in general, children showing a greater percentage of reactions than adults.

CONCLUSION

It can be stated that the results of the investigations here recorded do not indicate that preparations of pertussis bacilli can be used intracutaneously to diagnose whooping cough. Freshly prepared suspensions, suspensions 3 years old, suspensions killed by heat and suspensions killed by chemicals gave results that were quite conflicting. Nearly all children, whatever their ailments, gave positive reactions to the material mentioned above. Whooping cough patients at times were

TABLE 5.—Preparation F (Old Pertussis Vaccine) Compared with G (F Inactivated), H (Autolysate of F) and I (Autolysate of F Inactivated)

	F	G	H	I
Whooping cough cases (positive).....	3	6	6	5
Whooping cough cases (negative).....	0	1	1	0
Whooping cough suspects (positive).....	2	3	3	1
Whooping cough suspects (negative).....	0	0	0	0
Normal subjects (positive).....	7	7	7	0
Normal subjects (negative).....	1	1	1	0

negative, however. The few adults tested would indicate that they were less susceptible to such materials when injected intracutaneously.

Principle of Selection Is Educational, Not Genetic.—The application of the principle of selection is an educational, a social and economic, perhaps even a political rather than a genetic question. What may be called the negative phase, the prevention of the most degenerate types from reproduction is quite clear. Whether this is to be brought about by isolation or sterilization is a purely technical matter depending on expediency. The result eugenically in either case is the same. But eugenic progress would be painfully slow, if this negative aspect alone were practiced. Positive methods of encouragement of superior types to the greatest possible extent is the only method which will result in any perceptible advance.—P. W. Whiting, *Nation's Health* 5:136 (March) 1923.

THE ELECTROCOAGULATION METHOD OF TREATING DISEASED TONSILS

FRANK J. NOVAK, JR., M.D.

Attending Otolaryngologist, Cook County Hospital
CHICAGO

Various writers in this country, and, more particularly, in Germany, have recently been advocating the removal of the faucial tonsils by means of electrocoagulation. The virtues ascribed to this method, if they were true, would cast into discard the traditional methods of tonsillectomy. The application of the high frequency current to the tonsil, thereby coagulating it, is a simple office procedure. It is a bloodless operation, quickly performed, requiring no skill, dexterity or experience on the part of the operator. The high frequency current is readily controlled. Under suitable local anesthesia, the procedure can be carried out almost painlessly.

With such obvious advantages, it is easily understood why this method should appeal so strongly to the general practitioner, and, perhaps, also to the specialist. One need but consider the tremendous interest aroused by the recent advocacy of the roentgen-ray treatment of diseased tonsils to understand why any plan which offers certain marked advantages in its administration should immediately find numerous adherents everywhere. Especially is this true when one reviews some of the unfortunate and disagreeable results encountered with tonsillectomy. With perfect technic and the utmost in skill and equipment, tonsillectomy is occasionally a difficult operation. Operative and postoperative hemorrhages are not uncommon, and not infrequently, also, does one experience the chagrin in finding a remnant of tonsil after operation. It is no wonder, then, that any surgeon, specialist or general practitioner is willing to adopt any new procedure which would obviate these well recognized disadvantages.

For some time past, I have employed surgical diathermy in the treatment of malignant growths of the pharynx and larynx. In a large series of patients operated on at the Cook County Hospital, I have so familiarized myself with the technic that I felt qualified to apply the method to the tonsils. One hundred cases were selected for this purpose. The first group of the series consisted of seven cases. The usual local anesthesia was administered. Points to be observed were: (1) the immediate effects of the operation; (2) the extent of the postoperative inflammatory reaction, i. e., the amount of extra tonsillar tissue involved; (3) the degree of inflammatory reaction, and (4) the early postoperative symptomatology.

Then, before the next set of cases were to be treated, the following observations were to be made: (1) the extent and degree of cicatrization within and outside of the tonsillar fossa; (2) the damage, if any, to the palatopharyngeus and palatoglossus muscles; (3) the impairment, if any, of the function of the soft palate; (4) the frequency of otitic complications due to possible damage to Rosenmueller's fossae; (5) the effect on the voice and deglutition, and (6) the thoroughness of the destruction of tonsillar tissue.

TECHNIC EMPLOYED

After a topical application of 4 per cent. cocain solution, the peritonsillar tissue was injected in the usual manner with a solution of 1 per cent. procain. A flat electrode 12 by 12 inches, well moistened with tap

water, was applied to the patient's back. This so-called indifferent electrode, because no heat is generated at its place of application, is connected with a high frequency apparatus, generating the d'Arsonval current with a frequency rate of a million or more oscillations per second, and delivering an amperage of from 1 milliamperes to 4,500 milliamperes. The active electrodes were of two types, namely, the needle, and a flat button electrode of a diameter of 7 mm. The needle was used in one case, penetrating into the substance of the tonsil, and carrying an amperage of 400 milliamperes. It was inserted into three portions of the tonsil, and the current turned on for fifteen seconds in each place, or, in other words, just sufficient to blanch the tonsil. The other cases were treated with the button electrode and with currents for the respective tonsils of from 400 to 1,500 milliamperes, and for the periods of time sufficient to coagulate the tonsils. This time varied from 50 seconds to 10 seconds, respectively. The greater the amperage, the shorter the period of application.

The patients in general were comfortable during the operation. No bleeding whatever occurred. The technical skill and dexterity for the operation was no greater than that required to apply a swab of silver nitrate solution to a tonsil, assuming a knowledge of the technic of electrocoagulation.

RESULTS

Without exception, the patients embarked on a stormy experience within a few hours after operation. The pain was uncontrollable save by the administration of liberal doses of morphin. All experienced extreme difficulty in swallowing, much greater than that usually looked for after tonsillectomy. The palate was extremely edematous, and speech was impossible. The intensity of this reaction persisted through the sixth day, and then gradually subsided.

The types of reactions recorded were: swelling of neck, pain on swallowing, difficulty of speech, unusual amount of discharge and sloughing of tissue, marked edema of the pillars, intense edema of the pharynx, uvula, pillars and soft palate, and trismus; and, in a few of the cases, the lower poles of the tonsils were still present.

CONCLUSION

Assuming that electrocoagulation of the tonsils is a simple, bloodless operation, and assuming, moreover, that the ultimate results of this operation might be satisfactory, the very severe reaction, the great pain, the toxemia and the extreme discomfort of the patient almost immediately following operation are sufficient reasons for condemning the method. Furthermore, there is no accurate way of determining the dosage to be applied. Nor is it possible to apply the heat with sufficient accuracy to insure the destruction of only the tonsillar tissue. There is no gage by which the penetration of heat, through the tonsil and up to the capsule only, can be measured. The heat necessary to destroy the tonsil is great enough to penetrate and damage the surrounding tissues. If the aim is merely to obliterate a single crypt, then there is no assurance that a purulent pocket in the fundus of the crypt is not sealed in by a covering of resulting scar tissue. Whatever logical basis electrocoagulation of diseased tonsils may have, or appear to have, from a theoretical standpoint, is far overshadowed by the unfortunate and unsatisfactory results obtained in actual practice.

I realize fully that a small series of cases is ordinarily insufficient for a clinical test; but in this instance

it is, in my opinion, conclusive evidence that the method is entirely inadequate, inaccurate and unsatisfactory, both from the standpoint of the surgeon and from that of the patient, and, therefore, cannot in any manner compete with the accepted present-day methods of tonsillectomy.

30 North Michigan Avenue.

HIGH GRADE CHOKED DISKS IN EPIDEMIC ENCEPHALITIS *

WILLIAM G. SPILLER, M.D.

Professor of Neurology, University of Pennsylvania School of Medicine
PHILADELPHIA

The diagnosis of epidemic encephalitis may in some instances be difficult; the symptoms may resemble those of brain tumor, and this difficulty may be greatly increased when choked disks are present. Some physicians believe that choked disks do not occur in epidemic encephalitis, but I have had at least three cases in which the diagnosis of encephalitis seemed to me definite, and yet choked disks were present. It is singular that all three cases were in boys, two 16 years old and one 17. I have made some investigation of the literature to determine what is published concerning choked disks in epidemic encephalitis.

Holden¹ reported on the eye symptoms noted in 100 consecutive case histories of epidemic encephalitis at Mount Sinai Hospital. It is not stated whether the eyegrounds were examined in every case. There was noted in four patients a blurring of the optic disks, and in one a definite papilledema. True papilledema was also found in one of the twenty cases studied at the Neurological Institute; in this case, the elevation of each disk was 2.5 diopters. Holden refers to another case with papilledema. He concludes: "True papilledema is a very rare symptom of encephalitis, and seems to occur only when there are unusual complications. It is doubtless the result of increased intracranial pressure in most cases, although in some cases it may be due directly to meningitis." He refers to a few cases of optic neuritis in encephalitis reported by Symonds.

In a recent report on 1,250 cases of encephalitis notified in England and Wales during 1919 and 1920, references were given to other cases in the literature, and it was stated² that:

The fundi were examined in 234 cases, and in 80 per cent. of these, it was reported that no changes were seen. In the other 20 per cent., optic neuritis, including papillitis, was reported in twelve cases; in two or three others, the condition would seem to have been well marked; while in the majority of the remaining cases, the several signs which were observed form part of the ophthalmoscopic picture of optic neuritis. This means that in 5.5 per cent. of the cases in which the fundi were examined, optic neuritis was present. While in 19 per cent. of the cases, there were present one or more signs portending the same. In only two was the condition called choked disk. It was acknowledged that these figures were high and that some doubt may be held as regards some of the cases.

Pette,³ in a recent paper from Nonne's clinic, states that 120 cases of encephalitis were seen in this clinic

from 1919 to April, 1922. He says it is shown that changes in the eyegrounds occur occasionally in the acute stage of encephalitis, and Economo and Löhlein have observed atrophy of the optic nerve, but this had not been seen in Nonne's clinic. He does not speak of choked disks.

Smith⁴ presented before the Philadelphia Neurological Society, Feb. 28, 1919, a patient from my service at the University Hospital who had epidemic encephalitis with: right eye, disk + 3 diopters, fundus + 1.5 diopters; left eye, + 2 diopters, fundus + 1 diopter. Later, the right disk was + 5.5 diopters, and the left disk, + 5 diopters.

REPORT OF CASES

Two more cases of high grade choked disk in epidemic encephalitis have come under my observation:

CASE 1.—H. R. C., a boy, aged 16 years, previously in perfect health, referred to me by Dr. V. D. Holloway of Knoxville, Tenn., April 25, 1922, in March had had a general convulsion with unconsciousness, but seemed well later in the same day. He had not had another attack. A month later he began to have general headache, and this persisted with remissions and severe exacerbations. About a week after the headache began, pain in the back of the neck and vomiting developed and persisted. About May 15, he began to complain of diplopia, drowsiness and fever. Ptosis of the left eyelid developed, the lower jaw dropped, speech became thick and monotonous, and he could not swallow. He was confined to bed. The temperature rose as high as 101. He vomited frequently. When he came to me, April 25, he had not had diplopia for three days. He was drowsy, but was readily aroused. He had well marked choking of the disks and edema of the retina. Each external rectus muscle was weak, and convergence was poor. The left side of the face was weak, especially in the lower part; the tongue deviated slightly to the left when protruded, and the masseter and temporal muscles were so weak that he could take only soft food. The right soft palate was a little paretic. The tendon reflexes were weak. The limbs were not weak, but Babinski's sign was distinct on the left, and uncertain on the right. There was some albumin in the urine, and from fifteen to twenty dark and light granular casts. The diagnosis seemed to me to be epidemic encephalitis with some nephritis, not an uncommon occurrence, but the kidney elimination test showed good function. The spinal fluid was clear and somewhat yellowish, and contained two lymphocytes to the cubic millimeter; pressure was low, but had been high when the boy was at home. Dr. T. B. Holloway, April 27, found impairment of ocular rotation in all directions, most evident in the right eye; vision, right eye, 2/9??; left eye, 2/6??. Height of each disk, 7 diopters; macular, 2 diopters.

By June 1, the boy was less lethargic, the ocular palsies were less, the facial paresis of the left side had disappeared, the temporal and masseter muscles contracted almost normally, and the tongue was protruded straight. June 6, Dr. Holloway found the right disk, 4 diopters, the left disk, 6 diopters. Beginning June 1, magnesium sulphate (a half ounce at the dose) was given frequently by mouth to lessen the optic nerve swelling, and several lumbar punctures with withdrawal of a small quantity of fluid were performed for the same purpose. June 21, Dr. Holloway found the left disk 4.5 diopters, and the right, 3.5 diopters. The disk margins were distinctly clearer than they had been. The boy was allowed to go home, June 26, in good condition, aside from the swelling of the disks mentioned. A letter from Dr. V. D. Holloway, October 28, stated that Dr. Potter found the patient's eyes in such condition that "time should clear them up entirely."

CASE 2.—O. B., a boy, aged 17 years, referred to me by Dr. P. H. Dale of State College, Pa., was well until December, 1922, at which time he had a "cold," followed soon by

4. Smith, D. E.: Encephalitis Simulating Brain Tumor; abstr. Arch. Neurol. & Psychiat. 1: 796 (June) 1919.

* Read before the Philadelphia Neurological Society, April 27, 1923.
1. Holden, W. A.: Acute Epidemic Encephalitis, Tr. A. Res. Nerv. & Ment. Dis., 1921.
2. Reports on Public Health and Medical Subjects, No. 11, 1922, p. 84.
3. Pette: Die epidemische Encephalitis in ihren Folgezuständen, Deutsch. Ztschr. f. Nervenhe. 76, Nos. 1-4, 1923.

diplopia and lethargy, and the latter became more and more pronounced. At first he could be aroused readily; he would answer questions and then fall again immediately into lethargy, but later it was difficult to arouse him. He was confined to bed, though not paralyzed in his limbs. He was in profound lethargy most of the time, and paid no attention to his physical needs. A blood Wassermann test was negative.

When admitted to the hospital, Feb. 7, 1923, he responded to the examination when aroused, but not sufficiently for tests of sensation. The tendon reflexes were diminished, and Babinski's sign was present on each side. Dr. de Schweinitz, February 8, found the light reflex preserved. He had choked disks of between 5 and 6 diopters on each side. Hemorrhages were above the right disk. Diplopia was present, probably from oculomotor nerve involvement. There was noticeable divergence of the eyeballs.

The blood and urine were about normal, although an occasional light granular cast was found in the urine. Lumbar puncture gave a pressure of 28 mm., whereas the normal should be about 10. The fluid contained five lymphocytes to the cubic millimeter. The Wassermann test was negative. Repeated lumbar puncture with the removal of 5 c.c. of fluid was employed to reduce the choking of the disks, and March 1, Dr. B. F. Baer, Jr., found that each disk measured 3 diopters. The lethargy diminished temporarily. March 21, Dr. Baer found: right eye, 2 diopters; left eye, 1 + diopters.

High rectal injections of magnesium sulphate, 3 ounces (90 c.c.) in 6 ounces (180 c.c.) of water with 1 dram (3.75 c.c.) of camphorated tincture of opium, in the technic elaborated by Fay, were begun, February 26, in place of lumbar puncture, and given frequently almost every other day. This procedure accomplished much in reducing the swelling of the disks. It was more satisfactory than repeated lumbar puncture.

The boy became profoundly stuporous and died, April 5. The temperature was normal most of the time, but at one period while he was in the University Hospital, it reached 100 to 101 for a short time. A necropsy was not permitted.

3600 Walnut Street.

THE ANTITHESIS OF UROGENITAL TUBERCULOSIS IN A TABETIC PATIENT

REPORT OF CASE

VICTOR F. MARSHALL, B.S., M.D.

AND

GUY W. CARLSON, B.S., M.D.

APPLETON, WIS.

This case of tuberculosis of the bladder in a patient affected with tabes is reported, because the symptoms of the tabetic bladder are antithetical to those of tuberculous cystitis.

A search through the files of the Surgeon General's Index Catalogue fails to disclose a report of a similar case. Similarly, no such case was noted in other indexes, or the Index Medicus of 1916. It may be that such a condition is frequently present but overlooked by the physician, owing to his hesitancy in doing a complete examination when a diagnosis of tabes is evident.

Ockerblad¹ states that 30 per cent. of tabetic patients have disturbance of micturition at some time, and that 80 per cent. have bladder symptoms. The normal bladder capacity is from 300 to 400 c.c., while the tabetic bladder tolerates from 600 to 1,000 c.c. without discomfort. When a cystitis is present, however, we

may have, instead of an enervated bladder, one that is hypersensitive; and, instead of being relaxed, it becomes contracted and of small capacity. The mucosa, then, instead of being pale and trabeculated, is inflamed and velvety in texture between the trabeculae.

SYMPTOMS

The physician often encounters this important and troublesome disturbance. At the onset, vesical disturbance may be the first warning of an organic disease. It is difficult, when such a case presents itself, to know definitely whether or not the vesical symptoms, which appear to be independent of disease of the bladder itself, are the danger signal of a latent tabes. The symptoms experienced by the average patient are usually those of pain about the bladder region, hyperesthesia about the neck of the bladder, the troublesome dribbling, dysuria and the retention. Dillingham² states that the capacity of the tuberculous bladder at the beginning of treatment varied from 1 teaspoonful to 3 ounces. The bladder gradually regained normal size as the ulceration and inflammation diminished. The symptoms are usually those of frequent urination, pain and tenesmus. Hematuria may often be a symptom of this condition. Many authors believe that the frequency may be only slight, and no pain or hematuria present unless the bleeding is from the kidney. The degree of severity of the symptoms depends usually on the location of the tubercles, their proximity to the urethral orifice and whether or not a secondary infection is present. This is not the rule, however, and, in the vast majority of cases, frequent urination and pain are present to some degree, depending on where the ulceration is located. The average patient urinates from eight to ten times a day, and three or four times, or more, at night. The advent of cystitis, however, aggravates the symptoms mentioned above.

When the ulcerations are found about the urethral orifice, the frequency of urination is at times almost constant. Those patients who are hospitalized require a urinal at all times. The pain is usually referred above the symphysis pubes, about the neck of the bladder or at the glans penis. Any distention of the bladder with urine causes pain over the pubic arch. On voiding, pain is experienced in the glans penis, and at the end of urination, pain is felt in the region of the neck of the bladder. A frequent feeling that more urine remains in the bladder at the termination of the act is often experienced.

Hematuria is present, according to some authors, in from 15 to 20 per cent. of cases, which they say may be due to kidney involvement, or to a cystitis. The urine under these conditions contained both pus and blood. The general belief is that such cases are due to tuberculosis. One may easily err when one set of symptoms masks those of another.

REPORT OF CASE

History.—H. S., a man, aged 50, a bank cashier, slight, thin chested and of medium build, was admitted to St. Elizabeth's Hospital, Appleton, Wis., March 24, 1923, on account of urinary retention which had been present five days, necessitating catheterization. On further questioning, a history of difficulty in urination previous to the retention was present. There was pain and burning on urination, hematuria, a bilateral sciatica, the pains shooting in character, poor vision, diplopia, areas of hyperesthesia about the lower

1. Ockerblad, N. F.: *Tabetic or Neurogenous Bladder*, J. Kansas M. Soc. 20: 42 (Feb.) 1920.

2. Dillingham, F. S.: *Cases of Tuberculous Kidney and Bladder*, California State J. M. 15: 70 (March) 1917.

extremities, atonic impotence and constipation. The onset of the symptoms mentioned had begun about eight years before, at which time the patient experienced burning on urination, and the urine was distinctly cloudy.

During the past year he had experienced pain at the beginning of the act of micturition, and great difficulty in starting the stream, with, at intervals, complete retention. He never had any dribbling, but had been catheterized frequently before admittance to the hospital for the relief of the retention. The bilateral sciatica had been present for about four years, and the patient complained of sharp, shooting pains in the lower limbs, which were usually sore and tender to the touch, the pain being most noticeable along the course and distribution of the sciatic nerves. It seemed to attack either side similarly. He had never experienced any numbness or tingling in the lower extremities. Poor vision and diplopia developed about four years before admission, at which time the patient began having some difficulty in reading fine print. He stated that, on looking at objects at a distance, he saw double. No nystagmus was present. The hematuria had been present off and on for eight years, and streaks of blood with mucus was oftentimes seen at the end of urination. Atonic impotence had been present for several years. He had had grip two or three times during the last fifteen years, and a supposedly peptic ulcer in 1922, with tarry stools and hematemesis. He was put on ulcer treatment with apparent relief.

The patient's wife died at the age of 40, following the delivery of a premature macerated fetus, complicated by tuberculosis of the kidney. One daughter died at the age of 22 of pulmonary tuberculosis, having been confined in a sanatorium for one year previous to her death. Two daughters and one son were living and well. The patient had gonorrhea at 18 years of age, but no history of chancre was elicited. He stated that he did not recall having had a chronic cough, night sweats or afternoon rise in temperature. He had lost 15 pounds (7 kg.) during the last year. The history was otherwise negative.

Physical Examination.—A bilateral Argyll Robertson pupil and diplopia were present. There was a dulness of the right apex in the lungs, with increased vocal fremitus, probably that of an old healed apical tuberculosis. A small, hard nodule was felt in the head of the right epididymis. The prostate was soft and boggy. A small, palpable nodule, the size of a pea, was felt in the right seminal vesicle. The reflexes were apparently normal, except for a slight, sluggish knee reflex on the left side. There was also a positive Romberg sign. The blood pressure was: systolic, 130; diastolic 80. The physical examination was otherwise negative. A blood Wassermann test was ++; spinal fluid Wassermann, ++++; colloidal gold test, 1233310000, and Ross-Jones and Noguchi tests, positive. The urinalysis previous to cystoscopy of catheterized specimens revealed cloudy urine. The specific gravity was 1.011; albumin, ++; pus cells, ++; blood, ++. There were no casts. The urine centrifugated and stained with Ziehl-Neelson's stain revealed no tubercle bacillus. The patient was catheterized, March 25, at 9:30 a. m., and 40 ounces of urine was obtained; at 6:30 p. m., 27 ounces, and, March 26, at 9 a. m., 38 ounces.

Cystoscopic Examination.—The patient was catheterized with a metal curved catheter, and 32 ounces of urine was withdrawn. After the urethra was anesthetized with alypin through an endoscope, a McCarthy cystoscope was passed into the bladder with difficulty. The prostatic urethra was noticeably inflamed. Inspection of the bladder wall revealed three well-defined tubercles below and to the side of the right ureter, several at the bas-fond, and one in very close proximity to the left ureteral opening. The mucosa was edematous and reddened, with pronounced trabeculous formation. Following the cystoscopic examination, the ureters were catheterized by the use of a Brown-Buerger No. 2 cystoscope, and no difficulty was encountered in passing the catheters to the kidney pelvis. Urine specimens were taken from each kidney for microscopic examination and for inoculation of guinea-pigs. The urine from the left kidney was amber and clear; that from the right kidney was bloody. A kidney functional test with the intravenous injection of

1 c.c. of phenolsulphonephthalein was performed. The time of appearance from the left ureter was three and one-half minutes; that from the right ureter, seven and one-half minutes; first fifteen minutes, left, 1 per cent.; second fifteen minutes, left, 2.5 per cent.; total, 3.5 per cent.; first fifteen minutes, right, 10 per cent.; second fifteen minutes, right, 4 per cent.; total, 14 per cent. Pyelograms were then made by injecting the renal pelvis with 12.5 per cent. sodium iodid, the right kidney holding 22 c.c., and the left, 9 c.c. Roentgenographic findings revealed a dilated right pelvis with the absence of cali elevations, and a left normal contour. The case was diagnosed as genito-urinary tuberculosis with tabes dorsalis.

Treatment.—The patient is being treated by the usual combined specific therapy of neo-arsphenamin, mercurial inunctions and massive doses of potassium iodid. Hygienic measures combined with heliotherapy were advised and instituted.

COMMENT

Cabot³ says:

The bladder symptoms of tabes may simulate prostatic enlargement, and occasionally a useless operation has been done. In tabes the bladder is generally trabeculated, holds a large amount of urine, and is usually markedly free from pain on instrumentation. When a cystitis occurs due to poor bladder drainage, the patient is often unable to void his urine.

In trabeculous cystitis, the patient is usually intolerant of instrumentation, and apt to suffer pain on examination and react badly afterward.

Smith⁴ says:

In tabes at first, retention occurs due to spasm of external sphincter, which may be followed by dribbling from an over-distended bladder. In latter tabes, true incontinence occurs from paralysis of the sphincter.

Corbus and O'Connor⁵ believe that many patients retain large quantities of residual urine with a fair degree of general health and comfort. The urea nitrogen estimation of blood in a number of tabetic patients with appreciable amount of residual urine has been mainly within normal limits. In no instance did it compare with the nitrogenous content that accompanies a like quantity of urine retained by mechanical obstruction. The pains are not due to any uremia but to the syphilitic process.

In the uncomplicated tabetic bladder, even with the residual urine of from 900 to 1,000 c.c., and blood urea nitrogen normal, the bladder should be undisturbed, and treatment limited to systemic management. Local treatment should be reserved only for imperative complications.

Burns⁶ says:

The most effective form of treatment in tabes has consisted in intravenous and intraspinal therapy combined with dilatation of urethra. Of twenty-one cases, incontinence occurred in twelve; entire relief in five; improvement in six, and same condition in one.

Care should be exercised in the examination of patients on account of the presence of concomitant severe lesions. The symptoms which prompt the patient to seek medical aid are often complicated, as in the case just cited.

3. Cabot, F.: Disorders of Bladder. New York, Treat & Co., 1909.
4. Smith, G. G.: Bladder Disturbances Due to Nerve Lesions, J. A. M. A. **69**: 1323 (Oct. 20) 1917.
5. Corbus, B. C., and O'Connor, V. J.: Tabetic Bladder from Standpoint of Urologist, J. A. M. A. **79**: 1750 (Nov. 18) 1922.
6. Burns, J. E.: Bladder Changes Due to Lesions of the Central Nervous System, Surg., Gynec. & Obst. **24**: 659 (June) 1917.

Clinical Notes, Suggestions, and New Instruments

APHONIA FROM PARALYSIS OF THE LEFT VOCAL CORD*

NICHOLAS LUKIN, M.D., NEW YORK

History.—A woman, aged 23, whose family history is unimportant, had had diphtheria, scarlet fever, and complicating nephritis in childhood; also sore throat a few times later on. As she grew up and went through school, her health was considered good. About eight years ago, she came under my observation through her mother, who was not satisfied with her frequently "feeling tired," and her worried appearance. An altered mitral first sound, coupled with her past history, suggested the possibility of a developing mitral stenosis. It did not permit her to finish school, and she rested during a long period of time. Gradually, definite cardiac signs of a mitral stenosis developed. In appearance, however, she improved; she gained some weight, went dancing, and assisted her father in his office. About two years ago, a mild attack of appendicitis laid her up for a week. She had appendicular pains since on several occasions, but operation was delayed because of the danger to her heart from the anesthetic. Finally, about six months ago, the operation was performed under the most careful anesthesia. Recovery took place in three weeks. A remittent temperature, varying between 100 and 103, ending by lysis, lasted for seven days during the first week. A slight cough, which brought up some blood-stained mucus on several occasions, and intermittent hoarseness also complicated convalescence.

Two weeks after she left the hospital, her hoarseness, which was previously intermittent, became continuous for three months. Her general condition improved, but she spoke only in a whisper. Two eminent throat specialists were consulted, who found the left vocal chord in a cadaveric position while the right moved normally.

Physical Examination.—The patient was a pleasing brunette of the chlorotic type, weighing 105 pounds (48 kg.), and 5 feet 2 inches (158 cm.) in height. The mucous membranes were somewhat pale. The tonsils were of normal appearance; the teeth were in good condition, and the tongue was not coated. The complexion was sallow. Some dilated veins were visible on the chest.

The apex impulse of the heart was seen and felt in the fifth interspace in the nipple line. The pulse was normal in rhythm, but varied in frequency, being between 78 and 96. A diastolic murmur with a presystolic thrill was heard in the region of the apex. The sounds were of good quality; the pulmonary second sound was accentuated.

The liver was not enlarged; the spleen was not felt.

Roentgen-Ray Examination.—Dr. J. J. Landsman reported that the diameter of the left heart was 8 cm.; of the right heart, 4.5 cm.; of the whole heart, 12.5 cm., and of half of the chest, 11 cm. The auricular bulge was unusually enlarged, obliterating the auricular ventricular angle. The structures at the base of the heart were narrow.

Etiology and Prognosis.—For the sake of convenience, the etiology and prognosis must be considered here together, because the latter depends on the first. The throat specialists could not offer any positive opinion as to the etiology of the condition in this case, nor would they suggest a prognosis; but both agreed independently that a dilated left auricle may, by pressure on the left recurrent laryngeal nerve, cause paralysis of the vocal chord. A prognosis was withheld by the specialists, because neither one of them had seen a well authenticated case. Evidence of other mediastinal conditions was absent. Hysteria was excluded by the previous history of the patient and by the fact that the paralysis of the chord was unilateral. Dr. William Osler relates the possibility of a paralysis of the recurrent laryngeal nerve due to the dilatation of the left auricle. He states that he has encountered two instances of it. He also quotes Ostner and Herrick, who described such a condition.

The prognosis in this case was particularly desirable, because the patient was taking singing lessons before her last illness, and her parents, therefore, continually insisted on an answer—whether the voice would ever come back.

Course.—In about two months after the onset of the aphonia, some evidence appeared that the voice was becoming clearer, and by the end of the third month, the aphonia entirely disappeared, to the great satisfaction of all concerned. The only medication the patient received was tincture of digitalis, which she is still taking in small doses.

Examination by the throat specialist revealed that the chord was functioning. The patient submitted also to a reexamination by the roentgenologist who reported a smaller cardiac outline and the auricular bulge diminished in size.

CONCLUSIONS

The report of this case is made:

1. Because relatively sufficient evidence is present to class it clinically as a true case of aphonia resulting from paralysis of the recurrent laryngeal nerve due to the dilatation of the left auricle.

2. As a sequel to anesthesia on a patient with mitral stenosis.

3. As a guide to prognosis in similar conditions.

1437 Prospect Avenue.

SEPTICEMIA FOLLOWING PASSAGE OF CALCULUS THROUGH URETHRA

ABRAHAM NELKEN, M.D., NEW ORLEANS

J. L., aged 39, a native of Finland, admitted to the urological service of Touro Infirmary, Feb. 2, 1923, had been sick for ten weeks with an attack diagnosed as dengue, the symptoms of which were severe pain in the right lumbar region, accompanied by fever. Following cessation of pain, the patient developed urinary frequency, voiding as often as thirty or forty times in twenty-four hours. This continued for two weeks. Then he had difficulty in urinating, and, after two weeks more of suffering, he applied at the Touro outclinic for relief. The morning he first was seen, he had not been able to urinate for twenty-four hours. Catheterization was made without difficulty, and gave immediate relief. For the next two weeks, he visited the clinic daily, with the exception of two days, but until the day of his admission, he did not again have retention. My assistants in the clinic thought that they were dealing with an acute condition of the prostate, and the patient was treated accordingly.

When my attention was called to the case, I advised that the patient be admitted to the ward for observation. The day of admission, he again had retention. He was put to bed and voided without effort for two days. The morning of the third day, he had a severe chill, and the temperature rose to 103. He complained of something having "broken loose" in the bladder, which stopped up the canal. The resident house officer, Dr. Williamson, was called. Examination showed a stone about the size of a large bean, just back of the anterior scrotal attachment. After injecting procain solution, followed by liquid petrolatum, Dr. Williamson was able to dislodge the stone and force it to the meatus. Here it was crushed and removed. The patient was in agony until this was done, but, on removal of the obstruction, he voided urine freely and without effort. Following this, he was given a precautionary injection of mercurochrome-220 soluble.

He continued to have chills and high fever, and two days later, I put in a retention catheter, thinking to protect the traumatized urethra from the passage of septic urine. The following day, his maximum temperature was 100. However, the day after this, with the catheter in place and draining freely, the temperature rose to 102.6, and the second day after, to 104. I then did a cystoscopy and found pus in the slightly turbid urine from the right kidney. Cultures on agar slants showed staphylococci on the right side, the left being sterile after forty-eight hours. The patient looked so ill that, in spite of the presence of pus in the right kidney pelvis, I requested a blood culture. This proved positive, showing a luxuriant growth of *Staphylococcus aureus* and colon bacilli.

* Read before the Bronx County Medical Society, Feb. 21, 1923.

ter twenty-four hours. The patient's condition grew rapidly worse, the temperature ranging between 104 and 105, and he died in coma fourteen days after admission and twelve days after the passage of the stone through the urethra. In spite of every effort, we were unable to secure permission for a postmortem.

The history of this case, as outlined, contains several interesting points that I shall refer to briefly. It is evident that the so-called attack of dengue was really renal colic due to the passage of the stone through the right ureter. Infected urine would account for the fever, and the presence of the stone in the bladder for the frequency. Retention was evidently due to the blocking of the urethra as the stone engaged in its lumen. Invasion of the blood stream by the infecting organisms would appear to be coincident with the passage of the stone through the anterior urethra. It is only fair to point out that the first chill and subsequent rise of temperature preceded the instrumental removal of the stone. The trauma of the urethra by the stone in the presence of a septic urine can explain the invasion of the blood stream in sufficient dosage to induce a fatal septicemia. Here, the culture showed both staphylococci and colon bacilli. I have had a recent case of colon bacillus septicemia complicating pyelitis in which recovery ensued.

305 Baronne Street.

ELEVEN CASES OF BLACKWATER FEVER WITH ELEVEN RECOVERIES

ERNEST BALL, M.D., EBANO, SAN LUIS POTOSI, MEXICO

I treated eleven cases of blackwater fever in 1918 in the republic of Panama. All of these patients were negro or a mixture of negro and Spanish, and ranged in age from 28 to 45 years. The temperatures ranged from 102 to 105 F. Severe headache, pain in the loins, vomiting, jaundice and insomnia were marked features, and estivo-autumnal malarial parasites were found in the blood of all patients.

My worst case was that of a young native physician, aged 32. When I was called in to see him, his temperature was 103, and he had a severe headache, pain in the loins, nausea and vomiting, with slight jaundice. Urine examination revealed a large amount of hemoglobin.

The treatment in all the cases consisted of dosages of quinin, calomel and coconut water. The calomel was given in 5 grain doses as soon as the patient was first visited, and before and after the blood picture was made. Quinin was administered in 15 grain doses, given intramuscularly twice daily, with a large glass of coconut water, every two hours.

Pain in the loins, hemoglobin in the urine, jaundice, vomiting, insomnia and malarial parasites were marked diagnostic features of all cases; the temperature was no index as to the severity of the disease. All the patients were natives of the tropics, and all responded to what appears to be big doses of quinin. Every one of them remained free from malaria for more than one year from the date of recovery, had no further attack of hemoglobinuria after more than three years and gained in weight and are enjoying good health. These cases seem to indicate that, at least in my cases, blackwater fever was caused by a malarial infection.

Exhaustion as Factor in Etiology of Tuberculosis.—Dancing at the end of a day's work and indulged in until late hours may have serious effects upon general health. Even outdoor sports, which are certainly to be encouraged, may defeat their chief end if indulged in immoderately or to the exclusion of proper resting periods. Child labor, either in factory or at home, excessively long working hours, occupations which can not be interrupted for Sunday rest, or which tempt, or drive, to excessive effort or "speeding up," all tend to weaken resistance and predispose to tuberculosis. Night schools, overtime, excessive amusements, overindulgence, and asceticism are all important predisposing causes.—F. C. Smith, *Public Health Rep.* 38:780 (April 23) 1923.

Special Article

INSULIN: ITS ACTION, ITS THERAPEUTIC VALUE IN DIABETES, AND ITS MANUFACTURE*

BY THE INSULIN COMMITTEE, UNIVERSITY OF TORONTO

TORONTO

Carbohydrates, such as the starches, taken in the food, are converted into simple sugars, such as glucose. The glucose or other sugar is absorbed by the intestine and carried to the liver, where much of it is stored as glycogen. The remainder is carried to the muscles and other tissues, where some of it is oxidized and some stored as glycogen. Prior to these changes, glucose in some way becomes altered in chemical structure so as to change it from an inactive into an active form. In diabetes mellitus it is probable that the sugar absorbed from the intestine is no longer properly changed into the active form so that it cannot be stored in the liver as glycogen, or oxidized in the tissues, but circulates in increased quantities in the blood (hyperglycemia) and is excreted in the urine (glycosuria). It therefore becomes lost to the body as a source of energy. As a result, the store of glycogen is rapidly exhausted, and protein is attacked as a source for glucose. Further, as carbohydrate is necessary for the normal metabolism of fat in the body, incomplete combustion of fat occurs in diabetes mellitus, resulting in diabetic acidosis and coma. Diabetes mellitus must, therefore, be considered as a disease of metabolism in which carbohydrate is not efficiently utilized by the body, thereby causing a derangement of the normal metabolism of proteins and fats as well as carbohydrates. This derangement of metabolism is recognized by voracious appetite, hyperglycemia (increase in the percentage of sugar in the blood), and glycosuria (sugar in the urine).

DISCOVERY OF INSULIN

As a result of the experiments of von Mering and Minkowski, in which they showed that extirpation of the pancreas in dogs was followed by persistent glycosuria and other symptoms of diabetes, the important relation between this gland and diabetes was established. The pancreas consists of two types of tissue—the acinous portion secreting the pancreatic juice (the external secretion) which reaches the intestine through the pancreatic duct, and groups of cells scattered throughout the gland known as the islands of Langerhans. These cells possess a rich supply of blood vessels. As the islands of Langerhans show pathologic changes of varying degree up to complete destruction in the majority of patients dying of diabetes mellitus, Opie and others have considered that the insular portion of the pancreas is the one related to diabetes mellitus. They believed that it probably furnishes an internal secretion necessary to normal carbohydrate metabolism. Several investigators attempted to prepare extracts of pancreas containing this internal secretion but with uncertain results, probably because the active substance was destroyed by the powerful digestive ferments also present in such extracts. It remained for Banting, working in collaboration with Best in the

* Certain portions of this article are appearing in a medical bulletin of the University of Toronto.

Department of Physiology, under the direction of Professor Macleod, to demonstrate that such an internal secretion really exists, and thereby to determine the exact relationship of the pancreas to the disease diabetes mellitus.

It had been shown previously that, if the duct of the pancreas was ligated, degeneration occurred much more rapidly in the acinous portion than in the islands of Langerhans. Banting conceived the idea that, if an extract was prepared from the pancreatic tissue remaining some time after ligation of the ducts, it should contain the supposed internal secretion of the islands of Langerhans because there would not be enough of the digestive ferments to destroy it. In 1921, Banting and Best prepared an extract of the degenerated pancreas and injected it into diabetic dogs. Following the injection, a definite lowering of the blood sugar, and a decrease in the amount of sugar excreted in the urine, were found to occur. They also showed that, if sufficient extract was injected at proper intervals, completely depancreatized dogs could be kept alive and free of symptoms for a long period of time. These experiments support the view that the islands of Langerhans in the pancreas contain a substance which lowers the blood sugar and diminishes or abolishes the excretion of sugar in the urine of diabetic dogs. Later, by extracting the fetal or adult normal pancreas with alcohol, they prepared an extract which contained the anti-diabetic substance or hormone, the alcohol evidently preventing the destruction of the active principle by the digestive ferments. This extract was injected subcutaneously into a boy suffering from severe diabetes mellitus. A definite lowering of the blood sugar and of the amount of sugar excreted in the urine resulted. The extract contained other substances which caused considerable local irritation, making repeated injection impossible. With the assistance of J. B. Collip, an extract was prepared in a purer form, suitable for repeated injection in man. The active principle of these extracts has been called insulin, a name previously suggested by Sir E. Sharpey Shafer.

PHYSIOLOGIC ACTION OF INSULIN

At this stage, intensive investigation was conducted in the physiologic laboratory of the university to determine the effects of insulin on normal and diabetic animals. By excellent team work, in which the previously mentioned investigators and E. C. Noble, John Hepburn, J. K. Latchford and others participated, it was possible in a comparatively short time to show, among other things, that:

1. Insulin lowers the blood sugar in normal rabbits; characteristic symptoms supervene when a certain low level is reached, and these symptoms are specifically antidoted by glucose.
2. It may prevent the hyperglycemia due to piquê, asphyxia, epinephrin and ether.
3. It increases the sugar consumption by the isolated mammalian heart.
4. It causes glycogen to be deposited in the liver of diabetic animals fed with sugar.
5. It raises the respiratory quotient of diabetic animals fed with sugar.
6. It affects the migration of fat in diabetic animals.
7. It causes the acetone bodies to disappear from the urine of diabetic animals.

THE DOSAGE OF INSULIN

A physiologic unit of insulin was originally defined as that amount which lowers the percentage of sugar

in the blood of a normal rabbit, weighing 2 kg. and starved for twenty-four hours, to 0.045 per cent. within three hours. Because this amount of insulin is said to be greater than that required in the treatment of certain cases of diabetes in man, it has been found advisable to designate as one clinical unit one third of the foregoing physiologic unit. This clinical unit has been adopted on the labels of all preparations of insulin manufactured for use on man. In carrying out the actual assays on rabbits, considerable variations are found in the extent to which different animals react to equal doses of insulin. It is necessary, therefore, to use many animals for the assay of each sample of insulin, and to take the average of the highest results obtained. Much work is being done, using various other animals than the rabbit (mouse, diabetic dog) in an endeavor to improve the method of assay. In large diabetic clinics, a valuable assay can be obtained by determining how many extra grams of carbohydrate can be metabolized per unit of insulin. For this purpose, "pedigree" patients must be used; i. e., patients that have been under observation for a long time, and in whom the carbohydrate balance is precisely known.

THE THERAPEUTIC ACTION OF INSULIN AND ITS VALUE IN THE TREATMENT OF DIABETES

As a method for the preparation of insulin in suitable form had been found, it became possible to test its value in the treatment of diabetes mellitus. This has been done partly in the medical clinic of the University of Toronto, under the direction of Dr. Duncan Graham, and partly in various clinics in the United States and Canada. Further investigation on the administration of insulin in diabetic dogs, and in severe cases of diabetes mellitus, have shown that the injection of insulin restores to the body the lost ability to oxidize carbohydrates, and that glycogen is again stored in the liver. This it evidently does by converting glucose into the active form; and if insulin is given in sufficient quantity and at proper intervals, the blood sugar is maintained at a normal level and the urine remains free of sugar. Fat is also completely burned. As a result of this, acetone bodies disappear from the urine, and diabetic acidosis and coma are prevented. In brief, the artificial administration of insulin restores to the body a normal metabolism of carbohydrates, fats and proteins.

Although the administration of insulin is capable of relieving the cardinal symptoms and signs of diabetes mellitus, *one must not conclude that insulin can replace the dietetic treatment of the disease.* In diabetes there is a decreased production of insulin, owing to the weakened function of the islands of Langerhans. As all patients with diabetes mellitus are capable of metabolizing a certain amount of carbohydrate, the degree of damage to the islands and their capacity to produce insulin may be ascertained by estimating the tolerance of the patient for carbohydrate. The etiologic factor or factors causing this damage to the pancreas have not been discovered. It is known, however, that diets containing excessive quantities of carbohydrates, or proteins, fats and carbohydrates in improper proportions or quantities, as well as infections, further weaken the function of the already damaged pancreas. The object of treatment should be to give rest to the damaged islands, and conserve their power to produce insulin. Before the introduction of insulin, this was accomplished best by the dietetic treatment as outlined by Allen, Joslin and others. By marked restriction in diet, combined with periods of fasting, Allen demonstrated that, even in severe cases of diabetes, the urine could

be kept free of sugar, and the blood sugar maintained at a normal level for long periods of time. Later, many patients remained aglycosuric without the necessity of fasting. This method of treatment gave a maximum of rest to the damaged pancreas, and allowed it to maintain, or even increase, its power to produce insulin. The lives of patients suffering from severe diabetes were definitely prolonged, whereas in mild cases sufficient tolerance for carbohydrates was regained to allow the patients to take a more liberal diet and yet remain free of symptoms. Unfortunately, the extreme undernutrition resulting from the prolonged use of the restricted diet with fasting caused a marked loss of weight and strength, and made the continuation of the treatment difficult.

The introduction of insulin in the therapy of diabetes makes it possible to begin the treatment of even severe cases with a palatable diet of protein, fat and carbohydrate in adequate quantities to meet the requirement of the body at rest in bed, or with moderate exercise, and at the same time afford adequate rest to the damaged islands of Langerhans. After the glycosuria and ketonuria have disappeared, and the blood sugar level has returned to normal, the diet may be gradually raised until the patient is receiving sufficient food to maintain the body weight slightly below normal, and sufficient calories are being supplied for the body to perform the ordinary duties of life. In some cases the pancreas has so regained its power to produce insulin that the daily dosage need not be increased; in others, in which the damage to the pancreas is more permanent, sufficient additional insulin must be given to keep the urine of the patient free of sugar on the increased diet.

Overdosage of insulin is followed by the development of serious signs and symptoms demanding immediate treatment. The patient complains of a sense of weakness and fatigue, associated with sweating, a feeling of tremulousness, and sometimes pallor and flushing. In the more severe forms there is acute distress, with mental disturbances and even unconsciousness. These reactions are due to a fall in the blood sugar below the normal level of 0.1 per cent. When the blood sugar falls to 0.07 per cent., symptoms develop, and if it falls to 0.035 per cent. the patient becomes unconscious. The symptoms, though alarming both to the patient and to those in attendance, are completely relieved if glucose is given immediately.

INDICATIONS FOR THE USE OF INSULIN

The indiscriminate use of insulin in the treatment of diabetes mellitus is a real source of danger. At the beginning of treatment, all patients with diabetes mellitus, except those suffering from severe acidosis and coma, should be put to bed and given a basal maintenance diet. This diet contains protein sufficient to replace the daily wear and tear of the tissues of the body, approximately 0.3 gm. per pound of body weight. Additional calories in the food are supplied by carbohydrate and fat in proper proportion to prevent the production of acetone bodies, and in adequate amount for the height, weight and sex of the patient. If the urine of the patient becomes free of sugar on this diet, it should be gradually raised until he is receiving an adequate diet for the performance of the ordinary duties of life. Should the patient remain aglycosuric on this diet, insulin treatment is not indicated. Approximately 75 per cent. of diabetics may be controlled by dietetic treatment.

If, at the end of a week's treatment on a basal diet, the urine is not free of sugar, the patient requires

insulin. The amount of insulin to be injected daily is dependent on the total amount of glucose found in the urine at the end of the preliminary period of observation. It is given in divided doses, injected subcutaneously, usually before breakfast and supper or, in more severe cases, before each meal. Under combined dietetic and insulin treatment the patient rapidly improves. As the body is supplied with an adequate amount of insulin, carbohydrates are properly metabolized, sugar and acetone bodies disappear from the urine, and the blood sugar returns to a normal level. The patient enjoys his food, and feels stronger, and the mental depression so characteristic of patients with severe diabetes is replaced by cheerfulness. Some patients have been able to resume their former occupations after a months' treatment.¹

Probably the most brilliant results obtained with insulin have been in the *treatment of diabetic acidosis and coma*. In these cases insulin must be given immediately. In all cases of acidosis and threatened coma there is a favorable reaction to combined dietetic and insulin treatment.* In uncomplicated cases of advanced coma the majority of patients—four out of six—have recovered after being given repeated intravenous injections of insulin combined with an adequate amount of glucose to prevent the blood sugar from falling to a dangerous level. In all the other fatal cases of coma in which treatment was given, there was an associated infection sufficiently severe to cause death apart from the diabetic condition.

The susceptibility of the diabetic patient to infection has long been recognized. The effect of a developing infection or a surgical operation on the future course of a case of diabetes was feared by the physician. These, combined with acidosis and coma, constituted danger points in the life of the diabetic patient. If infection develops, or an operation becomes necessary in a case of diabetes adequately controlled by diet, sufficient insulin should be given to keep the urine free of sugar and acetone until the patient recovers. In more severe cases of diabetes already under insulin treatment, the daily dose must be increased. Under combined dietetic and insulin treatment, diabetic patients have recovered from mild infections in a normal period of time; teeth have been extracted, tonsils removed, and amputations performed with safety.

Diabetes mellitus can be successfully treated in the less severe form by the giving of a properly balanced diet; in the more severe, by proper diet and by an adequate daily dosage of insulin. The success of treatment is dependent on the physician for the institution of proper treatment, and on the patient for the continuation of the treatment prescribed. A prescription of a properly balanced diet is of as much importance for a case of diabetes mellitus, or even of greater importance, than is one of drugs in the majority of the diseases the physician is called on to treat. In the beginning of treatment, the value to the patient of a month's or six weeks' stay in an institution with proper facilities for the investigation and dietetic control of cases of diabetes mellitus cannot be overestimated. The case can be more fully investigated and the effect of an accurate diet carefully controlled. The patient appreciates more readily the value of proper diet in the treatment of his condition, and becomes familiar with the character, amount and preparation of the various foodstuffs con-

1. Further details of clinical experiences with insulin will be found in the articles by Banting, Campbell and Fletcher, and by Allen, Joslin, Fitz, Geyelin, Wilder, Williams and others in the *Journal of Metabolic Research*, May, 1923.

stituting his diet. In an institution the tuberculous patient learns how to live; the diabetic, what to eat.

THE MANUFACTURE OF INSULIN

Since the method for the manufacture of insulin from slaughter-house material demands the greatest of care and the strict observance of certain principles of extraction, and since it has been found that toxic symptoms are readily caused by excessive dosage, steps have been taken by the University of Toronto to insure the proper manufacture of insulin, and to provide for some measure of control over its distribution among physicians. The history of the various steps is briefly as follows: After it was discovered that an active non-irritating preparation of insulin could be prepared on a small scale by extraction of the pancreas with weak alcohol and subsequent purification of the extract by fractional precipitation with stronger alcohol, attempts were made to expand the scale of production so as to yield sufficient material for clinical use. Great difficulties were encountered in this work, and for more than two months scarcely any insulin could be obtained. When the difficulties were at last overcome and a reliable large scale procedure had been definitely elaborated in detail, the question of publication of the method came to be considered. It was pointed out, however, that such publication of the method would probably result in some commercial firm modifying the process sufficiently so as to obtain a patent which would give it a monopoly in manufacture, and that the only satisfactory way to prevent this was for the chief originators of the method to apply for such patents in their own names and to assign these, when granted, to some noncommercial organization to administer in such a way as to prevent commercial exploitation of the product. Application for process and product patents were, therefore, filed in Canada and the United States, and the board of governors of the University of Toronto was requested to accept these patents and to assume responsibility for their administration on the basis, first, that the "patent is not to be used for the purpose of restricting the preparation of this or similar extracts elsewhere, or by other persons," and, second, "that the university holds the patent for the sole purpose of preventing any other person from taking out a similar patent, which might restrict the preparation of such extract."

The Board of Governors accepted the trust and created a body known as the Insulin Committee to advise the Board in matters of administration. The personnel of the Insulin Committee is as follows: Col. A. E. Gooderham, convener; Sir Robert Falconer, president of the university; Mr. T. A. Russell; Sir Joseph Flavelle, and an advisory committee consisting of: Dr. H. J. R. Macleod, secretary; Dr. F. G. Banting; Mr. C. H. Best; Dr. R. D. Defries; Dr. J. G. Fitzgerald; Dr. Duncan Graham, with Mr. C. H. Riches as legal adviser.

One of the first questions to be considered by the committee related to further expansion in the manufacture of insulin. Since, however, a large scale method had not yet been sufficiently evolved to insure a product of constant potency, it was decided before issuing licenses to manufacturers to develop the details of such a method. At the same time it was realized that adequate facilities for doing this on a practical manufacturing scale could not be provided for unless by collaboration between the committee and some highly organized firm or firms engaged in the manufacture of

animal extracts of a similar nature. And since it was also evident that such collaboration could not be carried out satisfactorily with several firms at one and the same time, it was decided after careful consideration to invite the Eli Lilly Company of Indianapolis to send representatives to Toronto to confer on the question. As a result of this conference, an agreement was entered into by which this firm was granted an exclusive license in the United States for the manufacture of insulin for an experimental period set provisionally at one year, under the conditions that:

1. The firm utilize all of its available facilities and personnel for the manufacture of the product and pay all expenses entailed in its large scale manufacture in their plant.
2. The firm submit samples of its product to the University of Toronto for approval before distribution to physicians for use on patients.
3. The approved product be distributed either gratis or at cost price only to such physicians as may be chosen in consultation with the University of Toronto.
4. A certain percentage of the approved product be given gratis to the University of Toronto for use in its experimental laboratories, and for clinical purposes in its associated hospitals.
5. After the expiration of the experimental period, the firm be licensed by the University of Toronto to manufacture the product under the same favorable terms as may be granted to other firms operating in the same territory.

In consideration of the acceptance of these conditions, contained in an agreement between the firm and the University of Toronto signed, May 31, 1922, all known details of the method of manufacture of insulin were given to the Eli Lilly Company, and work was immediately started by it on a large scale.

Having made these arrangements for a gradual expansion in the manufacture and clinical use of insulin in the United States, the Committee now took up the question of its control along similar lines in Great Britain, and it was decided to apply for patents in that country and to recommend to the board of governors that these, when granted, should be assigned to the Medical Research Council of Great Britain on the same general terms as they had been assigned to the University of Toronto; namely, to administer as they deemed best for the purpose of preventing commercial exploitation and uncontrolled manufacture in that country.

During the latter part of 1922, intensive work on the manufacture of insulin, both in Indianapolis and in Toronto, resulted in the gradual increase of the output, so that it became possible to offer insulin for clinical trial to a larger number of physicians, whose reports on its therapeutic value have proved to be of great value in guiding the committee and the manufacturers in questions of suitable dosage, possible risks from overdosage, and the elimination of irritating impurities. This insulin was distributed free of cost by the Eli Lilly Company.

The large expenses incurred by the collaborating firm up to this stage made it necessary for it early in 1923 to put a cost price on its product. With the approval of the committee of the University of Toronto, the number of collaborating physicians was also increased so that there might be in each large center of the United States at least one clinic in a position to undertake treatment of emergency cases of diabetes by the use of insulin. Arrangements were also made through the Connaught Laboratories to undertake a similar expansion of distribution in Canada.

Through the whole-hearted collaboration of the university and the Eli Lilly Company, and the valuable assistance of its scientific adviser, Dr. G. H. A. Clowes, large scale production of insulin has been carried forward at a satisfactory speed, and it is hoped that it will be possible at an early date to terminate the experimental period.

That the policy as outlined above has been justified is exemplified by the fact that several firms have exploited, for the treatment of diabetes, entirely worthless preparations to which they have given names so closely similar to "insulin" as to convey the impression that they contain the antidiabetic hormone. While no other harm may come of this than that useless medicine is taken, it indicates that deaths from overdosage might have occurred in practice, had the method for the manufacture of potent preparations of insulin been made available without any control, and without some supervision over its distribution. Under such conditions the market would by now be flooded with preparations of unknown potency and durability, and serious accidents would inevitably have resulted because of overdosage.

The method of gradual expansion in the clinical application of insulin has eliminated the risks of such accidents. That these would certainly have occurred had insulin been made freely available to the profession will be sufficiently clear from the description of its use which is given in a preceding part of this article. Even at the risk of repetition, it should be pointed out that the symptoms of hypoglycemia due to an overdose of insulin may come on while the patient is asleep, and also that they are sometimes not unlike those of the late stages of many cases of coma. When insulin is used for the treatment of diabetic coma, therefore—and its value here is unquestioned—the physician must see to it that the blood sugar is not lowered to the level at which hypoglycemic symptoms supervene. Experience has shown how these symptoms can be recognized and antidoted so that their occurrence is no longer to be feared as a risk.

It is expected that insulin will be available in general practice within the next few months, and in anticipation of this, it is strongly urged by the Insulin Committee that physicians who may desire to employ this useful antidiabetic remedy in practice should visit some clinic in which it has been in use. This is advisable, not only that they may become familiar with questions of dosage, and the treatment of cases showing symptoms of overdosage, but also that they may learn to recognize the type of case for which it should be prescribed. It should be remarked in this connection that many, if not most, cases of diabetes can be adequately treated by dietetic measures alone, and that the necessity for insulin treatment can be determined only by careful clinical study.

FUTURE POLICY OF THE UNIVERSITY OF TORONTO

Now that a satisfactory process has been worked out for the manufacture of insulin on a large scale, the Insulin Committee considers that, at the expiration of the temporary agreement with the Eli Lilly Company, licenses to manufacture insulin should be granted to other firms who are able and willing to comply with certain conditions imposed by the committee. The Eli Lilly Company agrees to assign to the committee patents covering certain improvements in the manufacture of insulin that have been elaborated by it. All information in the possession of the committee, including the various methods involved in the manufacture of insulin,

whether patented or not, will be conveyed by the committee to the licensed manufacturers, it being understood, however, that they on their part agree to put at the disposal of the committee any new processes they may devise, whether patentable or not, and that the committee may then transmit this information to other manufacturers. In other words, the policy is to be that all patents already applied for and all information concerning the manufacture of insulin will be interchanged and made available for such manufacturers as satisfy the Insulin Committee that they are in a position to undertake the manufacture of this substance. By this arrangement it is considered that the purposes for which the University of Toronto holds the patent rights will be fulfilled, and that the medical profession will be assured of the most satisfactory product at the lowest cost.

The Insulin Committee desires to express its appreciation of the whole hearted manner in which the Lilly research laboratories have cooperated in working out the problems of large scale production of insulin. Without this collaboration it is unlikely that a nonirritating product of such satisfactory potency and durability could have been produced in adequate amounts to meet the demand of the medical profession, in this comparatively short time.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

Iletin (Insulin-Lilly).—A brand of insulin (see THE JOURNAL A. M. A., June 2, 1923, p. 1617).

Manufactured by Eli Lilly & Co., Indianapolis, Ind., under license from the Insulin Committee of the University of Toronto. U. S. trademark applied for.

Iletin (Insulin-Lilly) H-10: 5 Cc. ampules containing 10 units in each cubic centimeter.

Iletin (Insulin-Lilly) H-20: 5 Cc. ampules containing 20 units in each cubic centimeter.

Fresh pancreatic glands of animals, from which fat and connective tissue have been removed, are ground, and extracted with 1½ volumes 95 per cent. alcohol, containing 0.11 per cent. absolute sulphuric acid. The mixture is agitated during two hours and then filtered. The residue is again extracted using an equal volume of 70 per cent. alcohol containing 0.11 per cent. absolute sulphuric acid. This is filtered, and the filtrate added to the first filtrate. The combined filtrates are chilled to 0 C. and filtered. The filtrate is concentrated to about one-twenty-fifth its original volume, filtered, and the filtrate added to 5.3 times its volume of 95 per cent. alcohol. This mixture is allowed to stand for several hours, and then filtered, and the filtrate made up to contain 93 per cent. alcohol. After standing several days, the precipitate formed is collected and dissolved in distilled water. The insulin preparation is further purified by precipitation at the isoelectric point, the hydrogen ion concentration being adjusted to approximately pH 4.7, after which the solution is allowed to stand in the icebox. The precipitate formed is dissolved in acidified water (pH 2.5), filtered, reprecipitated and redissolved if necessary for further purification. The solution is then diluted to approximately the desired potency, filtered through a Berkefeld filter, and submitted to standardization and sterility tests.

On account of the extraordinary variation exhibited by rabbits, standardization is carried out on a very large number of animals, and it is required that not less than 60 per cent. and not more than 70 per cent. of the animals employed exhibit pronounced convulsive symptoms in a period of from two to five hours. The number of rabbit units having been approximately estimated, the solution is diluted to approximately the desired strength and is then submitted to the University of Toronto laboratory for further control tests which employ a somewhat different procedure.

In addition to standardization by means of animals, the experimental lots are tested in human cases in a number of diabetic clinics. So far as possible, each experimental lot is tested in two or more cases in each clinic. The results reported are compared with the animal tests. If the results show considerable variation from the results of the animal tests, the lot is retested, both on animals and in human cases.

For final distribution, a series of lots which have been tested are mixed on the basis of their unity, adding sterile water if necessary to bring the product to the desired strength. The product is then again submitted to unity tests and to tests of sterility.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - "Medic, Chicago"

Subscription price - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JUNE 23, 1923

REPORT OF COMMISSION ON BOTULISM

Outbreaks of food poisoning led the canning industry of this country in 1919 to propose and finance a thorough investigation of botulism. Original plans for the study covered only the state of California, but subsequent changes included the entire United States. In the report of the commission,¹ recently issued,² it is pointed out that ninety-one outbreaks of botulism have occurred in this country and Canada since 1899, and that 345 persons have been affected, 213 of whom died. Plant foods were proved or assigned as the cause in sixty-three of these outbreaks, and animal food products in nineteen. Home canned string beans head the unfortunate list with seventeen outbreaks to their credit; home canned corn is second with nine; commercially pickled and bottled ripe olives are third with seven; then come commercially packed spinach six, home canned asparagus five, commercially canned string beans three, and so on to a total of fifty-one outbreaks accredited to home preserved products, and thirty-one to commercially canned goods.

Although forty-five of these outbreaks occurred in California and thirteen in Washington, botulism is by no means a problem of these states alone. Botulism, either human or animal, has occurred in all states of the union except fourteen. Agricultural products in certain areas are unquestionably more heavily contaminated with *B. botulinus* spores than in others, but the organism seems to exist in nearly all parts of the earth. The California investigation disclosed information that is not ordinarily accessible. It is possible that botulism would be discovered where it has not yet been reported if similar investigations were made in those states.

The prevailing idea that food must be visibly spoiled to be toxic is not entirely supported by this investigation. In some instances, botulism developed from eat-

ing canned food which by odor, taste and sight presented no evidence of being spoiled. In a majority of instances, however, the canned products were spoiled so as readily to attract attention, and were said to be "a little sour" or with "odor unpleasant," "taste not right," "no odor but tastes metallic," and "top of jar moldy; lower portion tastes bitter." A mere taste of the infected food in some instances led to fatal botulism, while the same food when cooked was harmless. Botulism from ordinary commercially packed fruits, and such vegetables as tomatoes, was not disclosed by this investigation, although numerous persons probably ingest *B. botulinus* spores on raw vegetables and fruits. There is therefore strong evidence that botulism is always preceded by the consumption of preserved food that contains *B. botulinus* toxin. Otherwise, cases of botulism with no history of eating canned food, none of which were discovered in this investigation, would be numerous.

The recorded case mortality rate of botulism in the United States is 61.7 per cent., and is surprisingly uniform. It varies, however, in different group outbreaks from zero to 100 per cent., and apparently depends on the amount of toxin ingested. In 85 per cent. of 173 fatal cases, symptoms of botulism appeared within forty-eight hours after the food was consumed.

Antitoxin has been administered in eleven outbreaks of botulism. In two instances, Type B antitoxin was injected in what was later shown to be a Type A intoxication. In three other instances, details of administering the antitoxin have not been published. There have been six outbreaks of botulism in which homologous antitoxin was used, and these afford the only reliable data concerning its effectiveness in combating the disease. In these outbreaks, thirty-one persons became ill and twenty-three died, seventeen before antitoxin could be obtained, and six after its administration. One person recovered without any antitoxin, and six after it was used. In none of these cases was the antitoxin available until at least four days after the toxic food had been ingested.

For the prevention of botulism, cleanliness, sound materials and thorough processing of food are indispensable. Spoiled canned food is not safe until all parts have been at the boiling point from thirty to forty-five minutes. The time depends somewhat on the bulk, the size of the container, the altitude and other variable factors. Present regulations of the California state board of health require that ripe olives be processed at 240 F. for at least forty minutes. The temperatures employed in home canning are usually inadequate. Commercial processing was formerly also inadequate. Weinzirl³ and Cheyney,⁴ before outbreaks of botulism were reported, showed that certain commercially canned goods on the market were not sterile,

1. This commission consisted of J. C. Geiger, epidemiologist, U. S. Public Health Service; E. C. Dickson of Stanford University Medical School, and K. F. Meyer of the George Williams Hooper Foundation for Medical Research, University of California, and the California State Board of Health.

2. The Epidemiology of Botulism, Pub. Health Bull. 127, Washington, D. C., September, 1922.

3. Weinzirl, J.: Bacteriology of Canned Foods, J. M. Res. 39: 349 (Jan.) 1919.

4. Cheyney, E. W.: Study of Micro-Organisms Found in Merchantable Canned Goods, J. M. Res. 40: 177 (July) 1919.

and that the proportion of cans containing viable spores might be in some products as high as 25 per cent. It is not surprising, therefore, that occasional outbreaks of botulism have occurred. It is evident, however, that the commercial methods have been generally efficient, and that, with the exception of pickled olives and spinach, understerilization for the spores of *B. botulinus* has been rare. This danger, it appears, has been fully recognized, and scientific canning methods are replacing empiric standards. *B. botulinus* spoilage will probably be entirely eliminated in commercially canned goods in the near future.

A SUMMARY OF OUR KNOWLEDGE OF RICKETS

Following the close of the war, information began to reach London that rickets was extremely prevalent in Vienna as a result of deficiency in diet. The Medical Research Council, which had been carrying on special investigations of this disease, appointed a committee to carry on investigations in Vienna jointly with the Accessory Food Products Committee. The committee found at once that war edema had been prevalent, but was no longer so, and that scurvy was common among infants. Moreover, rickets had increased both in incidence and in severity.

As is pointed out in the report just issued,¹ the problem of the cause of rickets is approaching solution, but the interplay of the various factors influencing the satisfactory digestion of calcium phosphate in the growing skeleton is still obscure. As has been indicated in THE JOURNAL, certain investigators were of the opinion that rickets is an infectious disease, whereas others were definitely committed to the view that the disease bears a certain relationship to diet. In his foreword to the present report, Professor Pirquet, in whose clinic Dr. Harriette Chick and her colleagues carried on the work, states that he himself believed that rickets was of an infectious origin, but following their three years of conscientious work, he now has been convinced that the disease is definitely associated with a diet poor in fat soluble vitamins and with the absence of sunlight. The British workers, he says, succeeded with the accuracy of a laboratory experiment in maintaining a large number of artificially fed babies free from the disease, and, further, were invariably successful in healing children with rickets already developed.

This extensive clinical investigation completes the final establishment of views regarding the cause and therapy of rickets which mark an epoch in the control of this disease. In their summary of the results, the workers outline for us a history of the research which completes the record and assigns to each of the workers a correct share in the success. It has been shown that the following factors play a part in the etiology of

rickets: (1) an organic factor in diet concerned with the calcification of bone; (2) light, and (3) an adequate amount and correct balance in the diet of the salts of calcium and phosphates. To Mellanby is given the credit of having discovered the importance of the organic factor and having stressed the influence of the balance between this factor and the energy bearing constituents of the diet, particularly the amount and nature of the cereal element. MacCollum, Hess, Unger and others have extended these investigations, and have shown that other factors also have an influence. In 1890, Palm suggested the importance of sunlight following study of the epidemiology of the disease, and in 1919 Huldchinsky showed the curative effect of radiation from the mercury vapor lamp, which was shortly confirmed by Hess and others. The study of the conditions in Vienna indicated well the importance of all these primary factors, and it now remains only to show the extent to which each of them operates.

Of special interest is the mutual congratulation and satisfaction of the Austrian and English scientists in having arrived at such satisfactory conclusions as the result of their cooperation in this work. The English committee is profuse in its appreciation and thanks to the Austrian clinic for the great helpfulness and good will in reaching satisfactory conclusions. Professor Pirquet says: "I can only say that our good will was ideally reciprocated by our guests. What clinic would not be glad to receive such pleasant colleagues with so much energy, such keen scientific interest and so high a standard of scientific accuracy as our recent visitors?"

EPINEPHRIN AND THE REVIVAL OF THE HEART

The widespread interest with reference to the use of epinephrin as a life-saving drug, because of its apparent power to revivify the human heart under certain untoward conditions, is a natural consequence of some of the publicity that the subject has received. There is something uniquely dramatic in the response of a heart, which has apparently ceased its action, under unexpected circumstances. It presents the possibility of successful restoration of life when death seems already to have been ushered in. Thus, the fear of the end may become replaced by the hope of survival in many instances in which untoward conditions presage the interruption of life through failure of the circulation. The outstanding facts in regard to what has actually been accomplished in an experimental way and has been reported from clinical sources were reviewed in a recent issue of THE JOURNAL.¹ They stress the long known observation that a heart which has ceased to beat may often be revived by the injection of epinephrin; and when this is done with the circulation still intact, a renewal of the flow of blood may ensue, with consequent restitution of tissue functions.

1. Studies of Rickets in Vienna, 1919-1922. Report to the Accessory Food Factors Committee Appointed Jointly by the Medical Research Council and the Lister Institute, His Majesty's Stationery Office, London, 1923.

1. The Intracardiac Injection of Epinephrin, editorial, J. A. M. A. 80: 1314 (May 5) 1923.

In almost all of the discussions on this subject, certain aspects of fundamental importance seem to have been overlooked or forgotten. It is one thing to promote restoration of contraction in a quiescent cardiac muscle, and quite another problem to secure restitution of function in the organism as a whole—even when the entire circulation and the respiratory activities are satisfactorily established. The foremost reason for this seeming contradiction lies in the now well established consequences of lack of circulation in different organs and tissues. All of them are sure to suffer severely sooner or later from the anoxemia due to an interrupted circulation. Some structures, however, are damaged far more easily than others in this respect. Above all is the high susceptibility of the nervous tissues to permanent damage as a result of even temporary deprivation of oxygen.

The central nervous system exhibits a difference in the nutritive requirement of its various parts. Different groups of nerve cells show unlike ability to resist complete anemia without losing their ability to revive. Macleod has summarized the existing knowledge by pointing out the varying periods of time beyond which anemia cannot be extended without producing changes in the nerve cells that place them beyond recovery. For the cerebrum, eight minutes may suffice; for the cerebellum, medullary centers and spinal cord, thirteen, thirty and sixty minutes, respectively. The great susceptibility of the cerebral cells to lack of oxygen explains the ease with which consciousness is lost as the result of respiratory failure or asphyxia. It also emphasizes the all too little recognized fact that restoration of the circulation must be exceedingly prompt if permanent damage is to be averted. Every minute literally counts in any effort to resuscitate an asphyxiated nerve cell, in contrast with a muscle, for example. And so it happens, unfortunately, that permanent mental defects sometimes ensue in cases of poisoning with carbon monoxid from coal gas, water gas or automobile exhaust fumes—a condition leading to virtual anoxemia because of the reduced oxygen-carrying power of the blood. Similar mental disturbances are said to have been observed for similar reasons in cases of severe pernicious anemia.

It is sometimes taught that the heart, lungs and kidneys represent the three legs of the tripod of life. Their function may at times be restored after a cessation. But life without the participation of the higher nervous system is at best the expression of a set of mechanical reflexes—a veritable brainless existence. Discriminative features are lost. Consequently, the hope engendered by the stories of revival of the heart by means of epinephrin will be futile unless it carries along a realization of the importance of quick action to save the nervous system as well as the other functions. Otherwise resuscitation, if it does occur, means little more than the temporary survival of a mere automaton rather than an intelligent sentient creature.

There need be no utter discouragement or rejection of the favorable response which a potent drug can elicit in critical circumstances, but it will be a futile response unless it is secured speedily. Herein lies the greatest limitation of the much lauded proposals for reviving the moribund; from here, too, arises the scientifically valid warning that precious seconds, not to say minutes, should never be wasted when resuscitation is at stake. This applies most emphatically to every condition in which, for any reason, the master tissues of the body are deprived of a well oxygenated circulation.

YAWS IN THE TROPICS

The gratifying success that has been attained by preventive medicine in almost completely eradicating certain diseases of infectious origin has acted as a spur to renewed efforts in many directions. The mere knowledge of the mode of infection and the life cycle of the infectious agent will not of itself always suffice to promote the desired ends. If it did, the control of malaria would prove to be more easy than it has been found to be. Sellards and Goodpasture¹ have lately made the pertinent comment that, from a psychologic standpoint, the disease it is proposed to eradicate must be instinctively very objectionable to the patient. In addition to this, the effective measures for its control must be of a nature that will appeal to all the persons concerned, or at least be inoffensive to them. From the standpoint of obnoxiousness, the tropical disease yaws meets this requirement, for few maladies produce more loathsome lesions. Furthermore, the efficacy and availability of neo-arsphenamin as a drug applicable to the treatment of yaws brings the possibility of its eradication still more prominently into consideration.

In another respect also, recent studies² of yaws bring added encouragement. Recurrence or reinfection after treatment occurs in only about 5 per cent. of the cases. According to Sellards and Goodpasture, sufficient immunity is developed in longstanding cases to afford some degree of protection; and a certain proportion may be put in the category of "chronic self-limited disease." It is a distinct advantage, as these investigators have pointed out, to be working with a type of infection of this character, which can produce a substantial immunity. The lack of immunity results in the production of many chronic cases of disease, and these serve as reservoirs of the infecting agent. For this reason, malaria has been brought under imperfect control only in the same geographic areas in which yellow fever, likewise conveyed by the mosquito, has been eliminated; and it is even tending to die out spontaneously in some of its endemic zones.

These circumstances are highly important in relation to yaws. Sellards and Goodpasture, who have studied

1. Sellards, A. W., and Goodpasture, E. W.: Summary Concerning the Control of Yaws, *Philippine J. Sc.* **22**: 285 (March) 1923.

2. Sellards, A. W.; Goodpasture, E. W., and De Leon, W.: Investigations Concerning Yaws, *Philippine J. Sc.* **22**: 219 (March) 1923.

in various parts of the world, have no hesitation in selecting yaws, without reservation, as the outstanding disease of the tropics through which the immediate confidence and enthusiasm of the people can be secured in public health work. They regard it as reasonable to suppose that systematic effort, sustained over a period of a few years, would accomplish even the eradication of yaws from a given locality. The Philippines offer abundant opportunity to our authorities to test the feasibility of the proposed program. If, as Sellards and Goodpasture further aver, efforts at the control of one spirochetal disease, like yaws, may be properly regarded as a step in the direction of the infinitely more difficult problem, the control of syphilis, likewise of spirochetal origin, their suggestion deserves most serious consideration.

Current Comment

IDENTIFICATION OF *BACILLUS BOTULINUS* BY SEROLOGIC METHODS

Isolation of *Bacillus botulinus* from suspected food is somewhat difficult; this is evidenced by the fact that only 19 per cent. of the outbreaks of botulism in Germany, and 35 per cent. of those in this country,¹ have been proved bacteriologically and toxicologically. Peculiarities of the food products themselves may be responsible in part for the difficulty, but, in some instances, the immunologic and bacteriologic methods employed have been inadequate. Success has apparently followed a recent serologic attack on this problem. Kelser² has shown that the complement fixation test may be used to identify whole bouillon cultures of *B. botulinus*, filtrates of pure and contaminated cultures, and saline suspensions of toxin-free spores, and that in the case of canned food it may be used to demonstrate *B. botulinus* and its toxin in asparagus, spinach, corn, string beans and sausage. The technic employed is similar to the routine method in use in the veterinary department of the army. The sheep hemolytic system, fresh guinea-pig serum for complement, glycerized antishoop amboceptor and a 3 per cent. suspension of sheep erythrocytes are used. Positive and negative control serums are represented by antitoxic serum from hyperimmune horses, and serum from normal horses, respectively. The suspected canned food or culture is titrated as antigen. When the organism examined is in pure culture, a 48 hour broth culture is simply autoclaved, diluted from one to three times with physiologic sodium chlorid solution, and then titrated against a known positive serum. When the broth culture is contaminated, it should be at least five days old. It is then filtered, first through asbestos wool and then a Berkefeld filter, autoclaved, and titrated against a known positive serum. Such filtrates, says Kelser, give "exceedingly good results." In vegetables undergoing examination, the fluid in the container is drawn off, filtered through paper, autoclaved and

titrated. If there is too little, it may be expressed with a spatula. The controls for the antigens prepared from canned foods consist of titrations with sound, uninoculated similar food. These were consistently negative. When the antigenic value of the fluid from canned food appeared slight, it could be increased by desiccation or evaporation. A stable antigen was prepared from washed spores of *B. botulinus* that had been killed in the autoclave. This method of identification seems to have been successful under experimental conditions. It will doubtless be of value in outbreaks of botulism.

THE NATUREOPATHIC COMPLEX IN CONNECTICUT

An Act Concerning the Practice of Natureopathy (Chapter 245, Acts of 1923) was recently enacted by the Connecticut legislature. That body recognized the obscurity of the term "natureopathy," and in order that there might be no mistake concerning the matter, for its own guidance, and for the guidance of the people and the courts, defined the cult in the following terms:

For the purpose of this act, the practice of natureopathy shall be held to mean the practice of the psychological, mechanical and material sciences of healing as follows: The psychological sciences, such as psycho-therapy; the mechanical sciences, such as mechano-therapy, articular manipulation, massage, corrective and orthopedic gymnastics, neuro-therapy, physio-therapy, hydro-therapy, electro-therapy, thermo-therapy, photo-therapy, chromo-therapy, vibro-therapy, concussion, pneumatotherapy and zono-therapy; and the material sciences, such as dietetics, histology and external applications; but shall not be held to mean internal medication.

Unfortunately, the definition does not define. Not only is it tautological, having been expanded for the apparent purpose of lending dignity to the cult, but it is in part in words even more obscure than the word defined. What is vibro-therapy as distinguished from mechano-therapy, massage and physio-therapy? What is neuro-therapy? Or zono-therapy? Or pneumatotherapy? Or histology? If the Connecticut legislature knows or can find out the meaning of the terms used in its definition of natureopathy, it is to be hoped that it will pass an amendatory act embodying such definitions. Until it does so, one can but speculate as to what was in the legislative mind when the law was passed. As remarkable as the definition embodied in the law are its provisions regarding the qualifications of natureopaths. Any boy or girl—for there is no minimum age limit prescribed for licentiates—having a high school education or its equivalent, and devoting 108 weeks to the study of natureopathy in a school approved by two members of the board of natureopathic examiners, may be admitted to examination. If in those 108 weeks he has mastered anatomy, physiology, histology, psychology, chemistry, hygiene, public health, dietetics, jurisprudence, natureopathic pathology, diagnosis and theory and practice of natureopathic therapeutics, as demonstrated by examination before three natureopathic "physicians," there will be issued to him a certificate that will turn him loose, with the approval of the sovereign state of Connecticut, as a person qualified to treat the sick, to prey upon the lives and health of its people.

1. Dubovsky, B. J., and Meyer, K. F.: J. Infect. Dis. 31: 501 (Dec.) 1922.

2. Kelser, R. A.: Am. J. Pub. Health 13: 366 (May) 1923.

MEDICAL EDUCATION FOR NEGRO STUDENTS

A statement issued recently by the Department of the Interior calls attention to the seriously inadequate facilities for the education of negro physicians, as well as of negro dentists, pharmacists and nurses. It is shown that while there is one white physician for every 553 white people, there is only one colored physician for every 3,194 colored people in the United States, or in proportion to the population about one colored physician to every six white physicians. The disparity in dentists is even greater, there being only one colored dentist to every ten white dentists in proportion respectively to the colored and white populations. There are only two medical schools which are moderately well equipped to furnish instruction in medicine, dentistry and pharmacy. These are the Howard University School of Medicine at Washington, and Meharry Medical College at Nashville. The two schools at present are handicapped from the standpoint of teaching staff, laboratory facilities and equipment so that they are enabled to admit to their classes only one fourth or one third of the qualified students who apply. It is evident, therefore, that the shortage of negro physicians is bound to become more serious unless these institutions are given sufficient financial aid to enlarge their staffs and to secure additional equipment and teaching facilities. Although medical schools for white students are open to negro students also, few attend those schools, scarcely a dozen each year being graduated from these institutions. For both Howard University and Meharry Medical College, the great Foundations are at present offering large funds on condition that each institution from its friends and alumni shall raise a corresponding sum. Both these institutions are securing excellent results from such funds as are available, and are well worthy of consideration by those who have money to give for extending the opportunities in medical education to larger numbers of negro students.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—A four-story addition, containing seventy-five rooms, will be erected at the Florence Ward Hospital, San Francisco.—A new forty-bed hospital will be erected in Lodi, on which construction work will be started, about July 15.

"Herbalist" Sentenced.—According to reports Henry Ching, a Chinese herbalist of Los Angeles, was recently sentenced to five years in Fort Leavenworth Penitentiary, for violation of the Harrison Narcotic Law. It was stated by federal authorities that previous to 1919 Ching had been arrested twenty-two times for violating drug laws, but had never been convicted. In that year he pleaded guilty and was fined \$250 on each of two indictments.

CONNECTICUT

Yale University News.—The two hundred and twenty-second commencement of Yale University, New Haven, was held June 16-22. The association of Yale men in medicine

held its annual meeting, June 18, at the New Haven Medical Association. Dr. Lewis A. Conner, professor of medicine at Cornell University Medical School, New York, and Dean M. C. Winternitz were the principal speakers. The university conferred 716 degrees in course and fifteen honorary degrees. Thirty-one students graduated in medicine. The honorary degree of doctor of science was conferred on the following: Dr. Walter B. Cannon, professor of physiology, Harvard University Medical School, Boston; Dr. Jacques Loeb, head of the department of experimental biology, Rockefeller Institute for Medical Research, New York, and Henry Fairfield Osborn, Sc.D., formerly professor of comparative anatomy at Princeton University, and president of the American Museum of Natural History, New York. The honorary degree of doctor of laws were conferred on Dr. Livingston Farrand, president of Cornell University Medical School, New York.

DISTRICT OF COLUMBIA

Dr. Kober Receives Honorary Degree.—Dr. George M. Kober, dean of Georgetown University School of Medicine, Washington, for the last thirty-two years received the degree of doctor of letters at the one hundred and twenty-fourth annual commencement exercises of the university, June 4. This was also the "golden jubilee" anniversary of Dr. Kober's graduation from the Georgetown Medical School in 1873.

FLORIDA

Addition to Hospital.—A new building will be erected at the Pine Ridge Hospital, West Palm Beach, at a cost of \$36,000, for the exclusive use of negro patients.

Decision on Sheppard-Towner Bill Reversed.—The senate, May 25, killed the bill which would have brought the state within the provisions of the Sheppard-Towner Law (*THE JOURNAL*, June 16, p. 1780). On May 29, however, the senate reversed its decision and passed the measure. The change of attitude on the part of the upper house will make it possible for the state board of health to continue work started several months ago, if the measure is signed by the governor. Following the action of May 25, the senate was flooded with appeals to reconsider its action by various women's clubs of the state.

ILLINOIS

New Medical Practice Act.—The fifty-third general assembly at its closing session, June 19, passed a new medical practice act to replace the 1917 law and the old practice act of 1899 under which the state now operates. The bill now awaits the governor's signature.

Personal.—Prof. Madison Bentley, Ph.D., head of the department of psychology at the University of Illinois, Urbana, is lecturing on psychology during the summer at the University of California.—Dr. Roy W. Johnson has resigned as health officer of Shelbyville. Dr. Adolph G. Mizell has been appointed to succeed him.

Legislative News.—The senate passed a bill, June 15, providing for a home for the rehabilitation of World War veterans at Elgin and for appointment of the staff necessary to insure care for the service men. House bill No. 715 appropriates \$60,000 to purchase about 320 acres of land near or adjacent to the Elgin State Hospital and bill No. 474 appropriates \$200,000 for the construction of the necessary buildings and plant.—An amendment to senate bill No. 128 provides that any soldier or sailor of the World War, and also the wife of any soldier or sailor of the Civil, Mexican and Spanish-American wars, if 50 years of age, may be admitted to the State Soldiers' Home, Quincy.—The senate passed several bills, June 15, in the interest of child welfare. One of the bills legitimizes children born of marriages declared void; another provides that the state shall pay the cost of educating crippled children, but not to exceed \$300 a pupil yearly; another house bill passed provides that the county court may order the county to pay for the care of neglected or abandoned children who have been taken in by charitable institutions.—A bill passed the house, June 15, by 104 to 0, which provides that any one selling poisonous liquor that causes death shall be guilty of murder.

Chicago

Physicians Fined for Negligence.—Drs. Jacob B. Stogol and Jay Riley Gardner, were each fined \$25, by Judge O'Connell, May 18, for failure to report cases of ophthalmia neonatorum, it is reported.

Banquet for Dr. Norman Bridge.—The faculty of Rush Medical College gave a banquet to Dr. Norman Bridge at the Auditorium Hotel, June 13, the fiftieth anniversary of Dr. Bridge's appointment to the faculty of the college. Northwestern University conferred the honorary degree of doctor of science on Dr. Bridge at the annual commencement exercises, June 18.

Sanitary District Loses Fight.—The right to divert more water from Lake Michigan through the drainage canal than is authorized by the Secretary of War was forbidden the sanitary district by Judge Carpenter, June 18. At present the district is allowed to take 4,167 cubic feet a second, but contending that that amount is not sufficient to safeguard the health of Chicago, it has been taking 10,000 cubic feet. The district will carry the case to the Supreme Court. This decision comes fifteen years after litigation of the question began. The district contended that under the police powers of the state the state had the authority to take as much water from the lake as was required for the purposes of health and sanitation.

Undertakers and Necropsies.—The Chicago Medical Society recently passed the following resolution:

Whereas a real obstacle in the way of obtaining permission to make autopsies is the more or less open opposition by many undertakers who advise against granting permission for various pretended reasons, a favored one being that the body cannot be embalmed after autopsy; and

Whereas certain other undertakers offer willing and helpful cooperation with physicians in securing autopsies, and announce that they can assure the relatives that the body will look just as life-like and be preserved just as long as though no autopsy had been held;

It is resolved, that the council of the Chicago Medical Society records its hearty approval of this enlightened policy in favor of autopsies, recommends its prompt adoption by undertakers in general, and urges on the members of the Chicago Medical Society to insist on their inherent right, in the interest of the advancement of medical knowledge, to receive cooperation, and not antagonism, from undertakers in seeking permission to make autopsies.

League for the Hard of Hearing.—At the fourth annual conference of the American Federation of Organizations for the Hard of Hearing, Inc., in Chicago, June 18-20, Dr. H. O. Jones of the department of health, Chicago, spoke on "Medical School Inspection"; Dr. Gordon Berry, Worcester, Mass., on "Deliberately Deaf"; Dr. Carl A. Menninger, Topeka, Kan., "Mental Effects of Deafness," and Dr. Harry Mock, Chicago, on "Industrial Rehabilitation Service Through Federal and State Acts." Dr. Harold Hays presided. A lip reading symposium was held Wednesday afternoon. The conference closed with a banquet at the Congress Hotel, June 20. The following constituent bodies were represented: Boston Speech Readers Guild; Chicago League for the Hard of Hearing; Lip-Reading Club of Cleveland; Speech Readers Guild of Cleveland; Dayton League for the Hard of Hearing; Houston Club; Kansas City League for the Hard of Hearing; Los Angeles League for the Hard of Hearing; Minneapolis League for the Hard of Hearing; Newark League for the Hard of Hearing; New York League for the Hard of Hearing; Speech Readers Club of Philadelphia; Pittsburgh League for the Hard of Hearing; Rochester League for the Hard of Hearing; Toledo League for the Hard of Hearing; San Francisco League for the Hard of Hearing, and the Speech Readers Club of Washington.

INDIANA

Society News.—The ninth district convention of the Indiana State Medical Association held a joint meeting with the Boone County Medical Society in Lebanon, May 24. Dr. Lincoln J. Baldwin, Westfield, was elected president; Dr. Stanley M. Cotton, Goldsmith, first vice president, and Dr. Alvin R. Kerr, Attica, secretary-treasurer. Attica was chosen for the 1924 meeting.

IOWA

Personal.—Dr. Julia F. Hill, Des Moines, was elected president, and Dr. Florence D. Johnston, Iowa City, secretary of the Medical Women of Iowa at the twenty-sixth annual convention, Ottumwa, May 10.—Dr. L. R. Wilhite, formerly connected with Dunning State Hospital, Chicago, has been named superintendent of the U. S. Veterans' Hospital No. 57, Knoxville, to succeed Col. Charles A. Barlow, who has been transferred to Fort Sheridan, Wyo.—The State University of Iowa College of Medicine, Iowa City, conferred the honorary degree of doctor of laws on Prof. Ernest Hiram Lindley, Ph.D., chancellor of the University of Kansas School of Medicine. Dr. Lindley delivered the commencement address at the State University of Iowa, June 5.

MAINE

Maine Medical Association.—At the seventy-first annual meeting of the Maine Medical Association, held conjointly with the New Brunswick Medical Association, at Houlton, June 5-7, the following officers were elected for the ensuing year: president, Dr. Charles A. Moulton, Hartland; president-elect, Dr. Fred W. Mann, Houlton, and secretary-treasurer, Dr. Bertram L. Bryant, Bangor. Among the speakers were Drs. Eugene R. Kelley, health commissioner of Massachusetts; David W. Mackenzie, Montreal; Walter W. White, St. John, N. B.; William D. Rankin, Woodstock, N. B., and the Hon. William F. Roberts, M. P., M.D., St. John.

MARYLAND

Personal.—Dr. Henry R. Slack, Jr., associate in laryngology at Johns Hopkins University Medical School, Baltimore, who has been exchange professor in Peking Union Medical College, China, for the past year, sailed, June 20, from Shanghai, for Europe, to visit clinics at Vienna and Paris before returning to the United States in October.—Dr. Ralph G. Bleachley, Hagerstown, has been appointed county health officer for Dillon, S. C. Dr. Bleachley recently completed a course in hygiene and public health at Johns Hopkins University, Baltimore.—Raymond Pearl, Ph.D., biometrist of Johns Hopkins School of Hygiene and Public Health, has also been appointed to the chair of biology in Johns Hopkins Medical School, Baltimore.—Dr. J. Howard Brown, Europa, Miss., and Dr. William L. Holman, San Francisco, have been appointed associate professors in bacteriology at Johns Hopkins Medical School, to succeed Dr. Stanhope Bayne-Jones, who resigned to become head of the department of bacteriology in the University of Rochester (N. Y.) Medical School.—At the commencement exercises at the University of Maryland, Baltimore, June 9, the honorary degree of doctor of science was conferred on Dr. Samuel T. Darling of Baltimore.

MINNESOTA

Pathologists Elect.—At the annual meeting of the Minnesota Pathological Society, held at the University of Minnesota, Minneapolis, May 15, the following officers were elected for the ensuing year: president, Dr. Horatio B. Sweetser, Minneapolis; vice president, Dr. Paul D. Berrisford, St. Paul, and secretary-treasurer, Dr. Elexious T. Bell, Minneapolis.

Association of Physicians of the Mayo Clinic.—The annual meeting of the Association of Resident and Ex-Resident Physicians of the Mayo Clinic was held in Rochester, June 4-6. Dr. Thomas M. Joyce, Portland, Ore., was elected president for the ensuing year: Dr. Raymond A. P. Sullivan, New York, vice president; Dr. Harold L. Foss, Danville, Pa., general secretary, and Dr. Robert D. Mussey, Rochester, secretary-treasurer.

MISSOURI

Physicians Charged with Cruelty.—Health Commissioner Starkloff, St. Louis, has recommended to the board of public service that the license of Dr. Marguerite A. Vorbeck and her son, Dr. Joseph C. Vorbeck, to conduct the Marguerite Non-Sectarian Old People's Home be revoked. Complaints have been made to the health commissioner charging that inmates had been cruelly treated.

MONTANA

Medical Association of Montana.—The forty-fifth annual meeting of the state medical association will be held in Butte, July 11-12. Dr. Glenn O. Dayton, Butte, president of the Silver Bow Medical Society, will deliver the address of welcome, and Drs. Walter Williamson, Portland, Ore., and Verne C. Hunt, Rochester, Minn., will also deliver addresses.

NEVADA

New Hospital for Lincoln.—The contract will be let in the near future for the new building to the Lincoln Hospital for which about \$300,000 is available.

NEW MEXICO

State Board of Medical Examiners.—Governor Hinkle appointed a new state board of medical examiners, June 5, at Santa Fe. The members are: Drs. William T. Joyner, Roswell; James A. Massie, Santa Fe; Harry T. Watson, Gallup, for four year terms, and Harry A. Miller, Clovis, and Lucien G. Rice, Albuquerque, for two year terms.

Health Officers' Association.—The third annual conference of the New Mexico Health Officers' Association was held in Albuquerque, June 22, at the University of New Mexico. Dr. Oscar C. West spoke on "Control of Milk Supplies in Albuquerque." The afternoon session, which was held jointly with the state public health nurses' association, was given up to the discussion of "Maternal and Child Hygiene and Welfare in New Mexico."

NEW YORK

Origin of the Model Milk Ordinance.—At the annual conference of mayors in 1922, a resolution was adopted inviting the state department of health to join the conference in creating a committee to study the best protective measures for milk sold at retail and to make recommendations based on the study. The committee was appointed, with Dr. Hermann M. Biggs as chairman, and a model milk ordinance formulated, which was recommended for adoption by every city in the state. Copies of this ordinance may be obtained from the state department of health on request.

New York City

Insulin Instruction.—Commencing July 2, a series of biweekly courses on the use of insulin will be offered at the Presbyterian Hospital. Both morning and afternoon courses will be given throughout the summer. The cost of these courses is to be met by the recent gift of Mr. John D. Rockefeller, Jr., a nominal registration fee of only ten dollars being charged to cover the incidental expenses involved. Circulars of information and application forms may be obtained from Dr. George A. Harrop, Presbyterian Hospital, New York.

Dr. Lambert's Injunction Sustained.—Judge Knox, May 29, denied the motion by the government to dismiss the temporary injunction granted to Dr. Samuel W. Lambert, May 8, against Edward G. Yellowley, Acting Prohibition Director; David H. Blair, Commissioner of Internal Revenue, and U. S. Attorney Hayward (in the case questioning the authority of prohibition officials to apply the quantitative limitations of the Volstead act to physicians prescribing liquor) and at the same time granted a stay of the injunction pending an appeal which the government plans to take to the Circuit Court of Appeals.

Fellowships in Psychiatry.—As the result of a gift from the Commonwealth Fund to the National Committee for Mental Hygiene, the Division for the Prevention of Delinquency is able to offer certain fellowships in psychiatry. Those securing fellowships will be placed under training in the clinic now being conducted by this division. The object of the fund is to prepare properly qualified psychiatrists for positions in connection with permanent clinics that are now being organized through the activities of the demonstration clinics conducted by the National Committee for Mental Hygiene. Those interested in these fellowships may address Dr. V. V. Anderson, National Committee for Mental Hygiene, 370 Seventh Avenue, New York City.

Cornell Clinic Raises Its Fee.—A letter from the budget committee of the Cornell Pay Clinic has recently been sent to every physician whose name appears in the medical directory of Greater New York, explaining that the principal object of the experiment set up at the Cornell Clinic was to learn whether or not sound medical service could be rendered at cost to persons unable to pay the current charge for such service in the private office, and to render it at rates which these persons can afford. At a fee of \$1 for each visit, plus special charges for roentgen-ray work and laboratory examinations, it has been found that the patient has paid approximately 75 cents on the dollar. The average visits have cost the patient \$1.52, and the clinic \$2. This does not include 30 cents per visit, which is the approximate cost, to the college of rent, insurance and other matters in the overhead expense. Thus far, of every 100 applicants, twenty have been rejected; of these, only one was excluded because he was able to pay private rates. Within the last few months the clinic has studied to effect every possible economy, and still a deficit remains. To meet this it has been decided to increase the admission fee from \$1 to \$1.50. This new rate went into effect, June 1. No other fees will be increased.

NORTH CAROLINA

Sanatorium Closed.—The Wilson Sanatorium, Wilson, operated by Drs. Albert F. Williams and Elyal T. Dickenson, was closed, June 1.

Personal.—Dr. Charles S. Norburn, U. S. Naval Reserve, Asheville, has been appointed surgeon to President Harding

for his trip to Alaska aboard the transport *Henderson*.—Dr. Carl V. Reynolds, health officer of Asheville has resigned. He will be succeeded by Dr. Daniel E. Sevier.—Dr. Amzi J. Ellington, Goldsboro, health officer of Wayne County, has resigned and gone to New York to reside.—Dr. Blanche N. Epler, Hatteras, has been appointed by the U. S. Public Health Service as contract physician to furnish professional services to Coast Guard Stations Nos. 181-185, inclusive.

OHIO

Reorganization of Health Bureau.—Radical rearrangement of some of the most important bureaus in the state department of health became effective June 15, according to reports from Dr. John E. Monger, state health commissioner. Irvin C. Blummer, formerly chief statistician, has been appointed chief of the division of vital statistics to succeed Dr. Edward J. Schwartz who will become chief of the new bureau of epidemiology in the division of communicable diseases of which Dr. Frank G. Boudreau is chief. The post of chief statistician will be abolished. The bureau of venereal diseases has been detached from the division of hygiene, and Dr. Chandler P. Robbins, Columbus, has been appointed its head. The section for the prevention of blindness is being taken from the division of hygiene and consolidated with the bureau of trachoma, with Dr. Ralph B. Tate, Cincinnati, in charge. Assignment of nurses to the various bureaus will be made from the new division of public health nursing instead of, as heretofore, by nurses directly attached.

PENNSYLVANIA

Hospital Superintendent Resigns.—Dr. Jonathan C. Biddle, surgeon-in-chief and superintendent of the State Hospital, Ashland, has tendered his resignation to Governor Pinchot.

Hospital News.—The Children's Hospital, Pittsburgh, of which a wing was recently destroyed by fire, is still operating with sixty beds and with the dispensaries running as usual.

The Annual Clinic.—The annual clinic of the Dauphin County Medical Society was held at the Harrisburg and Polyclinic hospitals, Harrisburg, June 5. The clinic took the place of the society's June meeting.

Quarantine on Vice Withdrawn.—The health department has withdrawn its quarantine, established a week ago, on fifty disorderly houses in Philadelphia. Two hundred policemen were stationed in front of the houses day and night to enforce the quarantine, but the occupants of most of the buildings fled. Dr. Norman H. Taylor, acting health director, stated that the assistant city solicitor advised that the health department could only quarantine a person and not a house. The physicians assigned to this quarantine duty have been returned to their regular work.

Philadelphia

Medical Society to Prepare Radio Talks.—The board of directors of the Philadelphia County Medical Society has appointed a committee, of which Dr. John F. Roderer is chairman, to prepare suitable articles on medical, hygienic and sanitary topics to be broadcasted by radio through the Strawbridge & Clothier WFI station. As a rule, these talks will be given on Saturday evenings at 8 o'clock during the month of June.

Vaccination of Negroes.—On behalf of the City of Philadelphia, Dr. James Cumming, chief of the bureau of health, has asked the U. S. Public Health Service to vaccinate negroes migrating to Philadelphia from the South. Dr. Cumming attributes at least part of the recent spread of smallpox in Philadelphia to the presence of unvaccinated negroes from southern states. Lack of money was said by the Assistant Surgeon-General, with whom Dr. Cumming conferred, to be the reason why the service could not undertake the vaccination proposed.

The Dr. Spencer Morris Prize.—The board of trustees of the University of Pennsylvania decided that beginning with June 30, 1923, the Dr. Spencer Morris prize, established by a bequest under the will of the late Dr. Spencer Morris, shall be awarded to the student in the Medico Chirurgical College and Hospital Graduate School of Medicine in the University of Pennsylvania, who receives the degree of master of medical science at the annual commencement, and who shows the highest scholarship among those receiving that degree and who will continue his studies in the graduate school of medicine as a candidate for the degree of doctor of medical science. The prize will be paid in ten equal monthly installments from the time the third year candidacy actually begins

TENNESSEE

Medical Society to Reorganize.—The Chattanooga Academy of Medicine and Hamilton County Medical Society, which was recently disrupted, has surrendered its charter to the state society and is now being reorganized, preparatory to asking for a new charter.

Physician Sentenced.—According to reports, Dr. John W. Simmons, Nashville, was sentenced, June 9, to ten years in the government penitentiary at Atlanta, Ga., when he was found guilty of violation of the Harrison Narcotic Law. Motion for a new trial was overruled by Federal Judge Gore.

VIRGINIA

Food Handlers to Be Examined.—The health department has announced that all persons engaged in handling food-stuffs at Norfolk must submit to a physical examination every ninety days. This measure becomes effective, July 1. Certificates of good health will be given those who pass the examination; others will be excluded as food handlers.

WEST VIRGINIA

Physicians Get New Trials.—Dr. Edward R. Pendleton, Clarksburg, convicted in the district court at Elkins for violation of the Harrison Narcotic Law and sentenced to a term of five years in the Atlanta Penitentiary, won a reversal, May 25, in the U. S. Court of Appeals. Dr. Thomas L. Nutter, Clarksburg, also convicted on a similar charge, won a reversal in the appeal court at Richmond, May 20, according to reports.

PHILIPPINE ISLANDS

School for Sanitary Inspectors.—The first class at the School of Sanitary Inspectors, organized by the Philippine Health Service, graduated in February. There were twenty-three graduates. Dr. S. V. del Rosario, assistant director of health, is dean of the school.

Philippine Board of Medical Examiners.—The newly organized board of medical examiners consists of the following: Dr. Francisco Oñate, chief surgeon, Philippine Constabulary; Dr. Pedro Apacible; Dr. Florentino Herrera; Dr. Manuel Arguelles, bacteriologist of San Lazaro Hospital, and Dr. Martin Baltazar.

CANADA

Vancouver Medical Association.—At the annual meeting of the Vancouver (B. C.) Medical Association recently, Dr. Frederick J. Buller was elected president; Dr. Thomas H. H. Milburn, vice president; Dr. James A. Sutherland, secretary, and Dr. Stanley Paulin, treasurer.

Hospital News.—Mr. John D. Rockefeller, Jr., has recently donated the sum of \$10,000 each to the Toronto General Hospital and the Hospital for Sick Children, for research work with insulin to be conducted by Dr. Frederick G. Banting, also \$5,000 to the University of Toronto, to be added to the Banting-Best Fund, recently established by the Ontario Provincial Legislature. This will also be at the disposal of Dr. Banting for further research study of insulin.—The Calydon Sanatorium, Gravenhurst, Ont., has erected an addition to increase its accommodation.—The Muskoka Free Hospital for Consumptives, Sanitarium, Ont., has replaced the buildings recently destroyed by fire.—The Essex County Health Association has replaced the building destroyed by fire at the sanatorium, Kingsville, with a modern building accommodating sixty beds.—A legacy of \$100,000 from the will of the late Senator Richardson has made possible increased facilities for the Medical Faculty of Queen's University, Kingston, and the erection of a diagnostic clinic at the General Hospital. Fifty or more beds for the treatment of tuberculosis will be installed.

GENERAL

American Physicians Must Pass Examination in Mexico.—According to an order issued, June 13, by federal health authorities, American physicians will be barred from practice in Lower California until they have filed applications and passed examination at Guadalajara. This order goes into effect immediately.

Fund for Insulin Treatment.—It was announced, June 19, by John D. Rockefeller, Jr., that a gift of \$150,000 will be distributed among fifteen hospitals in the United States and Canada for the purpose of promoting the use of insulin in

the treatment of diabetes. The hospitals will be selected from all sections of the country.

The Ship's Physician May Have Liquor.—Foreign ship physicians will be the official heads of those vessels in matters of liquor after June 10. A ship's physician may demand of a port health officer a permit for such liquor as he believes necessary as an emergency stock against sickness on board, it was announced by the U. S. Treasury Department, June 4. It is believed this wide latitude allowed foreign ship physicians will avoid conflict with governments under which the foreign vessels operate.

Medical Rules on Liquor Relaxed.—Relaxation of prohibition rules regulating liquor supplies of hospitals and retail druggists was announced by Commissioner Haynes, June 15. State prohibition directors have been given new orders to expedite application of hospitals and druggists to the full limit of their yearly and quarterly allowances, and state directors are reminded that if hospitals and drug stores do not use their entire quota in one quarter they may draw the difference in a later period.

Two Years of Prohibition.—In reporting on two years' accomplishments under the National Prohibition Act, the federal prohibition commissioner made special reference in enumerating the factors operating for good to the treasury decision, first suggested by the American Medical Association, which limits withdrawals of whisky for medicinal use to that which has been bottled in bond. In 1920, whisky withdrawals aggregated 12,389,529 gallons; in 1921, 3,243,845 gallons, and in 1922, 1,819,888 gallons. In discussing narcotics, the commissioner calls attention to the fact that the Harrison Narcotic Act was not intended to be a revenue-creating measure, but that, in 1922, collections turned in to the United States Treasury amounted to \$610,311.13 in excess of actual expenditures. Notwithstanding this large cash balance, the appropriations provide for a bureau force of only eighty-two clerks, and a field force of only 182 officers and twenty-nine clerks. These employees cover the entire United States, and, in 1922, had under their supervision 268,258 permittees.

LATIN AMERICA

Health Progress in Salvador.—Health conditions in Salvador, according to the last report of the public health department, are relatively good. Smallpox and yellow fever have been eradicated and the campaign against hookworm disease is being continued. A state laboratory has been opened, the equipment of which was donated by the Rockefeller Foundation. A total of 137,450 vaccinations and revaccinations were made during the year. A total of 51,747 persons were examined, 33,454 of whom were found infected with hookworms, 26,883 with ascaris, 8,913 with trichuris, 44 with strongyloides, 145 with oxyuris, 611 with tapeworms and 10 with amebae, making altogether a total of 43,620 infected persons. A total of 75,290 hookworm and 10,716 ascaris treatments were given. Latrine construction is being pushed in the country districts. The Salvador health department is now directed by Dr. L. V. Velasco.

FOREIGN

New American Hospital in France.—Myron T. Herrick, United States ambassador to France, laid the cornerstone of the new American Hospital at Neuilly, June 18. This institution, which has a capacity for 100 patients, replaces the old building of thirty beds.

Honor for Rome Surgeon.—With much ceremony, a monument was unveiled, May 13, at Letojanni, in Messina, in honor of Prof. Francisco Duranto. An imposing bronze bust is supported by a group of four large bronze figures on a granite base, representing Surgery helping a cripple to throw away his crutches, Science and Charity.

Prizes for Essays on Depopulation in France.—The National Alliance for the Increase of the French Population has awarded the first prize of 50,000 francs to M. Paul Haury for the best popularly written pamphlet on the decreasing birth rate and the tragic consequences to the nation. A prize of 6,000 francs was given to Dr. Cattier of Paris. Forty-four other prizes for essays on depopulation, ranging from 1,000 to 8,000 francs, were distributed. Half a million copies of Haury's booklet are to be printed at once.

Institute for Research on Physiology of Altitudes and Tuberculosis.—The *Medizinische Klinik* announces that the institute at Davos is now completed. It is in charge of Pro-

fessor Loewy, collaborator of Professor Zuntz of Berlin for many years. The bacteriologic-pathologic department cannot be opened until more funds are available. According to the statutes, five of the nine members of the board must be physicians, and there is a corps of consultants among professors in Swiss universities. The institute is open to research workers of all nations. It is planned to offer free places to a few workers from countries with much depreciated currency. The subjects to be studied can be selected by the workers themselves, subject to the approval of the board. The Swiss government is to aid the institution when pending legislation on tuberculosis is completed. Professor Dorno is in charge of the physical-meteorologic observatory. His "Climatology in the Service of Medicine" is well known. There are places for twenty workers.

Deaths in Other Countries

Dr. Julio F. Arteaga, Havana, bacteriologist and medical inspector of the public health service of Cuba and editor of the *Revista de Medicina y Cirugía* of Havana, aged 47. He was a graduate of Bellevue Hospital Medical College of New York and served as intern in three New York hospitals before settling in Havana in 1902. Many of his works have been summarized in *THE JOURNAL*, and he was the official delegate from Cuba to several international medical congresses.—Professor Boruttau, Berlin, the physiologist, aged 54.—Dr. Marcial V. Quiroga, professor emeritus of pathology at the University of Buenos Aires, and of epidemiology and of hygiene in the army medical school, president of the *Círculo Médico Argentino* and member of the lower house.—Dr. R. Salillas, Madrid, founder and president of the school of criminology and a noted writer on medical jurisprudence and penology.—Dr. Luis Ortega Morejón, Madrid, senator, president of the local medical chamber and chief of the *Beneficencia Municipal*.—Dr. C. Godon, founder of the dental school at Paris and honorary president of the International Dental Federation.—Dr. A. Billingham, Buenos Aires, the secretary and one of the organizers of the *Asistencia Pública*, medical chief of the isolation hospital, and founder and director of the Pirovano Hospital.—Dr. F. Woithe, director of the Museum of Hygiene at Dresden, author of works on chemotherapy, disinfection, laboratory technic and biology, aged 45.—Dr. H. Palm, Berlin, director of the maternity at Schöneberg.—Dr. F. de Cérenville, Clarens, Switzerland.—The *Revista del Instituto Médico Sucre* of Bolivia mentions the death by accident of Dr. Adolfo Tufino, Jr.

Government Services

Field Hospital in Potomac Park

A field hospital was established by the Surgeon General of the Army in Potomac Park, Washington, D. C., for the emergency treatment of visitors and others during the Shrine Convention period. The Unit was part of the first medical regiment stationed at Carlisle Barracks, Pa., and its strength was ten officers and 120 men. The troops marched to Washington. The hospital comprised twelve ward tents, a surgical ward, operating room and roentgen-ray equipment. Its capacity was 150 patients. Twenty ambulances operated from collecting stations along the route of the parade, and several hundred cases but none of a very serious nature were evacuated to this or other hospitals in the city. Majors J. E. Bastion and J. P. Fletcher, M. C.; Capts. T. G. Tousey and J. H. Blackwell, M. C., and other officers from Carlisle, were in charge of the hospital.

Purchase of Hospital Sites

It has been announced by Director Hines of the U. S. Veterans' Bureau, Washington, D. C., that no more hospital sites will be purchased by the bureau at present, the chief reason being a lack of funds. However, further work in this line would not have been undertaken, pending reports on various surveys now under way. The hospital at Dwight, Ill., will be opened immediately for mild mental cases. Two hundred beds have been added to the Maywood (Ill.) Hospital. The two institutions, together with the Great Lakes establishment, will be able to care for all veterans in that region, it is believed. Hospital No. 30, Chicago, which was unsuited because of its proximity to the business district, has been ordered closed.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 28, 1923.

New Campaign Against Cancer

A new campaign against cancer has been inaugurated by a joint letter to the press from leaders of the profession and from philanthropic workers. It is pointed out that, in spite of advances in diagnosis and treatment, cancer is still the most common single cause of death in persons over 30, and is so in an increasing degree. During 1920, in England and Wales, nearly 43,000 persons over 30 died of cancer. In 1921, the last year for which the figures are available, the number was 45,328, more than one in every seven deaths of persons from the age of 30 onward being due to this cause. We are still ignorant of the cause and cure of cancer, but there is no reason to suppose that the problem will not ultimately be solved. The first step is to find the cause, and, for this, every line of research must be diligently explored. Impressed by the need for immediate action, the signatories have joined together to coordinate and support cancer research throughout the British Empire. The new movement will be called the British Empire Cancer Campaign. It will be directed by an executive council, the members of which will act as chairmen of small working committees, each dealing with a separate aspect of the cancer problem. Medicine, surgery, human pathology, chemistry, physics, radiology, animal and plant pathology, hygiene and vital statistics will be represented by committees whose work will be coordinated by the executive council acting as a central clearing house. Individuals and institutions now working on the cancer problem will be helped and encouraged and, when practicable, financially assisted. In this way, investigation can be carried out simultaneously along many lines and the results brought to a common stock of knowledge. The British Red Cross Society has placed its organization and machinery at the disposal of the council of the campaign. A large sum of money is needed, and an appeal is made with confidence to the British public in the United Kingdom, dominions and colonies.

The increase of cancer is shown by the figures of annual mortality from the disease per million living: 1838-1842, 173; 1881, 520; 1891, 692; 1901, 842; 1911, 992; 1921, 1,215. These furnish an interesting contrast with those for tuberculosis of the lungs, which has declined during the same period. Thus, in the period 1838-1842, while the mortality per million for cancer was 173, that for tuberculosis was 3,782. In 1911, the tuberculosis mortality approached closely that of cancer, being 1,062, and in 1921, the position was reversed, the tuberculosis mortality (884) having fallen below that of cancer. Cancer research has been going on for some time in this country. In 1902, the Imperial Cancer Research Fund was founded. Its work has been chiefly experimental—the transplantation of mouse cancer, the production of cancer by the application of tar, and the relation of the growth of cancer to diet. In 1900, laboratories were opened for the investigation of cancer at the Middlesex Hospital. Much work has been done there on roentgen rays and radium. Attempts are now being made to cause experimental animals to develop an immunity toward cancer. Sufficient success has been obtained in the case of transplanted tumors in rats to apply the principle to man. It is too early to speak of results. At the Cancer Hospital, there is a research institute where much experimental work has been done on substances suspected of producing cancer. The fact that arsenic, tar and paraffin can do this has been confirmed.

The Relation of Health to Psychic and Physical Characters in School Children

Prof. Karl Pearson has completed, for the Drapers' Company Research Memoirs, a statistical investigation in which he reaches some interesting conclusions. Quoting Kipling's reference to "the flannelled fool" and "muddled oaf" (in a poem written during the war, denouncing our too great addiction to sport), Pearson says that he felt uneasy at the time about these lines, and endeavored to ascertain what, if any, was the relation between intelligence and success in athletics. The answer given by statistics is that the relation of athletic power to intelligence, if not intense, is significantly marked, and that it is the intelligent rather than the slow or dull children who exhibit athletic power. His other conclusions are not very encouraging to the schoolmaster. He finds that general intelligence and a variety of psychic characters remain unchanged throughout the whole range of school life. It is not possible for the teacher to modify them. It is not he, but the parent, who provides the metal; all the teacher can do is to give an edge and temper to it. General health changes very little during the whole school period. Health and intelligence are correlated, though not markedly. While recognizing this association, it does not seem feasible in the present state of medical knowledge to improve intelligence by modifying health. We are forced to recognize that, on broad lines, health and intelligence are innate characters chiefly controlled by inheritance. There appear to be no grounds for the widespread opinion that health is a governing factor in temperament. It is associated, but only in a minor degree, with certain psychic characters.

The Injustice of Socialistic Legislation

In a letter to the *Times*, Dr. H. B. Brackenbury, chairman of the Insurance Acts Committee of the British Medical Association, points out this anomaly: Two patients require insulin. For one, an insured person, the physician can obtain any necessary supply, free of cost either to the patient or to himself. The other, a professional man of small means, must pay for the drug alone \$900 a year—a large part of his income—to keep himself alive, or else he must die. Meanwhile, as an employer, he is contributing to the fund by means of which the other man's supply is obtained, and as a taxpayer, he is paying his share of not less than two ninths of the cost. Turning from this injustice, which in this case is a service to one of the persons concerned, a wasteful one might be added to the doctor's example. Pharmacists often remark that the quantity of dressings ordered by panel physicians is excessive. The panel physician, no doubt, has no desire to waste the money of the taxpayer, for he is one himself. But the direct and much greater stimulus to economy of having to pay for the article is removed, by the Insurance Act, from both him and the patient, with natural consequence. Thus, a panel patient will bring to the pharmacist's shop an order for 4 ounces of cotton wool. The next customer, a woman, whose needs may be the same or greater, will ask for the same quantity, and, on hearing the price, will say, "I will take only 1 ounce." Yet it is she or her husband who helps to pay for the waste which often occurs in the other case. Another example is the Employer's Liability Act, which makes an employer responsible for compensation to an employee, even though the accident is the fault of the latter. If the employer is a small man with some modest savings made for his family, that employee has a prior claim on such savings. It may be said that the employer can and does insure against this liability for a small annual sum. The reply to this is that his liability still exists, for if the insurance company were to fail, he would be mulcted to the full amount.

Vital Statistics

The registrar-general, in his statistical review of England and Wales for 1921, gives some interesting information on marriages. The rate was 16.9 per thousand persons living, a rate higher than any since 1874, excepting the war years. The ages of marriage varied enormously, but twenty-four for men and twenty-one for women were the most usual ages. This does not accord with the popular belief that men and women are tending to marry later in life. However, the marriages included those of sixty men and twelve women who had reached the age of 80 years. Divorces were more numerous than ever before; they numbered 3,522. The largest number formerly recorded in a year was 3,090, for 1920. In the British dominions, the highest marriage rate was 18 per thousand, in Natal; the lowest, 13.4, in Saskatchewan. The birth rate was 22.4 per thousand, the lowest recorded, except for the war years. For every thousand girls born, there were 1,051 boys. Illegitimate births amounted to forty-five in every thousand births. The excess of births over deaths, or natural increase of population, was 390,185, or 10.3 per thousand of population.

PARIS

(From Our Regular Correspondent)

May 25, 1923.

The Formal Opening of the Medicolegal Institute

The medicolegal institute has just been formally opened by the general council of the department of the Seine. The ceremonies were presided over by M. Paul Strauss, minister of public health and social welfare, who was accompanied by the presidents of the general council and the municipal council, the dean of the faculty of medicine, and a large number of distinguished judges and medical men. Addresses were delivered by Dr. Balthazard, professor of medical jurisprudence at the Faculté de médecine of Paris, who explained in detail the rôle of the institute; by Professor Roger, dean of the faculty of medicine, and by others.

This institute was created by the general council of the department of the Seine, not only to replace the morgue proper, but also to become an important center for research work and special study. It was constructed in accordance with the suggestions of Professor Balthazard, and comprises an administrative and a medicolegal service. In the administrative department are the offices and the archives; the room in the morgue in which bodies may be inspected through a glass panel for identification; the necropsy room, and the room reserved for the judicial establishment of identity. The medicolegal service comprises a research laboratory, a museum and library, a large hall for students, and an amphitheater containing 200 seats, to which bodies can be brought on the demonstration table directly from the basement. In the basement is machinery for refrigerating bodies down to a temperature of from 0 to -5°C ., and apparatus for the washing and disinfection of clothing. The bodies are stored in separate compartments, of which there are ninety-four. Two small rooms furnished as chapels, each opening into a large reception room, are provided for funeral services.

The Centenary of Pasteur and the American Societies of Paris

The American societies of Paris celebrated the centenary of Pasteur, in the grand amphitheater of the Sorbonne. The ceremonies were presided over by Hon. Myron T. Herrick, United States ambassador. Others present were: M. Paul Strauss, minister of public health; Mr. Selden Palmer Spencer, senator from Missouri; Dr. William Sydney Thayer, professor at the Johns Hopkins University, and Dr. Pasteur Valléry-Radot, physician to the hospitals of Paris. Mr.

Herrick opened the meeting by an address in which he thanked the French government and the rector of the University of Paris for having accorded the American societies permission to take part in the celebration of this centenary, a participation which acknowledges that Pasteur belongs as much to America as to France, that his work knows no limits, and that the most humble, from Paris to Peking, have the right to consider him as a benefactor. Professor Thayer, who is foreign correspondent of our Academy of Medicine, pointed out the reasons America has to honor Pasteur, the great benefactor of humanity and world citizen, whose memory the entire world must revere. Dr. Pasteur Vallery-Radot expressed his thanks to American scientists for their repeated expressions of admiration for his illustrious grandfather, and closed his address with the words uttered by Pasteur on the occasion of his jubilee:

You afford me the greatest joy that a man can feel who holds the deep-rooted conviction that science and peace will eventually triumph over ignorance and war, and that the peoples of the earth will come to an understanding and will no longer seek to destroy one another but to confer benefits on each other, and that those who shall have the greatest love for suffering humanity will be the heirs of the future.

Celebration of the Centenary of Pasteur in Schools of Paris

The city of Paris wanted the school children to take part in the ceremonies organized in celebration of the centenary of Pasteur, and desired that, on this occasion, they should become familiar with the principal facts in the life of the great scientist and learn the importance of his discoveries. With this purpose in view, more than 3,000 children were assembled to see a motion picture that had been prepared with the collaboration of the heads of the various services of the Pasteur Institute, for the most part in the laboratories in which Pasteur worked, and with the identical instruments that he used. The film consisted of three parts. Part 1 traced the principal events in the life of Pasteur. Part 2 gave a general idea of micro-organisms, the phenomena of fermentation, anthrax and inoculations, and depicted the circumstances of the treatment and cure of young Meister, who was the first to profit by the discovery of antirabic inoculation. Part 3 showed the significance of Pasteur's immortal researches for public health, industry, agriculture and the prosperity of the country in general.

In both the primary and the secondary schools, a period was devoted to the study of Pasteur and his work. May 30, coincident with the arrival at Strasbourg of the president of the republic, a collection will be taken in all the classes of the public schools for the benefit of the scientific laboratories. All pupils in the primary schools who subscribe to this fund will receive a picture of Pasteur.

In Honor of Pasteur and Lister

In the presence of high officials; among others, the British ambassador, British delegates to the centenary of Pasteur, members of the university council, and representatives of the Franco-British Association, there was hung, in the main amphitheater of the Sorbonne, a marble tablet bearing this inscription:

On this spot, December 27, 1892, the date of the Pasteur Jubilee, the great Frenchman and the great Englishman Lister greeted each other with an embrace.

This 25th day of May, 1923, on which was celebrated the centenary of Pasteur, the University of Paris erected this tablet in commemoration of this fraternal embrace, a symbol of the friendship that exists between the two peoples.

Commemoration of Pasteur's Anthrax Discovery

Ceremonies in honor of Pasteur were held in the department of Seine-et-Marne, under the chairmanship of M. Henry Chéron, minister of agriculture. The celebrants proceeded in a body to Pouilly-le-Fort, the spot where, on a farm that today bears the name Clos-Pasteur, the scientist carried out,

in May, 1881, his conclusive experiments on the immunization of animals against the bacillus of anthrax. A tablet commemorative of this event was erected at the farm.

The Pasteur Postage Stamp

M. Paul Laffont, head of the postal and telegraphic systems of France, has issued an order that postage stamps of certain denominations (10, 30 and 50 centimes) and postal cards of 30 centimes shall, from May 25 on, bear the likeness of Pasteur.

VIENNA

(From Our Regular Correspondent)

May 23, 1923.

The Prohibitionist Movement in Austria

During the past year, the anti-alcohol movement has gained in momentum and influence in this country. Statistical data have been brought forward to show that the entire debts of this republic amount to less than is spent by the population in one year on alcoholic drinks, and that its financial straits could be easily overcome by making the population contribute as much to the state loans. In the army, as well as in the schools, total abstainers are already preferred, and the government is urged to bring into force a bill prohibiting the manufacture, import and sale of intoxicating beverages. A few days ago, a meeting of the Austrian Antialcohol Society took place in Vienna. In this a prominent part was played by the young people's organizations which, for the first time in this country, took a leading place in the movement. Although many of the speakers differed as to the methods to be adopted, there was general agreement on securing absolute abstinence. Chief stress was laid on the value of imbuing school children with the idea that alcohol is a poison for the organism, and for this purpose a resolution was drawn up by Professor Smola which was adopted unanimously. This recommended that all school children be instructed both orally and in books on the dangers involved even in moderate drinking of alcohol. All persons engaged in teaching must be total abstainers, and in all teachers' schools, thorough-going instruction on this subject must form part of the curriculum. No alcoholic drinks should be allowed in any school or educational institution, even on exceptional occasions. The regular meetings of parents (compulsory for the past two years) must devote at least one hour each term to a lecture against alcohol. Excursions arranged under the patronage of a school board or by teachers must be absolutely prohibitionist, and lectures, aided by films showing the evil effects of alcohol on the normal individual, should be encouraged. Books for adolescents, both of the school book and the belles lettres type, should be prohibited if they contain paragraphs praising or glorifying the use of alcohol. Drs. Kruz and Trier showed that industries engaged in the manufacture of alcohol could, without much difficulty, change their working methods so as to produce alcohol-free beverages with an increase of profit both to themselves and to the state, for the duties on alcohol amounted to less than 5 per cent. of the total budget income, while the nonalcoholic products from the same factories could bring 10 per cent. Our present legislative measures directed toward diminution of the use of alcohol are of little value. The next step must be to decrease the number of licenses to sell alcoholic drinks, diminish the hours of sale in public houses and "saloons," and prohibit all sales between Saturday afternoon and Monday morning. It will interest American readers to learn that Mr. Hohenthal of New York was present, and reported on the results of prohibition in the United States. He laid stress on the remarkable drop in the incidence of tuberculosis and of violent deaths by 50 per cent. since the law has been strictly enforced.

The Antituberculosis Campaign in Austria

In the course of a discussion on modern methods of fighting tuberculosis (part of the transactions of the fifth meeting of the Austrian Tuberculosis Society), Professor Durig gave some details of present conditions in this country. Since the return of order in the country, things have improved considerably. Chief attention centers around prophylactic measures. Austria, however, is far behind in this respect. Whereas in Germany one "Welfare Center" is active for each 20,000 inhabitants, in our country the ratio is 1:120,000. This is due, not so much to lack of funds, as to lack of recognition by municipalities and health insurance clubs of its fundamental importance. The attitude of general practitioners is also inimical, as they seem to fear a loss of income. Of the fifty-three "centers" in Austria, two belong to "sick-clubs" and seven to municipalities; all others depend on voluntary contributions by charitable societies. The number of beds available for tuberculous patients is absolutely inadequate. We have about 11,000 such beds, and 10 per cent. of these have been lost recently by the closing down of smaller sanatoriums and hospitals owing to the restriction of the state budget. At present it is difficult to find a bed for an advanced case. It has become necessary to call into existence a central board to control all tuberculosis beds, so that the distribution of cases can be regulated. The city of Vienna is much better off. The municipality possesses two special institutions with 2,000 beds for this purpose, and the numerous wealthy sickness clubs have also a number of beds in their own sanatoriums. But patients who do not belong to these clubs or to the municipal officials are badly off unless they can pay. These middle classes, who are in the greatest danger, must be the object of the welfare work; and, in them, prophylactic enterprise must be chiefly centered. An interesting contribution to the pathology of this disease was offered by Dr. Bielzke of Graz, who thus described the course of tuberculosis: The primary affection begins in the lung with an exudative inflammation (caseous pneumonia), which is soon surrounded by a mantle of granulation tissue. This is already a sign of tuberculous allergy. Metastatic foci in the lungs produced by small quantities of virus cause small tubercles, if larger quantities of the virus enter the lungs; or, if the resistance falls quickly, the exudative component—the inflammatory stage—is more prominent. If this resistance of the organism is overcome, primary caseation occurs. Reinfection follows a different course. By the cure of a primary focus, a high degree of specific resistance is acquired by the organism. The formation of tubercles and metastatic affections of glands as well as hematogenous infection are almost entirely excluded. As soon as the resistance is diminished, we again get caseous pneumonia and also military tuberculosis, meningitis and glandular caseation (hematogenous metastasis) or a relapse into the condition of primary infection. The so-called phthisis of puberty is an intermediate stage. Professor Tandler explained the prophylactic measures adopted by the city of Vienna to combat the so-called "morbus Viennensis" in children; chief stress is laid on the treatment of adolescents and children. Thus, for instance, a sum of one billion kronen (\$15,000) has been devoted to the purpose of sending children suffering from tuberculosis of the joints, bones or glands to the seaside during the summer months. Altogether, it may be stated that the necessity of beginning the fight very early in life is now well understood by the community. Professor Moll, who has had a large experience with the disease among nurslings and infants, showed how by rigid separation of babies from infected mothers—or other members of the family—by rearing them with reliable milk and a generous supply of air and light, more than 50 per cent. of the children, formerly doomed

to death before reaching the second birthday, now are saved. The resistance acquired soon after birth seems even to be useful in later life.

Comparative Statistics of the Weight and Size of School Children

In the early spring of 1923, 1,836 children from various institutions and schools, between the ages of 6 and 14 years, were examined by Dr. Nobel with a view to ascertaining their relative weight, size and general appearance, for comparison with the data for previous years. The figures were all taken by the same person, based on the relation between height when sitting and standing, and weight. In the spring of 1920, the average relation, as expressed by Pirquet's method was 92.4 for boys and 92.6 for girls, only 19 per cent. being above 95 pelidisi; in the spring of 1921, the figures were 93.4 for boys and 93.9 for girls, with 32 and 36, respectively, over 95 pelidisi; in 1922, the figures were about the same; but in March, 1923, the averages were 94.3 and 94.7, with 50 per cent. above 95 pelidisi. This means that the general condition of nutrition in 50 per cent. of those examined is about normal this year. The children reared at home are a little taller than those living in institutions, while the latter are a little broader and heavier. The reasons for this peculiar fact have not yet been elucidated. Dr. Nobel thinks that the vitamin A in the food of the latter children is deficient, and suggests a liberal dose of cod liver oil as a means to promote growth. Altogether, it is regarded as satisfactory that a constant improvement is noticeable in the general physical appearance of the nation's youth.

BERLIN

(From Our Regular Correspondent)

May 12, 1923.

Mortality in Germany

The official reports to the effect that the mortality rate in Germany at the present time is surprisingly low were discussed recently by the ophthalmologist and social hygienist Dr. C. Hamburger, at whose suggestion a committee on demography has been appointed by the Berliner medizinische Gesellschaft. The year before the war, 1913, presented a mortality lower than had ever been previously recorded in Germany. This favorable condition was apparently due to readily discernible causes: a high degree of general prosperity, better housing conditions, more and better health insurance societies, tuberculosis sanatoriums, more and better hospitals, and improvement in hygienic conditions. Then came the war, and the mortality increased. The victims of tuberculosis grew in number until they reached a figure that had not been known for many decades. Since the war, high prices have prevailed in all lines; there has been an increasing scarcity of suitable dwellings, and a downward trend in public hygiene; yet, the mortality has decreased, until of late it has been less than in 1913. And this in spite of the narrow quarters. It is true that the workman has been able to spend more for food—at least, so far—than he could before the war. At that time, a Berlin metal worker had to work a whole week to earn enough to pay the monthly rent, whereas in December, 1922, an hour sufficed. In view of the high prices and the scarcity of many articles of food, it does not follow that actually more food could be consumed. We are inclined to doubt whether such is the case, when we read the figures showing the minimal cost of existence at present. It is to be noted also that certain social groups, including millions of people, such as owners of rented buildings, the professional classes and the students, do not live as well as they did before the war. It is true, their numbers are not so great, when compared with the whole population, that they influence materially the total result. The eight-hour day,

which signifies a shorter work period and more leisure time, must necessarily exert a favorable influence; also the fact that workmen have demanded and secured, for the most part, an annual vacation for rest and recreation. In marked contrast with this, one observes the increasing misery in the hospitals and among the school children, thousands of whom have not a whole shirt to their backs. There seems to be only one explanation for the low mortality. The mortality rate for the whole population is markedly affected by infant and child mortality, which is decreasing because fewer children are being born. As always after a war, so after the World War, the number of marriages increased considerably, the last quarter of 1920 showing the highest number. The birth rate reached the lowest level during the third quarter of 1921. This explanation for the lowering of the mortality rate is not exactly pleasing. Hamburger demands, therefore, increased protection for infants, especially those born out of wedlock. He recommends also limitations on the activities of wetnurses, an increase in the charges for children boarded out, and limitation of the practice of giving unmarried mothers a lump sum settlement. Women should be given increased protection, and every measure that will allow the children more time in the open air should receive support.

Sanatorium for Combating Tuberculosis in Children

The Therapeutikum, an institute connected with the Children's Hospital of the Karl Zeiss Foundation, was recently dedicated in Jena. Its purpose is to combat, on a large scale, tuberculosis in children by employing all the therapeutic means known to science, including quartz lamp radiations, salt-water baths, inhalation treatment and general hygiene. In the Therapeutikum an attempt has been made, with considerable success, to combine the beautiful with the useful. While the demands of hygiene have been strictly observed, the cold, hospital-like appearance of everything has been overcome by bright and gay colors, pictures of groups of merry children, and a fine collection of children's playthings. The decorating and furnishing of the wards was carried out by skilled artists, and the general effect is that of a genuine children's home instead of a hospital. The nucleus of the funds to establish the Therapeutikum, which constitutes a model piece of work, was received from Germans living in foreign countries, and the sums thus contributed were augmented by energetic support from public and private sources at home. Dr. Duken, assistant physician in the Jena Children's Hospital, contributed in no small measure of his time and energy toward the creation of the institution. The management of the Therapeutikum has been placed in the hands of Professor Ibrahim.

The Importance of Tuberculosis Sanatoriums

Prof. F. Reiche of Hamburg has issued a report on the lasting result of the treatment received by sanatorium patients examined by him, in 1911, for an insurance company. On the basis of reexamination of the patients he had examined between 1895 and 1904, he comes to the definite conclusion that, in 1,726 cases of pulmonary tuberculosis (selected cases, adapted to the therapeutic measures in question), the earning capacity of patients was restored or firmly established to a surprising extent by the special course of treatment, which extended over several months and was not infrequently repeated. Of the entire number of pulmonary patients, after the lapse of at least seventeen or an average of twenty-two years, almost half (46.9 per cent.) were strong and easily able to earn their living, while only a little more than a third (35.2 per cent.) had died in this long period, and not more than 8.2 per cent. might be regarded as invalids. These results are for cases 52 per cent. of which belonged in the

first and 48 per cent. in the second and third stages, according to the Turban-Gerhardt classification. These highly satisfactory and encouraging results are in sharp contrast to the doleful reports made by Cornet.

Health Record Books for Public School Pupils in Saxony

According to an order issued by the office of public instruction, a health record book must be opened for every pupil in a public or private school, immediately on entering the primary class. All data pertaining to the health of the pupil must be carefully recorded by the class teachers during the whole school period. The introduction of the record book system marks a distinct advance, in that it will be of great value for vocational guidance. However, as it has been observed that physicians, when called on for an opinion with reference to definite vocational aspirations, are not sufficiently informed in regard to industrial conditions and the prospects in a given trade or profession, and that many who profess to give vocational guidance are not able to make practical use of the findings recorded by medical examiners, it is recommended that the advice of physicians with respect to the choice of a trade or profession be confined to calling the attention of aspirants to certain weaknesses or defects which would militate against them in the pursuit of a given calling. The main idea is to dissuade young people from entering on lines of work for which they are not suited.

Marriages

HARRY BALDWIN GANTT, JR., Captain, M. C., U. S. Army, to Mrs. Florelle Edson McKie, both of Washington, D. C., June 2.

ALBERT EUGENE BULSON, JR., Fort Wayne, Ind., to Miss Memory Edith Breeden of Jackson, Mich., May 29.

KEMP PLUMMER BATTLE BONNER, Raleigh, N. C., to Miss Clara Bell Martin of Beaufort, June 4.

ROBERT ALLEN POWERS, Palo Alto, Calif., to Miss Helen Marie Holt of San Francisco, June 7.

FRANK F. STIVERS, Stockton, Kan., to Miss Edythe Lucile Stone of Warrensburg, Mo., June 11.

FRED WHARTON RANKIN, Louisville, Ky., to Miss Edith Mayo of Rochester, Minn., June 12.

WILLIAM A. FOWLER, Oklahoma City, to Miss Virginia Tolbert of Hobart, Okla., April 29.

CHARLES S. DUTTENHOFER, New Holland, Pa., to Miss Mary Hyman of Churchtown, April 25.

JOHN J. RICHSTEIN, San Francisco, to Mrs. Agnes M. P. Pasley of Los Angeles, April 29.

JOSEPH EVANS SANDS, Philadelphia, to Miss Mary C. Fiero of Newton Square, Pa., June 12.

CARROLL COLBY BURPEE, Malden, Mass., to Mrs. Adelaide M. Cannell of Everett, May 4.

HAHNEMANN VOSS HARRELL to Miss Florence M. Lassaline, both of Detroit, June 2.

ISRAEL E. RUDMAN, Bangor, Me., to Miss Anna B. Strom of Norwich, Conn., June 10.

WILLIAM S. KERLIN to Miss Ruth Knighton, both of Shreveport, La., May 31.

CHARLES EDWARD LAWRENCE to Miss Helene Johnson, both of Atlanta, Ga., June 6.

R. EMMET KANE, St. Louis, to Miss Grace Cantwell of Madison, Wis., May 1.

WILLIS H. CORSON, Seattle, to Mrs. Anna Z. Wickland of Everett, Wash., May 3.

GLADYS GIRARDEAU to Mr. Edmund M. Henderson, both of Philadelphia, June 5.

LEE PETIT GAY, St. Louis, to Miss Ruth Bradfield, Abilene, Texas, April 22.

JOHN HENRY WEBER to Miss Helen Bartles, both of Akron, Ohio, May 2.

Deaths

William Cuthbertson ⊕ Chicago; University of Toronto Faculty of Medicine, Toronto, and Victoria University Medical Department, Toronto, Ont., Canada, 1883; died, June 18, at the Wesley Memorial Hospital of pancreatitis following a cholecystotomy. Dr. Cuthbertson was born in Winterbourne, Ont., in 1860. He was attending gynecologist to St. Luke's Hospital, and associate in gynecology at Northwestern University Medical School, 1900-1912, and a member of the Physicians' Club of Chicago.

William Prendergast Baldwin, Stephen, Minn.; University of Minnesota Medical School, Minneapolis, 1901; member of the Minnesota State Medical Association and past president of the North Dakota State Medical Association; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 47; died, May 17, at Oconomowoc, Wis., of cerebral hemorrhage.

Eugene Alphonse Frechet ⊕ Albuquerque, N. M.; Medical Department of the Tulane University of Louisiana, New Orleans, 1902; member of the State Medical Association of Texas; served in the M. C., U. S. Army, during the World War, with the rank of captain; formerly surgeon to the U. S. Veterans' Bureau; aged 45; died, May 28, following a long illness.

William Earl Beatty ⊕ San Diego, Calif.; Detroit (Mich.) College of Medicine and Surgery, 1917; past assistant surgeon lieutenant, U. S. Navy, stationed at the Naval Air Station; served in the M. C., U. S. Navy (air service division), in France, during the World War, and as health officer of Brest; aged 31; died, May 28, of food poisoning.

Ira Joseph Magee ⊕ Waterloo, Iowa; Northwestern University Medical School, Chicago, 1913; member of the Illinois State Medical Society; specialized in ophthalmology, otology, laryngology and rhinology; served in the M. C., U. S. Army, in France, during the World War, with the rank of captain; aged 34; died, June 1, of pneumonia.

James William Hadley ⊕ Frankfort, Ind.; Illinois Medical College, Chicago, 1902; member of the American Academy of Ophthalmology and Oto-Laryngology and the Indiana Academy of Ophthalmology and Oto-Laryngology; aged 49; died, June 1, of injuries received, when he plunged from a seventh story window.

Henry Carroll Bailiff, Beaumont, Texas; University of Texas Department of Medicine, Galveston, 1917; member of the State Medical Association of Texas; served in the M. C., U. S. Army, during the World War; aged 35; died, May 28, at a local hospital, of septicemia, following a tonsillectomy.

Frank Lane Nichols, Sutherland, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1895; served in the M. C., U. S. Army, during the World War, with the rank of lieutenant; aged 58; died, May 30, at the Aurora (Ill.) Hospital, of cerebral hemorrhage.

Joseph Turner Steele, Hastings, Neb.; Rush Medical College, Chicago, 1883; member of the Nebraska State Medical Association; formerly superintendent of the Nebraska State Hospital, Ingleside; died, May 25, at Rochester, Minn., following an operation.

Harold Hayes Crane ⊕ Dexter, Me.; Jefferson Medical College of Philadelphia, 1903; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 45; died, May 26, at the Central Maine Sanatorium, Fairfield.

Albert Stevens Cunningham, Goldfield, Iowa; Rush Medical College, Chicago, 1889; member of the Iowa State Medical Society; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 68; died, May 25.

Eduardo Diaz y Perez, Manila, P. I.; University of St. Thomas Medical Department, Manila, 1882; professor of gynecology at his alma mater; aged 62; died recently, of cerebral hemorrhage, at the San Juan de Dios Hospital.

Frederick D. Grant Harvey, Lawrence, Kan.; Meharry Medical College, Nashville, Tenn., 1892; member of the Kansas Medical Society; aged 57; died, May 25, at the Wheatley-Provident Hospital, Kansas City, Mo., of heart disease.

Harrison Ross Rogers, Rockford, Ill.; Rush Medical College, Chicago, 1909; served in the M. C., U. S. Army, during the World War, with the rank of lieutenant; aged 38; died, May 30, of acute nephritis and pneumonia.

Richard O. Smith ⊕ Pittsfield, Ill.; Missouri Medical College, St. Louis, 1884; for several years served as county physician; formerly mayor of Pittsfield; aged 62; died, May 29, of angina pectoris and pneumonia.

Samuel Saunders, Jr., Binghamton, N. Y.; University of Virginia Department of Medicine, Charlottesville, 1915; on the staff of the Binghamton State Hospital, where he died, May 7, of peritonitis, aged 35.

Edwin Albert Porter, Pittsfield, Me.; New York University Medical College, New York, 1881; member of the Maine Medical Association; formerly member of the state legislature; aged 67; died, May 23.

Franklin Pierce Hoover, Jacksonville, Fla.; University of Maryland School of Medicine, Baltimore, 1884; member of Florida Medical Association; aged 61; died, April 22, of angina pectoris.

Horace Clark, Wheatland, N. D.; Medical School of Harvard University, Boston, 1888; member of the North Dakota State Medical Association; aged 60; died, April 5, of acute indigestion.

Conrad Howard Czarra, Chicago; College of Physicians and Surgeons, Chicago, 1899; aged 48; died, June 10, at the Baptist Memorial Hospital, following an appendectomy.

John M. McBride ⊕ Albuquerque, N. M.; Dartmouth Medical School, Hanover, N. H., 1901; health officer of Valencia County; aged 55; died, May 19, of cerebral hemorrhage.

Harold Wilbert Street, Owen Sound, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1918; aged 36; died, April 24, in Constantinople, of typhus fever.

Stephen Casper Burton, Pittsfield, Mass.; Albany (N. Y.) Medical College, 1880; member of the Massachusetts Medical Society; aged 73; died, May 17, at Lanesboro.

Fremont W. Frankhauser ⊕ Reading, Pa.; Jefferson Medical College of Philadelphia, 1880; Medico-Chirurgical College of Philadelphia, 1888; aged 66; died, May 24.

Anson Levi Raymond, Alexandria, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1909; aged 45; died, May 4, of pulmonary tuberculosis.

Adam Thomson, Galt, Ont., Canada; Trinity Medical College, Toronto, 1887; served as mayor of Galt for two years; aged 56; died, April 19, of pneumonia.

James Wesley Crofford, Denver; Northwestern Medical College, St. Joseph, Mo., 1887; Barnes Medical College, St. Louis, 1898; aged 69; died, March 23.

John Walter Vandolah, Kansas City, Mo.; Keokuk (Iowa) Medical College, 1892; also a pharmacist; aged 53; died suddenly, May 22, at Kahoka.

John William Grady, Lowell, Mass. (licensed, years of practice); aged 61; died, May 24, at St. John's Hospital, of wounds received in a fight.

Harry H. Jones ⊕ York, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1896; aged 50; died, May 18, of chronic nephritis.

Thomas C. McKinney, Carbondale, Ill.; Eclectic Medical Institute, Cincinnati, 1867; aged 83; was killed, May 29, when struck by a train.

Charles Dansereau, Woonsocket, R. I.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1869; aged 78; died, May 24.

Jerome Sunday, Harrisburg, Pa.; Cleveland (Ohio) Medical College, 1879; aged 70; died, May 22, of cerebral hemorrhage.

Charles Sohn ⊕ Pittsburgh; Bellevue Hospital Medical College, New York, 1890; aged 62; died, May 22, of pneumonia.

George Allen Shannon, Galt, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1891; aged 57; died, April 22.

William L. Rukenbrod, Sidney, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 68; died, May 27, of angina pectoris.

Liberty Crawford McLain, St. Louis; Long Island College Hospital, Brooklyn, 1879; aged 73; died, May 24, of senility.

Thomas Burke Smith ⊕ Lowell, Mass.; Medical School of Harvard University, Boston, 1894; aged 52; died, May 21.

Munroe Plumlee, Poteau, Okla. (licensed, Oklahoma, 1908); aged 57; died suddenly, May 22, of angina pectoris.

William Wallace Bruce, Casey, Ill. (licensed, Illinois, 1880); aged 79; died, May 19.

Correspondence

PROTEIN AND PELLAGRA

To the Editor:—Permit me to comment briefly on Hindhede's interesting paper "Protein and Pellagra," which appeared in *THE JOURNAL*, June 9, 1923, p. 1685.

In this contribution Hindhede undertakes, he tells us, to "discuss the question: Is the cause of pellagra the lack of animal food?" From his discussion it appears, however, that by "animal food" he really means "animal protein." It also appears that he considers Goldberger and his associates as reprehensible advocates of the view that pellagra is caused by lack of animal protein. Just why Goldberger and his associates are charged with this view of the cause of pellagra he does not state, unless it is because "Goldberger and Tanner, from their observations, conclude that 'the dominating rôle of diet in the prevention and causation of pellagra must be referred primarily to the character of the protein (amino-acid) supply, this being the only other dietary factor at present known to be necessary to physiological well-being.'" But why he should interpret this as meaning lack of animal protein we fail to see, all the more as we have repeatedly warned against precisely this interpretation. Thus, in 1915 (*Pub. Health Rep.* 30:3129 [Oct. 22] 1915), Goldberger, Waring and Willets, in order to prevent misapprehension of their position on the cause of pellagra, pointed out that they were "not to be understood as meaning that pellagra is necessarily due to a lack or deficiency of fresh animal or leguminous protein food," or that the pellagra-causing dietary "fault" was susceptible of correction or prevention by such foods only. Indeed, they expressed the belief that the possibility existed that other foods might be capable of serving the same purpose, and suggested that "barley, rye and millet may have this power in some degree."

In 1916 (*THE JOURNAL*, February 12, p. 475), in 1918 (*THE JOURNAL*, September 21, p. 949, footnote) and again in 1920 (*Pub. Health Rep.* 35:690, footnote) substantially the same warning is repeated. Furthermore, in the paper last cited (p. 703) we have:

With respect to protein, the evidence which has already been considered seems to us to indicate that from the point of view of quantity alone a deficiency in this factor cannot be considered as essential to the development of pellagra; considering protein as a combination of amino-acids, however, the possibility of a deficiency in some one or more of these, already suggested by Voegtlin in 1914, cannot be excluded.

It therefore seems to us little short of absurd to charge Goldberger and his associates with advocating the view that pellagra is caused by a "lack of animal protein."

Since, so far as we are aware, no student has in recent years seriously advanced this view of the etiology of pellagra, Hindhede's effort to disprove it is, to say the least, utterly superfluous and, thus, his argument loses most, if not all, of its validity and force. Notwithstanding this, however, it seems worth while to consider briefly one or two points in his argument in order, if possible, to prevent further misunderstanding of our view of the cause of pellagra, all the more as some other writers (notably Jobling, *THE JOURNAL*, Feb. 10, 1923, p. 368) appear similarly confused as to our position.

Although not a matter of vital importance, it seems desirable to point out an error in Hindhede's Table 1 which, as he states, is a rearrangement and condensation of data presented in a table published by Goldberger, Wheeler and Sydenstricker (*Pub. Health Rep.*, March 19, 1920). In this table, as Hindhede presents it, the consumption of the foods of his "Group 1" in pellagrous households with two or more cases is given at the rate of 675 gm.; it should be 583 gm.

per person, so that this represents not 2,800 but 2,100 calories, and therefore 64 per cent. and not (as Hindhede states) 90 per cent. "of the nourishment" of the members of such households. We have not thought it worth while to attempt to verify the data presented in the other tables.

In discussing our published studies of the diet of pellagrous households, Hindhede correctly points out that they were made in April and May, "and consequently" he remarks, "at a time when the food is most deficient. Why have investigations not been made," he asks, "in July and August, when the food evidently is satisfactory? Investigations at this time," he adds, "would probably have readily unearthed the cause. Is it probable," he continues, "that people in the hot summer use more meat and milk? Hardly. But it is likely that they use more vegetables."

We must confess that earlier in our studies we were disposed to regard the problem in very much this simple light ourselves, so that in the continuation of the study to which Hindhede refers we actually did make just such an investigation, the results of which are in preparation for publication. We may here anticipate this report so far as to say that we actually did find, as we had anticipated and as Hindhede suggests as likely, that much more vegetables were eaten in July and August than in April and May but, quite unlike what presumably obtains in Denmark, we also found that in South Carolina, cows give (or did give) more milk in July and August and, to complicate matters, the people drank it. Thus, as can readily be seen through a complication arising from a peculiarity or perversity of South Carolina cows, this investigation did not enable us to unearth the cause.

Proceeding to another phase of Hindhede's discussion, we note that he does "not deny the possibility that pellagra is due to the absence of protein" (we assume that by "absence" he means deficiency), but he is "most inclined to think that the question of pellagra is not a question of protein but of vitamin." In support of this view, he presents data tending to show that excellent health may be maintained on diets lacking in animal protein but, by reason of the inclusion of "whole bread" and "plenty of fruits, vegetables and potatoes," not lacking in vitamins. This, it seems, Hindhede regards as proof of his contention in favor of vitamin.

In view of our position with respect to animal protein, it must be obvious that, if the problem were the simple alternative between animal protein and vitamin, as Hindhede seems to consider it, we should logically have to agree with him as to vitamin. Unfortunately, in our view the matter is not so simple, for to us it is a question not of a lack of animal protein but of a faulty protein (amino-acid) supply as against (perhaps, indeed, in combination with) some as yet unknown factor which may or may not be a vitamin. (It is believed that the evidence already adduced by us excludes the known vitamins as the essential factors.) Accordingly, it follows that before either possibility can be accepted the other must be excluded. Hindhede seems to believe that the evidence he adduces showing that good health may be maintained on a low protein, with little or none from animal sources, proves that the protein in diets associated with pellagra is biologically complete and adequate, and that this factor is thus excluded.

He seems to believe also that the inclusion of "whole bread" and "plenty of fruits, vegetables and potatoes" in a diet makes the diet so enriched satisfactory solely by reason of the vitamins thus supplied.

We regret to be unable to share either of these views. The results of the studies of the last few years, notably those of McCollum and of Osborne and Mendel on the dietary properties of our natural foodstuffs, even though very lightly

steemed by Hindhede, prevent it. In the light of these studies, it seems to us possible that the protein of "whole bread" and of "fruits, vegetables and potatoes," even though small in amount, may be adequate in itself or, more likely, may serve as an efficient supplement.

In closing we desire to state that we feel no prejudice either against vitamin or in favor of faulty protein in relation to pellagra. It is simply a question of the weight of evidence against or for. In our judgment, the weight of available evidence (*Pub. Health Rep.* **35**:648 [March 19] 1920; **37**:462 [March 3] 1922; *THE JOURNAL*, Dec. 23, 1922, p. 2132) supports the view that a faulty protein (amino-acid) supply is the primary etiologic factor in pellagra, although at the same time we fully recognize that some as yet unrecognized dietary factor, possibly a vitamin, may be concerned either alone or in combination with the amino-acid factor. More evidence is needed to settle this point conclusively.

JOSEPH GOLDBERGER, M.D., Washington, D. C.
Surgeon in Charge, Hygienic
Laboratory, U. S. P. H. S.

"THE INTRACUTANEOUS GUINEA-PIG TEST FOR HUMAN SUSCEPTIBILITY TO DIPHTHERIA"

To the Editor:—The communication in *THE JOURNAL*, May 12, by Dr. Kellogg, answering my criticism that he had devised a "new" method for the determination of diphtheria immunity of human beings by testing out their serums in guinea-pigs makes one believe that Dr. Kellogg is wrong in assuming undue credit.

The impression that Dr. Kellogg's letter conveys to an observer familiar with serum tests for antitoxin is well characterized by a statement in his own communication, i. e., that it consists of "quibbles as to differences or resemblances in technic."

I had occasion to refer to this matter before the American Society of Immunologists at the annual session in Boston, March 29, and was much interested to note that these very serologists, whom Dr. Kellogg calls in as witnesses, could not see the justice of his claims to originality of a laboratory test that had been carried out by different investigators for more than ten years and fully described by me in a publication seven years ago (*J. Infect. Dis.* **19**:557 [Oct.] 1916).

Dr. Kellogg claims "that his modification was the first application of a skin test in guinea-pigs for the detection of natural immunity in the human subject." I modified Römer's test with this very purpose in view, i. e., to separate the naturally immune from the nonimmune, so as to be able to immunize the latter with toxin-antitoxin. Then, by a reapplication of the serum test I could determine not only the development of an active antitoxic immunity, but also in an accurate way find out the exact amount of antitoxin that had been produced.

The second statement, "that Zingher perpetrated the same fault as Römer in his modification" is not correct. Through these serum tests Dr. Park and I have been able to make studies in natural and active immunity against diphtheria, which have been fully corroborated by many observers, both here and abroad. Moreover, in using the same principle in the dilution of the test toxin (Dr. Kellogg uses $\frac{1}{30}$ L plus toxin in each cubic centimeter, and I had originally recommended for purposes of more accurate determination $\frac{1}{100}$ L plus toxin in each cubic centimeter), Dr. Kellogg continues to perpetrate the same fault.

The third statement, that my test has not been used by anybody anywhere, as far as Dr. Kellogg is aware, whereas his

so-called "new" test is being used in three other laboratories, is also not correct. In several state and municipal laboratories, as well as in several research laboratories, my modification has been used with complete success for a number of years.

Fourth, Dr. Kellogg's statements as to the unreliability of the Schick test are sufficiently contradicted by the results obtained by the many thousands of physicians and investigators who have adopted and used the test all over the civilized world. In their hands it has given significant and far-reaching results in spreading the progress of diphtheria control, and through their efforts the hope is raised that we shall soon see the end of this disease wherever the Schick test and the immunization with toxin-antitoxin are carefully practiced.

Finally, Dr. Kellogg's claim for the intradermal guinea-pig test, that it has "simplicity, practicality, accuracy and originality of merit" is correct only with modifications. The intradermal guinea-pig test (as I described it in 1916, or as Dr. Kellogg rediscovered it in 1923), is "simple" enough in the hands of a carefully trained laboratory worker, who must have at his disposal not only a standardized toxin, but also guinea-pigs that are expensive and not always easily obtainable. It is "practical" only to the extent that he assumes that physicians would rather draw blood from a person to be tested for diphtheria immunity than learn how to do a careful Schick test and thus depend on their own results. This could only be true of physicians who rarely would want to do a Schick test. It is "accurate" in proportion as great care is taken in the laboratory in making these tests on guinea-pigs. But it falls down almost completely on "originality."

ABRAHAM ZINGHER, M.D., New York.

Assistant Director, Bureau of
Laboratories, New York City
Department of Health.

CONCERNING THE DIETETIC AND HYGIENIC TREATMENT OF CANCER

To the Editor:—In a recent circular, evidently sent to a large number of physicians, Dr. L. Duncan Bulkley has invited those interested in the treatment of cancer by purely medicinal and dietetic measures to join him at the San Francisco session of the American Medical Association, in forming a society to promote these methods. The injury that will be done to the public by the spread of such doctrines needs no emphasis; and this attempt to give such methods an apparently scientific "regularization" and basis should meet with the same decisive opposition as would other forms of cancer quackery.

In order that there may be no misconception as to the position of the New York Skin and Cancer Hospital in this matter, I have been directed by the Medical Board to send you this communication and the following resolution:

The Medical Board of the New York Skin and Cancer Hospital states that the views concerning the treatment of cancer expressed by Dr. L. Duncan Bulkley do not represent the opinions of the Medical Board or the policy of the Hospital; that the New York Skin and Cancer Hospital has no medical officer who bears the title "Senior Physician," and has never had such an officer; that Dr. Bulkley's official position in the Medical Staff is "Dermatologist Emeritus"; and that it regrets the attempt of Dr. Bulkley, by the use of the title "Senior Physician," to create an obviously incorrect impression as to the authority of his views concerning cancer.

GEORGE H. SEMKEN, M.D., New York.

Secretary, Medical Board, New York
Skin and Cancer Hospital.

Biologically Speaking.—Any characters appearing in man that can be proved hereditary are normal, biologically speaking, regardless of how the characters may unfit their bearer for harmonious cooperation in the economical and social programs of civilization.—Buchanan, *Am. J. Med. Sc.*, May, 1923.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF BILHARZIASIS

To the Editor:—Is there any efficient treatment for bilharzia disease (*Schistosoma haematobium*)?

E. H. McMILLAN, M.D., Pasadena, Calif.

ANSWER.—Christopherson introduced and placed on a sound basis the treatment of schistosome infestations. He reported the cure of seventy cases by the intravenous injection of antimony and potassium tartrate (tartar emetic), and his work has been confirmed by Taylor, Fairley, Low, Newham, Madden and Day.

The injections are given on alternate days over a period of from fifteen to thirty days. The first dose is $\frac{1}{2}$ grain (0.03 gm.) of antimony and potassium tartrate dissolved in 90 minims (6 c.c.) of sterile physiologic sodium chlorid solution. The injection is repeated every other day and increased by $\frac{1}{2}$ grain up to a maximum of $2\frac{1}{2}$ grains (0.16 gm.) at a single sitting. In giving the larger doses, the total amount of an injection is made up to 10 c.c. with the diluting fluid. The total amount of the drug injected may amount to between 20 and 30 grains (from 1.3 to 2 gm.). Manson says that this amount may be shown by further observation to be too large. A rapid improvement occurs in the condition of the urine, and after about 15 grains (1 gm.) has been injected, all traces of blood usually disappear. Care must be taken that none of the solution escapes into the surrounding tissues, as an abscess may result. It is advisable to have the patient lie down for a few hours after an injection. A total of 10 grains (0.6 gm.) appears sufficient for children.

Emetin also has recently been given with apparent success. It is advocated for patients who are intolerant of antimony. It may be given intramuscularly, but whenever possible should be given intravenously in a 3 per cent. solution in sterile water, the dose being 2 c.c. containing 1 grain (0.06 gm.) of emetin hydrochlorid. The maximum single dose is 3 grains (0.2 gm.) for an adult. Generally one commences with $\frac{1}{2}$ grain doses. A total of from 15 to 20 grains (1 to 1.3 gm.) may be given altogether.

LOCAL ANESTHETIC FOR TONSILLECTOMY

To the Editor:—1. What is the now commonly used local anesthetic for tonsillectomy, and how much could be used of it? 2. How much epinephrin should be added to a 0.5 per cent. procain solution for a local anesthetic? 3. How much epinephrin do I have to add to 8 ounces of a 0.5 per cent. procain solution to make the right composition?

G. V. WOHLLEBEN, M.D., Herreid, S. D.

ANSWER.—1. The most commonly used local anesthetic for tonsillectomy is procain in 1 per cent. solution. Two or three fluidrams may be safely used on each side.

2. If epinephrin is used, its action is sufficient if one drop is added to each dram of anesthetic. The use of epinephrin is not essential.

3. One fluidram to 8 ounces of 0.5 per cent. procain solution will give the proper effect, but it is wrong to prepare so great a quantity at one time. The epinephrin should be added before each operation, so that the preparation is fresh.

TREATMENT OF ARTHRITIS DEFORMANS

To the Editor:—Please give your latest judgment and opinion concerning the therapeutics of arthritis deformans. There seems to have developed a metabolic imbalance of a chronic nature in one of my patients of one year's standing. There is no ascertainable cause beyond a suspicion of mild gastro-intestinal stasis.

FRED W. BARGER, M.D., Salem, Va.

ANSWER.—Arthritis deformans, being in the great majority of all cases of infectious origin, requires for its proper treatment: (1) the thorough removal of all foci of infection; (2) the building up of the natural defenses of the body by optimal hygiene, including a general mixed diet, and (3) the correcting of the local malnutrition of the affected joints by hydrotherapy, dry hot air or diathermy, by active and passive exercises, and by orthopedic apparatus or operation. Vaccine therapy, even with autogenous vaccine, has not produced evident benefit.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ALABAMA: Montgomery, July 10. Chrm., Dr. Samuel W. Welch, Montgomery.
- ARIZONA: Phoenix, July 3. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
- CALIFORNIA: San Francisco, July 9-12. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.
- COLORADO: Denver, July 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
- CONNECTICUT: New Haven, July 10. Sec. Eclectic Board, Dr. James E. Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. E. C. M. Hall, 82 Grand Ave., New Haven.
- CONNECTICUT: Hartford, July 10-11. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford.
- DISTRICT OF COLUMBIA: Washington, July 10-12. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.
- HAWAII: Honolulu, July 9-12. Sec., Dr. G. C. Milner, 401 Beretania St., Honolulu.
- INDIANA: Indianapolis, July 10. Sec., Dr. Wm. T. Gott, Crawfordsville.
- MAINE: Augusta, July 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.
- NORTH CAROLINA: Raleigh, June 25-29. Sec., Dr. Kemp P. B. Bonner, Raleigh.
- NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.
- OKLAHOMA: Oklahoma City, July 10-11. Sec., Dr. J. M. Byrum, Shawnee.
- OREGON: Portland, July 3. Sec., Dr. Urling C. Coc, Stevens Bldg., Portland.
- PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Preliminary Examiner, Mr. C. D. Koeh, 422 Perry Bldg., Philadelphia.
- RHODE ISLAND: Providence, July 5-6. Sec., Dr. B. U. Richards, State House, Providence.
- SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
- SOUTH DAKOTA: Deadwood, July 17. Dir., Dr. H. R. Kenaston, Bonsteel.
- UTAH: Salt Lake City, July 5. Dir. of Regis., Mr. J. T. Hammond, State Capitol, Salt Lake City.
- WEST VIRGINIA: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.
- WISCONSIN: Milwaukee, June 26-28. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

South Dakota January Examination

Dr. H. R. Kenaston, director, Division of Medical Licensure, South Dakota State Board of Health and Medical Examiners, reports the oral, written and practical examination held at Pierre, Jan. 16-17, 1923. The examination covered 15 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University	(1922)	79.1
Northwestern University Medical School	(1901)	88.4
Rush Medical College	(1882)	82.2
State University of Iowa College of Medicine	(1920)	81.1
Medical School of Maine	(1904)	83.2
Jefferson Medical College of Philadelphia	(1920)	87.7
University of Vermont	(1914)	87.2
University of Toronto	(1893)	87.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1920)	Minnesota
Johns Hopkins University	(1919)	Minnesota
University of Kansas School of Medicine	(1915)	Kansas

North Carolina January and April Report

Dr. Kemp P. B. Bonner, secretary, Board of Medical Examiners of the State of North Carolina, reports that four candidates were licensed by endorsement of credentials at the meeting held at Raleigh, Jan. 31, 1923. The following colleges were represented:

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Emory University	(1915)	Georgia
University of Louisville	(1911)	S. Carolina
Columbia University College of Phys. and Surgs.	(1896)	New York
Medical College of the State of South Carolina	(1911)	S. Carolina

The report shows, also, that one candidate who graduated from the Medical College of Virginia in 1916 was registered by endorsement of his Virginia license at a special session held at Raleigh, April 30, 1923.

Book Notices

VORLESUNGEN ÜBER DIÄTBEHANDLUNG INNERER KRANKHEITEN. GEHALTEN VOR REIFEREN STUDIERENDEN UND ARZTEN. Von Dr. H. Strauss, Prof. e. o. an der Universität Berlin. Mit einem Anhang Winke für die diätische Küche von Elsie Hannemann, fr. Vorsteherin des Haushaltungs-Lehrerinnen-Seminars und der Kochschule des Lette-Vereins in Berlin. Fourth edition. Paper. Price, 7 marks. Pp. 471. Berlin: S. Karger, 1922.

To physicians interested in dietetics, Strauss needs no introduction. Previous editions of this book have been favorably received, and this edition is an improvement over the others. Perhaps the most interesting feature of the volume is the constant recurrence of references to the lessons of the war. It would seem that never before has such an opportunity for the study of mass action of food been obtained. An interesting contrast to this point of view is noticed in the repeated warnings as to necessity of individualization in the treatment of patients with diabetes. One need not agree with the author's point of view to appreciate the generally sound common sense which is the keynote of the volume. The discussion of obesity is particularly interesting. Diabetes is handled practically, as it was in earlier editions; we miss the newer American studies, yet we wonder which will stand the test of time. The diet tables and recipes are practical and helpful. The book is well printed; the German language as written by Strauss is easy to read.

CLINICAL SYMPTOMATOLOGY OF INTERNAL DISEASES. PART II: GENERALIZED PAIN. By Prof. Dr. Norbert Ortner. Translated by Francis J. Rebman, with an introduction by Thomas Webster Edgar, M.D. Cloth. Price, \$5. Pp. 596. New York: Medical Art Agency, 1922.

The arrangement of the subject matter is similar to that of the first volume, on abdominal pain. The inherent value of this book consists not alone in the completeness of the subject, but also in clear, concise and descriptive presentation. Nothing seems to be left out. Any reader, baffled by a pain of apparently unknown origin, and in doubt as to the various causes of pain in the particular region in question, will find here a concise differential diagnosis of all causes of pain appearing in this locality. A careful history, a complete examination and discriminating use of laboratory methods are no more important than a thorough analysis of the results of these examinations. The translation is fairly well made, although at times a happier selection of words could have been made. The book can be recommended as a valuable aid to the student and to the practitioner.

LEXIKON DER GESAMTEN THERAPIE DES PRAKTISCHEN ARZTES MIT EINSCHLUSS DER THERAPEUTISCHEN TECHNIK. Unter Mitarbeit zahlreicher Fachgenossen. Herausgegeben von Walter Marle. Second edition. Lieferungen I, II and III. Paper. Price, 90 marks. Pp. 480, with 190 illustrations. Berlin: Urban & Schwarzenberg, 1923.

These are the first three instalments of an index of treatment in German, which, when finished, will consist of perhaps fifteen such instalments, or three volumes. The diligence and thoroughness characteristic of German literature of this kind is evident throughout. By the frequent use of asterisks, the reader is referred to other portions of the lexicon, in which the technic of the various remedial measures is discussed in detail. In this manner, repetition is avoided; and, at the same time, very complete information may be obtained. Handicaps to American use of this handbook are, besides the unavoidable use of the German and Austrian pharmacopeia, numerous references to German proprietary preparations, many of which would probably not be acceptable under the rules of the Council on Pharmacy and Chemistry. The lack of an analogous institution in Europe is making itself strongly felt here.

NERVE EXHAUSTION. By Maurice Craig, C.B.E., M.D., F.R.C.P., Physician for and Lecturer in Psychological Medicine, Guy's Hospital. Cloth. Price, \$2.25. Pp. 148. Philadelphia: Lea & Febiger, 1922.

According to the preface, this book is written with the object of rendering knowledge of the subject more general in the hope that this will lead to efforts to prevent the disease.

The descriptions of symptoms, diagnosis, prognosis and treatment are written in simple language, but with textbook formality. The subject of causation is equally formal; and though there are some excellent, but very brief, suggestions on care in training children, especially hypersensitive children, there is nowhere any consideration of psychodynamics. Probably the author, a psychopathologist of note, considers this field too complex for the general medical reader; but it is difficult to understand how preventive work is to be fostered without such considerations. Altogether, there seems little justification for the book.

TEXT-BOOK OF OPHTHALMOLOGY. By Hofrat Ernst Fuchs. Authorized translation by Alexander Duane, M.D., Surgeon Emeritus, Knapp Memorial Hospital. Seventh edition. Cloth. Price, \$9. Pp. 997, with 445 illustrations. Philadelphia: J. B. Lippincott Company, 1923.

The last American edition of this textbook appeared in 1919. The present edition has been entirely rewritten and rearranged with a view to a more logical consideration. Dr. Duane points out that he has been guided in the arrangement by the thirteenth German edition just prepared by Professor Salzmann. However, he himself has modified the arrangement in the section on the anatomy of the eye, physiology, refraction and many other subjects. Throughout the entire book there are numerous revisions and additions on technic and pathology, with particular relation to new apparatus that has been made available for ophthalmologists. The Fuchs textbook has been for long an outstanding guide in this field; the constant revision and issuing of new editions is a commendable effort.

PUBLIC RELIEF OF SICKNESS. By Gerald Morgan. Cloth. Price, \$1.50. Pp. 195. New York: The Macmillan Company, 1922.

The author discusses, first, the problem of sickness and poverty. Much of the information bearing on this phase of the subject is taken from the report of the health insurance commission created by the state of Illinois in 1917. That sickness is a very important factor in the causation of poverty is certain, but it is by no means the only factor, and its influence in this direction is often overestimated by enthusiastic supporters of some form of compulsory health insurance, just as overzealous prohibition advocates frequently overestimate the influence of drink in the production of poverty. The health insurance acts of Denmark, Germany and England are then briefly discussed, and their shortcomings pointed out. He then takes up two methods of legislation proposed in New York State for the public relief of sickness—the so-called "health center" and the "compulsory health insurance" bills. He believes that cash benefits and medical relief should be separated and not contained in the same act. It is a comparatively simple matter to provide for cash benefits, but it has not been possible satisfactorily to provide adequate medical service by compulsory governmental regulations. The author favors the establishment of health centers built and maintained by state aid and local taxation, and controlled and managed by state and local officers, much after the general plan of the bill presented in New York State but which was not passed.

LEHRBUCH DER GEBURTSHILFE. Von Prof. Dr. Rud. Th. v. Jaschke, Direktor der Universitätsfrauenklinik in Giessen, und Prof. Dr. O. Pankow, Direktor der Frauenklinik an der Akademie für Praktische Medizin in Düsseldorf. Second and third edition. Cloth. Price, \$7.20. Pp. 789, with 501 illustrations. Berlin: Julius Springer, 1923.

This textbook of obstetrics covers its field in much the same manner as the Döderlein-Krönig textbook covers the field of gynecology. The work, as built up by Runge, was in its eleventh edition. The present is the third edition issued under the editorship of Jaschke and Pankow. As with most German textbooks, one of the most important features is the illustrations. There are numerous excellently colored lithographed reproductions of both gross appearances and microscopic sections that are not available in other textbooks. The authors call attention to the fact that the sections on physiology of the new-born and on the pathology of pregnancy have been especially revised. The literary references apparently do not cover literature later than 1920, and there are virtually no references to American work.

Miscellany

OPTICAL SERVICE IN INDUSTRY

A Report from the New England Conference of Industrial Physicians

The New England Conference of Industrial Physicians, through a committee¹ appointed for that purpose, has investigated the question of optical service as a part of the general medical service in industry. The committee considered the technical procedures employed in examining the eyes of industrial workers, the question focusing particularly on a comparison of the cycloplegic and noncycloplegic methods of refraction, and the relationship of ophthalmologists and optometrists to this work.

In pursuit of reliable information bearing on the subject, questionnaires were submitted to a number of ophthalmologists and optometrists. In framing this questionnaire, the difference in the qualifications and points of view of the two groups was kept in mind. An analysis of replies received from seventeen ophthalmologists and thirteen optometrists elicited the following information.

The majority of ophthalmologists consulted regard the routine use of a cycloplegic as essential in determining the refraction of the eyes of persons under 40 years of age. A few feel that in properly chosen cases a cycloplegic may be dispensed with. All use cycloplegics in difficult cases.

On the other hand, the majority of optometrists reported that an alkaloidal cycloplegic was not essential for the proper refraction of the eye. For the most part they advocate the fogging method, modified fogging method, repression and suppression, and dynamic skiametry. Some use prisms to relax convergence.

The ophthalmologists were practically unanimous in asserting that the inability of a skilled optometrist legally to employ alkaloidal mydriatics would lessen his efficiency as a refractionist in an industrial plant. They were nearly unanimous in their unwillingness to concede a satisfactory substitute for alkaloidal cycloplegics. The majority of them consider the optometrist not educationally qualified to cope with questions that may arise in connection with the physics and physiology of refraction, although it is admitted by some that a well qualified optometrist could deal with questions relating wholly to refraction. The optometrist's lack of knowledge of diseases of the eye is stressed by the majority of ophthalmologists as a serious handicap to his interpretation of cases in which an unsatisfactory refraction is obtained, claiming that this knowledge is necessary to the attainment of ideal efficiency as a refractionist. Ophthalmologists and optometrists are in practical agreement as to the necessity for combining retinoscopy with the subjective examination in the majority of cases.

Most of the optometrists consider that, for all practical purposes, their methods enable them to determine the degree of refractive error. They also consider that the method of dynamic skiametry yields more practical and satisfactory information than the static method.

Almost all the replies contained the suggestion that, before undertaking the examination of workers, the examiner should spend sufficient time in the work rooms to acquaint himself with the working conditions, including illumination and the visual requirements of the work. The advisability of occasional simple lectures to employes on the relation of eyestrain to health and occupation was also suggested.

An excellent optometric opinion is voiced by this quotation from one of the replies:

As an optometrist, and in view of the great majority of refractive cases as compared with pathologic ones, which are encountered during such examinations, I quite naturally feel that the optometrist is the logical practitioner to be engaged for such purposes. However, wherever possible, I believe it advisable to engage both an oculist and an optometrist, the oculist in an advisory and consulting capacity, and the optometrist to conduct the routine examination. If thought advisable,

1. This committee consisted of Dr. H. S. Reynolds, Cheney Bros., South Manchester, Conn., Chairman; Dr. N. G. Monroe, American Optical Company, Southbridge, Mass., and Dr. H. G. Murray, Dennison Manufacturing Company, Framingham, Mass.

the oculist might make the ophthalmoscopic examination in the suggested superficial examination, although all competent optometrists can detect pathologic conditions and could then refer these to the company oculist.

In defining the attitude of the American Medical Association on this question, the late Secretary of the Association wrote:

The Principles of Medical Ethics of the American Medical Association declare that "in every consultation, the benefit to be derived by the patient is of the first importance."

An optometrist is one who is skilled in, or practices "the employment of subjective or objective mechanical means to determine the accommodative and refractive states of the eye and the scope of its functions in general." In a number of states the laws defining and regulating the practice of optometry especially exclude from the means which optometrists may employ "the use of drugs." In many instances, drugs afford a valuable means for determining abnormal eye conditions, but these are rightly denied to optometrists because they have no, or at best rudimentary, knowledge of pathology and of therapeutics. Optometrists are skilled technicians rather than especially qualified practitioners of medicine.

On the other hand, an oculist or an ophthalmologist is a physician who specializes in treating diseases of the eye and is in a position, both under the laws and because of his knowledge, to consult with the attending physician as freely as could a laryngologist, a neurologist, a surgeon or any other specialist. It is manifest, therefore, that the interests of the patient can better be served by an oculist or an ophthalmologist, than by one who is qualified merely as an optometrist.

If the services of a specialist in diseases of the eye cannot be made available to the patient, the attending physician himself must be responsible for the care of a patient suffering from an eye condition, when his patient is refracted by an optometrist, just as the attending physician is responsible for the welfare of his patient when the physician is assisted in the treatment of the patient by a pharmacist, a nurse, a lay laboratory technician or any other partly qualified lay technician whose services are employed under the direction of the attending physician.

CONCLUSIONS

As to the use of cycloplegics, the majority of ophthalmologists consulted, all of whom have access to all methods of refraction, consider the use of homatropin or atropin essential in determining the refraction of the eye. On the other hand, the majority of optometrists consulted, who for the most part are not legally qualified to use cycloplegics, claim that their use is not essential in determining the refraction of the eye.

If refraction is regarded merely as one part of industrial eye service, the better eye service, as a whole, which it is possible for an ophthalmologist to render is indisputable—even by optometrists.

It is believed that an optometrist can render useful service in industry if he will acknowledge that he is not legally qualified to refract all eye cases satisfactorily, and will be on the alert to seek adequate medical aid when his refractive resources are unavailing or when independent eye disease seems at all likely. In addition, and in accordance with the attitude of the American Medical Association and of some optometrists, he should be willing to act under suitable medical supervision and responsibility.

The best interests of industry in the examination and treatment of the eyes of workers would appear to be served by the following alternatives, presented in the order of their value:

1. Employ a full-time or part-time ophthalmologist to handle practically all the eye service.
2. Employ a part time ophthalmologist, who will do all or part of the refraction work, or who will be available for consultation by the full-time or part-time optometrist who is doing the work.
3. Employ a full-time or part-time optometrist, who will act under suitable medical supervision and responsibility.

NATURAL GAS HEATERS

The U. S. Bureau of Mines has issued a warning on the dangers of carbon monoxid poisoning from the improper combustion of natural gas in heating appliances, founded on experience and a series of tests. The specific suggestions offered to avoid such accidents are: 1. A radiant gas heater should not be operated so that the radiants glow more than three quarters the distance from the bottom to the top. 2. Adjustments should be made from the needle valve rather than the gas cock, which should be as far open as possible when the adjustment is made. 3. Oversize orifices should not be used for low gas pressures. 4. Stoves adjusted for arti-

cial gas are not suitable for natural gas without the substitution of a smaller orifice. 5. Manufacturers should stamp on the heater whether it is for use with natural or artificial gas. 6. Heaters should be of sufficient size to avoid the danger of operating at excessive rates. 7. Flues are always desirable. 8. One should never sleep in a room in which a fuelless heater is burning without at least one window wide open.

Medicolegal

Malpractice Not Shown in Tearing of Ligaments

(*MacKeown v. Baldwin* (Calif.), 211 Pac. R. 477)

The District Court of Appeal of California, First District, Division 2, says that, in her seventh amended complaint, the plaintiff alleged that on July 12 she strained the ligaments of her right leg, and about September 1 employed the defendant to treat and cure the leg; that the defendant instructed a nurse who was in his employ to bend the leg backward and forward a great many times—instructed her to bend the leg as aforesaid to the right and left, which bending caused the leg to tear the ligaments at a point near the knee, and caused the ligaments to become broken and torn from the flesh; that the twisting and bending of the knee by the nurse was so done by the expressed orders of the defendant, and that the latter was negligent in that he told the nurse to bend the right leg of the plaintiff to the right and left, backward and forward, as aforesaid; that such bending, twisting and exercising of the leg caused the tearing of the ligaments, which would not have been torn if the defendant had not instructed the nurse to treat the leg as stated; and that the defendant was negligent and careless in prescribing the treatment. A demurrer was sustained to this seventh amended complaint, without leave to amend, and later a judgment was entered in favor of the defendant for his costs, which judgment is affirmed.

It is patent from the charging part of the complaint that the defendant's instruction to his assistant was "to bend the right leg of plaintiff backward and forward a great many times." It is true that the pleader in the next sentence charged that the defendant instructed the nurse "to bend the leg as aforesaid to the right and the left, which bending caused said leg to tear the ligaments." But further down such expression was clarified as showing that the pleader did not mean to state that the leg was to be bent sideways to the right and sideways to the left, but the bending to the right and left was to be backward and forward. It is clear that the pleader did not aver that the leg was to be twisted, although the pleading contained language from which that inference might be drawn. The pleader evidently thought that he was within his rights in averring that a ligament was torn by reason of the operation, but he evidently overlooked the fact that in many proper operations it is an essential part of the operation to tear ligaments. In other words, the mere matter of the tearing of a ligament is not actionable. If, by reason of a spraining or some other injury, an adhesion has taken place, it would seem to be elementary that relief can be had only by forcibly and with more or less violence tearing the ligament loose. It is not, therefore, malpractice to tear loose a ligament, but many other factors must be considered to constitute such an act malpractice.

In this pleading there was no averment of any fact or facts showing that the defendant did anything which under the particular circumstances he should not have done, nor was there any averment that under certain circumstances he omitted to do something which he should have done. These omitted circumstances should have been enumerated (if, in fact, they existed), and thereon the pleader should have predicated his contention that under such circumstances, naming them, the alleged bending was not the act of a person reasonably skilful in his profession. Thereafter, on the trial of the case, experts could be called to give testimony for and against such contention. In no other way can some cases sounding in malpractice be proved.

Taking the plaintiff's pleading by and large, and supposing that she should take the stand and prove every single word which she directly alleged, her proof would not constitute a cause of action to go before the jury, for there would be nothing to guide the jury as to whether the defendant had skilfully prescribed a bending, or whether his prescription was not reasonably skilful. But the court does not want to be understood as stating that a physician may prescribe a violent bending of the leg from side to side, and that such bending, if alleged, must be followed by additional averments; for the court does not understand that the plaintiff by her complaint made any such allegation, and, besides that, the defendant's demurrer was directly addressed to that subject and to the subject of twisting.

Untrue Answer by Physician Applying for Insurance

(*Cunningham v. Penn. Mut. Life Ins. Co. (La.)*, 95 So. R. 110)

The Supreme Court of Louisiana, in affirming a judgment in favor of the plaintiff on a policy of life insurance issued in January to her husband, a physician, who died in the following November, says that the insured in answering the question in his application for insurance as to when he was last attended by a physician or consulted one, and for what, answered: "About ten years ago. Malaria." It appeared, however, that less than two years before he made application for the insurance, he had visited a firm of specialists in genito-urinary diseases, who diagnosed his trouble as slight nongonorrheal prostatitis and vesiculitis. The net result was that they considered his case "chiefly psychic" or imaginary, and, in the light of these facts, at that time did not think that the complaint should have affected his health to any appreciable extent and he was so led to understand by them.

It is entirely possible for answers to such questions to be knowingly untrue from a literal standpoint, and yet not fraudulent, for the applicant may, in good faith, have considered the facts not of sufficient importance to report, especially in view of the law, as announced by the decisions of this court and sustained by the jurisprudence of the other states, to the point that inconsequential illnesses do not have to be disclosed, even though they may have occasioned the attendance of a physician. Nothing was charged to show that, if the information in question here was material, the insured knew of it, or that his action was not due to honestly mistaken judgment. Fraud must be specially pleaded, and because the company's answer did not aver that the incorrect replies were given with a fraudulent purpose, the court thinks the pleading fell short of the requirement of the law to raise the question of fraud.

The examination blanks of the defendant inquired of the applicant with respect to many diseases, symptoms, etc., but nowhere did they directly or indirectly ask if he had had prostatitis or vesiculitis, by those technical names or otherwise. The insured was shown to have been a country physician, with a practice scattered over considerable territory, which necessitated his doing a great deal of riding in buggy and on horseback, and that he had had very little rest for the three years preceding his examination by the specialists. The fact that he was also a physician, and also an examiner for life insurance, and knowing the common character of his trouble, could and doubtless did cause him to consider it not of sufficient importance to be reported in his examination; and, since bad faith is never presumed, the court concludes that this was the consideration which actuated him in answering the interrogatories as he did.

It seems to the court that the best evidence on whether or not the defendant would have considered such a complaint sufficient to refuse the policy was that, notwithstanding the common nature of the trouble from which the insured was said to be suffering in men of his age, and notwithstanding the detailed inquiries about numerous other diseases and symptoms, nowhere did it ask a question that was calculated to disclose such a condition. The court takes it that the interrogatories on these blanks were deliberately prepared by experts with long experience in such matters, and, if such information was important, it would have been called for.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, San Francisco, June 25-29.
Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

American Association of Anesthetists, San Francisco, June 25-27. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
American Radium Society, San Francisco, June 25-26. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, San Francisco, June 25-26. Dr. Ward Burdick, 652 Metropolitan Bldg., Denver, Secretary.
American Society of Tropical Medicine, San Francisco, June 25-26. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Sec'y.
Association for the Study of Internal Secretions, San Francisco, June 25. Dr. F. M. Pottenger, Title Insurance Bldg., Los Angeles, Secretary.
Association of American Teachers of Diseases of Children, San Francisco, June 26.
Medical Women's National Association, San Francisco, June 25-26. Dr. M. J. Potter, First National Bank Bldg., San Diego, Calif., Secretary.
Montana Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.
Western Society for the Study of Hay Fever, Asthma and Allergic Diseases, San Francisco, June 25. Dr. A. H. Rowe, Hutchinson Bldg., Oakland, Calif., Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Seventeenth Annual Meeting, held in New York, May 22-24, 1923

(Continued from page 1801)

Treatment of Certain Cardiac Irregularities with Quinidin

DR. ROBERT L. LEVY, New York: Quinidin is suitable in about 50 per cent. of cases of auricular fibrillation, the primary requisite for therapy being an efficient myocardium. The heart muscle must be competent. Cases of mitral stenosis do better than those with combined valvular lesions; but patients with no valve lesions and comparatively small hearts do best. Cases of hyperthyroidism do well if the heart muscle is not badly damaged. Rheumatic and arteriosclerotic cases do fairly well with quinidin. Hypertrophic hearts obtain only temporary relief. The technic of administration is important. The patient should be in bed, under careful observation; preferably hospitalized and controlled by the electrocardiogram. Patients can be treated at home, in charge of a good nurse, but ambulant treatment should be discarded. An interval of four or five days should elapse between digitalis therapy and quinidin treatment. The dose is given in capsules at two hour intervals to insure concentration. The first day a test dose of 0.1 gm. is given, to test for drug idiosyncrasy. The following doses are 0.4 gm., as follows: first day, once; second day, twice; third day, three times; fourth day, four times; fifth day, five times, and not more than 2 gm. in the twenty-four hour period. The first course is not continued for more than a week, and if normal rhythm is not established, a second course may be given later with good effect. The duration of effect varies from one day to more than a year. If the fibrillation is of long standing, usually the patient relapses. If prolonged quinidinization is needed, no bad effects are noted. In paroxysmal fibrillation, daily small doses can be given. Unpleasant or dangerous symptoms from the use of the drug have been noted. These may occur in cases in which the drug is contraindicated. Quinidin causes a rise in the ventricular rate, and where this is naturally rapid, palpitation may occur. Some patients are specially sensitive to quinidin, for which reason a small probatory dose is necessary. The occurrence of ectopic ventricular beats during quinidin therapy indicates cessation of the drug. There is an idea that clots are apt to appear in the appendixes of the ventricles, but emboli are not more frequent in quinidin patients. Sudden unexplained death has occurred after taking quinidin, but electrocardiographic tracings were not procured just before death, so that the mechanism is in doubt. The drug belongs to the cinchona group of alkaloids. Quinidin depresses excitability and conductivity, but not contractility of the myocardium. The ventricular output is therefore increased. Its therapeutic

value is limited to a small group of patients. In the limited group, some may be helped and in some there is a real therapeutic triumph. Premature contractions and extrasystoles may disappear spontaneously; but if they do not, they may be controlled by small doses of quinidin. I must emphasize the fact that a competent myocardium is requisite before attempting quinidin therapy.

DISCUSSION

DR. LOUIS FAUGERES BISHOP, New York: No one should attempt to appraise the value of quinidin without a thorough knowledge of the natural history of the case. If the paroxysms become more frequent, they become finally established. I do not think that the dictum "Once a fibrillator, always a fibrillator" is to be considered as true. One point I consider of importance is that this idea that 70 is the normal heart rate is all wrong. Many people average a much higher rate all their lives, while some have a rate of 40, and that is normal for that particular person. Each individual has his own normal rate. McKenzie stated that 90 was an optimal pulse rate in the treatment of fibrillation. I believe that failure in treating fibrillators with digitalis is often associated with clinging to this old idea of 70 as the goal to be attained. I am satisfied when I can reduce the pulse rate to 90. I try to maintain this as nearly as possible. This is a very practical point because we want to get therapeutic results with a minimal amount of the drug. It requires a good deal of clinical acumen to judge of results.

DR. T. STUART HART, New York: In my own experience, the most suitable field for quinidin therapy is in paroxysmal cases of auricular fibrillation. We do not want to keep these patients continuously on digitalis. The cases are puzzling, and the patients are much more uncomfortable than in continuous fibrillation. The latter become accustomed to the arrhythmia and do not mind it very much; but if the attack comes out of a clear sky, the patient is very unhappy and uncomfortable. In regard to the heart rate, I differ with Dr. Bishop on that point: the cases best kept under control by digitalis were those in which the patient, while resting in bed, had a heart rate of from 60 to 70, and when they moved around, it naturally increased slightly, but they can be kept below 80 all the time. To return to quinidin, there is another class of patients that receive considerable benefit—the class with the tachycardia of exophthalmic goiter, those with neurocirculatory asthenia and other rhythmic tachycardias of which we cannot explain the cause, but which give a great deal of discomfort and sometimes approach cardiac insufficiency because the efficiency of the heart sometimes depends more on the rate than on the rhythm. The drug is very useful in these cases.

DR. C. S. DANZER, Brooklyn: The requirements in regard to quinidin are difficult to satisfy. Dr. Levy emphasized that a competent myocardium must be present, but this is difficult to determine; he also said that unfortunate reactions have occurred even when probatory doses have been given. I have known patients with fibrillation who reached old age, and they never suffered very much harm. Therefore, taking all these points into consideration, would it not be wise to use quinidin, which is less toxic than quinidin, in intravenous injection to stop tachycardia? This is not so dangerous and would serve to stop disturbance of rhythm or rate which does not produce embarrassment of the circulation. We should not use quinidin unless we are forced to it.

DR. H. E. B. PARDEE, New York: The question of selection of cases is the most difficult, because we have so few reliable criteria on which to go. Patients with much enlarged hearts do not tend to revert to normal rhythm. Patients with valvular disease do not get benefit. Fibrillators of long standing do not get benefit. But there are notable exceptions to all these things in patients who have everything to predispose against the drug. Two thirds of the patients revert to normal rhythm, and four tenths can be maintained at normal rhythm, so that it seems wise to give all patients who have auricular fibrillation, with the exception of those showing signs of cardiac failure, a chance with quinidin treatment. We can treat the patients with digitalis until we

get compensation and maintain this for two weeks; then we can try quinidin. One such patient, when put on digitalis, and waiting for quinidin, returned to normal rhythm spontaneously. There is a tendency to revert to normal rhythm, and quinidin may push it along. Quinidin may be tried for a week, and if it does not have effect, then it is not worth while to continue as the effect produced will not be permanent.

DR. W. D. ALSEVER, Syracuse: Is the patient put in better shape to do his work by changing the cardiac mechanism with the use of quinidin?

DR. ROBERT L. LEVY, New York: I must also take issue with Dr. Bishop regarding the optimal ventricular rate. He said the normal rate was supposed to be about 70; there is no such thing as a normal rate. There are no "normal" biologic phenomena. I think, however, that patients with auricular fibrillation are much more comfortable with a ventricular rate of from 60 to 70, than one above 80. The fibrillator's response to effort is out of proportion with the demands made on the heart. The question raised about the difficulty of ascertaining whether or not the myocardium is competent is a just one. We all know the difficulty of estimating myocardial function, but there are certain clinical criteria which adequately serve our clinical needs. Clinical experience and judgment must be utilized. In regard to administration of quinin intravenously, Dr. Wenckebach spoke of this in his Harvey lecture. This is not an entirely innocuous procedure. Certain graphs showed ventricular tachycardia, a very serious disorder, and I would not urge giving a cinchona alkaloid in such a disturbance of the cardiac mechanism. In dogs, it gives a very marked fall in blood pressure. In regard to the use of quinidin in extrasystoles, small doses can be used with no untoward symptoms. I do not believe that quinidin is any more toxic than quinin, and it is a very much more effective drug. Dr. Pardee expresses the opinion that every person with auricular fibrillation may be given the benefit of a trial with quinidin. It has been our practice rather to eliminate those persons who might be supposed to be harmed by it. Of the remainder treated, not all will be benefited. It is difficult to predict those in whom success will be achieved. We have not been uniformly successful, but we have done no harm. I cannot answer Dr. Alsever as to what percentage of patients have their working capacity increased by the use of quinidin, but it is a considerable number.

DR. SOBEL, Rochester: What effect has quinidin dosage on hypertension, with or without arteriosclerosis?

DR. LEVY: In the presence of a competent myocardium, even with hypertension, I would not hesitate to use quinidin.

(To be continued)

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Eighth Meeting, held at Atlantic City, N. J., May 1-2, 1923

(Continued from page 1804)

Infectious Jaundice in the United States

DR. GEORGE BLUMER, New Haven, Conn.: This disease was noted first in 1812. From 1812 to the present time, the outbreaks can be divided into three groups: 1. From 1812 to 1886 there were isolated epidemics in the Southern states; (2) from 1886 to 1920 there were fifty-one reports of more or less scattered cases, never more than seven in one year, occurring in all parts of the country, with the exception of the Pacific states. From 1920 to 1923 there have been 208 epidemics, 113 of which occurred in New York State. I have been able to get reports from every state, except nine, and I do not believe that the disease has not been present there, but it has not been recognized and reported. The type of outbreak varies very much. There are the (1) family outbreaks, occurring in closely associated families or in such institutions as schools, colleges, jails or asylums; (2) city outbreaks, confined to certain districts, and (3) country outbreaks, in which the disease involves large areas. There was

one state wide outbreak involving New York State. The disease has seasonal incidence, 72 per cent. of cases occurring in the fall and winter months. The age incidence is important, 72 per cent. of 3,700 cases occurring in children and young adults. The method of spread is by contact; it may be by fomites. Rats are suggested as carriers, but there are large areas in the country where no rats are found, and yet the disease is present. The disease occurs most when other rodents are hibernating. Some writers have assumed that it is a form of Weil's disease and caused by spirochetosis, but there is no foundation for this assumption. There is no relation to the typhoid-paratyphoid group, as tested by agglutination reactions. It is believed that the causative organism is at present entirely unknown.

Exceptional opportunities have been found in New Haven for the study of the disease. It begins with a definite upper respiratory tract infection, coryza and sore throat. The incubation period is from a week to ten days, but sometimes as long as four weeks. Symptoms are severe headache, pain in the back, marked gastric symptoms, anorexia, nausea, distressing vomiting and fever (the temperature is not high, except in children); jaundice appears on the fifth day, or later, the latest date being 102 days after onset. The jaundice varies in intensity; the liver is enlarged and tender. There is severe abdominal pain. The clinical picture is one of catarrhal jaundice, but jaundice is not always present. Complications are rare; recovery is slow; fatalities are few. If fatalities occur, they are in infants or pregnant women, and are associated with abortion. The postmortem picture is that of acute yellow atrophy of the liver. The disease is hard to differentiate from catarrhal jaundice; indeed, the ordinary catarrhal jaundice may be a sporadic form of this disease, although there are clinical differences. I am not certain whether this disease is related to acute yellow atrophy or not. Many of us do not regard acute yellow atrophy as a clinical entity, but rather as a reaction of the liver to various poisons. There is a difference in the number of acute yellow atrophy cases coming to necropsy at one time and at another. In Alabama, the mortality statistics are usually about 23. It suddenly rose to three times that number and fell again later. This variation is suggestive.

DISCUSSION

DR. JOSEPH MILLER, Chicago: In one case the disease failed to clear up after six weeks. The man had acute abdominal pain. He was operated on, and a normal gallbladder was found. He discharged a great amount of colorless fluid for two weeks, and later normal bile, which continued, and the case cleared up. The bile ducts were open, but no bile ever reached the biliary ducts.

DR. N. E. BRILL, New York: As Dr. Blumer said, it has been supposed that catarrhal jaundice was a spirochetal condition, but there is no pathologic basis for this. Catarrhal jaundice is not catarrhal at all. The stools in many of these cases are full of blood and mucus. There is necrosis of the cells of the liver, and an eruption in the liver, and the capillaries take up bile, which appears in the urine. It is likely that catarrhal jaundice has a seasonal relationship. In the spring and fall cases are seen, starting with vomiting, pain and nausea, followed by jaundice in a few days. These are called catarrhal jaundice. Some of these cases terminate in atrophy of the liver.

DR. HIDEYO NOGUCHI, New York: These cases are often reported as Weil's disease. The lesions in the liver and kidney are very definite. I have had experience from a serologic standpoint. Two or three years ago there was an outbreak in Indiana, and Dr. Symmers sent me there to investigate. We obtained several specimens of blood of recovered patients to test out with the spirochetes of Weil's disease. Most of the tests were negative. The transmission experiment failed. We were unable to get positive results from the serum in many cases in a school outbreak, and also in a family outbreak.

DR. W. W. FORD, Baltimore: Our impression of the outbreak which occurred in Virginia is different from that of Dr. Blumer. We felt that the portal of entry was the gastro-

intestinal tract; no cases suggested respiratory infection. The incubation period was very much extended in some instances. There were well marked cases with an incubation period of from thirty to forty days. Our results coincided with those of other laboratories. In one case we did get paratyphoid organisms from the duodenum, but I believe that this was really a paratyphoid infection. The parasite seems to attack primarily the gastro-intestinal tract. Dr. Dowell has records of cases in Nova Scotia which occurred as a summer outbreak.

DR. NORMAN GWYN, Montreal: I agree with Dr. Blumer that the disease may simulate catarrhal jaundice and may show a picture of acute yellow atrophy. At the necropsy it was difficult to think we were not dealing with acute yellow atrophy. In milder cases we were able to transmit the disease to guinea-pigs. We might have been dealing with a very active type of infection. The cases came in with a diagnosis of cholelithiasis. The first attack was over in a few days; later, pain and fever developed, and we suspected more than ordinary gallbladder lesions. There was little trouble in centrifugalizing the serum. We took twelve spirochetes out of the fresh serum, and we thought we could follow these parasites through the blood very definitely. After the first two or three days, the chances of finding the organism are remote. After infecting guinea-pigs, we could find spirochetes in the blood of the ear. The clinical symptoms are definite and yet indefinite, varying from those of acute catarrhal jaundice to rapidly fatal acute yellow atrophy. In one case there was occlusion of the bile duct. The most interesting thing in the clinical picture is the acute myositis. It was debated whether muscles should be incised for supposed collection of pus. About the time of occurrence of this epidemic there were one or two unexplained deaths from myositis in which the patients had not had jaundice. Shortly afterward it was reported definitely that spirochetes had been demonstrated by the infection of guinea-pigs from a case of myositis without jaundice.

DR. HENRY KOPLIK, New York: The impression is that jaundice is a distinctly toxic affair. In some cases certain foods, not fresh, such as fish, caused infection in several children. There is enlargement of the liver, some temperature elevation, abdominal pain and an enlarged spleen. There is bile pigment in the urine. In some cases, infection in children has been reported, due to the water supply; but, though the cases were evidently toxic, no bacteria were discovered.

DR. GEORGE BLUMER, New Haven, Conn.: In regard to catarrhal jaundice, I agree that the medical profession has been dominated by Virchow's statement, up to the time of Eppinger's work. There does not seem to be obstruction of the ducts, but there is an enlarged and tender liver. In these outbreaks there are many cases in which jaundice does not occur at all. There is plenty of evidence that this disease is seasonal. That can be found in the records of the Japanese investigators. In a great majority of the reported cases in which mention is made of the urine, the urine contains not only bile but a definite amount of albumin, although not more than would be associated with other infectious cases. In the literature, a few cases are complicated by nephritis. Hemorrhagic jaundice is lacking in the vast majority of reports, differing, thus, from Weil's disease. In a certain proportion of cases there was nosebleed, but hemorrhagic tendencies were lacking. This looks as if the cases were not of a spirochetal nature. We are at a great disadvantage as to the pathology because there were few fatal cases and no necropsies, or very few. In the European literature a few necropsies were reported, and the findings in young subjects were the same as those of acute yellow atrophy of the liver. The upper air passages were evidently the portal of entry in a certain proportion of cases, but I do not wish to give the impression that this was the only mode of infection. In some instances it probably takes place through the gastro-intestinal tract. There are epidemics in which duodenal washings have been investigated. At the Mayo Clinic this was done, but the result was negative. I feel that cases seen in France were hemorrhagic icterus, or Weil's disease. In the Euro-

pean form it is more difficult to isolate spirochetes than in Japan. I cannot answer Dr. Koplik's question definitely. Some of the cases may be toxic in origin, but I do not think that we can explain widespread epidemics as being of toxic origin, because the patients are not under the same food conditions.

Pathogenesis of Epidemic Encephalitis

DR. SIMON FLEXNER, New York: This study on the etiology of epidemic encephalitis was commenced in 1919 by Dr. Amos and myself, and has been carried on ever since. There has been a recrudescence of the disease, both here and in Europe, thus affording further study. Credit is due to the Mount Sinai Hospital workers who succeeded in communicating the disease to rabbits and monkeys from material from patients suffering from epidemic (lethargic) encephalitis. Dr. Amos and I have worked with washings of the nervous tissue and with cerebrospinal fluid taken from persons showing typical microscopic lesions of the disease, and have never had a successful transmission, but lately we did get a successful transmission with the cerebrospinal fluid from a case of syphilis of the central nervous system. Having failed ignominiously with material from patients, we took cerebrospinal fluids indiscriminately for the work. In one case we got transmission from the contents of an herpetic vesicle. The monkey is not susceptible to inoculated material. The guinea-pig can be inoculated. Rodents are the most useful animals for this purpose. I believe that the results we have obtained by our experiments are these: We have disclosed a new variety of pathogenic organism, or, perhaps, a new group, which we shall speak of as viruses because they have not been seen. It is virulent material, up to the present unrecognizable by the usual means of identification. The material is very active, but under the conditions of the experiment is destroyed very quickly. The symptoms are those of nervous system lesions, and if successful transmission is accomplished there should follow high temperature, paralysis, convulsions and rapid death. Movements of the jaws and excessive salivation are pronounced. These symptoms are stressed, because necropsy material is not conclusive. Rabbits are very apt to show lesions of the nervous system, so that this cannot be regarded as something experimentally produced. I believe we are at the beginning of a study of a new variety of infecting organism; it is an open question whether this is the cause of epidemic encephalitis. I believe that epidemic encephalitis is separate from influenza, but probably associated with it in the same way that pneumonia may be associated. The two diseases may be coincident, but independent. These results of four years of study are not wholly negative if we have widened our horizon with reference to pathologic infective agents, although we may not have established a specific etiologic agent in epidemic encephalitis.

DISCUSSION

DR. HANS ZINSSER, New York: Dr. Flexner has shown great conservatism in his conclusions. A great deal of confusion has resulted from the fact that in dealing with herpes virus we have concluded that it was the same substance as the virus of encephalitis. There is also a filtrable virus of fowl pox. So little is known of filtrable viruses that it is unsafe to draw conclusions. We easily infected a rabbit on the cornea with herpetic virus from a common cold. We kept the strain running along, and have had one strain from March, 1922; but we have discontinued the work, as regards herpetic virus. In human beings, the virus may be present in the saliva when there is no herpes. We had the same unsatisfactory results as Dr. Flexner did when we tried to transmit encephalitis. We had to throw out a great many rabbits on account of mixed infection, even after two or three passages. Merely planting a piece of brain was not enough to give inoculation. The brain must be mashed up and an emulsion made. We have three cases valid at present, one at the third generation, and one at the fifth generation. There is a tremendous irregularity in individual rabbits. I agree with Dr. Flexner that these viruses are a new group of organisms, but I don't believe that encephalitis and herpes are the same.

DR. EMANUEL LIBMAN, New York: Further study will decide whether these viruses are the cause of the disease or whether they are associated. In the transmissions done by our workers from nasal secretions, they took controls from the surgical side where there were no contacts. We did not use herpes virus longer than six weeks. It is possible that encephalitis may or may not have direct relation to the disease. Dr. Loewy has been successful in getting organisms from the virus of encephalitis, from the brain and nasal secretions of patients. That organism creates lesions in the rabbit, but it acts differently from influenza. Introduced intratracheally, it does not produce the same lesions as encephalitis. Dr. Loewy implanted the organisms from influenza intratracheally into rabbits and produced thrombosis of the capillaries and arterioles, but the organism introduced intradurally did not produce encephalitic lesions in the brain. Thus we have not produced encephalitis with organisms from influenza cases.

Pathologic Physiology of Botulism

DRS. C. W. EDMUNDS and PUTNAM C. LLOYD, Ann Arbor, Mich.: The symptoms of this disease are entirely motor—the dysphagia, weakness of the legs and respiratory difficulty, marked constipation, dryness of the mouth. The patient dies of respiratory failure. My theory is that central symptoms are not essential to the botulism intoxication, which is entirely a peripheral affair caused by paralysis of the motor nerve endings in the muscles. Experiments on guinea-pigs and cats by inoculation of botulinus poison produced weakness of the hind legs, great respiratory difficulty and paralysis of the abdominal muscles. The chest is pulled up in the effort to carry on respiration. The whole vasomotor system is normal; the circulatory system is normal. The difficulty is in the respiratory system entirely from paralysis of the pharyngeal muscles. Animals kept on artificial respiration for eighteen hours recovered. The condition reminds one of curare paralysis, except that it is not so complete. I believe that these findings alter the clinical point of view and give us a much more hopeful prognosis.

A New Classification of Mycetismus or Mushroom Poisoning

DR. W. W. FORD, Baltimore: It was formerly supposed that about a dozen varieties of mushrooms contained the poisonous substance muscarin. Now we know that about eighty species are poisonous. During the food shortage of the war the fields were searched for edibles, with the result that in Germany and Austria, particularly, many cases of mushroom poisoning occurred. There are certain main types of mushroom intoxication: (1) entirely gastro-intestinal, in which the attack ceases when the stomach is empty; (2) general catharsis, which is painless; (3) violent vomiting and pain, but no involvement outside the gastro-intestinal tract; (4) a choleric type producing widespread degeneration of the cells. There is an incubation period for twenty hours after ingestion, followed by a violent, painful gastro-intestinal crisis. The patient appears to recover, but gets a relapse, with violent intestinal pain, collapse and death in a few days. In this type, the cells of the liver and spleen, and the voluntary and involuntary muscles show degeneration. There are evidences of attempt at repair on the part of the liver and kidney. The first symptom is a severe nephritis. Treatment in California, which has been successful, has been mainly directed to the kidney, and with emptying of the intestinal tract and irrigation of the bowel with potassium permanganate solution. The last type is that of nervous system intoxication by muscarin, which comes on half an hour after eating the mushrooms. There are pin-point pupils; the eyes water; there are salivation and diarrhea. Patients die of the effect of the muscarin on the heart. The heart dilates and stops in diastole. Atropin is the physiologic antidote, given subcutaneously. There are two other rare types which may be mentioned, one caused by the morels, or helvella, which produce helvellic acid. These resist the action of the gastric juice and produce hemolytic intoxication. The patient voids chocolate-colored urine. Another kind, which looks like the

meadow mushroom, produces an intoxication similar to ethyl alcohol. The patient is hilarious, has staggering gait, sees variation in the size of objects, and finally collapses in a stupor. The patients recover in these two types, but in weak persons and children, mushroom poisoning of any kind may produce death from heart failure.

Chylous and Chyliform Ascites

DR. M. A. BLANKENHORN, Cleveland: It has been supposed that, after centrifugalizing chylous fluids, in the remaining nonchylous portion the turbidity is due to abnormal proteins, such as mucin and lecithin. I have found that the turbidity in nonchylous fluids is due to fat in the form of fatty acids or nonsaturated fat. I have been successful in making a nonchylous fluid experimentally from an emulsion of proteins and fat, by using nonsaponifiable fat in the form of liquid petrolatum and distilled water. The unusual behavior of the finely divided fat is because of the colloid properties taken on by particles in minute suspension. It has electric properties explainable by surface tension phenomena in relation to electrical charge. We can, therefore, have a pseudochylous fluid with fat alone. We examined the fluid from various patients with various lesions, in order to discover the source of the turbidity. Various processes—heat, coagulation, extraction, freezing, dialysis, peptonization, electrolysis—were used. We found that the turbidity of the fluid is due to fat alone, and we discarded the term pseudochylous fluid. It would seem that we must direct our attention to the lymph vessels and blood capillaries where these fluids are produced, and discard the idea of unusual proteins.

An Exceedingly Powerful Oxytocic and Pressor Substance Obtained from the Posterior Lobe of the Pituitary Gland

DRS. JOHN J. ABEL and C. A. ROUILLER, Baltimore: The posterior lobe of the hypophysis has been supposed not to have an internal secretion. Dixon, however, reports that he can find the posterior lobe principle in the spinal fluid and that, injected into an animal, it will increase the substance in the spinal fluid. Byrne also notes that the posterior lobe substance opposes the action of insulin. I believe that we have found that: (1) the posterior lobe principle raises arterial pressure and keeps it up for a long time; (2) it acts on muscle tissue, causing it to contract; (3) it has diuretic action; (4) it constricts the capillaries of warm-blooded and of cold-blooded animals, and (5) it has tonic action on plain muscle tissue. So far we have two well known active gland principles—epinephrin and thyroxin. Histamin is the most powerful plain muscle stimulant that we know of, a proportion of 1:200,000,000 causing contraction of the guinea-pig's uterus; but with this posterior lobe substance a proportion of 1:19,750,000,000 will produce the same result, that is, it is 1,250 times as powerful as histamin. We have now reached a point at which the product is 97 per cent. pure. We hope that it will be of use in the isolation of other products, such as insulin and secretin.

The Remedial Efficacy of Splenectomy in Chronic Thrombocytopenic Purpura Hemorrhagica

DRS. N. E. BRILL and NATHAN ROSENTHAL, New York: Splenectomy has been found in our hands to be a truly life-saving measure in cases of thrombocytopenic purpura hemorrhagica. This operation has been tried in twelve cases. The spleen showed the same picture in all cases, with enlarged follicles, but no attempt at fibrosis, as described by Banti. There were no platelets found in the spleen. I believe that platelets are a feature of the escape of the blood from the tissues. These platelets are very large, and look like megaloblastic cells. The bleeding occurs because of the enormous size of the platelets. In these cases, immediate improvement was noted after operation, with great regeneration of the blood picture. Up to the present time the patients remain practically cured.

DISCUSSION

DR. H. Z. GIFFIN, Rochester, Minn.: We submitted a case of this type to splenectomy in March. This patient had

hemorrhage before coming under observation, with epistaxis and ecchymoses and bleeding from the uterus lasting as long as thirty days. She had twelve transfusions to maintain her condition. The red blood cells numbered 1,600,000, with hemoglobin, 18 per cent. The coagulation test was normal, but the bleeding time was prolonged; the prothrombin time was prolonged; the platelet count varied between 40,000 and 80,000. After a series of transfusions and the use of coagulants, we got the red blood cells up to 3 million and hemoglobin to 56 per cent. The patient was then subjected to splenectomy, with the same spectacular results that Dr. Brill describes. Six hours after operation, the platelet count rose to 200,000 and then to 700,000; sixteen days after operation, it was 350,000. The bleeding time was two and one-half minutes, four weeks after operation; the red blood cells numbered 4 million, and hemoglobin was 68 per cent. The pathologic changes in the spleen were interesting. There were acute splenitis and great numbers of polymorphonuclears. This is a life-saving measure. This patient would have had recurrence and died of hemorrhage.

DR. R. MINOT, Boston: Two years ago I saw a woman who had had the disease ten years. There were always petechiae and a small amount of bleeding. The spleen was removed two years ago. It was not possible to obtain a careful count immediately after operation. Forty-eight hours afterward, the platelets numbered 300,000. They had dropped below 10,000 before operation. The patient is living and well, with normal hemoglobin, and platelets above 175,000. I think that this type may be congenital as well as acquired. In some acute cases, spontaneous cures do occur; but there are no spontaneous cures in the chronic type. The pathologic changes in our cases resemble those described by Dr. Giffin.

DR. E. B. KRUMBHAR, Philadelphia: Very remarkable increase in platelet count follows removal of the spleen, but the rise is temporary. I do not think that we should feel that the subsequent fall of platelets has nothing to do with the disease. It is not proved that they are not a cause of the purpura. I should like to know, in the four cases that were not cured immediately, how the platelet curves compare subsequently with those in the cases that were cured. There is a relation between the platelet count and the symptoms, or the platelet rise is enough to relieve the condition for the moment. It is sufficient in some cases to prevent recurrence.

DR. N. E. BRILL, New York: The pathologic picture was one of myeloid metaplasia. There were no platelets in the spleen or in the reticulated epithelium. I think that the platelets are used in the repair, but they are unusually large. Ordinary platelets are less than a micron in diameter. Six months after operation there was an unusual rise in the platelet count, but for one week after operation it was the same as before operation. In the case of one boy, the count is 20,000, far below the number associated with bleeding. It remains for the future to decide whether these cases are permanently cured. In a few cases there were small recurrences of bleeding, which eventually disappeared.

The Etiologic Relation of Achylia Gastrica to Combined Spinal Sclerosis

DR. DOUGLAS VANDERHOOF, Richmond, Va.: In a study made of forty-five patients with achylia gastrica, twenty-nine had combined sclerosis of the spinal cord. Seven patients who received complete clinical and laboratory studies form the basis of this report. Fractional gastric analyses were made. The blood counts were done, and showed no evidence of pernicious anemia. The spinal fluid Wassermann test was negative. In regard to infective foci: One patient had infected tonsils; one a mild oral sepsis which cleared up. Attention was given to all foci of infection, and an addition of 1 teaspoonful of dilute hydrochloric acid was added to the meal. Very remarkable results followed this treatment. Not only was the achlorhydria relieved, but symptoms of spinal sclerosis, such as paresthesias of the extremities, flaccid or spastic paraplegias, or acro-ataxia, were relieved, or disappeared in the course of some months. This disease is not hereditary, and syphilis

does not play a part in it. Its association with achylia has not been noted until recently. According to our studies, achylia is as constant a finding in acroparesthesia as it is in pernicious anemia. It is found that one third of the patients having combined spinal sclerosis have pernicious anemia. In my series, fourteen patients have pernicious anemia. The failure to note this association is due to the fact that the disease has been investigated entirely by neurologists, and the spinal changes in pernicious anemia have been studied by clinicians. Hearst and Bell discussed the relation of oral infection, absence of hydrochloric acid and secondary intestinal infection. It would seem that achylia, accompanying or preceding the malady, is the predisposing cause. Hydrochloric acid is nature's method of defense; without it, bacteria from the mouth and throat pass to the intestine without being digested by the gastric juice. The bacteria may affect the nervous tissues, or may influence the bone marrow unfavorably; thus, one patient may suffer from nervous lesions and another from disturbance of the blood-forming organs. This finding throws considerable light on the origin of pernicious anemia, and the presence of hydrochloric acid in the test meal is against the diagnosis of combined sclerosis in doubtful cases. In my experience, pernicious anemia has always been a fatal disease. The prognosis of combined spinal sclerosis and achylia gastrica without pernicious anemia is much more favorable. The spinal cord symptoms can be reduced greatly. There is reason to believe that every person suffering from achylia gastrica is a potential case of pernicious anemia or of combined spinal sclerosis. Patients should receive a regular amount of hydrochloric acid with each meal until the stomach renews its secreting activity.

DISCUSSION

DR. W. S. THAYER, Baltimore: We know that pernicious anemia is preceded by diarrhea, associated with an acidity of the gastric juice. This is present in almost all pernicious anemia cases. Cord changes are not infrequent in pernicious anemia, and are often the first to be noted. In the instances in Dr. Vanderhoof's series in which cord changes have been found with achylia gastrica, the fact that they have been held in abeyance or materially improved for years is a very interesting result.

DR. B. W. SIPPY, Chicago: I should like to know how much hydrochloric acid Dr. Vanderhoof gives. Our patients cannot take much by mouth because the pharynx will not tolerate it. It required 900 drops to digest a meal, and that is practically impossible to administer clinically. Would the small doses that he gives have much influence on the bacterial flora of the intestinal tract? It is very difficult to reason from cause to effect. We must be careful that we are not attributing too much effect to very small doses.

DR. H. S. PLUMMER, Rochester, Minn.: A large number of people are born with a diathesis whereby they have no hydrochloric acid. These people are naturally prone to develop certain clinical pictures—scaly skin, an acidity, and a basal metabolism 15 or 20 per cent. below normal. Perhaps, the patient's mother comes in and she shows very low basal metabolism. Arthritis and creaky joints are apt to be seen in these cases.

DR. DOUGLAS VANDERHOOF, Richmond, Va.: For fifteen years I have been giving large doses of dilute hydrochloric acid. I have given a teaspoonful at each meal, and later when the duodenal tube came into use I have been giving a dram through the duodenal tube. The acid is suspended in 6 ounces of water. I have subtracted specimens to see what happened. A dose of 1½ drams (5.6 c.c.) of dilute hydrochloric acid will make a beverage which is the same as the acidity of the gastric juice. The observations happened accidentally. I was giving these patients hydrochloric acid doses, and they happened to be cases of combined spinal sclerosis. I had never supposed that it would help the spinal cord symptoms to supply secretion to the stomach, but in four out of the seven patients the improvement has been unusual and uninterrupted.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

5: 345-460 (April) 1923

- *Sarcoma of Uterus. J. C. Masson, Rochester, Minn.—p. 345.
- *Urinary Tract of Eighty Fetuses and Young Infants. G. V. Brown and C. Corbeille, Detroit.—p. 358.
- Glycosuria Test for Pregnancy. P. F. Williams, Philadelphia.—p. 369.
- Craniotomy. A. M. Mendenhall, Indianapolis.—p. 372.
- Double Salpingo-oophorectomy with Partial Auto-Ovarian Transplantation, Followed by Twelve Years of Menstruation, Normal Pregnancy and an Uncomplicated Menopause at Fifty-One Years of Age. W. S. Bainbridge, New York.—p. 379.
- Transplantation of Cervix. W. W. Babcock, Philadelphia.—p. 380.
- Pernicious Effects of Use of Stems in Uterus, and Danger of Introducing Sounds and Other Foreign Bodies Without Preparation. J. N. West, New York.—p. 383.
- Renal Tuberculosis. Diagnosis and Treatment. H. D. Furniss, New York.—p. 386.
- Bladder Surgery in Relation to Fourth Era of Surgery. R. T. Morris, New York.—p. 392.
- So-Called Hernia in Mammary Areola: Etiology of Mamma Areolata and Vicarious Menstruation. G. L. Moench, New York.—p. 394.
- *Toxemias of Pregnancy from New Aspect. O. M. Gruhzt, Detroit.—p. 400.
- Management of Third Stage of Labor. C. A. Gordon, Brooklyn.—p. 403.
- Patency of Fallopian Tubes Ascertained by Transuterine Injection of Fluids. I. S. Stone, Washington, D. C.—p. 408.
- *Phenobarbital Sodium (Luminal Sodium) Treatment for Hyperemesis Gravidarum. R. Luikart, Omaha.—p. 410.
- Obstetrico-Gynecologic Diagnosis. Report of Three Cases (Hemato-salpinx; Dermoid Cyst; Eclampsia). A. P. Leighton, Portland, Me.—p. 415.
- Operation for Retrodisplacements of Uterus. J. W. Keefe, Providence, R. I.—p. 418.

Sarcoma of Uterus.—In the series of fifty cases analyzed by Masson there were two deaths, an operative mortality of 4 per cent. Of the remaining forty-eight patients, one was not heard from. Ten had died, four within one year of the date of operation, and the remaining six within two years. In all probability, most of them died from recurrence of the malignant growth. Thirty-six (76.59 per cent.) are apparently in good health, or at least have no symptoms to suggest recurrence. One patient reported that she is feeling much worse, thinks there is a recurrence of the growth, and has marked dyspnea, weakness and dropsy, evidently a case of recurrence, but Masson feels that the possibility of a cardiorenal disorder must also be considered, as it is now five years since her operation.

Urinary Tract of Fetuses and Infants.—Only twenty-five, or 31.25 per cent., of the eighty cases studied by Brown and Corbeille were found entirely free from pathology. A group comprising 13.75 per cent. of the cases showed only such slight changes as edema and passive congestion. Of the 68.75 per cent. abnormal cases, only nine presented negligible alterations.

Typing of Blood of Eclamptic Mother and Her Child.—Blood typing was undertaken by Gruhzt to determine incidence of incompatibility of the blood of the mother and her offspring in normal pregnancy as well as in toxemias. In every case of eclampsia the mother's and baby's blood grouping produced agglutination of the baby's red cells by the mother's serum. Not a single case of normal pregnancy showed a possible blood grouping which could result in agglutination of the fetal red cell elements by the mother's serum in vivo or in vitro. The noticeable signs and symptoms of an eclamptic attack appear toward the later stages of pregnancy, i. e., at the time of the most rapid growth of the fetus. The increased anabolic process goes hand in hand with increased rate of catabolism. Increased amounts of waste products, including the waste products of the blood system, are thrown or diffused into the mother's system. Whether the specific agglutinating substance is passed to the mother's system in the waste products as an albumin molecule or as a hypothetical "agglutinin," is not known. In the fetal body it is associated with the red cells. When in the mother's blood stream, it is agglutinated and suspended as

fine colloidal particles. A new colloidal state of the blood is produced which probably accounts for the more viscous "thicker," blood of the eclamptics. This new state of the blood Gruhzt believes is the paramount factor of the disease. The physical and chemical processes which associate with a colloidal substance in the blood stream may readily explain the signs and symptoms of eclampsia.

Phenobarbital Sodium in Treatment of Vomiting of Pregnancy.—Luikart has administered phenobarbital sodium to allay vomiting and nausea long enough for food to be taken and assimilated. The use of phenobarbital sodium is not an immediate cure for hyperemesis gravidarum, but a relief to such an extent that the patient can often be carried to the end of the third month of pregnancy with her weight and general strength but little impaired. Phenobarbital sodium, from 1 to 2 grains, is administered hypodermically, every four hours, in the majority of cases, though it may be given at shorter intervals, for three or four doses, if relief is not prompt. If the woman is seen early, regular feedings are continued—six a day. Great care must be taken with the general management. There should be examinations of urine, a record of total intake and output of fluids, daily blood pressure determinations, pulse, temperature and respiration records. The sensation caused by phenobarbital sodium is described by patients as a "fluid feeling" of the entire body. Occasionally the patient becomes a day sleeper and complains of wakeful nights. A hypodermic of 7 grains of caffeine sodium benzoate, administered with the phenobarbital sodium, helps to overcome this, and does not interfere with the quieting effect on the nausea of the phenobarbital sodium. The only untoward effect of phenobarbital sodium thus far observed has been urticaria. This is relieved, to a large degree, by sponge baths of 1 per cent. lysol solution as needed.

American Review of Tuberculosis, Baltimore

7: 67-140 (April) 1923

- Nature of Tuberculosis of Eye. W. C. Finnoff, Denver.—p. 67.
- Tuberculosis of Eye and Its Treatment: Review of Recent Literature. C. A. Clapp, Baltimore.—p. 81.
- Studies on Biochemistry and Chemotherapy of Tuberculosis: XXV. Tissue Changes Produced by Action of Lipins of Tubercle, Grass and Colon Bacilli, and of Liver. L. W. Ray and J. S. Shipman, Chicago.—p. 88.
- Studies on Biochemistry and Chemotherapy of Tuberculosis. XXVI. Fat-Splitting Ferments in Lymphocytes. C. C. Reed, Chicago.—p. 105.
- *Demineralization in Tuberculosis: Distribution of Calcium in Tuberculous Guinea-Pig. O. Barkus, Saranac Lake, N. Y.—p. 111.
- *Dish Towel as Source of Tuberculous Infection. C. Floyd and L. Sikorsky, Boston.—p. 117.
- *Apical Tuberculosis. O. H. Brown, Phoenix, Ariz.—p. 120.
- Corporation Care of Tuberculous Employees: Experiment as Carried Out in Colfax by Large Corporation. R. A. Peers, Colfax, Calif.—p. 133.

Demineralization in Tuberculosis.—An appreciable loss of calcium due to progressive tuberculosis could not be proved in any case by Barkus. Spontaneously healed tuberculous lesions produced by infection with a strain of low virulence, which should, in the light of the theory of demineralization, yield a low calcium content, showed, on the contrary, quite normal values.

Dish Towel as Source of Infection with Tubercle Bacillus.—In a series of twenty-five instances of guinea-pigs inoculated from the washings of dish towels used by tuberculosis patients no positive results were obtained by Floyd and Sikorsky. In three control experiments, in which gauze was thoroughly impregnated with viable tubercle bacilli and thoroughly washed, no positive results were obtained. The most reasonable explanation of these negative results would seem to be that the strong alkali soap or soap powder used for a period of weeks in the home must very deleteriously affect any viable tubercle bacilli that may be caught in the meshes of the dish towel and either kill them or so impair their vitality as to make them unable to produce infection in small numbers.

Mode of Infection in Apical Tuberculosis.—The paramount determining factor in the selection of the apices by pulmonary phthisis, in Brown's opinion, is the long continued assault, which occurs in all adults, on the topmost bronchial

lymph nodes by bacteria and their toxins. The germs and their poisons are picked up by the lymphatics from the nose and mouth and the entire head, and are passed on by the lymphatics to the deep cervical nodes and thence to the mediastinal and bronchial nodes. The swelling of the bronchial lymph node dams back the lymph into the area drained; since it is the topmost bronchial node which usually is affected most seriously, the resulting stagnant lymph will be in the apex of the lung, where already the circulation of lymph, by virtue of the relative immobility of this part of the lung, is at a low ebb. In this way there is produced a fertile soil for tubercle bacilli coming from whatever source they may.

Archives of Dermatology and Syphilology, Chicago

7: 573-720 (May) 1923

- *Biologic Reactions of Arsphenamin. IV. Effect of Large Doses on Coagulability of Blood. J. Oliver and E. Douglas, San Francisco.—p. 573.
- *Value of Bismuth Salts in Treatment of Syphilis. V. Pardo-Castello, Cuba.—p. 586.
- Hydrogen-Ion Concentration of Surface of Healthy Intact Skin. H. Sharlit and M. Scheer, New York.—p. 592.
- *Aspergillus in Scalp Lesions Following Red-Bug (*Leptus*) Bites. K. M. Lynch, Dallas, Tex.—p. 599.
- Unusual Case of Dermatitis Venenata Caused by Colored Paper. H. G. Rowell, New Bedford, Mass.—p. 603.
- *Ulcus Epidemicum. Preliminary Report. W. B. Adams, Beirut, Syria.—p. 604.
- Leukoderma Acquisitum Centrifugum (Sutton). J. H. Stokes, Rochester, Minn.—p. 611.
- Frambesiform Syphilid: Report of Case. H. Goodman and E. F. Traub, New York.—p. 619.
- Bullous Eruptions in Hemorrhagic Sarcoma of Kaposi and Lichen Planus. F. Wise and J. J. Eller, New York.—p. 625.
- Pituitary Gland Dystrophies. L. Hollander, Pittsburgh.—p. 632.

Effect of Large Doses of Arsphenamin on Blood Coagulability.—Oliver and Douglas did not find any evidence indicating marked action of arsphenamin on thrombin or its precursors. They did find, however, a marked change in the properties of the fibrinogen and other globulins of the arsphenamin plasma, rendering them incoagulable to heat or thrombin. No action on thrombin could be demonstrated. The practical importance of the effect of arsphenamin on the coagulability of the blood is not very evident at the present time. In its therapeutic use, the concentration needed to produce definite changes is never reached. The experiments detailed indicate only that there is some reaction between the arsphenamin and the globulins which renders them incoagulable to thrombin and heat, and that they are not "destroyed" as they may be recovered by precipitation by carbon dioxide.

Value of Bismuth Salts in Treatment of Syphilis.—Pardo-Castello reviews the literature and presents results obtained in the treatment of nine cases. Quinin bismuth iodid seems to be the compound of choice. The author has not observed a single accident with its use in more than 180 injections. Sodium and potassium tartrobismuthate is painful, and stomatitis is likely to occur with its use. Spirochetes disappear from the chancre and mucous patches after the second or third injection of quinin bismuth iodid. The primary lesion and all the secondary manifestations heal in a short time, and the general disturbance and headache also disappear after the fourth or sixth injection. Tertiary lesions respond more slowly, but they finally disappear entirely. The effect on the Wassermann test is marked. It became negative in seven of nine cases. Bismuth, in the light of Pardo-Castello's experience, is entitled to a prominent place among antisyphilitic remedies. Time alone will demonstrate whether bismuth will take the place of the other antisyphilitics or be used in combination with them. It will also show whether the effects are permanent.

Treatment of Aspergillus Scalp Lesions.—A sulphur ointment was used by Lynch in the treatment of some of these sores. The hair was not disturbed, the masses of exudate were removed and the ointment applied twice daily on the elevated and eroded area. A few small yellowish masses reformed but were easily removed, and in a few days no further formation occurred. The skin lesion gradually disappeared in the course of ten days or two weeks.

Epidemic Tropical Ulcers.—Adams describes an epidemic of ulcers, frequently called "tropical," which began in Syria in 1916, swept through the land, reached its height in 1919, and now seems gradually to be disappearing. It is a dry weather disease, flourishing during the summer drought and never beginning in the rainy season. The painful, obstinate ulcers invariably occur on the exposed parts of the poorer people of the community. The etiology seems to be a fusiform bacillus and a commensal spirillum found in the edges; but a rich flora flourishes on the floor of the ulcers. The host, if there be no other than man, is unknown, as is the carrier. The treatment calls for prompt and energetic measures; but at best, the healing is slow. The painful ulcers incapacitate patients for work for a long time, thus causing a serious loss to the community.

Archives of Neurology and Psychiatry, Chicago

9: 547-688 (May) 1923

- Some Problems in Epilepsy. W. Timme, New York.—p. 547.
- Ecology of Epilepsy. I. Epilepsy in Colonies. C. L. Dana, New York.—p. 551.
- Id. II. Racial and Geographic Distribution of Epilepsy. C. B. Davenport, Long Island, N. Y.—p. 554.
- Epilepsy and Convulsive State. F. Kennedy, New York.—p. 567.
- Symptomatic Epilepsy in Birds. Anatomico-Pathologic and Clinical Report. G. Mingazzini, Rome.—p. 576.
- Infantile Progressive Muscular Atrophy of Werdnig-Hoffmann Type. Case Report with Necropsy. J. C. Michael, Minneapolis.—p. 582.
- *Cystic Blastomycosis of Cerebral Gray Matter. Caused by *Torula histolytica* Stoddard and Cutler. W. Freeman and F. D. Weidman, Philadelphia.—p. 589.
- *Experimental Convulsions. Epileptogenous Zones of Central Nervous System. L. J. Pollock, Chicago.—p. 604.
- *Studies on Epilepsy. I. Convulsions Experimentally Produced in Animals Compared with Convulsive States in Man. Preliminary Report. C. A. Elsberg and B. P. Stookey, New York.—p. 613.
- Metabolic States Contributing to Uremia. N. B. Foster, New York.—p. 627.

Cystic Blastomycosis of Brain.—Freeman and Weidman report a twelfth case of cystic infiltration of the cerebral gray matter with a blastomycete. The clinical picture is that of tuberculous meningitis or unlocalized brain tumor, but the organisms are readily found in the spinal fluid. The organism in this case was *Torula histolytica*, Stoddard and Cutler. The disease was transmitted to guinea-pigs. These developed a general infection, and, in one animal, there was cystic infiltration of the brain and testes.

Experimental Convulsions.—Pollock states that from his experiments no conclusive evidence could be adduced that an isolated segment of the brain stem contained epileptogenous elements. It appeared highly probable, however, that such was the case. It would seem that epileptogenous qualities are possessed by the ganglion cells both of the brain and the brain stem; that convulsive movements may be evoked by proper stimulation of such cells at any level; and that the first symptom produced depends on the level so stimulated.

Experimental Convulsions Produced by Shutting Off Blood Supply to Brain.—Elsberg and Stookey report on their work in this field, the convulsions being produced, not by the introduction of a drug into the circulation which may affect every part of the body, but by the simple method of shutting off the blood from the brain. The method also made it possible to establish an artificial circulation through the brain, so that a variety of fluids could be passed through the intracranial circulation. All that was necessary was to inject fluid into a carotid artery above the clamps and to drain off the fluid from one of the jugular veins, a ligature having been tied around the animal's neck and all structures excepting the trachea, esophagus, carotid vessels, and vagus nerves being compressed. This ligature prevents the return of the fluid into the general circulation, except for an amount, that cannot be controlled, that is carried off through the veins in the spinal canal. Thus there was a cranial organism—a living test tube for the study of the influence of various solutions and various drugs on the brain.

Iowa State Medical Society Journal, Des Moines

13: 177-220 (May) 1923

- Subacute Bacterial Endocarditis. W. L. Biering, Des Moines.—p. 177.
- Routine Wassermann Test in Ophthalmology. H. B. Gratiot, Dubuque.—p. 186.

- Opportunities and Means of Giving Patients Consulting Surgeon a Better Service. H. J. Vanden Berg, Grand Rapids, Mich.—p. 191.
Hyperemesis Gravidarum. D. F. Crowley, Des Moines.—p. 195.
Consideration of Some Practical Problems in Artificial Feeding of Normal Baby. J. D. Geissinger, St. Paul.—p. 198.
Surgical Diseases of Urinary Organs; Plea for Early Recognition. W. Downing, Le Mars.—p. 201.
Function of Gallbladder. G. M. Crabb, Mason City.—p. 204.

Journal of Comparative Psychology, Baltimore

3: 85-145 (April) 1923

- Some Effects of Duration and Direction of Rotation on Postrotation Nystagmus. J. Q. Holsoopple, Baltimore.—p. 85.
Validity of Tests of Musical Talent. M. Schoen, Pittsburgh.—p. 101.
Behavior of Birds in Maze. M. P. Sadovinkova, Moscow.—p. 123.
Brightness Value of Red for Light Adapted Eye of Calf. E. Kittredge.—p. 141.

Journal of Infectious Diseases, Chicago

32: 315-399 (May) 1923

- Rabbit Spirochetosis. A. S. Warthin, E. Buffington and R. C. Wanstrom, Ann Arbor, Mich.—p. 315.
Hypertrophy of Hemolymph Nodes in Texas Fever Immunes. A. S. Warthin, Ann Arbor, Mich.—p. 333.
Bacterial Parasitism, Bacterial Pathogenism, and Resistance to Bacterial Infection. A. I. Kendall, Chicago.—p. 341.
Estimation of Small Amounts of Carbohydrates by Bacterial Procedures. A. I. Kendall and S. Yoshida, Chicago.—p. 355.
Carbohydrate Identification by Bacterial Procedures. A. I. Kendall, Chicago.—p. 362.
Measurement of Carbohydrate Mixtures by Bacterial Procedures. A. I. Kendall and S. Yoshida, Chicago.—p. 369.
Carbohydrate Configuration and Bacterial Utilization. A. I. Kendall, R. Bly and R. C. Haner, Chicago.—p. 377.
Etiology of Spontaneous Ulcer of Stomach in Domestic Animals. E. C. Rosenow, Rochester, Minn.—p. 384.

Hypertrophy of Hemolymph Nodes in Texas Fever Immunes.—Warthin asserts that in many Texas fever immunes there occurs a very marked generalized hypertrophy of the hemolymph nodes, which is to be interpreted as a manifestation of protective reactions against a latent infection. Inasmuch as Meyer has emphasized the involvement of the hemolymph nodes in East Coast fever, there appears to be a special predilection for these organs in piroplasma infections.

Streptococci Cause Experimental Ulcer of Stomach.—Streptococci were isolated consistently by Rosenow in pure cultures or in predominating numbers from a series of ulcers in the hog, calf, cow, sheep, and dog. This organism was demonstrable in the tissues, and the number was roughly proportional to the acuteness of the condition. There was an increasing incidence of pure cultures in the tissues as the distance from the source of contamination, the ulcerated surface, increased. Ulcer, hemorrhage, and infiltration of the stomach were produced in 86 per cent. of rabbits and dogs injected with the freshly isolated cultures from ulcers in the different species, often with no lesions elsewhere. Similar results were obtained with cultures of the streptococcus from the infected tonsils in the cow and dog that had ulcer. The streptococcus was demonstrated in, and isolated from, experimentally produced ulcers when other tissues were sterile, and produced ulcer on reinjection. Specific localizing powers were retained for seven and one-half years in two of three strains preserved in ascites-glucose-agar shake cultures, layered with oil. Rosenow asserts that results such as these have not been obtained with streptococci of similar morphology from sources other than ulcer. Ulcer of the stomach in animals, as in man, is apparently often due to localized blood borne infection by streptococci having selective affinity for the mucous membrane or other parts of the stomach.

Journal of Metabolic Research, Morristown, N. J.

2: 401-545 (Oct.) 1922

- Feeding Experiments on Rats with Plants at Different Stages of Development. I. Experiments with Corn. B. Harrow and F. Krasnow, New York.—p. 401.
*Studies of Thyroid Apparatus. XI. Effect of Thyroparathyroidectomy on Reproduction in Albino Rat. F. S. Hammett, Philadelphia.—p. 417.
*Treatment of Arterial Hypertension. F. M. Allen and J. W. Sherrill, Morristown, N. J.—p. 429.

Effect of Thyroparathyroidectomy on Reproduction.—Studies have been made by Hammett of the reproductive ability of

thyroidless albino rats. He found that conception occurred when completely thyroidectomized males were mated with completely thyroidectomized females; when partially thyroidectomized males were mated with completely thyroidectomized females, and when completely thyroidectomized males were mated with partially thyroidectomized females. When the thyroid apparatus was removed from young rats 45 or 56 days of age, there was no apparent inhibition of function of the internal secretion of the gonads (stimulation to development of the secondary sexual characteristics, stimulation to sexual activity, preparation of the uterine mucosa for nidation). The processes of reproduction concerned in the formation, maturation and discharge of the gametes were apparently disturbed by the loss or deficiency of the thyroid secretion, as were the reproductive processes subsequent to gonadal participation. This is shown by the increased sterility, greater age at breeding, high birth mortality, high mortality during and after weaning, the smaller number of rats in the litters, and the failure of the rats to thrive during the nursing period as do the young of normal mothers. From these results and from the point of view of comparative physiology it is concluded that the disturbances in reproductive ability following the loss of or a deficiency in the thyroid function are not due to any particular effect on the endocrine functions of the gonads of either sex or to the lack of a specific influence of the thyroid on the processes of reproduction subsequent to fertilization, but that they are the result of the general lowering of the anabolic level of the organism due to the lack of the specific stimulus to metabolism supplied by the thyroid, which results in a condition of partial physiologic inanition.

Sodium Chlorid Treatment of Hypertension.—Allen and Sherrill describe 180 severe cases of hypertension treated by close restriction of the sodium chlorid intake, for periods from one month to three years. Fully normal blood pressure was restored in only thirty-four cases (18.9 per cent.). In seventy-five other cases (41.9 per cent.) the relief of hypertension and other symptoms was sufficient to be regarded as a distinct therapeutic success. Transitory benefit, followed by relapse or death after several months, was obtained in sixteen cases (8.9 per cent.). Complete failure of treatment was encountered in fifty-five cases (30.5 per cent.). The total mortality for the four year period was twenty-five (13.8 per cent.), with no appreciable difference between cases of long and short duration, as success or failure is determined by the character of the case rather than by a time element. Incomplete and unsuccessful results are believed to be due to organic changes which cannot be removed by a treatment based only on the principle of functional rest. In successful cases not only are symptoms relieved but the progressiveness is arrested, so far as the present duration of observations can decide. The chief requirement for success, which needs emphasis above everything else in the use of this treatment, is that sufficiently strict salt privation must be carried out for a sufficient length of time. Facts are presented to show that the therapeutic results described are not due to physical or psychic rest, protein restriction, or general undernutrition. Chlorid restriction has acted favorably on the serious accompaniments of hypertension, such as cardiac failure, incipient pulmonary edema, and vascular crises, including to some extent angina pectoris. The authors believe it to be the best treatment for eclampsia in the broad sense, though in the puerperal form an active toxic process, comparable to that in acute nephritis, may seriously limit the possibilities of any dietetic treatment. With due allowance for other possible causes and treatments, these observations create the impression that sodium chlorid is the most important direct factor in nephritic retinitis, either with or without hypertension, and the arrest of this process by salt privation is highly important practically and theoretically. It appears rational that sodium chlorid, as the principal osmotic regulator of the body, should play an important part in such phenomena. Clinical experience supports the view that chlorid restriction acts powerfully not only in relieving immediate symptoms but also in checking the progressiveness of the condition.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology,
Liverpool

17: 1-112 (April) 1923

- Case of Creeping Eruption in European in Gold Coast. J. F. Corson.—p. 1.
Depth, and Larvae and Pupae of *Stegomyia Fasciata*, F. J. W. S. Macfie.—p. 5.
Note on Action of Lithium Chlorid on Mosquito Larvae. J. W. S. Macfie.—p. 9.
Malaria in Chimpanzees in Sicra Leone. S. Adler.—p. 13.
New and Old Observations on Ceratopogonine Midges Attacking Other Insects. F. W. Edwards.—p. 19.
Strongylid Larvae in Horse, Especially Those of *Cylicostomum*. J. E. W. Ihle and G. J. Van Oordt.—p. 31.
Avian Cestodes from New Guinea. II. Cestodes from *Casuariformes*. A. Kotlan.—p. 47.
Id. III. Cestodes from *Galliformes*. A. Kotlan.—p. 59.
Anopheles of *Myzorhynchus* Group (*Anopheles amazonicus* Sp. N.) from South America. S. R. Christophers.—p. 71.
*Etiology of Blackwater Fever. B. Blacklock.—p. 79.
New Species and New Variety of *Culex* from Belgian Congo. A. M. Evans.—p. 89.
Report on Sleeping Sickness in Eket District, Southern Nigeria. R. W. Orpen.—p. 93.
Culicidae in Venezuela; Descriptions of New Species. III. A. M. Evans.—p. 101.

Blackwater Fever Not Caused by Parasite.—The existence of a parasitic cause of blackwater fever has been frequently suggested but experimental human inoculation, with blood from a severe case of blackwater fever which ended fatally, Blacklock says, elicited no evidence in favor of the existence of such a parasite after an observation period of two months.

British Medical Journal, London

1: 747-794 (May 5) 1923

- *Cancer of Breast. C. Rowntree.—p. 747.
Blood Transfusion. E. F. Skinner.—p. 750.
*Composition of Gases in Artificial Pneumothorax. L. Hill and J. A. Campbell.—p. 752.
Sterilization of Unfit. R. A. Gibbons.—p. 754.
Miners' Nystagmus. A. S. Percival.—p. 757.
*Posterior Gravity Drainage in Empyema. J. O'Connor.—p. 758.

Early Symptom of Breast Cancer.—The symptom which Rowntree puts first, and a long way first, in diagnostic importance, is adhesions between the growth and the skin overlying it—not the coarse and obvious infiltration met with in advanced cases, but a much more delicate involvement, resulting in a faint dimpling of the skin which is often of so slight a degree that it may only be visible after careful examination in suitable conditions of light. In its earliest stages, it can be made to appear by grasping the breast on each side of the suspicious nodule and trying to push the skin away from the tumor. By then looking along the surface of the breast it may be possible to perceive slight irregularity in the contour not hitherto apparent. If this sign be evident—and it nearly always is when carefully looked for—a definite diagnosis of malignancy may safely be made with the utmost confidence, irrespective of the presence or absence of retraction of the nipple, alteration in the size and shape of the breast, enlargement of glands, or any of the other classical signs of cancer. Absence of adhesion to the skin does not necessarily indicate that the tumor is benign, for the growth may be too small, or, if the breast be large and fat, the distance to the skin may be too great. Rowntree reviews, briefly, the results of treatment—surgical, radium and roentgen ray. He favors the Handley operation adapted to the individual case.

Composition of Gases in Artificial Pneumothorax.—Experimental research made on animals by Hill and Campbell, with regard to changes in composition of gases injected for the purpose of producing pneumothorax, showed that the carbon dioxid percentage in the gases of pneumothorax appears to approximate very rapidly to that of the blood bathing the compressed lung. The volume of gas introduced in carrying out artificial pneumothorax may thus be increased at first, but not more than about 6 per cent. The oxygen percentage in the gases of the pneumothorax cavity approximates very slowly to that in the tissues bounding the cavity. As nitrogen diffuses out equally, it makes little difference whether oxygen

or air be used for inducing artificial pneumothorax. Pathologic fluids and tissues usually cause abnormally high percentages of carbon dioxid. Pathologic changes probably lower the oxygen content. Any leakage in the thoracic cavity lowers the carbon dioxid percentage, but increases the oxygen percentage in the imprisoned gas.

Posterior Gravity Drainage in Empyema.—O'Connor claims for his method of drainage at the posterior inferior angle, that it is based on anatomic facts, and on roentgen-ray study of the normal living thorax which demonstrated the existence of a distinct potential sulcus in the pleural cavity, between the scapular line and the vertebrae beneath the ninth and tenth ribs, formed at the junction of the parietal and diaphragmatic pleura. This, combined with the fact that these patients do not pose in bed in the prone position but invariably assume a supine slope, and that those who have a resection of a rib performed for empyema on textbook lines have a tendency to tilt the affected side upward in order to avoid pressure pain, rendered it obvious that this posterior angle was the strategic site for gravity drainage in general suppurative pleuritis. Personal experience has convinced O'Connor that the lung expands more rapidly if unhampered by having to force liquid uphill. This seat of election is ideal for an encysted empyema between lung and diaphragm, not to mention the ready ingress it affords in cases of suppurating hydatid cysts, abscess of the liver, or subdiaphragmatic abscess, which have perforated the diaphragm on their tracking to a bronchus.

China Medical Journal, Shanghai

37: 205-350 (March-April) 1923

- Present Status of Insulin Therapy in Diabetes. F. C. McLean.—p. 205.
Intraperitoneal Saline Infusion. H. C. Chang.—p. 215.
Dermatology: Recent Advances in Treatment. L. F. Heimburger.—p. 220.
Statistics of Communicable Diseases Among Hospital Employees. E. Tso.—p. 226.
**Embadomonas Sinensis*, Faust and Wassell, 1921. E. C. Faust.—p. 231.
Convenient Test of Autoclave Efficiency. R. M. Atwater.—p. 234.
*Cholesterol: Occurrence in Two Thyroid Cysts: Modification of Salkowski's Test. B. E. Read and F. L. Meleney.—p. 236.
Campaign Against Smallpox in Wuhu. R. E. Brown.—p. 239.
Medical Mission Policy. H. Fowler.—p. 246.

***Embadomonas Intestinalis* in Dysentery.**—*Embadomonas intestinalis* has been found in Alexandria, Egypt, and in overseas and home service troops of the U. S. Army in New York, as well as in natives in the United States who have had no contact with imported cases. *E. sinensis* has been found only in native Chinese at Wuchang. In both instances the infection was observed in diarrheic stools or those containing *Endameba dysenteriae* or *Trichomonas hominis*. In amebic dysentery the parasite appears several days after the critical period and is found to grow more rapidly at room temperature than at body heat. However, Faust has noted particularly that it has been derived from the stool and not as a contamination from bedpan or specimen box. It seems more than likely, therefore, that the organism is not itself primarily a parasite, although large numbers of the species in the stool may give rise to diarrhea. Nevertheless, it is significant that the species occurs in patients suffering from amebic dysentery. It seems safe to assert, then, that it fits into the environment and same organic cycle as *Endameba dysenteriae*. Even in questionable cases, when the latter organism has not been demonstrated in the stool, the presence of *Embadomonas*, Faust says, may be indicative of amebic infection.

New Test for Cholesterol.—A modification of Salkowski's reaction for cholesterol is described by Read and Meleney. The material is dissolved in 4 or 5 mls of chloroform; 1 or 2 drops of glycerin are added, and then an equal volume of strong sulphuric acid. There develops in a few minutes a characteristic red color, varying according to the amount of cholesterol present, from a deep magenta to a faint pink. Compared with the test made without glycerin, there is observed a more distinct coloration of the chloroform layer; moreover, the color is developed more quickly. Strong solutions of cholesterol give a deep purple color, which on standing may greatly deepen in color and change to a deep blue. It is essential that only a drop (or two) of glycerin be added.

A larger amount, instead of clarifying the reaction, only delays or spoils the result by setting up a third layer of fluid between the chloroform layer and the strong sulphuric acid layer.

Glasgow Medical Journal

17: 209-272 (April) 1923

- High Blood Pressure and Its Treatment. J. Henderson.—p. 209.
Influence of Local Anesthesia on Mortality Rate of Laryngectomy. J. Adam.—p. 219.
Surgical Diathermy in Treatment of Malignant Disease of Throat. W. S. Syme.—p. 221.
*Tendon Transplantations for Musculospiral Paralysis. G. H. Stevenson.—p. 225.
*Appendicitis: Its Diagnosis and Treatment. W. J. Moore.—p. 231.

Splint for Musculospiral Paralysis.—After discarding the metal splint which is applied immediately after operation, Stevenson applies a light papier maché splint made on a plaster cast and usually prepared before the operation. The materials for its production are ordinary brown paper and paste. It is easily made waterproof by a solution of cotton wool, the formula of which is as follows: water, 1¾ pints; liquor ammoniac (0.880 sp. gr.), 2 pints; copper carbonate, 3¾ ounces. After standing four hours or longer the copper has dissolved. One-half pint of water and the cotton wool, not wadding, 1¾ ounces, are added. The mixture is shaken frequently till the cotton wool is dissolved (about twenty-four hours).

Diagnosis and Treatment of Appendicitis.—Moore describes an incision which he makes when operating for appendicitis for which he claims that no nerves are cut, there is no traction of wound edges, there is free exposure and easy access to the peritoneal cavity, excellent for drainage, less tendency to occurrence of postoperative ventral hernia, the appendix in the majority of cases is more easily found. Easy access is given to other contents of the right side of the abdomen, if desired. There is less postoperative pain, and no structure is interfered with which would predispose to inguinal hernia. A point is taken from 1½ to 2 inches perpendicularly below McBurney's point, and a transverse incision 3 inches long is made, having its center at that point. The first incision is through skin and subcutaneous tissues. The aponeurosis of the external oblique is now incised in the same direction as the skin. The internal oblique and transversalis muscles are separated and the peritoneum is then reached.

Irish Journal of Medical Science, Dublin

14: 49-96 (April) 1923

- Pernicious Anemia. J. H. Pollock.—p. 49.
*Two Cases of Paroxysmal Tachycardia. L. Abrahamson.—p. 58.
Deep Roentgen-Ray Therapy in Gynecology. G. E. Pepper.—p. 67.
*Case of Subcutaneous Traumatic Emphysema Complicating Labor. A. H. Davidson.—p. 79.

Paroxysmal Tachycardia.—One of Abrahamson's cases demonstrates a paroxysm of extrasystoles; the second case was one of paroxysm of auricular fibrillation.

Traumatic Subcutaneous Emphysema Complicating Labor.—Davidson's patient, aged 21, entered labor at full term, and reached the second stage in twelve hours. The pains during the first stage and the first part of the second stage were normal in force and character, but as the head came down on the perineum (a normal vertex), the patient bore down with frantic efforts. In a few minutes the head began to show, and then the patient's face became very markedly swollen, especially about the eyelids so that the eyes were almost closed. She complained of nothing except a little pain about her face and of not being able to see well. The swelling involved not only her face and eyelids, but also extended to the neck and chest. On palpation, there was no edema or pitting on pressure, but there was a marked sensation of crackling all over the swollen area. There was some tenderness. Next day the crackling and a slight amount of swelling was noticeable down both arms, and over the back, chest and abdomen to the level of the umbilicus. There was no dyspnea or pain in the chest, and the lungs yielded nothing in the way of physical signs. The crackling and swelling gradually disappeared, and the patient was normal at the end of eight days. No treatment was adopted.

Japan Medical World, Tokyo

3: 67-94 (April) 1923

- Experimental Investigation on Passage of Hemolysin, Ferment and Drugs Into Cerebrospinal Fluid Under Normal and Pathologic Conditions of Animals. N. Kimura.—p. 67.
Metabolism of Transplanted Tumors. 1. Carbohydrate Metabolism. K. Tadenuma, S. Hotta and J. Homma.—p. 71.
*Nonacid Dysentery Bacillus. A. Tanaka.—p. 74.

Nonacid Dysentery Bacillus.—A nonacid dysentery bacillus was isolated by Tanaka almost in pure culture from the stools of two patients with typical dysentery symptoms and from three mild diarrhea cases. This organism had common characteristics, morphologically and culturally, with the other dysentery bacilli. It does not split mannit but forms indol. It resembles the Schmitz strain in the weakness of virulence against the rabbit, but it differs in sugar splitting actions (maltose and dextrin). It is highly agglutinated with the patient's serum, and weakly agglutinated with immune rabbit serums of Shiga or the other atypical strains. Immune serum of this organism agglutinates already known dysentery organisms only weakly; even when the agglutination titer of the serum is very high. A strain of dysentery bacillus isolated from a dysentery patient in Tokio in 1922, agrees with the Flexner type in sugar splitting actions, but agglutinability corresponds to Hiss' Y type. It, however, is very similar to this organism. Some of the characteristics of this organism resemble those described by Yoshida, Maruyama, Shirai and Kasai, but it differs from them in immunologic reactions.

Journal of Tropical Medicine and Hygiene, London

26: 103-118 (April 2) 1923

- Castellani's Bronchospirochetosis, Pneumonic and Asthmatic Varieties; Roentgen-Ray Examination; Treatment with Intravenous Injections of Iodin. N. Farah.—p. 103.
Nervous Sequelae of Phlebotomous Fever. I. H. Lloyd.—p. 110.
Personal Experiences of Bilharzia Disease. F. G. Cawston.—p. 111.

26: 119-134 (April 16) 1923

- Treatment of Bilharziasis with Antimony. J. E. R. McDonagh.—p. 119.
*“Blackwater,” A Disease of Metabolism. G. R. Hall.—p. 119.
Virulence of Bacillus Metadysentericus (Castellani) in Rabbit. Its Resistance to Action of Sunlight. G. Olivi.—p. 123.

Blackwater Fever a Disease of Metabolism.—The view put forward by Hall is that hemoglobinuric fever is a disease of metabolism, and that the final stages resulting in “blackwater” are intensely influenced by any process of pyrexia coincident with it or preceding it.

Medical Journal of Australia, Sydney

1: 393-416 (April 14) 1923

- Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne. S. W. Patterson.—p. 393.
Commonwealth Serum Laboratories. W. J. Penfold.—p. 396.
Microbiologic Laboratory in Relation to Problems of Research. E. W. Ferguson.—p. 400.
Bacteriologic Laboratory of University of Melbourne. R. J. Bull.—p. 403.
Pathologic Department of University of Adelaide and South Australian Government Laboratory of Pathology and Bacteriology. J. B. Cleland and L. B. Bull.—p. 404.
Physiologic Laboratories of University of Sydney. H. G. Chapman.—p. 405.
Facilities for Research in Department of Physiology and Bio-Chemistry. T. B. Robertson.—p. 407.
Physiologic Laboratory of University of Melbourne. W. A. Osborne.—p. 407.
University of Melbourne: Provision for Medical Research. H. B. Allen.—p. 408.
Research Facilities of Department of Anatomy, University of Sydney. J. I. Hunter.—p. 408.
Anatomic Department of University of Melbourne. R. J. A. Berry.—p. 409.
Pathologic Laboratory at Children's Hospital. R. Webster.—p. 411.
Laboratories of Lunacy Department of New South Wales. O. Latham.—p. 411.
Victorian Lunacy Department Pathologic Laboratories. W. A. T. Lind.—p. 412.

1: 435-462 (April 21) 1923

- Further Series of Cases Closely Resembling Typhus Fever. F. S. Hone.—p. 435.
Serologic Examinations. L. B. Bull.—p. 443.
Possibilities in Transmission of Onchocerca Gibsoni. R. W. Cilento.—p. 445.
Death from Progressive Emphysema. C. G. McDonald.—p. 446.
Case of Acute Gangrenous Cholecystitis. J. M. Andrew.—p. 447.

Archives des Maladies de l'App. Digestif, Paris

13: 201-304 (March) 1923

*Influence of Sleep on Motility of Stomach. D. Daniélopou and Carniol.—p. 201.

Insufficiency of Pylorus and Aortic Aneurysm. M. Klippel and J. Rachet.—p. 205.

*Chronic Intestinal Invagination. E. Delannoy.—p. 215.

Influence of Sleep on the Motility of the Stomach.—Daniélopou and Carniol found in three patients with stenosis of the pylorus a complete or almost complete inhibition of movements of the stomach during sleep. When the patients were awakened, the gastric contractions started and increased progressively to the usual strength.

Chronic Intestinal Invagination.—Delannoy does not discuss the well known cardinal symptoms but points out a few minor ones. Loss in weight is usually present. Guinon wrote: "Some children, who become pale and cry without apparent reason may have chronic intussusception; we guess at appendicitis too much." The rectum should always be examined in intestinal disturbances. The anus is wide open, especially during the attack, and the invaginated "sausage" may be felt. The stool is sometimes normal and regular. The diagnosis between dysentery and intussusception is made by the microscopic and bacteriologic examination of feces and the agglutinins in the serum, or the presence of a tumor or a mass in the abdomen. The treatment is surgical. Reduction may be possible even after months. Tabulated details of forty-two cases from the literature conclude the paper.

Bulletin de l'Académie de Médecine, Paris

89: 239-284 (Feb. 20) 1923

*Acidosis from Fasting and from Diabetes. Labbé.—p. 242.

Montaigne's Philosophy Conduces to Long Life. Armaingaud.—p. 255.

Mask for Inhalation of Oxygen as Aid in Artificial Respiration. M. Nicloux and R. Legendre.—p. 267.

Intramuscular Injection of Alcohol in Treatment of Recurring Luxation of the Jaw. Sicard.—p. 271.

Influenza Sinusitis. G. Laurens.—p. 274.

Bulbar Paralysis in Course of Acute Anterior Poliomyelitis. Rapid Recovery Under Specific Antiserum. L. Babonneix.—p. 276.

Disinfecting Soaps that Can Be Used with Sea Water. Brunet.—p. 280.

Essential Difference Between the Acidosis of Fasting and Diabetic Acidosis.—Labbé finds it probable that the outcome of the alimentary glycemia test depends on the rapidity of absorption of the test substances used. It is not a test of the utilization of carbohydrates. Acidosis of diabetes is a much more complex phenomenon than the acidosis of fasting, and is characterized by the abundance of acetone bodies and other organic acids excreted. Other discrepancies between the findings of himself and others he ascribes to defective technic, saying that Van Slyke's method has revealed the actual high figures. Forssner's severe acidosis after a diet containing little carbohydrate and much fat, he ascribes to indigestion from such a "terrible" diet as 306 gm. of fat, 163 gm. of protein and 300 of Bordeaux wine, the whole equivalent to 3,650 calories. The twenty-first day he eliminated 42.8 gm. of acetone bodies and some albumin, but Labbé insists that the disturbances were not from the diet, but from indigestion. He fails to see any essential difference between the acidosis of fasting and of a diet with preponderance of fats.

Journal d'Urologie, Paris

15: 161-248 (March) 1923

*Movable Kidney. G. Potel and P. Cordier.—p. 161.

*Alternating Hermaphroditism. K. Sand.—p. 181.

Perinephric Abscess. X. Delore and C. Dunct.—p. 195.

Two Ureters in a Tuberculous Kidney. A. Giuliani.—p. 197.

*Some Minor Points in Treatment of Gonorrhea. J. Janet.—p. 201.

Movable Kidney.—Embryology explains why the right kidney is movable so much more frequently than the left.

Alternating Sex Glands.—Sand's description of a case of true hermaphroditism was mentioned when published elsewhere (Oct. 14, 1922, p. 1374). Brought up as a boy, the child at the age of 10 seemed to be developing feminine characteristics and tastes, and Sand discusses what should be done in such a case: a testis on one side and an ovary on the other.

Minor Points in Treatment of Gonorrhea.—Janet regards a series of six injections of a 20 per cent. solution of protargin

strong in three days as the ideal abortive for gonorrhea. After each injection he introduces a protargin-cocoa butter pencil, pushing it up to the bulb. The failure of abortive treatment is often due to gonococci lurking in the mucous crypts.

Paris Médical

13: 241-268 (March 17) 1923

Dermatology in 1923. G. Milian and L. Brodier.—p. 241.

*Sporotrichoid Tuberculous "Gummas." J. Nicolas et al.—p. 245.

Mycotic Eczema and Intertrigo. G. Petges.—p. 249.

*The Nature of Eczema. B. Bloch.—p. 251.

*Epidermal Mycosis Due to Yeasts. G. Petges.—p. 256.

*Etiology of Herpes. E. Rivalier.—p. 257.

*Treatment of Eczema. G. Sauphar.—p. 262.

Sporotrichoid Tuberculous "Gumma" Without Adenopathy.—Nicolas, Gaté and Dupasquier are of the opinion that before the existence of sporotrichosis was known, many cases were classified as tuberculous; now there is a tendency to think of it in every case of multiple cutaneous gumma, especially when adenopathy, so long considered indispensable evidence of tuberculosis, is absent. Their researches show that tuberculosis may cause multiple gummas, without adenopathy, and with a good general condition of health, thus increasing the difficulties of dermatologic diagnosis. The lesions in their patients simulated sporotrichosis. The existence or absence of adenopathy with gummas does not indicate nature of the lesion. Inconstant in sporotrichosis, it may be absent in certain cases of tuberculosis, while a syphilitic gumma may be accompanied by serious glandular lesions. In the cases they examined, the Wassermann reaction was negative; tuberculin elicited positive reactions, but the streptothrix could never be cultivated from the pus.

Nature and Treatment of Eczema.—Bloch says that to ascribe eczema to arthritism, metabolic disturbances, etc., is only to conceal our ignorance. Nothing is known about the relations of eczema to metabolic disturbances, which include nearly all internal diseases. Persons affected with eczema are frequently free from other pathologic stigmas. Of a number of individuals in the same trade and thus exposed to the same external conditions, liable to induce eczema, only a small proportion will develop it. The individual factor is the important one. Bloch has experimented with 200 eczema patients and 500 normal subjects. The substances tested were turpentine, mercuric chlorid, arnica, quinin, iodoform and formaldehyd which were left on the skin for twenty-four hours. In normals, an inflammatory reaction followed in 5 per cent., and in the eczema patients in 50 per cent. He asks if eczema may not be an anaphylactic phenomenon, localized in the skin. Theoretically there are three methods of treating eczema: removing the antigen or toxic substance; desensitization; transforming the hypersensitive cell complex. For the last, we have arsenic and the roentgen rays, and he declares that these are indispensable in treatment of eczema.

Epidermal Mycosis Due to Yeast Fungus.—Petges says that the signs indicating mycotic eczema or intertrigo are those found in all cutaneous lesions due to yeast fungi, a greasy creamy discharge, early desquamation, especially around the edges of the lesions, and the presence of islets of various size around the principal lesion. These signs call for microscopic examination. He has often found mycotic lesions in diabetes.

Etiology of Herpes.—Rivalier recalls that in man herpes appears to be a recurrent disease and there is no effective immunization. In rabbits, on the other hand, experimental keratitis from inoculation with human herpes virus is followed by permanent local immunity, and, if encephalitis develops, it is followed by general immunity. No author has been able to show a keratogenetic virus in herpes zoster vesicles. Analogy between the virus of herpes and that of epidemic encephalitis is shown in descriptions of herpetic encephalitis in rabbits, and also by experimental epidemic encephalitis in the same animal, first produced by Levaditi and Harvier in 1920. The two affinities are also experimentally dissociable, and several authors agree in considering the encephalitic virus a neurotropic modification of common herpetic virus.

Treatment of Eczema.—Sauphar places eczematous persons, whose diet has previously been restricted, on a normal

diet, and says this favors the effects of local treatment. Milian has for many years been using a paste prepared from coal tar and zinc oxid, 20 gm. each and petrolatum and hydrous wool fat, 30 gm. each. This paste should be applied freely on the lesions, renewing it as often as necessary.

Presse Médicale, Paris

31: 353-360 (April 18) 1923

- *Ptosis of the Duodenum. F. Ramond and G. Parturier.—p. 353.
- Bismuth in Inherited Syphilis. Cajal and Spiercer.—p. 354.
- *Paralysis of Inferior Laryngeal Nerve. Trivas.—p. 356.

Tender Points with Ptosis of the Duodenum.—Ramond and Parturier remark that the supports of the duodenum are not so solid as we have been taught to believe. The first third follows the movement of the pylorus, and the ligament supporting the pylorus may extend down on the duodenum. With ptosis, this ligament may pull on the gallbladder. The other portions of the duodenum follow the movement of the pancreas. They discuss the tender points which aid in differentiating the various affections in this region.

Paralysis of Inferior Laryngeal Nerve.—Trivas diagnosed the complete paralysis of the inferior laryngeal nerve on one side in two cases and abductor paralysis on both sides in two other cases as traumatic neuroses. In the case described here, the left laryngeal palsy developed three days after a fall of 15 feet on the right side, without bleeding. The corneal and pharyngeal reflexes were abolished, and the sudden subsidence of the paralysis five or six months later confirmed Trivas' diagnosis of *hystéro-traumatisme*. He adds that the interval, the *phase de méditation*, of several days between the accident and the recurrent paralysis suggests its true nature.

Revue Franç. de Gynécologie et d'Obstét., Paris

18: 113-144 (Feb. 25) 1923

- Vaccination Treatment in Obstetrics. R. Riss.—p. 113.
- *Testis Extract in Treatment of Women. B. Zénope.—p. 119.
- Ovarian Cancer After Roentgen-Ray Treatment. Grosse.—p. 125.

Extract of Testes in Gynecology.—Zénope, describing its use in twelve cases, says that testis extract treatment is indicated in all cases of ovarian insufficiency and to check excessive thyroid functioning. He reports the case of a woman at the menopause with insomnia, palpitation, breathlessness when walking, etc., the last symptom being the most serious. He prescribed 0.75 gm. of the extract daily, divided into three doses. She returned eight days later and reported that she could climb stairs without any difficulty and that the other symptoms had also disappeared. This form of organotherapy seems also to have a regulating action on menstruation.

Pediatria, Naples

31: 225-288 (March 1) 1923

- *Brahmachari's Reaction in Infantile Leishmaniasis. I. Nasso.—p. 225.
- Blood and Hemopoietic Organs in Leishmaniasis under Treatment. M. Mallardi.—p. 230.
- *Roentgen Treatment and Sun Treatment in Tuberculosis. Corica.—p. 247.
- Rectal Infusions of Arsphenamin in Syphilis of Children. E. Modigliani and V. Castana.—p. 258. Cont'd.

Brahmachari's Reaction in Infantile Leishmaniasis.—Nasso finds that the reaction devised in 1907 by Brahmachari for the diagnosis of leishmaniasis is also positive in other anemias. The test consists in adding two or three volumes of distilled water to the serum.

Roentgen Treatment and Sun Treatment for Tuberculous Lesions.—Corica recommends roentgen rays with climato-therapy in surgical tuberculosis of children.

Policlinico, Rome

30: 361-392 (March 19) 1923

- *Fever from Occult Tuberculosis. U. Arcangeli.—p. 361. Conc'n.
- Hydrocele of Tuberculous Origin. M. Segrè.—p. 368.
- *Symptom of Bladder Calculus. G. Gaeta.—p. 372.

Fever from Occult Tuberculosis.—Arcangeli insists that almost all slight fevers that are ascribed to autointoxication, indigestion or other ill defined cause, are in reality traceable to overlooked tuberculosis, especially in children.

Sign of Calculus in Bladder.—Gaeta calls attention to the chilliness experienced in the penis during the paroxysms of

pain from a calculus in the bladder. It seems to be a reflex vascular spasm, as evidenced by the pallor from the ischemia and the sensation of local coolness.

30: 165-220 (April 1) 1923 (Medical Section)

- *Sequelae of Epidemic Encephalitis. A. Borgherini.—p. 165.
- *Necropsy in Case of Epidemic Encephalitis. R. Vegni.—p. 195.
- *Brain Tumors. O. D'Allocco.—p. 207.

Epidemic Encephalitis.—Borgherini's extensive experience has demonstrated that the later symptoms of epidemic encephalitis are fully as grave in the cases with a mild primary phase as in those with a stormy onset. He explains the disease as an essentially chronic affection with phases of improvement deceptively suggesting complete recovery; but the virus persists in the nerve centers. The tardy manifestations are not so much sequelae as symptoms of a still active process, notwithstanding the regressive character of the special symptoms and their mutability.

Necropsy in Epidemic Encephalitis.—Vegni found evidences of acute inflammation in the locus niger region at necropsy, twenty months after subsidence of the symptoms of the primary phase of the disease. The striatal region was less involved in the inflammatory and degenerative process.

Brain Tumors.—D'Allocco compares the clinical course and necropsy findings in ten more brain tumor cases, a total of thirty thus analyzed. In one case the man recovered after an operation on the hematoma. The symptoms were misleading in the multiple tumor cases. A sarcoma in the left rolandic region was successfully removed in 1899; a decompression operation was applied in four cases, and the necropsies in many other cases showed that the tumors had offered every chance for successful extirpation. He advises operation in every case.

Revista Médica del Rosario, Argentina

13: 1-87 (Jan.) 1923

- *Uremic Symptoms in Heart Disease. Clemente Alvarez.—p. 1.
- *Recovery After Removal of Brain Tumor. T. Fracassi.—p. 12.
- Stab Wounds of the Kidney. P. L. Mirizzi and R. Gonzalez.—p. 20.
- Septic Injury of Kidney. Idem.—p. 29.
- Monster with Eventration, etc. P. Ferrazini.—p. 40.

Uremic Symptoms in Heart Disease.—Alvarez comments on the variability of the urea content in the urine in asystoly and the lack of any apparent relation to the urea in the blood. In thirteen cases tabulated, with from 0.51 to 2.6 per thousand in the blood, the range in the urine was between 12.1 and 35, the total output of urine between 150 and 700 c.c. Analysis of the cases showed that the retention of urea was not due to the oliguria alone, but to disturbances in the ureosecretory function of the kidneys. The symptoms suggesting uremia were due not to the retention of urea but to the retention of chlorids. This applies particularly to the Cheyne-Stokes breathing, as this occurs even with very moderate retention of urea and even without any retention.

Recovery After Removal of Tumor in Parietal Lobe.—Fracassi's patient was a girl aged 12 who had complained of frontal headaches for nine months. They lasted for five or six hours and returned at intervals of two or three days, and were sometimes accompanied by vomiting. After the sixth week there was formication in the right side of the body with weakness and paroxysmal limping on that side. Six weeks before she entered the hospital, vision in the right eye and two weeks later in the left became impaired. Tympany in the left parietal region and pain on percussion confirmed the assumption of tumor, and the glioma was removed at a two-stage operation.

Beiträge zur klinischen Chirurgie, Tübingen

129: 1-243, 1923

- *Loose Bodies in Joints. R. Sommer.—p. 1.
- Cause of Köhler's Disease. M. Kappis.—p. 61.
- Etiology of Stieda's Fracture. M. P. Schüller and S. Weil.—p. 71.
- Surgical Tuberculosis in East Prussia, 1911-1920. H. Käfer.—p. 78.
- *Histologic Blood Examination in Surgery. K. Bringmann.—p. 99.
- *Cancer on Soil Modified by Actinomycosis. N. v. Hedry.—p. 157.
- *Reverdin-Halsted Grafts on Granulating Surfaces. K. Schläpfer.—p. 162.
- Importance of Anaerobic Streptococci for Appendicitis. H. Brütt.—p. 175.
- *Rectopexy by Kümmell's Method. D. Frank.—p. 186.

Experimental Research on Pointed Bullets. Bircher and Berger.—p. 193.

*Periarterial Sympathectomy in Treatment of Peripheral Roentgen Ulcers. Gundermann.—p. 231.

Loose Bodies in Joints.—In only seven of Sommer's twelve cases was there a history of trauma, but some contusion, possibly too slight to be noted, had probably occurred in all. Repair of the more or less injured cartilage had entailed the casting off of the injured cartilage or bone tissue. This aseptic regeneration process has been called osteochondritis dissecans, but there were no signs of inflammation in his cases.

Surgical Import of Histologic Findings in the Blood.—Bringmann says that in addition to determining the hemoglobin, color index and differential count, and examining stained and unstained specimens, the platelet count and the "thick drop" findings (to detect the efforts at regeneration) should also be recorded in every thorough examination of the blood. He presents, for ready reference, the histologic blood picture of the conditions that confront the surgeon, and their interpretation. Four of the fifty-eight pages are devoted to the eosinophils.

Cancer in Actinomycotic Lesions.—In two cases the fungus, entering by a cavity in a tooth, had induced a lesion in the lower jaw and cheek. The microscope revealed cancer in a fragment excised from each.

Transplantation of Skin on Granulating Wounds.—Schläpfer describes, with four illustrations, the Reverdin grafts as modified by Halsted. He extols the method as prompt and reliable. The raw area heals over with an elastic, resistant skin, even after crushing wounds and roentgen burns.

Rectal Prolapse.—Frank relates that in twelve cases Kümmell has corrected prolapse of the rectum by fixation to the anterior longitudinal ligament of the spine. Access is through the perineum, and this simple method cures the prolapse permanently, even when extensive, and the elasticity of the sphincter is soon restored.

Sympathectomy in Treatment of Roentgen Ulcers.—Gundermann was impressed with the rapid healing in two cases of ulcer of the foot after periarterial sympathectomy. They had persisted for years after injury of the nerve. This success impelled him to apply the treatment in two cases of rebellious roentgen ulcer of the dorsum of the hand, and in a large roentgen ulcer in the elbow region. In all three the ulcer had persisted for one or more years. Wherever healing was not hampered by the presence of necrotic tissue, the surface was soon covered with vigorous granulations. The pain subsided as if by magic. In one case the swollen inflamed aspect of the upper arm returned to normal within twenty-four hours, but this was followed at once by profuse suppuration requiring puncture to release the fluid pus. It is evident from such experience, he says, that both vasodilating and vasoconstricting nerves accompany the sensory bundles of the spinal nerves to the vessels. The vasodilators seem to be more resistant than the constrictors. Venous hyperemia is not the consequence of inflammatory transudation but one of its main causes. Periarterial sympathectomy breaks up the deadlock of the vasoconstrictors and thus transforms conditions.

Deutsche medizinische Wochenschrift, Berlin

49: 303-334 (March 9) 1923

*Seroreaction in Tuberculosis. A. v. Wassermann.—p. 303.

Etiology of Rheumatic Polyarthrit. E. Keeser.—p. 308.

Frambesia and Syphilis. A. Müller.—p. 309.

*Titration in Sachs-Georgi and Wassermann Reactions. Sparmann.—p. 311.

Intestinal Cartridge Without Electromagnet for Examination of Micro-Organisms. van der Reis.—p. 312.

Our Blood Transfusions and the American Method of Grouping. G. C. J. Scholten.—p. 314.

Hypertrophy of Prostate. Voelcker.—p. 315. Cont'n.

Payr's Pepsin-Iodin Solution for Softening of Scars. W. Falb.—p. 317.

*Toxicity of Tobacco Smoke. R. Heinz.—p. 318.

Suicide by Fluor Sodium Silicate. G. Kurtzahn.—p. 319.

Protein Injections in Atrophic Infants. E. Kovács.—p. 320.

Dermatologic Diagnosis. M. Joseph.—p. 321. Cont'n.

Experimental Basis for Specific Reaction for Tuberculosis.

—This paper was reviewed editorially on page 1456.

Titration with Variable Amounts of Serum in Sachs-Georgi and Wassermann Reactions.—Sparmann finds that some scrums give positive reactions in low concentrations, and negative with the usual amounts. The use of stronger concentrations is advantageous in seronegative syphilis, in approaching relapses, and in the course of treatment. The Wassermann is superior in both ways to the Sachs-Georgi reaction, but the latter is of great value in anticomplementary serums.

Toxicity of Tobacco Smoke, Especially Cigaret Smoke.—Heinz reports on Bogner's experiments on smoking. It was found that with inhalation of the smoke, eight times more nicotine was absorbed than in smoking without inhaling.

49: 369-400 (March 23) 1923

Pathology and Treatment of Kidney Disease. I. F. Umber.—p. 369.

Exophthalmic Goiter. II. Goldscheider.—p. 371. Discussion.

*Bilirubin in Serum in Gallbladder Disease. Strauss and Sandherr.—p. 376.

*Epinephrin Test in Thyroid Disease. Csépai et al.—p. 379.

Quinin Treatment of Pneumonia. M. John.—p. 380.

Surgical Treatment of Dorsal Luxation of Two Metacarpophalangeal Joints. Sonntag.—p. 382.

Torsion of Testis. H. Weitz.—p. 384.

Hypernephroma After Accident. Rückart.—p. 384.

Abscess After Ruptured Empyema of Gallbladder. Schenk.—p. 385.

Acute Occlusion of Intestines in Infants. A. Reiche.—p. 386.

*Sense of Smell as Aid in Diagnosis. A. Niedermeyer.—p. 387.

Prophylactics Against Gonorrhea. P. Schwarz.—p. 388.

The "Conscientious Objector" in Social Hygiene. C. Flügge.—p. 389.

Etiology of Smallpox. v. Niessen.—p. 389. Reply. Gins.—p. 390.

Medicine in the History of Civilization. Vorwahl.—p. 390.

Clinical Significance of Bilirubin Determination in Serum with Regard to Diseases of Gallbladder.—Strauss and Sandherr in chronic affections of the gallbladder always found an increased amount of bilirubin in the blood during the attacks. In the intervals, 70 per cent. had a normal bilirubinemia. Fresh cases of cholecystitis only exceptionally gave positive results.

Determination of Epinephrin Sensibility in Diseases of Thyroid Gland.—Csépai, Fornet and Tóth use the reading of the blood pressure only after intravenous injections of epinephrin. With these precautions, they find the test valuable in diagnosis and prognosis of affections of the thyroid gland.

Diagnosis by Smelling.—Niedermeyer recalls the cadaverous odor, which is almost always a sign of imminent death. It may be the reason why a dog sometimes avoids his master, before a physician can make the prognosis. In two cases of intra-uterine fetal death, the odor was present in the breath of the mother until the fetus was removed.

Jahrbuch für Kinderheilkunde, Berlin

101: 127-250 (March) 1923

*Proteins and Bacterial Fermentation. R. Rühle.—p. 127.

Acidity and Buffer Action of Feces. K. Scheer and F. Müller.—p. 143.

Acidosis and Hyperglycemia in the Toxic Syndromes of Infants. S. Ederer and E. Kramer.—p. 159.

Epidemic Encephalitis in Early Infancy. F. Rund.—p. 175.

Icterus of the New-Born. H. L. Ratnoff.—p. 187.

Scarlet Fever After Lye Poisoning. J. Von Petheö.—p. 197.

*Anatomical Findings in Nutritional Disturbances of Infants. E. Stephani.—p. 201.

Morphologic Variations of Eggs of Ascaris. D. Lebedev.—p. 221.

Comment on Zeissler and Käckell: Bacteriology of Infant's Feces. A. Adam.—p. 225.

Reply to Cahn and Steiner: On Resorption and Action of Epinephrin. K. Csépai.—p. 227.

Reply. R. Cahn and B. Steiner.—p. 229.

Gummatous Syphilis in Infants. J. Ambrus.—p. 231.

Proteins and Bacterial Fermentation.—Rühle confirms Kayser's and Blühdorn's observation of increased formation of acid in the presence of proteins. The figures are still higher if products of peptic tryptic digestion are used. The stronger fermentation is simply due to the physicochemical binding of acid with the proteins. This enables the micro-organisms to continue the fermentation, and produce more titratable acid, but for the same reason this acid does not hurt the mucosa of the intestines. Therefore proteins have no harmful effects in intestinal fermentation.

Anatomic Findings in Nutritional Disturbances of Infants.—Stephani reports the results of 121 necropsies on children

with nutritional disturbances. In the acute forms she found almost constantly a severe fatty degeneration of the liver with loss of fat in the cortex of the suprarenal capsules. The chronic cases did not have fatty degeneration of the liver, but had large deposits of hemosiderin in the spleen and a little less in the liver.

Klinische Wochenschrift, Berlin

2: 525-572 (March 19) 1923

- *Action of Protein Treatment. H. Vollmer.—p. 529.
- Comparison of Bilirubin Determinations with Herzfeld's and Bergh's Methods. L. Frigýér.—p. 532.
- Indications and Results of Radical Phrenicotomy. H. Fischer.—p. 535.
- Anesthesia with Dichloromethane in Gynecology and Obstetrics. P. Schumacher.—p. 536.
- Changes in Shape of Stomach with Stenoses of Intestines. Markó.—p. 538.
- *Bile Acids in Fluids in Icterus. Borchardt.—p. 541.
- Xanthoma or Xanthomatous Degeneration of Skin? Urbach.—p. 542.
- Phenomena of Growth in Micro-Organisms. F. W. Oelze.—p. 545.
- Traumatic Parthenogenesis. Haberlandt and Levy.—p. 547. Reply. Voss.—p. 547.
- *Relation Between Blood Viscosity and Corpuscles. Drossbach.—p. 548.
- Experiments on Acquired Resistance of Bacilli. Jungeblut.—p. 549.
- Diagnosis Between Tumor of Lungs and Chronic Pneumonia. Deist.—p. 550.
- Orthopedics of Jaws in Relation to Whole Organism. Weber.—p. 552.
- Rachitis in Large Cities and Significance. Engel.—p. 554.

Action of Protein Treatment on Intermediary Metabolism and Glycemia.—Vollmer finds that injections of proteins injure at first the organism and inhibit oxidative processes in the cells, which leads to an increased acidity of urine. The stimulative stage is secondary, and due to the products of disintegration of the own cells of the organism. Specific stimulating bodies, like tuberculin, have not only their specific action, but also a nonspecific influence on metabolism identical with other proteins. Protein treatment inhibits the hyperglycemic action of epinephrin. He attributes this in accordance with some experiments of György and Herzberg to the "alkalotic" change of the metabolism.

Bile Acids in Urine, Blood, Duodenal and Cerebrospinal Fluid in Icterus.—Borchardt examined 200 cases of icterus and was never able to find in mechanical icterus a dissociation between the elimination of bilirubin and bile salts. He attributes different findings to the use of Hay's test, while he prefers the more sensitive stalagmometry. The hemolytic forms of icterus were always dissociated. The threshold for excretion of bile salts is low and the serum contains very rarely larger quantities of them. The patients with drops of serum smaller than 90 c.mm. died. The duodenal contents from healthy persons formed droplets of the maximal size of 62.5 to 69.5 c.mm. Higher figures (up to 82.7 c.mm.) were found only in persons with impaired liver function, and are due to the absence of the surface-active bile salts. The cerebrospinal fluid contains bilirubin only in cases with affections of vessels or hemorrhages. He was not able to find any bile salt in cerebrospinal fluids.

Relation Between Blood Viscosity and Blood Corpuscles and the Action of Caffeine on it.—Drossbach found with the hematocrit method that caffeine increases the volume of the erythrocytes. It increased the viscosity of blood if he used a low pressure to determine it.

Medizinische Klinik, Berlin

19: 265-298 (March 4) 1923

- Tumors of Bladder. R. Paschkis.—p. 265.
- Speed of Sedimentation of Erythrocytes and Its Analogy with Non-specific Agglutination of Micro-Organisms. J. Vorschütz.—p. 269.
- *Prophylactic Immunization of Pregnant Women Against Streptococci. Louros.—p. 272.
- Collective Inquiry on Eclampsia.—p. 274. Cont'n.
- Generalized Vaccinia After Spontaneous Infection. Althoff.—p. 275.
- Blood Pressure in Irradiation with Artificial Sunlight. B. Günther.—p. 276.
- Treatment of Nervous Breakdowns with Regard to the Blood Corpuscles. V. Kafka.—p. 278.
- Use of Kathodic Tubes for Demonstrations of Heart Sounds. L. Jacobsohn.—p. 280.
- Survey of Physiology and Pathology of the Organs of Digestion. W. Wolff.—p. 286.

Prophylactic Immunization of Pregnant Women Against Streptococci.—Louros injects twenty and ten days before labor 250 millions and 500 millions of streptococci. Women

who come to the clinic too late for this, receive 50 c.c. of antistreptococcus serum. No case of puerperal generalized infection occurred in 2,500 women thus immunized at Athens, notwithstanding the bad hygienic conditions at the clinic.

19: 371-406 (March 25) 1923

- Diagnostic and Therapeutic Progress in Foreign Bodies in Esophagus. von Eicken.—p. 371.
- *Responsibility for Ischemic Contracture. Schubert.—p. 373.
- Clinic and Diagnosis of Hodgkin's Disease. W. Weis.—p. 375.
- *Treatment of Chronic Gastric and Duodenal Ulcers. Holler.—p. 379.
- *Gout in Etiology of Neuralgia and Myalgia. W. Alexander.—p. 380.
- Case of Malignant Syphilis Treated with Extracts of Syphilitic Organs. A. Perutz.—p. 383.
- Treatment of Lobar Pneumonia with Franke's Digitalis-Salicylate-Antipyrin Mixture. H. Hoffmann.—p. 385.
- Rupture of Sigmoid During a Curettage. E. Parsch.—p. 386.
- Colloidal Reactions in Cerebrospinal Fluid with Berlin Blue and Indigo. P. Kirchberg.—p. 387.
- "Dold Reaction." Sachs and Georgi.—p. 388. Reply. Dold.—p. 388.
- Fracture of Neck of Femur and Tabes Mistaken for Simple Contusion. Engel.—p. 389.
- Survey on New Results of Surgery. O. Nordmann.—p. 392.

Responsibility of Physician for Ischemic Contracture.—Schubert emphasizes the significance of simultaneous lesion of artery and nerve in the pathogenesis of ischemic contracture. A circular cast may increase the existing circulatory trouble. The contracture develops very quickly—within six or eight hours—so that even an early removal of the dressing does not help. Yet the physician cannot be held responsible if the dressing was applied correctly and removed early. In cases of fractures, especially in supracondylar fractures of the humerus, circular dressing is contraindicated if pulsation is absent.

Treatment of Chronic Gastric and Duodenal Ulcers.—Holler found changes in the medulla oblongata in two cases of ulcers. He recommends parenteral protein treatment in ulcers, and found that, unlike normal persons, disappearance of hemoclastic crises occurs. Large amounts of alkali are beneficial.

Gout in Etiology of Neuralgia and Myalgia.—Alexander finds myalgia frequently in gout, but believes that neuritis is practically never due to gout.

Monatsschrift für Kinderheilkunde, Leipzig

24: 769-848 (March) 1923

- *Further Signs of Anal Fissure. K. Svehla.—p. 769.
- Significance of Presence of Colon Bacilli in Stomach of Infants. W. Grävinghoff.—p. 784.
- Colon Bacilli Agglutinins. E. Kramár.—p. 799.
- Pathogenesis of Köhler's Disease. P. Caffier.—p. 810.
- Juvenile Delinquency. K. Planner.—p. 813.

Signs of Anal Fissure.—Svehla adds new signs to the coxalgia he described before: loss of weight, pain, especially in the liver and cecal region, and diarrhea alternating with constipation; psychic irritability may also be due to an anal fissure. He illustrates, with several cases, the importance of examining the rectum even if the symptoms seem to have no connection with it. The pathognomonic sign is severe pain on digital examination and pulling on the rectal mucosa. He treats with calomel (three times at one hour intervals), giving 0.01 gm. per year and dose, but never more than 0.03 at one dose. If the bowels do not move after the third administration, an enema should be given. Then a suppository containing 0.01 gm. cocaine is given and is repeated the next morning and evening without regard to defecation. More than ten suppositories are rarely needed.

Münchener medizinische Wochenschrift, Munich

70: 353-384 (March 23) 1923

- Affections of Adnexa and Appendicitis. M. Flesch.—p. 353.
- *Titration of Antitoxic Serums. R. Kraus and Rocha Botelho.—p. 354.
- Meinicke's Reaction in Diagnosis of Syphilis. Y. Huang.—p. 356.
- *Tubercle Bacilli in Feces. K. Nüssel.—p. 357.
- Psychogenous Disturbance of Defecation with Erroneous Roentgen Diagnosis of Organic Stenosis. Tscherning.—p. 358.
- Epidemic of Necrotizing Erysipelas. Hoersch.—p. 359.
- Varicella and Ultraviolet Rays. A. Reiche.—p. 360.
- Treatment of Breech Presentations in Old Primiparas. F. Benzel.—p. 361.
- Etiology of Köhler's Disease. Dürig.—p. 362.
- Fever in Toxic Dermatitis. F. Jacoby.—p. 362.
- Goldsol Reaction. W. Lohmann.—p. 363.

- "Localization of Cervix in Gynecologic Irradiation." W. Simon.—p. 363.
Life, Stimulus, Disease and Inflammation. K. E. Ranke.—p. 363.
Cone'n.
Parasitic Affections of Skin. L. v. Zumbusch.—p. 368.
Method of Teaching Nurses. J. E. Kayser-Petersen.—p. 370.

Titration of the Avidity of Antitoxic Serums Against Snake Venoms.—Kraus' and Botelho's experiments on snake venom antitoxins confirmed the importance of the quality of antitoxin. The number of antitoxic units is not the only decisive factor, especially in snake bites, when the action must be rapid. Differences between the action of antitoxins in vitro and in the living body are best explained by assuming a different avidity (speed of combining with toxins) of the antitoxins.

Tubercle Bacilli in Feces.—Nüssel examined simple smears and preparations of feces. Patients, who had tubercle bacilli in the sputum, also had them in the stools. If no sputum is available, the stool should be examined.

Wiener klinische Wochenschrift, Vienna

36: 213-230 (March 22) 1923

- *Treatment and Prevention of Goiter. B. Breitner.—p. 213.
Splanchnic Anesthesia. E. Kutscha-Lissberg.—p. 216.
*Agglutination of Dysentery Bacilli in Children. Widowitz.—p. 220.
Hypercholesterolemias. I. Barát.—p. 221.
Statistics of Trachoma. H. Wassing.—p. 223.

Indications for Surgical Treatment and Prevention of Goiter.—Breitner finds that the mere size of a goiter is rarely an absolute indication for surgical treatment; ptosis of the gland is more important. It may be necessary to transplant a substernal remnant of the gland under the skin or into the subperitoneum. Roentgenologically demonstrated deviation or compression of the trachea is an absolute indication. Tracheomalacia caused by a goiter requires, in the average, six months before it is cured. Blauel's and Reich's experiments demonstrated the significance of stenosis of the trachea (lack of oxygen) in the formation of colloid goiters. Treatment with iodids mobilizes the secretion and thus diminishes the volume of the gland. Exophthalmic goiter in a patient who has formerly had a simple goiter, is suitable for operation. When combined with persistent thymus, the indications are not clear. It may be, that other endocrine glands are primarily affected. Resection of the thyroid may ameliorate the condition and removes the compression of trachea. Thyrectomy may also be considered. The surgical treatment of small, vascular goiters, without affection of the trachea, is difficult and dangerous. Roentgen rays are indicated here. He adds that a sojourn in localities where endemic goiter is prevalent sometimes has a beneficial influence on exophthalmic goiter. The preventive treatment of goiters with iodids, recommended thirty years ago by Wagner-Jauregg, is almost generally accepted.

Agglutination of Dysentery Bacilli in Children.—Widowitz studied children with dysentery in a hospital. He finds that formation of agglutinins indicates a present or previous infection. The so-called normal agglutinins are specific remnants of real agglutinins. He believes that coagglutination is also due to infections with the germs.

Zeitschrift für Kinderheilkunde, Berlin

35: 67-126 (March 18) 1923

- Body Frame and State of Nutrition in Their Influence on the Index of Fulness of Body. E. Helmreich and K. Kassowitz.—p. 67.
Noma. P. Kuhn.—p. 79.
*Digestion Leukocytosis and Leukopenia in Children. J. C. Schippers and C. de Lange.—p. 95.
Determination of Pelidisi in Normal Infants and Children. S. Newman.—p. 102.
Three Cases of Acute Appendicitis in School Children. Rheindorf.—p. 105.
*Eczema Death and Myocarditis. I. Bernheim-Karrer.—p. 120.

Digestion Leukocytosis and Leukopenia in Children.—Schippers and de Lange find that the leukocyte count in healthy children and babies is subject to so many influences, that it is impossible to give any rule. It is impossible in medicine to rely on one sign; only marked differences are of value.

Eczema Death and Myocarditis.—Bernheim-Karrer seventeen years ago found interstitial myocarditis in two cases of

eczema. He reports another case history of a child, aged 13 months, suffering from an extensive suppurating eczema. The child died suddenly. Myocarditis, with predominance of round cell infiltration, was the cause of death.

Zeitschrift für Tuberkulose, Leipzig

37: 401-466 (March) 1923

- Ways of Tuberculous Infection. H. Beitzke.—p. 401.
Sanitariums and Fight Against Tuberculosis. G. Schröder.—p. 413.
*Diazo and Urochromogen Reactions in Tuberculosis. K. Lemmens.—p. 423.
"Problem of Tuberculosis." G. Schellenberg.—p. 426.
Some Problems of Tuberculosis. H. Rieckenberg.—p. 430.

Clinical and Prognostic Significance of Diazo and Urochromogen Reactions in Pulmonary Tuberculosis.—Lemmens examined repeatedly the urine of 528 tuberculous patients, using Ehrlich's diazo and Weiss' permanganate tests. In twelve very severe exudative cases, both reactions were present. Weiss' reaction was constantly present in thirty-two other progressive cases. It is thus preferable to the diazo test. If the diazo is negative and Weiss' test is positive, this may indicate severity. Both tests negative, indicates a good prognosis. Sometimes the reaction becomes negative a few days before death.

Zeitschrift für urologische Chirurgie, Berlin

12: 81-402 (March 29) 1923. J. Israel Festschrift

- *Menstrual and Hypertonic Hematuria. H. Strauss.—p. 84.
Suppuration in Adipose Capsule of Kidney. H. Maass.—p. 90.
*Operative Treatment for Incontinence of Urine. E. Unger and F. Höring.—p. 96.
*Albuminuric Neuroretinitis and Kidney Disease. F. Umber and M. Rosenberg.—p. 100.
*Treatment of Suppurating Nephritis. Lehmann.—p. 106.
*Transudation from Tumors in Bladder. Dobrotowski.—p. 118.
*Exploratory Exposure of Kidney. G. Ekehorn.—p. 123.
Renal Hemorrhage Month After Trauma. C. Posner.—p. 153.
Reconstruction of Male Urethra. H. Joseph.—p. 158.
*Pyelotomy. M. Zondek.—p. 163.
*Recent Progress in Urology. A. Lewin.—p. 171.
Simultaneous Gallstones and Kidney Stones. F. Karewski.—p. 182.
Clinical Significance of Pus in Urine. T. Cohn.—p. 191.
Origin of Kidney Cysts. E. Holländer.—p. 202.
Nephritis Dolorosa and Calculus Anuria. W. Israel.—p. 206.
*Pyelitis or Hydronephrosis? A. Bloch.—p. 219.
Diverticulum in the Bladder. A. Bloch and P. Frank.—p. 242.
Hydronephrosis from Aberrant Vessels. C. H. Ludowigs.—p. 250.
*Ignipuncture for Cystic Kidney. E. Payr.—p. 254.
Anterior Pyelotomy. P. Rosenstein.—p. 269.
Diverticulum in the Bladder. V. Blum.—p. 290.
*Pneumoradiography of the Kidney Bed. A. Mosenthal.—p. 303.
*Elasticity of the Bladder. M. Katzenstein and M. Rosen.—p. 310.
Defect in Female Urethra. K. Franz.—p. 315.
*Chromocystoscopy. H. Janke.—p. 323.
Contractility of Kidney Pelvis and Ureter. A. Israel.—p. 328.
*Surgery of Urogenital System. H. Riese.—p. 334.
Total Removal of Bladder. E. Joseph.—p. 353.
*Diagnosis and Treatment of Calculi in the Kidneys. T. Rovsing.—p. 358.
Electrocoagulation of Bladder Tumors. E. Wossidlo.—p. 385.
*List of Israel's Publications.—p. 390.

Menstrual and Hypertonic Hematuria.—Strauss regards the painless and afebrile hematuria in a case described as vicarious menstruation. The hematuria persisted several days and returned three times in the course of nine months during two years of amenorrhea. The vasomotor system in this young woman seemed to be peculiarly unstable. In three other cases the brief hematuria was explained by the high blood pressure. In conclusion, Strauss remarks that not enough attention is paid to the agglutination of crystals in the urine as a sign of a tendency to calculus production. In one case this "clumping phenomenon" helped to distinguish cases of the oxaluric diathesis from purely alimentary oxaluria.

Operative Treatment of Incontinence of Urine.—Unger and Höring describe, with illustrations, the application of the Goebell and Stoeckel method. A vertical flap, 8 cm. long by 4 cm. wide, is cut in the muscular tissue above the symphysis. This flap is slit to form two strips and these strips are brought down toward the vagina and sutured together. They embrace the urethra and exert enough pressure to insure continence.

"Albuminuric Neuroretinitis."—If there is no acute kidney disease accompanying the neuroretinitis, then the latter signifies merely sclerosis of the minute arteries in the retina;

probably other organs are also affected. But it is not a sign of insufficiency of the kidneys. The patient may live for years. Three years was the longest survival after the first signs of neuroretinitis in the cases analyzed. In the case with the fatal arteriolosclerosis of the brain, there was only incipient sclerosis in the kidney vessels.

Conservative Operation for Suppuration in the Kidney.—In Lehmann's five cases of this kind in a recent year, he decapsulated the kidney and made a small incision in it only large enough to hold a drain. Prompt recovery followed.

Transudation Through Villous Tumors in Bladder.—The profuse transudation might mislead in diagnosis. In two cases reported the ureters had been implanted in the bowel, but the bladder continued to void large amounts of what was supposed to be urine until the absence of urea in it was noted. The fluid was not stained with the indigo carmine test.

Exploratory Exposure of Kidney Before Removing its Mate.—Ekehorn reviews his experience in this line in twenty-seven cases. He never witnessed any disadvantage from it; the nephrectomy was always done at the same sitting. The aspect of the upper ureter is always instructive in renal tuberculosis. He says the functional tests are useless in this disease.

Pyelotomy.—Zondek's data confirm the advantages of anterior pyelotomy even when the calculus is in a major calyx or extends to the upper ones.

Progress in Urology.—Lewin reviews the progress of the last few years in diagnosis and treatment of inflammatory affections of the bladder and kidney pelvis, exclusive of tuberculosis and syphilis. He has had excellent results from vaccine therapy in a number of cases of pure streptococcus cystitis and pyelitis, but otherwise has found vaccine therapy often disappointing. The heat applied to kill the bacteria injures their bodies to such an extent that they fail to stimulate antibody production. Little if any progress has been realized in treatment of nontuberculous ulcerating cystitis—simple ulcer of the bladder.

Chronic Pyelitis Versus Infected Hydronephrosis.—Bloch gives details of eight cases in which the clinical picture of chronic pyelitis was traced to a mechanical or dynamic obstruction to the flow of urine as the primary cause. If the obstruction is unilateral and cannot be corrected, nephrectomy may be advisable.

Polycystic Degeneration of the Kidneys.—Payr's colored illustration shows a kidney brought to the surface to be treated by ignipuncture. With the galvanocautery he pierces the cysts separately, or makes a crucial incision in the cyst with it, or cuts out the presenting portion by running the cautery around it. He has applied this treatment in five of the fourteen cases of congenital cystic kidney he has encountered. The patients were all women but three. One patient returned for repetition of the procedure so that he has applied it to date nine times. All were benefited, and all are in good condition except one patient who succumbed to the progress of a duodenal cancer. The decidedly favorable action of ignipuncture was confirmed anew by necropsy in this case.

Pneumoradiography of the Bed of the Kidney.—Mosenthal extols the simplicity and instructive findings with insufflation of oxygen to facilitate roentgen-ray examination of the kidney. It has been applied in thirty-eight cases in his service.

Elasticity of the Bladder and Kidney Pelvis.—Research in this line and a case of spontaneous rupture of the bladder are reported.

Chromocystoscopy.—Janke injected indigo carmine by the vein in 100 cases, and declares that the findings with the test are far more instructive than with the usual intramuscular technic.

Surgery of Urogenital Apparatus.—Among the operations reviewed by Riese, nine were for removal of a hypernephroma. Three of the patients are still in good health, the interval in one case in which postoperative roentgen exposures had been given, being more than five years.

Kidney Calculi.—Rovsing analyzes 716 cases of nephrolithiasis encountered in twenty-nine years. The list includes

two cases of cystinuria and cystin stones. He ascribes the permanent cure after removal of the large cystin stones to the daily ingestion of 1 or 2 liters of distilled water. One patient was a woman, the other a girl, aged 4. The intervals since are nine and four years.

Israel's Works.—The list fills twelve pages, including about fifty works by Israel's pupils. His first publication appeared in 1875 and described the nervous phenomena in a case of foreign body in the pancreas.

Zentralblatt für Chirurgie, Leipzig

50: 505-552 (March 31) 1923

Heminephrectomy in Pyonephrosis of Horseshoe Kidney. W. Carl.—p. 506.

*Gangrene of Intestine as Complication of Typhus. A. Gregory.—p. 507.

Rhinoplasty with Flap from Patient's Chest. K. Steinthal.—p. 508.

The Significance, for Surgery, of Menstrual Changes in the Mammary. A. Rosenberg.—p. 510.

Tendoplasty in Paralysis of Popliteal Nerve. Birt.—p. 511.

Retrosternal Luxation of the Clavicle. Wachendorf.—p. 514.

Illumination of Operating Rooms. L. Drüner.—p. 516.

Splint for Fractured Femur. Schönbauer and Orator.—p. 518.

Rubber Protector for Trephining Operations. W. Porzelt.—p. 520.

A Two-Eyed Ligating Needle. E. Braatz.—p. 521.

An Instrument for Removing Plaster Casts. H. Knorr.—p. 522.

Gangrene of Intestine as Complication of Typhus.—Gregory observed during typhus epidemics 827 instances of surgical complications in 7,237 cases of typhus. Gangrene of the intestine was rare, fifteen cases being noted. The cause of the gangrene was necrotic thrombovasculitis, produced by the typhus virus. The ascending colon is usually first affected. The complication begins from eighteen to sixty days after onset of the typhus and follows a somewhat typical course. The seven cases in which no operation was performed ended fatally; also the cases in which operation was not done till the second stage was reached. In the two cases in which operation was done in the first stage, an artificial anus at the cecum was established. The intestinal condition cleared up, but one patient died from pneumonia; the other recovered. Gregory emphasizes: (1) after recovery from typhus, no operation that is not urgent should be performed before two months; (2) peritoneal manifestations after typhus usually point to disturbed circulation in the intestinal wall and constitute a dangerous complication, which, if left untreated, or treated conservatively, ends fatally. An artificial anus at the cecum, at the beginning of the peritoneal manifestations, may save the patient's life.

Zentralblatt für Gynäkologie, Leipzig

47: 497-544 (March 31) 1923

*Normal Total Blood Volume in Pregnancy. G. Kaboth.—p. 498.

Chondrodystrophia and Pregnancy. E. Wehefritz.—p. 503.

Compressor for Abdominal Aorta. K. Riediger.—p. 507.

Rodent Ulcer of the Vulva. F. Jess.—p. 509.

Pregnancy After Bilateral Tumors of Adnexa. E. A. Koch.—p. 514.

Symptoms of Rupture in Tubal Pregnancy. B. Herzfeld.—p. 517.

Cleansing of Surgeon's Hands and Bathing of Patients Before Operations. E. Ekstein.—p. 519.

Protein Therapy in Febrile Abortion. J. Trebing.—p. 521.

Normal Total Blood Volume in Pregnancy.—Kaboth examined 11 nonpregnant and 20 pregnant women. The total blood volume in the nonpregnant ranged between 2,805 and 4,480 gm., or from 5.21 to 7.62 per cent. of the body weight. The total blood volume of the 20 pregnant women was from 2,982 to 4,810 gm. or from 5.96 to 8.50 per cent. of the body weight of the women, after deducting the approximate weight of the fetus. The increase in the total blood volume in women is due partly to added growth of tissue. In pregnant women approaching term, whose body weight ranged between 50 and 70 kg., there was an increase of from 300 to 450 gm. of blood.

Zentralblatt für innere Medizin, Leipzig

44: 209-224 (March 31) 1923

*Mechanism of Introduction of Gastroscopic Tube. W. Sternberg.—p. 209.

Physiologic Identity of Difficulty and Danger in the Mechanism of Introducing the Gastroscopic Tube.—Sternberg applies the contrast between effort and success, as discussed by Bernard Shaw in "Cashel Byron's Profession," to the introduction of the gastroscope. Safe introduction is easy,

and vice versa. The minimum of effort required results in the maximum of effect and safety, everywhere in physiology. Both patient and physician must relax completely.

Polska Gazeta Lekarska, Lwow

1: 637-652 (Aug. 6) 1922

Influence of the Great War on Diseases of the Eye. J. Kolinski.—p. 637.

*Retroflexion of the Uterus. W. Falgowski.—p. 638. Conc'n.

*Typhus Fever. J. Grek.—p. 641. Conc'n p. 677.

*Psychical Needs of the Sick and Hospital. A. Chelmonski.—p. 650.

1: 653-668 (Aug. 13) 1922

Quantity of Cholesterol in Blood. Z. Michalski.—p. 653.

Lenticular Lenses. A. Lipka.—p. 653.

Torsion of the Spermatic Cord. H. Hilarowicz.—p. 654.

Serotherapy of Scarlatina. W. Pulawski.—p. 654.

Question of Labor in Poland. E. Artwinski.—p. 665.

1: 669-684 (Aug. 20) 1922

Congenital Bifurcation of the Inferior Part of the Digestive Tract. J. Glatzel.—p. 669.

Pathology of Blood-Producing System. M. Semeran.—p. 670. Conc'n p. 686.

Salt of Morszyn in Mouth Hygiene. H. Allerhand.—p. 675.

Typhus Fever. J. Grek.—p. 677. Conc'n.

Question of Epidemic Hospitals in Poland. A. Kuhn.—p. 682.

1: 685-700 (Aug. 27) 1922

Treatment of Appendicitis. T. Kozuchowski.—p. 685.

Treatment with Colloids and Proteins. S. Baley.—p. 690.

Teaching Oto-Laryngology in Poland. I. Szmurlo.—p. 696.

1: 701-716 (Sept. 3) 1922

Rupture of Gravid Uterus with Primary Cancer of the Cervix. W. Janusz.—p. 701.

Morphology of the Cell. M. Konopacki.—p. 703.

Provocation of Neoplasms by Irritation with Tar. L. Paszkiewicz.—p. 707.

Wire of Hypo-Needle in the Left Ventricle of the Heart. W. Czarnecki.—p. 708.

Treatment with Colloids and Proteins. W. Ziembicki, M. Selzer and S. Ruff.—p. 708. Cont'd.

Medicine and Esperanto. M. Blassberg.—p. 714.

Retroflexion of the Uterus.—Falgowski's article was summarized on page 1350.

Typhus.—Previous instalments of Grek's analysis of his experiences with typhus were reviewed on page 1111.

Psychic Needs of the Sick in Hospitals.—In this article Chelmonski is touching an interesting subject, the importance of the individual care of the sick not only physically but also psychically. To support his view of the importance of this, he cites various physiologic phenomena excited directly by the mind, such as the secretion of saliva and gastric juice from the imagination of savory food. Chelmonski reiterates the necessity for consideration of psychic influences on sick persons, especially in hospitals.

Acta Chirurgica Scandinavica, Stockholm

55: 437-631 (April 11) 1923

*Phlegmonous Enteritis. G. Bohmansson.—p. 437.

Fracture of Scaphoid Bone of Hand. A. Troell.—p. 490.

*Bleeding from Cauterized Pleural Adhesions. H. Dahlstedt.—p. 497.

*Tuberculous Epididymitis. G. Söderlund.—p. 513.

*Gastroscopy. W. Sternberg.—p. 563.

*Coxa Plana. H. Waldenström.—p. 577.

Tuberculosis in Kidneys with Two Ureters. E. Perman.—p. 591.

Amputation Stumps in Sweden. Silfverskiöld and Hansson.—p. 602.

Phlegmonous Enteritis.—Bohman'sson has compiled 68 cases of acute purulent processes in the intestinal wall, only 24 surviving. Of the 18 cases treated by primary resection, only 22.2 per cent. terminated fatally while the mortality in cases without radical operation was 80 per cent. His list includes 9 from his own experience and 2 other unpublished cases. The exact diagnosis cannot be made until the abdomen is opened; the prognosis is favorable with resection. In 4 fatal cases there was no peritonitis at any time. The ages ranged from 16 to 80 except 2 children of 3 and 12.

Hemorrhage After Cauterization of Pleural Adhesions.—The application of the Jacobus method was a complete success although conditions had seemed exceptionally unfavorable. Blood spurted as one of the adhesions was severed. There had been nothing to indicate that this adhesion contained a blood vessel. Attempts to char the stump failed on account of the spurting blood, and the skin was sutured and the woman left over night on the operating table, the pulse

gradually improving. In a second case two of the adhesions bled as they were divided, and about 150 c.c. of blood accumulated in the pleura. The hemorrhage soon stopped. In this case one of the adhesions had torn loose spontaneously. This occurred also in another case during a course of treatment for scabies.

Tuberculous Epididymitis.—Söderlund analyzes the course and outcome in fifty-two cases given operative treatment. In thirteen other cases the diagnosis of tuberculosis proved erroneous. The chronic epididymitis in one nontuberculous case followed eighteen months after removal of the testis on the other side for unmistakable tuberculosis. The testis seems to be peculiarly resistant to tuberculosis. After removal of the tuberculous epididymis, mild tuberculous lesions in the testis generally heal spontaneously. In two cases, however, the lesion progressed and the testis had to be removed later. Fistulas and abscesses do not necessarily contraindicate epididymectomy alone.

Progress in Gastroscopy.—Sternberg relates that study of the mechanics of endoscopy has enabled him to devise an effectual method of treating asthma and stuttering, and to perfect gastroscopy. He asserts that direct local treatment of gastric ulcer under direct visual inspection, even at the pylorus or beyond, is possible with his gastroscope.

Coxa Plana.—Waldenström remarks that Legg and he were the first to describe this affection (1909), Sourdat's, Calvé's and Perthes' descriptions not appearing until 1910. He has traced the course with the roentgen rays through the years in forty cases, and states that the outcome is about the same in cases given no treatment as in the others. The functional outcome is remarkably good. The affection runs about a six year course; he advises that, the first three to five years, the child should not take part in gymnastic exercises, jump, nor take long walks. But this advice is purely theoretic as his cases offer no clue to treatment, except of course with pains and much contracture. Thirteen roentgenograms accompany the article, which is in English.

Acta Medica Scandinavica, Stockholm

57: 515-622 (Feb. 22) 1923

*Essential Hypertension. W. Kerppola.—p. 515.

Preserved Sensibility of Last Sacral Segments in Differential Diagnosis Between Extramedullary and Intramedullary Tumors. W. Kerppola.—p. 527.

*Wassermann Reaction in Prognosis in Syphilitic Disease of Aorta. T. E. H. Thaysen.—p. 543.

*Clinical Determination of Capillary Tension. E. Kylin.—p. 566.

*Blood Picture in Erythema Nodosum. W. A. Hoyer.—p. 587.

*Frontal Reflex in Cerebral Affections. I. Holmgren.—p. 616.

Essential Hypertension.—Kerppola examined thirty-one cases of essential hypertension. About 50 per cent. had a higher amount of hemoglobin; 45 per cent. increased numbers of erythrocytes; 60 per cent. monocytosis. The coagulation time was slightly prolonged in 40 per cent. The blood sugar was normal on a fasting stomach; the sugar tolerance was lowered in 80 per cent.; alimentary glycosuria was present in 25 per cent.

Syphilitic Affections of the Aorta.—Thaysen finds that the Wassermann reaction is of no prognostic value in syphilitic aortitis.

Clinical Determination of Capillary Tension.—Kylin gives details of his technic for determining capillary blood pressure. This and the preceding article are in English; the last is in French; the others are in German.

Blood Picture in Erythema Nodosum and Etiology.—Hoyer examined the blood in twenty patients with erythema nodosum. Slight neutrophilic and eosinophilic leukocytosis in the incubation period is followed by lymphocytosis and monocytosis with progressive lowering of the number of neutrophils. This picture is very different from that of acute rheumatism, and resembles an anaphylactic reaction—possibly to proteins of tubercle bacilli.

Frontal Reflex in Some Cerebral Affections.—Holmgren, in some hemiplegic patients, found that gliding pressure on the forehead of the healthy side provoked bilateral elevation of the eyebrows. Most of these patients had hemorrhage or thrombosis affecting the lentiform nucleus. He calls his symptom the frontal reflex.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 26

CHICAGO, ILLINOIS

JUNE 30, 1923

HUMAN WELFARE AND MODERN MEDICINE *

RAY LYMAN WILBUR, M.D.
STANFORD UNIVERSITY, CALIF.

"The objects of this Association are to promote the science and art of medicine and the betterment of public health," states the constitution of the nation-wide organization we represent here tonight. Not only are these the objects, but they have been the goals already won, and still constitute the guiding stars before our profession here in America and throughout the world.

PROGRESS OF CIVILIZATION AND MEDICINE

Civilization is a constantly expanding phenomenon. It must remain alive, sensitive, mobile, since it rests on myriads of lives. If it fails to grow, it stagnates. While individuals are born, develop, mature, decay and die and all society must rest on them, there must always be more of the vigor of youth and growth than of maturity and senility if progress is to be made. Life, and life more abundantly, is the key to human welfare. Life means health. It must have the plus sign in order to be effective enough to provide the great driving forces needed to push the human race onward and upward. Each year our increasing knowledge of the past events that have taken place on this world of ours are better known, and we can more clearly follow man's conquest of himself and his environment. These conquests have come from experience, reasoning and experiment. Man has had to recognize his physical and mental limitations; but with his marked capacity for social organization, his developed ability to leave written records that carry over the accomplishments of one generation to the next and with the glory of the spirit of unselfishness, mutual service and religion, which is his alone, he has been able to harmonize many of his actions with the unswerving, immutable and dependable laws of an orderly universe. Wherever he has been able to find solid bottom on these great laws, his environment has yielded him support from which to reach toward newer fields. As a thinking animal, hemmed in by his sense organs and controlled by his emotions, mental processes and inhibitions, the path upward has been full of the terrors of the unknown, of superstitions, idols. Even in this day of steam, electric lights, radio, aeroplanes and submarines, the residues of these inherited dreads are about us all of the time.

The history of the art and science of medicine has run more or less parallel with human advance. In

general, it has reflected the mental attitude of those it served. If demons were thought to be the cause of disease, then firecrackers or drums to scare them off were used by the medicine man. Even where the microscope has proved that bacteria acting as parasites in the human body cause a disease, many minds have not gone beyond the stage of demonology, and, in considering it, they insist on going through mental processes resulting solely from tradition and superstition. There is no possibility of uniform understanding or advance by all members of the human family, for at any given time the variation in the individual units is too great. Nevertheless, there is and has been a steadily growing recognition of the structure of fact on which the art and science of medicine have come to rest.

Man's nerves, provided to keep him intact as an organism made up of trillions of diverse cells, brought his brain sensations of pain and distress, and told him of the dangers of injuries, hemorrhages and diseases. He was not content to lick his wounds like a dog, or patient enough to wait for "Nature to take its course." The very spirit that made him a man made him ask why and seek relief. Medicine is thus as old as man. Its history begins in magic, and ends in the roentgen-ray laboratory. Its aims have always been relief of human suffering and the release of human power from physical and mental handicaps. It began and still is primarily personal in its activities; but, with time and the growth of civilization, it has become more and more interwoven in the whole fabric of human society. No modern community could stand today without using the benefits of the art and science of medicine as practically applied in community life.

Without the "betterment of public health" no lasting progress can be made, since, as living beings subject to the great biologic laws, our actual existence can be secured only through the understanding and control of the factors that hamper or favor human welfare.

There has been much discussion as to just what constitutes human welfare and goes to make up human progress. Where is the human race going? What are we seeking so busily, as we multiply in numbers and spread our control over this great ball that goes hurling through the vast spaces of a universe which it is beyond the range of our senses to grasp? There is a general opinion that we are moving in a desirable direction and that the outcome will be a favorable one for us, the most favored of all living creatures. The visualization of our destination is as varied as are the ideals and aims of man, but the maximum of human happiness for the maximum number of men is a universal

* President's address before the American Medical Association at the Seventy-Fourth Annual Session, San Francisco, June, 1923.

standard of welfare. MacKaye,¹ in "The Happiness of Nations," says:

Now the total amount of happiness achieved by a nation in any given period of time is equal to the amount experienced by the average individual composing said nation during that period, multiplied by the number of individuals. That is, the happiness of a nation is merely the aggregate happiness of the individuals who compose it. There is no such thing as the interest or welfare of society as something distinct from the interest or welfare of the members of society, present and future.

The individual and his life and happiness are basic in any scheme of human welfare, and the happiness of the individual depends largely on the condition of the living vehicle which carries around the brain which records his impressions of his environment. Sustained health and normality of bodily function are given to but few. If the height of human happiness is to be obtained, then every advantage must be taken of all that is known of health and relief from sickness and injury. Individual and collective living can be promoted as much, if not more, by carrying out the expressed objects of this association than in any other way.

Medicine in human service has almost unlimited possibilities. Its accomplishments show us what is yet to come. Even now our information is far in advance of our application of the facts we know. Men are not educated in the mass to the point at which they are seeking all that we of the medical profession can offer them either in personal or in community relief. Much of our attitude toward life is not unlike that of the African village described by a colonial governor, who said: "Yes, ——— is a hell on earth, but the natives seem to want it that way." It takes time, patience, education to make things better. The rules of biology work all the time; they are as sure as the rules that control electricity or falling bodies. The duty of medicine is to learn the rules and to help men to meet them. History tells us that we of the civilized races can lose all that we have gained if we fail to follow the guidance of experience and fact. Nation after nation, race after race, are known today only by a few pots or arrowheads. One biologic mistake after another, and they are merged with the dust that is our common fate.

Progress requires constant thought, planning and foresight; and men who forget this are, says Karl Pearson,²

Like the older political economists, who thought all real progress depended upon an all-round fight within the community. They forgot that the herd exists owing to its social instincts, and that human sympathy and racial and national feelings are strong natural forces controlling individual conduct and economic theories based purely on questions of supply and demand. It is the herd, the tribe, or the nation which forms the fundamental unit in the evolution of man, and it is to the leaders of the herd, or nation, that we ought to look for conscious recognition of this fact.

There is no inherent positive force making for progress aside from the expansion of knowledge and the conquering thereby of environment together with the persistent growth of so-called moral qualities, which biologically help to protect the herd.

We as social animals can make our particular civilization secure only by developing and controlling our food supply and housing, holding aloof our enemies, particularly the microscopic ones, keeping up proper physical standards of individual and group health, and having

ideals of service and religion that make life cooperative and wholesome.

RELATIONSHIP OF MEDICINE TO HUMAN ADVANCE

It is inspiring to think of the noble position of the man of medicine in this program. In every one of these vital fields, his voice and his services can be invaluable. For too long a period our work has been thought of by ourselves and others largely from the standpoint of the relief of the ill and the care of the weak. Our success has been so unusual that, with the great material advances made in every direction, the whole practice of medicine is undergoing vast and fundamental changes. It is no longer possible to think traditionally in medicine. The pace forward is too fast. Drained swamps, septic tanks, filter beds, safe water, physical training, closed saloons, extinguished red lights, compensated injuries, pure milk, open windows, clean car floors, have brought permanent health benefits. Gasoline, good roads, the up-to-date hospital, trained nurses, modern chemistry, arsphenamin, diphtheria antitoxin, and a host of other measures have sent many methods in recent vogue in practice to join in the oblivion of the plug hat and the high phaeton.

Methods have changed, but the aims have not. They still revolve around the individual relationship of a physician to a patient. The touch of sympathy and the need of personal helpfulness are just as important as ever before.

With the spread of general information, decrease in the number of home patients, the increase in hospital beds, the enlargement of office practice, the development of laboratories, the changes in the disease processes due to the betterment of public health, the increasing need of early diagnosis, the enhanced significance of prognosis, and the increase in size and number of cities, the practice of medicine is being remodeled right under our eyes. This is particularly true from the broad standpoint of society responsibility. Not many years ago the doctor was nurse, druggist and social worker, as well as physician. Gradually these functions have been changed or dropped, and aids of various kinds have been substituted. In smaller communities and more primitive times, the doctor was his own social worker. He knew home conditions and problems. Today he is less and less able to do that social investigation which is imperative for sensible treatment and for his own protection.

It is probable that the members of the American Medical Association do the largest amount of charitable work of any voluntary organized body in the world. Up to date, much of it has been as thoughtlessly done as is the giving of doles to street corner beggars. The whole problem of charitable and semicharitable work of the medical profession needs intelligent and modern organization from within the profession. In too many instances we have even lost leadership in our own charitable work. Hit and miss individualistic methods, protected by tradition and prejudice, are not in keeping with our forward leadership in science. The social relationships of medicine are so intimate and imperative that they are bound to multiply and continue. We cannot stop them by calling them bolshevik or socialist or pro-German, but we can guide them if we get away from the brake and begin to steer. We can, too, if we do not think, put on the blinders of prejudice and fail to make a diagnosis and prognosis of society, its great sweeping activities and its needs.

1. MacKaye: The Happiness of Nations, p. 98.

2. Pearson, Karl: National Life, p. 53.

As a profession, we are now deeply entwined in the meshes of legislation and in the service of government. In many instances those outside the profession have, without our aid, made the rules that govern medicine.

The emergencies and requirements of war brought medicine into an early and vital relationship with government. Those nations won whose armies were in the best physical condition. Much of war is settled by the way casualties, including sickness, are handled. Under war conditions, sentiment, prejudice and short-sightedness in health matters exact a direct toll. It would be difficult to say how far the superb organizing genius of the great surgeon Larrey contributed to the success of some of Napoleon's campaigns. Since his time we have seen an increasing control by medical science of numerous aspects of war. The nation entering on a modern war without the advantages offered by medical knowledge and skill for both the military and the civilian population would soon crumble.

Much of the competition in modern industrial life has in it the same aspects as are presented by war. As war is now a war of peoples, so industrial success, in a world growing smaller each year with improvements in communication and transportation, demands the maximum of health and achievement consistent with that sound health requisite for production. Every sick worker, every injured workman, every demand for expenditure of energy or goods in caring for unnecessary incapacity of human industrial units, is a handicap. Our civilization must carry along the very young and the very old and a certain number of the sick, but it has in addition the terrible burden of the insane, criminal, feeble-minded, blind, crippled, diseased and those who are a prey to alcohol and drugs and their own vices. It is only good common sense to reduce this burden by education, the development of character and the use of medical knowledge. The length of the bread line will eventually compel such action. As members of the great profession of medicine, we can do more than any other force in our country to minimize this load, since so much of our knowledge can be made directly applicable to its reduction.

Increasing pressure of population, the growth of industrial centers, the spread in popular education, have required and made possible more and more order in human society. As Americans, we want to see this order kept so that individual freedom is maintained. We know that where the rights of many are concerned the rights of one cannot prevail. In medicine we do not want to become mere medical automatons carrying out legislative orders, but we do need to interest ourselves actively in the spread of legislation for the "betterment of public health." Our fellow citizens, in one way or another, will have a try at every possible benefit science can offer them.

Throughout we must keep free the individuality of the physician. The voluntary association of two men, one giving and one seeking relief, is at the heart of the art of medicine. The unfeeling rules of the law must and can be carried out so that the public welfare can be protected without destroying this bond. Health or its lack will be more and more of a public matter. We need a more even distribution of medical relief, for we have to live with the results of individual failures.

Our growing youth need instruction in health matters. They need not only to know life for their own protection, but to protect the lives that will be dependent on them as they grow to maturity. Our greatest service to the human race can be done only when we

help to make possible a marked increase in positive health. Already our efforts are crowned with a marked prolongation of life, particularly through the economic productive period. We can free human beings from many of the things that bring them down before the race is run. As a race, our success is dependent on the strong and the reproduction of the strong. In the control of the human germ plasm lies man's future. In this great field we have not as yet even reached the amateur stage.

We hear much of the melting pot and of Americanization, but how many of our citizens realize that good minds and sound bodies can come only from those with these qualifications? Since all who come to our shores are permanently added to our American stock, we at least must be wise enough to see that we are protected against the diseased, the feeble-minded and the criminal. We need to keep out the diseased as well as the diseases. Great possibilities are before us. When we can keep the spirochetes of syphilis out of the body of every new-born babe, we shall have added enough to human life and happiness to heal the wounds of the Great War.

We must join in on the great game of collective living and make ourselves felt on the constructive side. By our failure to lead in some instances we are already being forced into a position that may be interpreted as obstruction to progress. The danger is that organized medicine may become a defense organization. If it does, it will lose rampart after rampart before the great offensive provided by the development and spread of science. We must be as altruistic in our public service as we have been in the relief of private need throughout the generations, since medicine now serves all in serving one, and serves one in serving all. We need an informed, alert board of strategy, looking ahead, advising the public in its health measures. At present too many view our medical organizations as self-centered and engrossed in selfish aims. When interested legislators and laymen turn to us for help, the attitude will change. Bringing science into medicine has brought a great flood of workers into the broad domains of physical health who lack full medical training. They are appreciative of much of the science of medicine, but they lack that deeper professional insight which comes from medicine as an art. Our medical training, too, has been remiss in cultivating the art of medicine. The general practitioner, that real disciple, interpreter and practical exponent of medical science, has been pushed aside in many parts of the country, both from within the profession and from without.

MEDICAL EDUCATION

The ideals of the medical student have been largely influenced by the necessary location of medical schools in growing cities. The big surgeon, the specialist and the limousine doctor have set the pace. The medical curriculum has gone through the usual changes that occur when an attempt is made to cover a rapidly expanding field of information. Steps are now going forward for sounder and more complete fundamental training in medicine, surgery, obstetrics and public health. After proper laboratory training, it is in these fields that the right point of view can be obtained. We are learning, too, that there is no substitute for adequate *sense training* and its corollary, clinical sense.

Medical education differs from most other educational projects because of its wide range of services. While its primary object is and must always be the

training of physicians for the general practice of medicine, it must develop also large numbers of anatomists, physiologists, biochemists, bacteriologists, pharmacologists, specialists in the fields of medicine and hospital administration, roentgenographers, laboratory technicians, nurses, physiotherapists, social workers and public health officials. It requires, too, an unusual combination of agencies to achieve its primary object.

The sick human being forms the necessary center about which must be gathered the teacher, the intern, the student and the nurse. At every step the teacher has a double function. He is the teacher with all that the term implies, and the personal physician of a fellow human being. If he fails in the second, he is worse than a failure in the first. His real success as the physician depends largely on his capacity to view his patient as a social unit. He must combine treatment and prevention of disease. He must see his patient put back on the firing line of ordinary life, tell him how to stay there, and see that he does not become a focus of trouble for others.

Every person brought into contact with medical education owes a duty to the public. He must help to bring to it that knowledge of medicine which it needs for its own protection. Miseducation in health matters has been the rule of the ages. The empiricist, the quack, the crank, the fanatic, have too long had domain over the minds of men. The truth presented in a practical form is needed not only to help mankind, but to protect that further research without which medicine will stagnate.

The success of modern man in medicine must rest on the same three factors of safety given by Allbutt³ as the guides of the wise Greek physicians of more than two thousand years ago—freedom from magic, mastery of hygiene and, in spite of abstract notions, never to forget to treat the individual.

Medical education, in its essence, is to get the young physician ready to serve fellow citizens from a period of five to forty years after graduation. He must deal with them under conditions that are ahead and unknown. His preparation must be forward looking, although grounded in the best that time has brought to his profession. The faculties of medical schools should be fully conscious of the changes that have come and are coming to medicine. Early recognition of the first deviations from the normal, both physical and mental, are most difficult to recognize and to teach, but the young physician without such training will find himself a premature antique. He, too, must remember what Hippocrates⁴ says on the theme of the *Prognosis*:

He seems to me the best physician who is able to know in advance the entire group of phenomena constituting the disease, to wit, to divine its previous conduct, its present action, its future course. Thus he will be able to supplement the patient's faulty statements, gain his confidence, keep clear of blame, and be the better able to manage a cure when that is possible.

The physician is the middleman who delivers to an individual patient the results of all accumulated medical lore. His effectiveness is not a question of how much he knows, but how much he makes applicable to a fellow human being. This human being is in an acutely conscious, susceptible and impressionable state, and needs the instillation of confidence and courage as much as the administration of drugs or other therapeutic measures. There must be direct personal contact,

man to man, to give the best that medicine offers. All sorts of aids may be used, but the physician alone can deliver the art of medicine to the patient. The doctor must visualize his patient not as a living mass of cells stuffed inside a skin, but as a member of a great social organism on which he must be a burden if he is not a worker. He must see the general health aspects of his disease or ailment, and think in terms of the needs of the great economic world which now has so firmly bound into itself the fortunes of man.

The young physician unfamiliar with the social appreciation of medicine will find his wings clipped. He must administer and direct all of the necessary agents needed in the practical applications of science to medicine. His primary assets must be clinical sense, social sense and common sense. In the past, men have made and, in the future, men will make money because they were able to convince others, at least temporarily, that certain things "were good" for certain ailments. Such methods of treatment are moving along on the shelf toward the end where the old-fashioned yarbs, rheumatism rings and pukes are already crowding one another. Science demands more accurate relationship between cause and effect.

The human mind, the human will and human personality will be as important for the medical student of today when he comes into full practice as typhoid fever, smallpox and cholera have been to physicians in the past. Moral and spiritual qualities play as large a part in life as do the more physical of the biologic processes. As Morison⁵ has said:

The liver of a miser is more likely to break down in the course of his life than his passion for gold. The muscular heart of the benevolent man may, and often does, fail before the spiritual heart which makes him unwearied in doing deeds of mercy. The common sense of mankind has always, when not perverted by the necessities of a theory, recognized the permanence of moral qualities, not only in the individual, but in the race.

The modern physician, viewing man as a social animal, must see through his patient the great living group of which he is but a unit.

OPPORTUNITIES OF ASSOCIATION

The opportunities before this great association are almost beyond parallel. We have numbers, organization, intelligence and sympathy, and are in possession of a fund of knowledge which, if applied to the full extent to human need and human development, would give untold happiness to humanity. The traditions of our profession are noble and heartening. In the march forward of organized society, we have too long carried out our greatest function as personal physician to individuals, neglecting our functions as educators and as protectors of the structure that is imperative for us as social animals. We must exercise the patient leadership of the man who knows. No group of men understands human weakness and human needs better than we. The "betterment of public health" can come only through legislation in our form of organized life. That legislation which will grow and change needs to be guided by us for the public good. No city would trust its crowds to a bridge built without an engineer; no community can afford to trust its health protection to laws made without expert knowledge or to administrators without a training in the medical sciences.

There is at present no one best way of handling the social relationships of medicine. Fortunately, there are

3. Taylor: Greek Biology and Medicine, p. 90.

4. Taylor: Greek Biology and Medicine, p. 28.

5. Morison, J. C.: The Service of Man, p. 205.

forty-eight states in the Union, so that experiments can be tried out in them without too much risk. When a good plan is discovered, it can be repeated by other states. Not until we are sure of our ground is national social health legislation advisable. At every step we must be available to help in making wise decisions. To those to whom are delegated the safeguarding of the public health should go the responsibility for our protection against inadequately trained and vicious practitioners of all sorts. We should see that high educational standards are maintained for all those granted the degree of Doctor of Medicine, and that there is clear publicity as to the training of all those treating the sick; but we should not as physicians be responsible for policing the treatment of the sick.

Most important in public health is the safeguarding of the death certificate. When any one who is not a trained physician is allowed to declare the cause of a death there is danger of the spread of unrecognized disease, vital statistics are impaired, and crime is made easier. It is imperative for the life of the state to guard carefully the birth of its citizens, to have marriage laws that protect its children, and to know the causes of all deaths.

HOSPITALS

We can and must keep our medical societies and hospital staffs on a plane above reproach. The patient entering a hospital should be guaranteed good nursing, a careful physical examination, proper laboratory service, scientific treatment and, if necessary, the use of a trustworthy operating room with trained anesthetists. Our lives as physicians are so closely bound up with hospitals that we must keep a full share of responsibility in their management and policies.

Along with the growth of the modern hospital there has been, particularly in our own country, a remarkable development of training schools for nurses. A large number of fine spirited and trained lieutenants have been educated to help us in the care of the sick. They are even more intimately associated with the hospitals than are we. Together, the two great professions of medicine and nursing must work forward in the mutual control of educational and hospital standards. There can be no successful separation of interests, since the good of the patient is primary and the field of operations is the same. The practice of medicine will change, the graduate nurse will have new duties, but the proper relationship of physician, nurse and patient must go on undisturbed.

NEW POSITION OF WOMEN

The new position of woman as citizen and voter, and the capacity of women to replace men as industrial workers and as administrators, together with the marked shift of women from the home and farm to the congested city with its boarding and apartment houses, have already had their effect on medical practice. The hospital is rapidly replacing the home in the care of the sick, and is having an increasing relationship to child-bearing. Women still pay a heavy toll for motherhood. But, as Sir Arthur Newsholme⁶ has said:

If only we are prepared to do what is almost immediately practicable for this end, death or injury associated with child-bearing will become rare, the loss of infant and child life will be halved, and, what is still more important, mothers and infants will cease to be damaged by neglect or ignorance at critical periods of their life and will not become burdens to themselves and to the community.

SCIENTIFIC AND PUBLIC ADVANCEMENT

The Association has been unusually successful in developing side by side the organization of the medical profession of the United States and the science of medicine. Much of our progress is due fundamentally to the double representation in our governing body of geographic units of the country and the various branches of the medical sciences as typified by the constituent scientific sections. Through the high standards of *THE JOURNAL* and the steady improvement in the spirit and quality of the section programs, a great educational service has also been given.

Now as an association we have just begun to educate the public in health matters and thus to extend our work into wider fields. Much has been done in the past by those interested in endeavoring to improve health conditions of all sorts. Many of these steps have been poorly thought out, and based on opinions rather than experience and ascertainable information. More general dissemination of the facts of medicine and life will lead to sounder development and, at the same time, will show the public the help it can receive from the medical profession as the only group trained in such matters.

When every student in school receives some training in biology, the quack, the "patent medicine" cheat, the aggrandized rubber and manipulator, and the knotted string faddist will have a less fertile soil for their mushroom activities. Since we are alive, we need to be able to think biologically about our individual and our mass problems if we are to avoid deception and danger.

Medicine, in its foundations and in its applications, is based on research. The most sacred heritages of medicine have come through the transcendent genius of a comparatively few men applied to human woes. The protection and advancement of research is our greatest opportunity, but it is as important to apply the results of research as to foster it. All dealing with life is relative, and will be so until we can know more of the unknown. For the present we can only expect to get high percentage results in the application of medicine. Every time we learn a new fact, the structure of medicine becomes firmer and more dependable. Near facts must fall before facts. There can be no present finality. Dogma has no place in medicine today. Facts and not authority control.

With minds open and unafraid and with a growing appreciation of all human values, our profession faces the days ahead ready to give to our race that full service which it is our privilege and glory to render.

Chimney-Sweeps' Cancer.—Chimney-sweeps' cancer was one of the first occupational skin diseases to be described, having been referred to by Percival Pott in 1775. The employment of climbing boys for sweeping chimneys was regulated in the reign of George III, the masters being compelled to provide proper clothes and to cause them to be cleaned once a week, and no apprentice of less than 8 years of age being allowed to be employed. A Liverpool newspaper of 1828 refers to climbing boys suffering from "incurable skin diseases." The use of climbing boys has long since been legally abolished in these islands. Coal soot is known to contain considerable quantities of arsenic derived from arseniferous pyrites present in the coal, and the work of Bayet and Slosse points very definitely in the direction of arsenic being a serious factor in the production of the pre-cancerous conditions, if not actually of the cancer itself.—Hope: *Industrial Hygiene and Medicine*, 1923.

6. Newsholme, Arthur: *Public Health and Insurance*: American Addresses, p. 133.

TREATMENT OF MIGRAINE WITH
PEPTONEEVIDENCE OF THE ANAPHYLACTIC CHARACTER
OF THE SEIZURE

JOSEPH L. MILLER, M.D.

AND

B. O. RAULSTON, M.D.

CHICAGO

Three years ago, Pagniez, Vallery-Radot and Nast¹ published a report on the treatment of migraine by the intravenous injection of horse serum, later substituting peptone for the serum. At this time they advanced the view that the migraine seizure was an anaphylactic manifestation. Independently, Abel² during the same year, reported the results of treating 100 cases of migraine by intramuscular injection of a placental extract. He was led to select the placenta for making an extract on account of the frequent disappearance of the disease during pregnancy. His theory of the method of action was not one of desensitization, but rather of some obscure endocrine effect.

Becoming interested in this subject from reading these reports, we have treated during the last two years twenty-five migrainous patients. The results have been sufficiently striking to lead us to conclude that migraine is definitely benefited by this procedure, and we have sought for evidence to support the anaphylactic theory.

Our knowledge of clinical anaphylaxis is at present in the developmental stage, as the list of diseases proved to be of this character is gradually increasing. At present there is included hay-fever, asthma, urticaria and some forms of eczema and, as possible candidates, angioneurotic edema, intermittent hydrarthrosis, epilepsy and migraine. This group of diseases presents wide differences in their symptomatology, and there is little to suggest from a clinical standpoint that they are of common origin.

They have, however, some points in common, of which periodicity is probably the most striking. Asthmatic attacks develop suddenly and are usually self-limited in duration, followed by a longer or shorter period of freedom. In this respect they resemble migraine seizures. Migraine sufferers frequently state that, following a seizure, they enjoy a period of relative immunity, during which period nerve strain that ordinarily would precipitate an attack is without effect. This might be interpreted as a refractory period corresponding to the antianaphylactic state observed in animals following anaphylactic shock—a period in which they are relatively desensitized.

Migraine, like its congeners asthma and hay-fever, is distinctly hereditary. Gowers³ and others have called attention to the frequent association of asthma and migraine in certain families. Liveing and Möbius⁴ refer to the not infrequent development of asthma in patients suffering from migraine.

The importance of nervous influences in precipitating an attack of migraine corresponds to what has been observed in asthma. Trousseau considered asthma a pure neurosis, and the nervous theory has still many adherents. They are unwilling to accept in full its

anaphylactic origin, on account of the preeminence of nervous factors in precipitating an attack. It is only necessary to recall cases referred to in the literature in which the sight of an artificial rose or a vivid description of a mustard field was sufficient to excite a paroxysm in those sensitive to these pollens. Migraine attacks associated with the menstrual period might be explained on the basis of disturbed stability of the nervous system at this time. It is not improbable that nervous influence plays a rôle in increasing the patient's sensitiveness.

Migraine seizures frequently disappear temporarily after severe, prolonged infections, especially typhoid fever. This might be explained by desensitization acquired through the infection. In this respect it resembles asthma, as not infrequently the asthmatic patient may enjoy a prolonged period of freedom following a severe infection.

Migraine and asthma are frequently influenced favorably by pregnancy. The former, in the majority of instances, subsides during the latter half of pregnancy. This is much less constant in asthma, and, in fact, attacks may first appear at this time. Many instances are on record, however, in which the attacks have disappeared during this period. Coke⁵ recently referred to a chronic asthmatic patient who during six pregnancies was entirely free from attacks. An explanation that has been offered is that the placenta, which behaves as a foreign protein, may desensitize the individual.

Mention is frequently made of the rôle played by foods in precipitating an attack of migraine. Little reference is made in regard to the responsibility of a specific food. Pagniez refers to a patient who had migraine after eating chocolate. Möbius refers to attacks being precipitated by odors and certain drugs, and also to a series of ninety cases studied by Symond, in nineteen of which the seizures were considered as due to dietary errors. Brown,⁶ who recently reviewed this subject, refers to one case in which eggs would precipitate a seizure. He states that some patients are greatly benefited by a diet free from animal protein, and others by a diet in which carbohydrates are restricted. This particular phase of the subject deserves further study. When we recall that many of the older medical writers do not refer to specific foods as playing a rôle in asthma, it can be readily seen how this factor might easily be overlooked in migraine. In case migraine is a sensitization disease, beyond the possible rôle played by foods, there is no information available regarding the character of the sensitizing agent or agents.

The presence of eosinophilia during the attack is perhaps the strongest evidence of the possible anaphylactic nature of migraine. Neusser,⁷ in 1892, reported a definite eosinophilia during severe attacks of migraine, and, Gänsslen⁸ recently, in forty-two patients with migraine, examined during an attack, reported an eosinophilia of from 5 to 16 per cent. in thirty-one. Seventeen of these had an eosinophilia of 9 per cent. or more. If further observations confirm these findings, they would furnish highly suggestive evidence of the anaphylactic character of the attack.

The relief obtained following the use of peptone in migraine is temporary, as, within from a few weeks to a few months after it has been discontinued, the headaches return, in this respect behaving like hay-fever and

1. Pagniez, P.; Vallery-Radot, P., and Nast, A.: *Presse méd.* **27**: 172 (April 3) 1919. Pagniez, P., and Nast, A.: *Ibid.* **28**: 253 (April 28) 1920. Pagniez, P.: *Ibid.* **29**: 45 (Jan. 15) 1921.
2. Abel, G.: *Deutsch. med. Wchnschr.* **47**: 1229 (Oct. 13) 1921.
3. Gowers, W. R.: *Diseases of the Nervous System* **2**.
4. Möbius, P. J.: *Die Migräne*, in Nothnagel's *Specielle Pathologie und Therapie*.

5. Coke, F.: *Brit. M. J.* **1**: 455, 1922.

6. Brown, T. R.: *Rôle of Diet in Etiology and Treatment of Migraine and Other Types of Headaches*, *J. A. M. A.* **77**: 1396 (Oct. 29) 1921.

7. Neusser, E.: *Wien. klin. Wchnschr.* **5**: 41-64, 1892.

8. Gänsslen, M.: *Med. Klin.* **17**: 1202 (Oct. 2) 1921.

asthma, in which diseases the desensitization is rarely lasting.

Finally, Van Leeuwen and Zeydner⁹ have isolated from the blood, in cases of asthma, urticaria, epilepsy and migraine, a substance that stimulates unstriated muscle. They were unable to isolate this substance from normal persons or patients suffering from a variety of other diseases. As stimulation of unstriated muscle is one of the constant physiologic reactions in anaphylaxis, they suggest that migraine and epilepsy may be allergic diseases.

Summing up the foregoing evidence, it cannot be considered more than suggestive, and more specific studies must be made before it can be stated that migraine seizures are a manifestation of sensitization.

The reported relief from migraine by the use of horse serum, typhoid vaccine, placental extract and peptone indicates that a variety of proteins are capable of producing changes responsible for this improvement. That desensitization is not strictly specific has been generally accepted by immunologists, recognizing, however, that it is less complete and probably of shorter duration than that produced by specific proteins.

Biedl and Kraus,¹⁰ in 1909, reported that animals sensitized to a foreign serum would not react to a second dose if, in the interval, peptone was administered. Weil¹¹ demonstrated that a preliminary injection of sheep serum protects guinea-pigs in a certain percentage of cases against the sensitizing effect of immune rabbit's serum. An animal sensitized simultaneously to several proteins, when desensitized to one, is partially desensitized to all the others.¹² Dale¹³ has shown that the uterus of a guinea-pig previously sensitized to several serums and, in addition, to egg white, could be desensitized to the serums with egg white. Auld¹⁴ has reported favorable results in a certain percentage of asthma cases by the intravenous use of peptone.

TREATMENT

We began treating migraine patients by this method two years ago. The first patient treated was given typhoid vaccine intravenously. After eight injections, her migraine disappeared and did not return until four months later. On account of the inconvenience of a chill after each injection, this method was discontinued, and a 5 per cent. solution of Armour's "Peptonum Siccum" employed. Auld, in the treatment of asthma, called attention to the advantage of this preparation over Witte's peptone. The latter at times gave an anaphylactic-like reaction after a single injection. The explanation offered is that Witte's peptone contains a larger amount of primary proteoses. It is also possible that its action as a desensitizer may be due to the proteoses and not to the peptone, as Auld reported he was not able to secure favorable results in asthma when pure peptone was used. In several hundred injections we have never observed any symptoms resembling anaphylactic shock, nor, in fact, any reaction, provided the preparation is sterile. When a chill follows the injection, it is due to an infected solution. Recently, however, another physician observed marked urticaria following a single injection in two patients. No doubt, different preparations of the same brand differ in their

composition. In order to produce peptone anaphylaxis in dogs, large amounts are required, according to Biedl and Kraus, 0.3 gm. per kilogram of body weight. The total quantity administered in a single dose in this treatment, however, does not exceed 0.1 gm.

The solution is prepared by dissolving the peptone in 0.9 per cent. sodium chlorid solution so as to make a solution of about 6 or 7 per cent. strength. This is neutralized, half normal sodium hydroxid solution being used and litmus paper as an indicator. The solution is then made to the volume required to make a 5 per cent. solution, filtered until clear, and then placed in 5 c.c. ampules, and autoclaved in the usual manner. In order to determine whether the preparation is sterile, the ampules are incubated, and if they remain clear, they are ready to use. The first intravenous injection is 0.5 c.c., the dose being rapidly increased to 2 c.c. The interval between injections is unimportant. We have usually given two injections a week until the headache disappears; then weekly, and, if the improvement continues, once in two weeks, and finally once a month.

Results of Treatment in Twenty-Five Cases

Patient	Number of Attacks per Month	Nausea and Vomiting	Number of Injections	Results		
				Marked Im-prove-ment	Moderate Im-prove-ment	No Im-prove-ment
1.....	4	+	17	+	..	..
2.....	4	+	42	+	..	..
3.....	2	+	18	..	+	..
4.....	3	+	10	+	..	..
5.....	3	+	15	..	..	+
6.....	5	0	28	..	+	..
7.....	8	0	17	..	+	..
8.....	2	0	13	+	..	..
9.....	8	+	12	..	+	..
10.....	2	+	27	+	..	..
11.....	1	+	20	..	+	..
12.....	4	+	16	..	..	+
13.....	4	+	25	..	+	..
14.....	3	+	14	..	+	..
15.....	3	0	6	..	+	..
16.....	3	0	10	..	..	+
17.....	2	0	21	..	..	+
18.....	2	+	11	..	+	..
19.....	2	+	16	+	..	..
20.....	3	+	16	..	+	..
21.....	2	+	17	..	+	..
22.....	3	+	22	+	..	..
23.....	3	+	26	..	+	..
24.....	2	+	24	+	..	..
25.....	4	+	9	+	..	..

It has not been determined how frequently the injections must be given in order to prevent a recurrence. This period will probably show individual variation. If the injections are discontinued, sooner or later the migraine will return. The longest period of freedom observed after discontinuance of the treatment was nine months.

RESULTS

Twenty-five patients have been under observation a sufficient period of time to permit conclusions to be drawn in regard to the results of the treatment. This group could all be considered as relatively severe types, as may be seen in the accompanying table. Twenty-one were females, four males. Their ages ranged from 12 to 51 years. Ten had seizures at the menstrual period, but in only one were they confined to this time. Four had a systolic blood pressure above 150, and seven below 110. Nausea or vomiting was present during the attack in seventeen. Two had ophthalmic manifestations. A definite hereditary history was obtained in seventeen. One had a family history of epilepsy, one, hay-fever and one, urticaria. The total number of injections given varied from six to forty-two.

9. Van Leeuwen, W. S., and Zeydner: Brit. J. Path. & Pharmacol. 3: 282 (Dec.) 1922.
10. Biedl, A., and Kraus, R.: Wien. klin. Wchnschr. 22: 363-554, 1909.
11. Weil, Richard: J. Immunol. 2: 456, 1917.
12. Karsner, H. T.: Principles of Immunology, 1921.
13. Dale, H. H.: Brit. M. J. 2: 689 (Oct. 29) 1921; 1: 45 (Jan. 14) 1922.
14. Auld, A. G.: Brit. M. J. 1: 696 (May 14) 1921.

In reporting the results of treatment, we have divided the patients into three groups—much improved, moderately improved and not benefited.

In the group of much improved are included those patients who were free from headaches for a period of two months or more after the treatment was discontinued. Nine patients fell in this group. Four were free from headaches two months, two were free three months, one was free four months, one, six months and one, nine months. At the end of this period the headaches returned, but were again controlled by the peptone.

In the group of moderately improved were those patients in whom the attacks were definitely less frequent and less severe. Ten in this group had nausea, and in all but two it disappeared. Twelve patients were included in this group.

Four patients were not benefited—at least not appreciably. One of the male patients was in this group, two were in the group of much improved, and one in the moderately improved group.

Expressed in percentage, 36 per cent. were much improved, 48 per cent. were moderately improved, and 16 per cent. were not benefited. These results correspond quite closely to those reported in the treatment of hay-fever by desensitization.

For further information in regard to the frequency of attacks and duration of improvement, the reader is referred to the accompanying table.

CONCLUSIONS

The intravenous injection of peptone has a definite action in temporarily relieving or modifying migraine attacks. Whether these results are due to desensitization or to some other action of peptone is not known. Clinically, migraine has many of the characteristics of a sensitization disease.

STUDIES ON THE THERAPEUTIC APPLICATION OF BACILLUS ACIDOPHILUS MILK

HARRY A. CHEPLIN, PH.D.

Assistant Professor of Bacteriology, Syracuse University

H. CLIFFORD FULMER, M.S., M.D.

AND

CLYDE O. BARNEY, M.D.

SYRACUSE, N. Y.

At birth, the meconium is sterile, as would naturally be anticipated, in view of the fact that the uterine cavity is normally sterile. The first manifestations of bacterial contamination of the meconium are discernible several hours postpartum. These early invaders are adventitious microbes, resembling in every respect those commonly encountered in the infant's environment, and probably gain entrance to the intestinal tract through the mouth and anus.

As soon as the digestive tube becomes permeated with milk, a marked change is recognizable in the intestinal flora. The heterogeneous aggregation of promiscuous micro-organisms gives way to a simplified flora dominated by *Bacillus acidophilus*. The stools of healthy infants are yellowish, slightly acid in reaction, nonputrefactive, and soft and pasty in their physical appearance. It is now a well known and widely accepted fact that lactose is the chemical constituent of the infant's diet directly responsible for the predominance of *B. acidophilus*. As the child grows older

and the artificial feeding becomes more varied, a new distribution of bacteria makes its appearance, in the course of time approaching that of an adult. The increased variety of food, furnishing new combinations of pabulum easily attacked by various kinds of bacteria, while relatively unavailable for *B. acidophilus*, is the essential cause of complicating the bacterial picture of the feces of man. Under such ordinary conditions of alimentation, the presence of *B. acidophilus* is reduced to a minimum, and the metabolic activities of the putrefactive microbes are supported to a maximum.

The intestinal tract of man represents a combined culture medium and incubator of a highly perfected type. It is constantly teeming with bacterial life. Thus, MacNeal, Latzer and Kerr¹ demonstrated that the average adult, subsisting on a so-called ordinary mixed diet, excretes daily thirty-three trillions of bacteria, and that this extremely large number of microbes represents about 5.34 gm. of dried matter, or 0.585 gm. of bacterial nitrogen. Combe, Herter and others have shown that the fecal flora of the adult is almost always putrefactive, producing substances toxic to the host and considerable amounts of gas in the intestine. The stools are foul smelling, compact and desiccated. Metchnikoff² and his co-workers asserted that the absorption of these poisonous substances, especially in the case of chronic constipation and intestinal stasis, is cumulative in nature and gives rise to autointoxication, arteriosclerosis and high blood pressure. While the theory of autointoxication is by no means universally accepted, it is now a well-established clinical assumption, at least, that the absorption of toxic substances from the lower bowel gives rise to changes in the liver, brain, kidneys and blood vessels.

The observations of Metchnikoff on the antagonistic effects of *B. bulgaricus* on the putrefactive microbes are generally known to the medical world. Appreciating the baneful influence which the unrestrained activities of the large microbic army of the lower bowel might exercise on the general health of man, Metchnikoff advocated the introduction into the alimentary canal of living cultures of *B. bulgaricus*, absolutely benign to the host, for the purpose of completely displacing the undesirable pernicious intestinal bacteria. However, many investigators failed to substantiate the assertions of Metchnikoff. In their recent extensive investigations, Cheplin and Rettger³ have proved that *B. bulgaricus* cannot be acclimatized to the intestinal tract of both animal and man, and they strongly emphasized the fact, by furnishing experimental evidence, that the bacteria in the stools, identified by Metchnikoff as *B. bulgaricus*, were in reality *Bacillus acidophilus*, whose growth had been stimulated by the lactose in the milk fed to the patients. These investigators pointed out that bacterial implantation within the intestine for therapeutic purposes was possible and could be accomplished only when organisms possessing the requisite

1. MacNeal, W. J.; Latzer, L. L., and Kerr, J. E.: The Fecal Bacteria of Healthy Men, *J. Infect. Dis.* **6**: 123-169; 571-609, 1909.

2. Metchnikoff, E.: The Prolongation of Life, New York, 1911, 161-183.

3. Cheplin, H. A., and Rettger, L. F.: Studies on the Transformation of the Intestinal Flora, *Abstr. Bacteriol.* **4**: 8-9, 1920; Transformation of the Intestinal Flora of Man, *ibid.* **5**: 20-21, 1921; The Therapeutic Application of Lactobacillus Acidophilus, *ibid.* **6**: 24, 1922; Studies on the Transformation of the Intestinal Flora of Albino Rats, *Proc. Nat. Acad. Sc.* **6**: 423-26, 1920; Studies on the Transformation of the Intestinal Flora of Man, *ibid.* **6**: 704-06, 1920; Studies on Intestinal Implantation of Bacillus Acidophilus, *Proc. Soc. Exper. Biol. & Med.* **17**: 192-95, 1920; Further Studies on the Intestinal Implantation of Bacillus Acidophilus, *ibid.* **18**: 30-32, 1921; A Treatise on the Transformation of the Intestinal Flora, New Haven Conn., Yale University Press, 1921; Bacillus Acidophilus and Its Therapeutic Application, *Arch. Int. Med.* **29**: 357-67 (March) 1922.

qualifications for colonization and proliferation in the alimentary canal are employed.

Cheplin and Rettger have also demonstrated that the most effective method of simplifying the intestinal flora is through the use of milk cultures of *B. acidophilus*, which were employed by them for the first time in 1920. In some instances, 500 c.c. of acidophilus milk was sufficient to bring about complete transformation of the fecal flora with the elimination of the undesirable putrefiers. A total of 1,000 c.c., taken daily in from two to three doses, in every instance effected the desired change of the flora in the course of from four to seven days. Their work at the start was conducted with animals and apparently normal human beings, and the conclusions suggested that the simplification of the fecal flora might possibly be of benefit in certain pathologic cases in which there is associated a predominance of the putrefactive forms of bacteria in the intestinal tract. The first clinical application of the so-called *B. acidophilus* milk therapy was made by Cheplin and Rettger early in 1920, and the treatment was given in more than sixty cases. They reported that the ingestion of *B. acidophilus* milk resulted in relief from chronic constipation, chronic diarrhea and mucous colitis, as well as sprue. They also reported beneficial results in the treatment of eczema referable directly to the bacteriology of the intestinal tract. Cheplin and Wiseman,⁴ in their studies on the effect of acidophilus milk in cases of chronic constipation, found that this milk culture exerted a beneficial influence in regulating the fecal eliminations from the bowel and in changing the character of the intestinal flora. Kopeloff⁵ has shown that relief from chronic constipation has persisted for six months after the ingestion of *B. acidophilus* milk has been discontinued. Gompertz and Vorhaus,⁶ in their recent experiments with 200 patients suffering from chronic constipation and 100 with diarrhea and mucous colitis, reported that from the purely clinical standpoint, the results have been most gratifying, 70 per cent. of all the cases of either group showing complete relief from symptoms and toxemia, and 15 per cent. showing some relief and improvement. Norman and Eggston⁷ have given the acidophilus therapy a widespread application, and strongly advocate the acidophilization of the intestinal tract by means of milk cultures.

EXPERIMENTS

The milk feeding experiments presented in this paper were conducted for the purpose of extending the observations on the therapeutic value of the oral administration of *B. acidophilus* milk in cases of chronic constipation and mucous colitis. Our chief aim was to establish *B. acidophilus* in the alimentary canal and, while maintaining the acidophilus-dominating flora, to ascertain the extent of clinical improvement.

The acidophilus milk was prepared, in accordance with the method advocated by Cheplin and Rettger, in liter lots, and living twenty-four to thirty-six hour cultures were administered daily to the patients. With

but few exceptions, 1,000 c.c. of the milk culture, enriched with from 50 to 100 gm. of lactose, was ingested by the subjects each day in three equal doses, from two to three hours after meals. At no time during the investigation were any special or modified diets prescribed, and the milk culture was consumed regularly in addition to the ordinary daily dietary regimen. It was definitely arranged that no cathartics or laxatives be taken by any patient throughout the entire experimental period. In the event of no response during forty-eight consecutive hours, enemas, consisting of from two to three parts of warm water and one part of acidophilus milk, were resorted to, and these were given in but five instances.

Bacteriologic examinations of the stools were made of every patient before treatment and then at intervals of from five to seven days. These routine fecal examinations were carried out with the chief object of determining the progress in the transformation of the intestinal flora from the ordinary mixed type to one dominated by *B. acidophilus*. It has also been our endeavor to establish, if possible, a correlation between the simplified acidophilus flora and any benefits that might be noted clinically.

REPORT OF CASES

CASE 1.—A woman, aged 29, in whose family there had been tuberculosis, in the spring of 1920 was stricken with influenza, which was followed by symptoms of fatigue, loss of weight and expectoration. Roentgen-ray examination of the chest showed a lesion at the hilum of the left lung. No acid fast bacilli were found in the sputum. In 1922, the patient was reexamined, and the lesion in the lung had disappeared. All active symptoms had subsided, except that the patient showed plainly the signs of fatigue and asthenia. Constipation was marked. An urticaria developed, with other manifestations of autointoxication. Treatment included enemas and aloin, belladonna and strychnin tablets, together with a fruit, vegetable and milk diet.

In the fall of 1922, she was given an intensive treatment of acidophilus milk. One liter of the milk culture, reinforced with 50 gm. of lactose, was consumed daily for eight weeks. Then this amount was reduced to one glass a day. Without the use of cathartics or enemas, complete elimination followed. The patient has improved, and her symptoms have cleared up to a large extent.

CASE 2.—A boy, aged 5, whose family history was negative, had been troubled since birth with constipation. The mother gave liberal amounts of magnesia magma, and liquid petrolatum for relief. Malnutrition and undernourishment were noticeable. The abdomen was distended, with no areas of tenderness. The child had repeated attacks of pain in the pit of the stomach, and this was always relieved by the passing of considerable amounts of gas.

On the oral administration of acidophilus milk, 12 ounces (355 c.c.) daily, movements were recorded each day, followed by disappearance of the distention and symptoms. When last seen, the child had regained his proper weight. The treatment was discontinued after eight weeks.

CASE 3.—A woman, aged 62, whose family history revealed cancer, had been troubled with constipation extending over a period of fifteen years. She had gone the rounds of physicians and had been told that the liver was torpid. She was in the habit of taking ox-gall, cascara and phenolphthalein tablets as laxatives. She also had consumed large quantities of liquid petrolatum. The main symptoms, beside the chronic constipation, were lassitude, lack of ambition, loss of appetite and headache, with sensations of heat and cold in the extremities.

One liter of acidophilus milk, in addition to 100 gm. of lactose, was consumed daily for eighteen weeks. Daily bowel movements followed. At the end of twelve weeks, the patient refused to discontinue the treatment because of its beneficial effect. Her toxic symptoms disappeared, and she resumed

4. Cheplin, H. A., and Wiseman, J. I.: Observations on the Effect of *B. Acidophilus* Milk upon Cases of Chronic Constipation, Boston M. & S. J. **185**: 627-30 (Nov. 24) 1921.

5. Kopeloff, Nicholas, and Cheney, C. O.: Studies on the Therapeutic Effect of Bacillus Acidophilus Milk and Lactose, J. A. M. A. **79**: 609-611 (Aug. 19) 1922. Kopeloff, Nicholas: Is the Action of Bacillus Acidophilus a Strictly Bacteriologic Phenomenon? *ibid.* **80**: 602-604 (March 3) 1923.

6. Gompertz, L. M., and Vorhaus, M. G.: Observations on *B. Acidophilus*: Its Bacteriological Characteristics and Possible Therapeutic Significance, M. Rec. **100**: 497 (Sept. 17) 1921; Bacteriologic and Clinical Experience with Bacillus Acidophilus, J. A. M. A. **80**: 90-92 (Jan. 13) 1923.

7. Norman, N. P., and Eggston, A. A.: Pyogenic Infections of the Digestive Tract and Their Biological Treatment, New York M. J. **115**: 449 (April 19) 1922.

her daily duties with, as she repeatedly stated in person, new strength and endurance.

CASE 4.—A woman, aged 31, whose family history was negative, for ten years had suffered with recurring attacks of pain in the abdomen, headache and constipation, with no relief. In the summer of 1922, the appendix and gallstones were removed. This operation relieved the pain. The constipation and headache persisted. For weeks after the operation, the patient was in the habit of taking Epsom salt.

In November, 1922, the acidophilus milk treatment was prescribed, and was taken for a period of nine weeks. The patient responded unsatisfactorily during the first eight days, requiring enemas on two occasions. After the tenth day, she reported a daily defecation, which continued for the remainder of the experimental period. Removal of the toxic symptoms and relief from most obstinate constipation resulted in marked physical improvement.

CASE 5.—A woman, aged 42, whose family history revealed cancer, under a barium series showed a visceroptosis. The stomach and transverse colon were both ptosed to a marked degree. The intestinal stasis was extreme. The uterus was retroflexed. An operation was not advisable on account of the ptosis. The symptoms were dizziness, headache, bearing down pains and eye strain. Intestinal toxemia was acute.

An intensive treatment with 1 liter of acidophilus milk, enriched with 100 gm. of lactose, daily, was extended over a period of eight weeks. The response was slow during the first two weeks, necessitating the use of enemas in three instances. After completely transforming the fecal flora at the end of the third week, relief from constipation, headache and dizziness were noted. Correction of glasses relieved eye strain.

CASE 6.—A woman, aged 38, with a family history of tuberculosis and arterial disease, had, at the age of 18, lived in a tent for the treatment of an attack of pulmonary tuberculosis. Recovery followed. In 1917, she developed an attack of renal colic, which was wrongly diagnosed as uremia at the time. In 1921, the condition was diagnosed as a tuberculous kidney. A nephrectomy was performed. Recovery followed, but the constipation became chronic. Barium series revealed a ptosis of the viscera, particularly the stomach and the transverse colon. Elimination through the kidney was sluggish and headaches were common. High enemas with sweating and purging had to be resorted to.

In the fall of 1922, the patient commenced the treatment of acidophilus milk, reinforced with 100 gm. of lactose. She responded immediately after the first liter of the milk culture was ingested. She gained 10 pounds in weight, and the uremic symptoms cleared up with the daily movements of the bowels. Bacteriologic examinations of the stools revealed *B. acidophilus* as the predominating organism. The patient was under treatment for twelve weeks.

CASE 7.—A man, aged 29, complained of insomnia, nervousness, nausea and a great deal of gas after eating. He had been constipated for five years, and was losing weight. A bismuth meal roentgen-ray series proved negative. Nothing was found of diagnostic value in the chest. A diagnosis of chronic constipation with acidosis was made.

The treatment consisted of daily oral administrations of 1 liter of acidophilus milk, with 50 gm. of lactose, and continued for a period of fifteen weeks. The subject responded very readily, having at least one daily movement, not infrequently two, and on several occasions as many as three defecations a day. The fecal flora was completely transformed within twenty days. The patient claimed pronounced relief from abdominal pains and gaseous distention.

CASE 8.—A woman, aged 30, anemic, had a red blood count of 4,035,000, and a white blood cell count of 17,000. Many evacuated red cells were found in the differential count. At this time she was in a great deal of distress from gas in the stomach and bowels, with occasional pain in the right groin which sometimes shot up the right side of the abdomen. She had diarrhea alternated with constipation. She also complained of being very tired and depressed, especially in the morning, and of lacking the ambition to do much work. A diagnosis of intestinal infection and toxemia was reached.

After the patient had taken 1 liter of acidophilus milk and 100 gm. of lactose daily, with no other medicine, over a period of three months, the red cell count was 5,020,000, and the white cell count, 12,300. With daily elimination throughout the entire experimental period, her general condition manifested marked improvement. The fecal flora was completely simplified, the gas-producing and proteolytic microbes being almost entirely displaced by *B. acidophilus* within sixteen days.

CASE 9.—A man, aged 36, aside from typhoid fever at the age of 12, and an attack of acute rheumatism with quinsy six years later, had always been in good health. With the removal of the tonsils, the rheumatism disappeared. For the past five years, he had had considerable gastric and abdominal distress with more or less soreness in the region of McBurney's point, but no acute pain. He was compelled to be exceedingly careful of his diet on account of nausea and gas formation. He felt all tired out, and was on the verge of discontinuing his charge unless he could get relief. A diagnosis of intestinal toxemia was made.

The patient ingested 1 liter of acidophilus milk, together with 100 gm. of lactose, daily for fourteen weeks. During the first three weeks, the response was unsatisfactory, in spite of daily defecations. The subject's general condition manifested some improvement by the end of the fourth week. From that time on until the end of the experiment, the transformation of the fecal flora was in evidence, and the disappearance of the patient's symptoms was clearly noted.

CASE 10.—A woman, aged 25, an underdeveloped "hunch-back" girl, for eighteen months had had bowel trouble, and was very nervous and depressed. Her weight was 70 pounds (31 kg.). The pain in the abdomen was severe, and she passed so much mucus with tenesmus in the rectum that she took as many as eighteen enemas a day to rid herself of long ribbons of foul-smelling mucus. Her case was diagnosed as chronic mucous colitis.

The treatment of acidophilus milk, reinforced with 100 gm. of lactose, commenced, Nov. 27, 1922, and continued for four months. During the first week, the condition was somewhat aggravated, the patient claiming to have had as many as seven defecations in one day, with increased amounts of mucus. By the end of the third week, the amount of mucus was much lessened; after the fourth week, the abdominal pain and distress had practically disappeared, the mucus had almost completely ceased, and the flora was represented by *B. acidophilus* to the extent of 80 per cent. Beginning with the seventh week and thereafter until the termination of the course of observation, the patient reported, with but two exceptions, one natural and normal bowel passage free from mucus. There was a marked physical improvement; the patient ate and slept better, gained in strength and showed an increase of 10 pounds (4.5 kg.) in body weight.

COMMENT

From the results obtained in this investigation, we are confident of the therapeutic value of *Bacillus acidophilus* milk in the intestinal conditions outlined in this paper. That viable cultures of *B. acidophilus*, when ingested in sufficient amounts, can be successfully implanted in the human intestine is no longer disputable, as is also the fact that the resultant simplified flora can be maintained as long as the administration of the culture continues.

B. acidophilus is, according to all available information, an organism which does not elaborate toxic or other injurious by-products. It is considered as a strictly nonputrefactive microbe. Its therapeutic virtue is embodied not only in its ability to suppress *B. coli*, as recently claimed by Gompertz and Vorhaus, but also to its inhibiting influence on *B. welchii*, *B. proteus*, *B. putrificus* and other toxicogenic intestinal microorganisms.

B. acidophilus milk therapy possesses distinct merits in the treatment of chronic constipation and mucous colitis, as the numerous experiments that we have thus

far conducted conclusively show. Its beneficial effects in simplifying the complex fecal flora are manifested in two well-defined ways: (1) In the constipation group, the physical characteristics of the feces are noticeably changed, becoming yellowish, soft, comparatively odorless, quite resembling the infantile type of stool, and accompanied by the elimination of pain at straining of stool; in the diarrhea and mucous colitis group, there is a gradual formation of the fecal material, finally resulting in soft, light and partially formed stools, with a complete disappearance of the mucus; (2) marked improvement in the clinical picture by relieving the toxic symptoms which previously coexisted. The accumulated evidence and clinical belief that the absorbed by-products of intestinal putrefaction are harmful offer additional and significant relation to our results under discussion. We believe that the theory of autointoxication deserves perhaps more consideration than it has hitherto been given. If the ordinary complex fecal flora, ever harbored within the recesses of our bowels, were simplified to a point at which its bacterial population is reduced to a minimum with a concomitant lessening in the total elaboration of their poisonous products, much would be accomplished toward combating the evils of so-called toxic intestinal conditions. *B. acidophilus* milk apparently achieves such results, and merits further investigation.

Undoubtedly, individuals will manifest great variations and idiosyncrasies in their reaction to acidophilus milk; and, while we do not deem it safe to generalize on the benefits of this mode of treatment, the fact remains that up to this time we had not observed a single patient, no matter how chronically constipated, who has not been relieved of constipation and clinical symptoms, following an intensive course of treatment with acidophilus milk and lactose. In this respect, the range of usefulness of *B. acidophilus* milk seems quite clearly defined. In any application of the acidophilus milk therapy, however, immediate results should not always be expected. In several instances in which the treatment finally became effective, we have failed to obtain a favorable reaction until after the expiration of from one to three weeks; and in a few other cases, still under treatment, there was no favorable response until a month or six weeks after the initial ingestion of the acidophilus milk culture.

In view of our own results and those of other observers, we feel that the application of the acidophilus milk therapy is worthy of further investigation in the treatment of other ailments directly or indirectly referable to intestinal disturbances. We suggest also that it be given a trial in specific infections, such as typhoid and paratyphoid fevers and dysentery. Torrey⁸ showed that the oral administration to typhoid patients of from 250 to 300 gm. of lactose, in addition to the Coleman-Shaffer diet, resulted in an acidophilus-dominating intestinal flora, cut short the course of the disease, reduced the tendency to complication, and conserved body weight. These results suggest definite indications for future experimentation with *B. acidophilus*.

It has long been known that the growth of one organism inhibits that of another. Metchnikoff made attempts with *B. bulgaricus*, and the fact that his conclusions have not been confirmed by further experimental evidence does not affect the main issue. We do not question his clinical findings. We believe that *B. acidophilus* actually accomplishes all that Met-

chnikoff attributed to *B. bulgaricus*, and we fully support the contention of Cheplin and Rettger to the effect that the former has been mistaken for the latter.

We wish to emphasize that *B. acidophilus* milk therapy is not an elixir nor the fountain of youth in the sense that Metchnikoff's *Bacillus bulgaricus* was for a while, at least, supposed to be. The ingestion of relatively few acidophilus bacilli will not be conducive to complete implantation and clinical improvement. A minimum amount of the bacterial culture, containing, on an average, fifty billions of viable organisms, is required each day to bring about these changes, and for these reasons, we strongly advocate the use of acidophilus milk cultures as the most effective means of attaining the desired results. We are of the opinion that the acidophilus milk therapy, if properly executed, is a resource which has a sound, logical, scientific foundation, and which in time may take a high place in the scale of efficiency.

SUMMARY AND CONCLUSIONS

1. *Bacillus acidophilus*, when given by mouth in the form of minimum amounts of milk cultures, lends itself to complete implantation and colonization within the human digestive tract, effecting a complete simplification of the fecal flora, and supplanting almost all known intestinal toxicogenic microbes.

2. In chronic constipation, there was marked clinical improvement in the so-called toxic symptoms and regulation of the fecal eliminations from the bowel.

3. In mucous colitis, beneficial changes were noted clinically, with daily natural defecations free from any mucus.

SOME LESS FREQUENTLY CONSIDERED PORTALS OF INFECTION IN ARTHRITIS AND IRITIS

ERNEST E. IRONS, M.D.

CHICAGO

The general principle that recurrent metastatic infections may result from chronic local infections seems well established, and the search for chronic hidden infections has become routine in the examination of patients, particularly those afflicted with arthritis and iritis. In many cases the removal of such chronic local infections is followed by freedom from recurrences of the metastatic lesions in eyes or joints, and the relief of the patient from his disability. In other cases, in many of which the clinical appearances of the lesions in the joints are indistinguishable from those of the favorable group, the removal of chronic local infections, if found, fails to free the patient from recurrent lesions, and the disease progresses. While much has been accomplished in the treatment of arthritis and similar metastatic infections, the study of the symptomatology and mechanism of chronic infections is by no means complete, and offers an interesting field for investigation not alone in relation to lesions of the joints and eyes, but also in other branches of medicine, notably in dermatology. In inviting attention to portals of entry other than those of the conventional sites of chronic infection, I recognize that the mechanism suggested is applicable to only a part, and perhaps a small part, of the unsolved group. The problem is, however, complex, and efforts to solve a part may contribute to the solution of the whole.

Before I pass to the consideration of the unsolved group, it will be of advantage to consider what hap-

8. Torrey, J. C.: The Fecal Flora of Typhoid Fever and Its Reaction to Various Diets, *J. Infect. Dis.* 16: 72-108, 1915.

pens in the patient in whom the removal of a tonsillar abscess, for example, is followed by freedom from a previously recurrent arthritis or iritis. The removal of the tonsils may occasion very little local reaction, and the subsequent improvement in the joints or the eye may be slowly progressive, so that after a few days the joint is free from pain or swelling, and the residual functional disturbance is proportional only to the mechanical damage incurred by previous inflammation; the inflammatory reaction in the eye subsides gradually, and the return of vision depends on the degree of clouding of the media, and mechanical disturbance resulting from the inflammation of the uveal tract. The favorable end-result is apparently effected by the removal of the local infection, from which infection organisms can now no longer pass into the circulation and produce distant metastases.

In occasional cases in which the final result may be equally favorable, the removal of the tonsils may or may not be attended by fever and local inflammation. The effect on the eye or joint is, however, more striking; the inflammation in the eye disappears within twenty-four hours, perhaps permanently; the effect on the joint may be as rapid, but is less easily observed. Such results are similar to those seen occasionally after the intravenous injection of foreign protein, and, like them, are probably nonspecific. This sudden and remarkable improvement following the removal of a local area of infected tissue may be misleading, in that it may occur in patients in whom subsequent events show that the removal of this tissue did not effect a cure. Either the patient was the subject of multiple infections, of which only part was removed, or the cause of the disease in the joint or eye entered the body from some other source.

A review of the group of cases in which search for, and removal of, chronic local infections failed to give favorable results will show that many belong to the composite group of arthritis known as arthritis deformans, in which other factors, such as disturbances of nutrition, family predisposition, and the persistence of infection in the joints themselves, presumably play an important part in the continuation of the disease. In the present discussion it is desired to omit the group of frank arthritis deformans, not because the same principles may not apply here, but because other factors first enumerated complicate the problem to a degree greater than in other types of arthritis and metastatic infection, and tend to lead aside from the issue of the portal of entry. There remain a considerable number of metastatic infections in which a thorough examination fails to give a satisfactory result in the search for the cause along the commonly accepted definition of focal infection. The prompt relief from metastatic infection which has followed the removal of chronic local lesions in favorable cases, the evident soundness of the general principle that recurrent bacterial invasion of the joints may originate from small areas of local infection, and the name "focal infection" itself have led to the general clinical conception, assumed, if not formally expressed, that all metastatic lesions of this sort, not preceded by one of the recognized general bacterial infections, enter the body from some pre-existing focus. It is consequently assumed that if the search is thorough and extensive enough, a primary offending lesion may be found and removed. The search is prosecuted with more diligence than thought, and frequently patients lose teeth and other parts of their bodies without profit, and to the discredit of

a fundamentally sound but misinterpreted clinical principle.

Three less frequently considered portals of entry of recurrent infections present themselves: (1) the mucous membranes of the upper respiratory tract; (2) the tissues about the hila of the lungs, and (3) the intestinal tract. In some of these, the lesions are chronic and localized; in others, the infection enters directly through mucous membranes without evident previous lesion.

THE UPPER RESPIRATORY TRACT

It is generally accepted that many infections begin as local superficial inflammatory lesions of the nasopharynx; if mild, they pass under the diagnosis of a "cold"; if more severe, they may become general infections, as in the severe streptococcal infections of 1917. In health, organisms that reach the buccal and pharyngeal mucous membranes are usually quickly removed, to a large extent by the mechanical flushing action of the secretions, as shown by Bloomfield.¹ As he points out, there is evidence that invasion of intact mucous membranes by bacteria may occur, and if at the time of such invasion the resistance of the body cells and fluids is lowered, or if the virulence or invasiveness of the organism is high, the invader may enter the blood stream. The experiments of Thiele and Embleton showed that general infection from the buccal mucous membrane occurs in guinea-pigs fed with virulent bacteria, provided the food is coarse enough to produce minor lesions of the mouth.² The invasion of the body by way of the buccal and pharyngeal mucous membranes is often accompanied by evidence of enlargement of regional lymph nodes, as in experimental infections with tubercle bacilli, and clinically, regional lymph node enlargement may afford the clue to the route of invasion in developed infections of other kinds. A group of acute infections characterized by initial pharyngitis without tonsillitis, and by cervical and sometimes general enlargements of lymph nodes and spleen, which apparently is similar to the disease described years ago under the title of glandular fever, has recently been brought to the attention of pediatricians. While most of these cases occur in children, a like condition is sometimes encountered in adults, and occasionally in these a mild acute arthritis occurs. The arthritis as well as the adenopathy subsides rather promptly, and therefore does not present a serious problem. The condition is, however, of interest as an example of probable systemic invasion through the pharyngeal mucous membranes, and because the occurrence of the arthritis may suggest a search for other conventional sources of infection in arthritis. In patients subject to acute articular rheumatism, recurrences of acute rheumatic fever, preceded by pharyngitis, are sometimes seen in those whose tonsils have been removed as a prophylactic measure. Mild temporary arthritis occasionally follows acute streptococcal pharyngitis and colds in patients in whom there is no evidence of intervening sinus or other local infection.

THE LOWER RESPIRATORY TRACT

Aside from the chronic suppurative lesions of the lungs which may be the source of distant metastases, there is an interesting group of cases in which the primary lesion is apparently at the hila of the lungs, and in which other areas of chronic infection can be

1. Bloomfield, A. L.: *Am. J. M. Sc.* **164**: 854 (Dec.) 1922.
2. Thiele, F. H., and Embleton, D.: *Proc. Roy. Soc. Med.* **7**: 69, 1913-1914.

excluded with reasonable certainty. These cases have been more numerous in the years since influenza has been epidemic.³

The clinical features of this group are: recurrent arthritis; attacks of erythema, with nodular swellings resembling clinically erythema nodosum or erythema multiforme; frequently asthmatic seizures in adults not previously subjects of asthma, and definite peribronchial thickening, particularly of the lower lobes, with sometimes enlargement of the lymph nodes at the hilum of the lung, as shown by fluoroscopy and roentgenograms. The erythema, arthritis and asthma may occur singly or together. The pulmonary condition has usually followed bronchopneumonia, and is not tuberculous. Periods of irregular fever of from 100 to 103, lasting from a few days to a week, occur, and with these febrile attacks come the erythema and arthritis. There is a moderate leukocytosis. Blood cultures, both aerobic and anaerobic, during the exacerbations of fever have usually shown no growth. Apparently, the infection is resident in the peribronchial tissues and lymph nodes at the hilum of the lung, and is therefore to be regarded as an unusual type of infection resident in a local lesion rather than as a renewed invasion of the body through the respiratory mucous membranes. The diffuse erythema and asthma suggest a protein intoxication possibly derived from the infecting bacteria or from the tissues affected by them. Several of these patients have been greatly benefited by therapeutic doses of the roentgen ray directed toward the tissues at the hila of the lungs.

THE GASTRO-INTESTINAL TRACT AS A PORTAL OF INFECTION

In certain of the acute specific diseases, such as typhoid fever, and in some chronic infections, such as tuberculosis of intestinal origin, the infecting organisms enter the body by way of the gastro-intestinal tract. The question as to whether other organisms which are not able to produce acute or chronic continuous infection can pass through the intestinal wall at intervals, enter the blood stream, lodge in the joints or other tissues and produce recurrent metastatic lesions similar to those produced by organisms resident in chronically infected areas, is of considerable clinical importance. It is evident that, in view of the large numbers of bacteria either temporarily or permanently resident in the bowel, the wall of the intestine must present, under normal conditions of health, a fairly effective barrier against bacterial invasion. When, however, these normal conditions are varied by inflammatory or other changes in the intestinal wall, or by modifications in normal resistance of the body to infection, it is conceivable that bacteria other than those capable of causing a progressive bacteremia may enter the body through this portal. The problem is evidently concerned with (1) the passage of bacteria through the stomach and their fate in the small and large intestine; (2) the permeability of the mucosa of the intestine for small particles and for bacteria, and (3) the survival of these bacteria in the lymphatics, lymph nodes and blood, and their subsequent lodgment in the eyes, joints and other structures. As in other problems of infection, the relative values of the ability of the invading bacteria to survive a progressively changing

environment, and the resistance of the body cells and fluids to bacteria, are intimately involved.

In addition to gastro-intestinal symptoms which occur in the specific infectious diseases, such as typhoid fever, the causal organisms of which usually enter the body by way of the gastro-intestinal tract, disturbances in the stomach and intestine of varying degree, with nausea, vomiting, anorexia, diarrhea or constipation, are frequent in many other infections and are often merely expressions of functional disturbances of the intestinal tract coincident with actual infection elsewhere in the body. In some of these infections it is possible that the infecting organisms, whose chief site of attack is the tonsil, nose or respiratory tract, pass down the gastro-intestinal canal and there act as direct excitants of inflammation and diarrhea. In another group, the intestinal symptoms apparently result from the embolic lodgment of organisms in the intestinal mucosa, a mechanism similar to that in infectious arthritis. This seems to be true in certain cases of colitis, in which a proctoscopic examination shows, in addition to the ulcers, small hemorrhagic areas in the mucosa, with here and there beginning necrosis.

In infectious arthritis, there are sometimes accompanying gastro-intestinal disturbances; in many, these disturbances appear to be secondary effects of the infection, or to result from interference with normal exercise and food-taking; but in some, the relation of symptoms is such as to suggest the possibility that the intestinal infection came first, and that the arthritis resulted from bacteria which entered the body through the intestinal mucosa.

There are numerous case reports of iritis associated with gastro-intestinal upsets, constipation or diarrhea in which healing of the iritis has apparently been hastened by treatment directed toward the intestinal tract, either by laxatives or by modifications in diet, with the elimination or reduction of proteins, fats or carbohydrates. It is entirely possible that the real source of infection in some of these cases was in the intestinal tract as assumed, but in many cases, no evidence is furnished to show that other of the recognized possible sources of infection were investigated and excluded. Further, it is possible that recovery may have been hastened by some of the measures referred to, indirectly through the improvement of general nutrition and increase of bodily resistance to infection; and hence, the fact of recovery following dietary or other treatment is not conclusive evidence of the direct etiologic relation of the intestinal infection to the iritis. It is thus difficult to prove directly, in the individual case of iritis or arthritis, that the infection that caused the metastatic lesion entered through the intestinal tract; but by demonstrating the absence of other sites of infection, the probability of an intestinal portal of entry may be arrived at, provided the conditions under which invasion of the body from the intestine occurs are known.

PERMEABILITY OF THE INTESTINAL WALL

The number and the varieties of organisms that enter the intestine are greatly reduced by the antiseptic action of the gastric juice. Normal stomach contents after an Ewald meal are usually sterile so far as concerns ordinary pyogenic bacteria; yeasts, sarcinae and certain aciduric bacteria are frequently found in stomach contents of normal or increased acidity. Gastric juice (free hydrochloric acid from 20 to 40) or hydrochloric acid of corresponding strength in dilution of 1:16 will

3. Harkavy, Joseph (Rôle of Unresolved Pneumonia in Bronchial Asthma, *J. A. M. A.* 79: 1970 [Dec. 9] 1922) has noted the occurrence of asthma, and in one instance, arthritis, in patients, following bronchopneumonia.

kill hemolytic streptococci in ten minutes and, in higher dilutions up to 1:64, in one hour. Other common pathogenic bacteria, such as the colon bacillus and *Streptococcus viridans* show a similar, though somewhat less, degree of susceptibility to normal gastric juice. This antiseptic action is not continuously effective throughout the twenty-four hours, however, for we were able to isolate hemolytic streptococci from the stools of 30 per cent. of eighty-five patients with scarlet fever, although in some instances repeated attempts were necessary.⁴ Organisms within the intestine thus may be recent arrivals as well as older residents.

The permeability of the wall of the intestine to small particles and bacteria within its lumen has been extensively studied in the investigation of the intestinal origin of tuberculosis, of pulmonary anthracosis, of conditions affecting the sterility of stored blood serum, of the route of invasion of certain infectious diseases and, in the course of observations, on antiperistalsis and on the mechanism of the absorption of fat. From experimental evidence in animals, it appears that while the intestinal wall is not readily permeable to bacteria, or at least, bacteria which do pass the first barrier are caught in the mesenteric lymph nodes, in exceptional cases a few organisms may pass into the blood by way of the thoracic duct.⁵ It does not follow, of course, that the presence of such bacteria indicates a condition of sepsis, for they may still be destroyed in the blood, or may perish in the tissues in which they lodge. When acute diarrhea is produced, the experiments of Basset, Carré and others would indicate that the number of organisms entering the thoracic duct is larger. In a limited number of experiments in dogs after free catharsis, we were not able to obtain such an increase, however. Williamson and Brown⁶ were unable to recover *B. prodigiosus* from a fistula of the thoracic duct in dogs by culture of the lymph after ingestion of the organisms, regardless of diet or previous catharsis.

The observations of McCarrison⁷ on monkeys, fed on a deficient diet, in which he found bacteria already present in the tissue spaces and within the blood vessels of the intestinal wall at the site of hemorrhagic and ulcerating lesions of the intestine, indicate the importance of the factor of injury to the bowel wall.

BLOOD CULTURES IN ULCERATIVE COLITIS

In attempting to correlate the results of animal experiment with conditions encountered in man, it seemed advisable, first, to determine whether or not bacterial invasion of the blood could be demonstrated in ulcerative lesions of the intestine of man in the absence of fatal or serious sepsis. Ulcerative colitis, or colitis gravis, presents conditions in several respects suitable for such study. In addition to the abdominal distress, mucus, pus and blood in the stools, the ulcerative lesions of the bowel demonstrable by the proctoscope and at operation and necropsy, and the symptoms of malnutrition and anemia, patients with ulcerative colitis frequently show periods of increased fever, occasionally chills, and in some cases recurrent arthritis. At necropsy, also, enlargement of the mesenteric lymph nodes is pronounced. The arthritis and accessions of fever are suggestive of recurrent bacterial

invasion, and it therefore seemed possible that a transient bacteremia might be demonstrable.

Through the courtesy of Drs. Sippy and Brown, Dr. Apfelbach and I have had the opportunity of studying four cases of ulcerative colitis, and in two of the four have isolated organisms in cultures from the blood during febrile periods. In both successful cases the organism was a gram-positive staphylococcus which produced a marked zone of hemolysis on blood agar plates, and was identical with a staphylococcus occurring in overwhelming numbers in cultures of the stools of the same patients. Great care was exercised in providing necessary bacteriologic controls, and it is believed that the organisms present in repeated blood cultures, though in small numbers (not more than two or three colonies on a plate), were present in the blood and were not contaminations. All four patients recovered.

In the experiments on animals, as well as in the observations in man, the conditions of bacterial invasion of the body in this type of infection are not those encountered in sepsis, but rather those of the entry of occasional organisms which are detected at various points along their route of invasion. The difficulty of detecting occasional organisms, and of determining their origin, by excluding contamination, is much greater than when experiments concern conditions of overwhelming sepsis. Experimental and clinical results therefore require the more critical evaluation before they can be accepted, and it is recognized that these clinical observations should be extended and repeated. Even when organisms have entered the blood stream, it of course does not follow that they will be able to produce clinically recognizable metastatic lesions. Many will be destroyed en route in the blood stream, provided the resistance of the patient to infection is not unduly depressed; when, however, conditions are favorable to the entry of organisms through the bowel wall, and when at the same time resistance to infection is depressed, it seems quite possible that metastatic lesions from an intestinal portal may occur.

It should be made clear that instances of this sort are few, compared with the large numbers of metastatic infections of other origin, and that in perhaps the majority of instances in which temporary intestinal symptoms accompany recurrent metastatic infections, they are secondary and incidental. The satisfactory demonstration of direct invasion through the intact intestinal mucosa of man by organisms which can cause arthritis without continued general infection presents difficulties that so far have not been overcome. That the intestinal tract may sometimes be the portal of entry of recurrent metastatic infection seems certain.

122 South Michigan Avenue.

Undergraduate Training in Tuberculosis and Public Health Work.—Physicians will greatly appreciate the opportunity which many of the present undergraduate men are having to acquire more training in tuberculosis work and in public health matters generally than was their lot in former years. In 1916 the National Tuberculosis Association endorsed the idea of having tuberculosis wards in general hospitals while at the Atlanta, Ga., meeting of the National Nursing Associations and at the Boston meeting of the American Medical Association the project of having pavilions for the tuberculous in connection with general hospitals was approved. This means greater efficiency in the training of both physicians and nurses in work for the tuberculous. So much is the national association impressed by this need that it is giving special attention to work with medical colleges, aiding them to develop their undergraduate tuberculosis training.—A. J. Strawson: *Nation's Health* 5:148 (March) 1923.

4. Moody, W. B., and Irons, E. E.: *J. Infect. Dis.* 27:363 (Oct.) 1920.

5. Moody, W. B., and Irons, E. E.: *J. Infect. Dis.* 32:226 (March) 1923.

6. Williamson, C. S., and Brown, R. O.: *Am. J. M. Sc.* 165:480, 1923.

7. McCarrison, R.: *Brit. M. J.* 1:822 (June 19) 1920.

OBSERVATIONS ON USE OF INSULIN
IN DIABETES MELLITUS*

W. H. OLMSTED, M.D.
AND
S. H. KAHN, M.D.
ST. LOUIS

The discoverers of insulin have made fundamental observations¹ on its clinical application to the treatment of diabetes. The observations may be thus summarized:

1. Blood sugar is reduced and glycosuria disappears.
2. Glycogen is stored in diabetic animals, and the respiratory quotients are raised, showing the burning of sugar.
3. Ketonuria rapidly disappears, and patients in coma may be successfully restored to consciousness and life.
4. An overdose of insulin in animals produces violent symptoms of a convulsive nature, followed by coma and death. The antidote for this state is glucose.

Of the mass of invaluable physiologic data presented by the Toronto workers, these are the main facts of direct clinical bearing.

Through the courtesy of Professor Shaffer of the department of biologic chemistry, insulin² produced

great in the one case as in the other, and sugar present before administration bore the same ratio. This observation suggested a quantitative relationship between sugar metabolized and insulin given. If the administration of insulin is stopped, sugar promptly reappears in a few hours, but may not reach its former level for several days (Chart 6).

The effects of insulin on the blood sugar is very marked, as seen in Table 1. Large doses were here

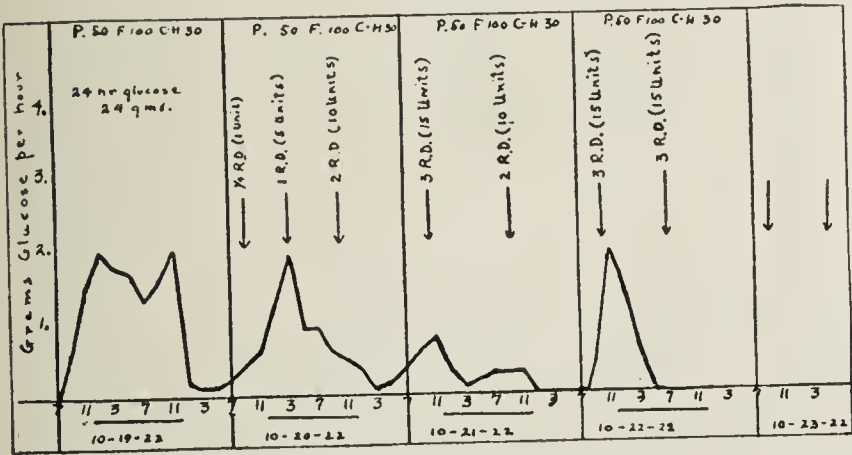


Chart 1.—Rate of excretion of sugar in Case 1 (L. S., a woman, aged 23). Duration of disease, two and one-half years. Weight at onset, 130 pounds (59 kg.); height, 5 feet, 1½ inches (156 cm.); present weight, 82 pounds (37 kg.). In Charts 1 and 2, R. D. refers to rabbit dose. This insulin was standardized on rabbits weighing about 2.5 kg.; therefore an R. D. would equal about 5 or 6 "units." The urine was collected every two hours. The sugar was determined by Benedict's method.

by his laboratory became available for clinical use, Oct. 1, 1922. The observations here recorded have been made from work on more than forty patients. Effort has been made to restrict our observations to severe cases and to make them as complete as possible.

GLYCOSURIA AND ACETONURIA

The effect of insulin on sugar and acetone excretion is graphically shown by Charts 1, 2, 3 and 4. These two patients with diabetes were under observation at the time insulin was made available for our use. They illustrate well the facts demonstrated by Banting and his co-workers.

The disappearance of sugar from the urine with administration of insulin is proportional to the sugar present and the dose of the extract given. All diabetic patients may be made sugar free if enough extract is given. In the two patients whose charts are shown (Charts 1 and 2), the dosage was more than twice as

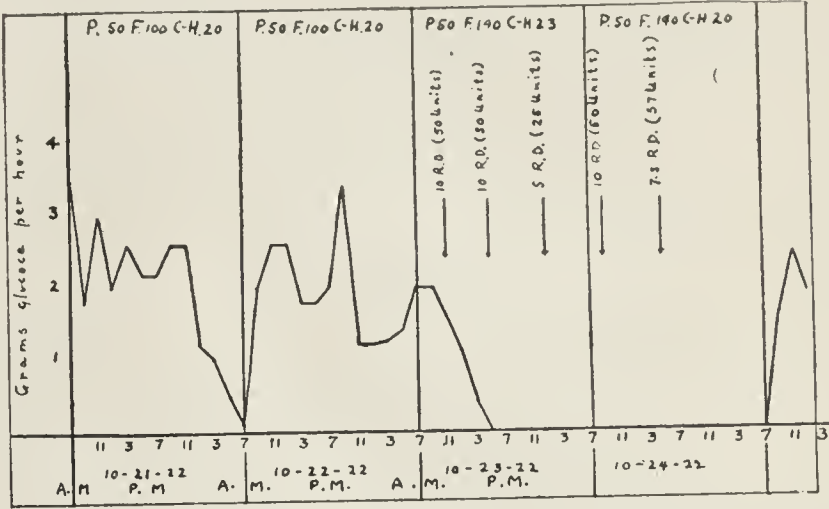


Chart 2.—Rate of excretion of sugar in Case 2 (R. H., a man, aged 20). Duration of disease, two years; weight at onset, 120 pounds (54 kg.); height, 5 feet, 7 inches (170 cm.); present weight, 90 pounds (41 kg.).

purposely given to note the effect of insulin on the basal metabolic rate. When insulin is being used in treatment, blood sugar determinations are of value in preventing overdose. If symptoms of the latter con-

TABLE 1.—Effect of Insulin on Blood Sugar*

Case	Date	Blood Sugar Before Insulin		Insulin		Blood Sugar	
		Time	Gm. per 100 C.e.	Time	Units	Time	Gm. Sugar per 100 C.e.
1	11/27/22	.....	.....	7:15 a.m.	28	10:55 a.m.	0.045
3	11/28/22	7:15 a.m.	0.162	7:55 a.m.	20	11:25 a.m.	0.046
4	12/20/22	8:10 a.m.	0.160	8:15 a.m.	26	11:20 a.m.	0.061

* Insulin was administered in the postabortive state.

dition are marked, it is not well to wait on sugar determination before treatment is instituted. Blood sugar determinations are especially useful when one is treating cases of coma. Here, when the patient is

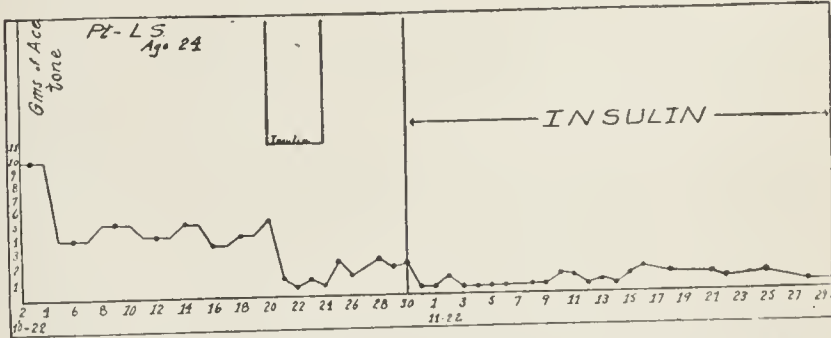


Chart 3.—Reduction of ketonuria in Case 1: In Charts 3 and 4, figures represent the days of the month; arrows, two days of insulin administration; figures on base line, days of month.

incontinent, the response of the blood sugar to a set dose is a rough index to further dosage. It should be pointed out that the ordinary method of taking the blood from the patient before breakfast gives no indication of his blood sugar during the absorption period.

Charts 3 and 4 illustrate the rapidity of the fall of acetone excretion. Chart 4 illustrates a patient with

* From the Department of Internal Medicine, Barnes Hospital, Washington University School of Medicine.

1. An excellent summary of the publications of Banting and his collaborators up to November, 1922, is given by Allen, F. M.: J. Metabol. Res. 2: 125, 1922. McLeod, Brit. M. J., Jan. 6, 1923.

2. Insulin-Lilly was supplied by Eli Lilly & Co. This product and that made by the university were identical in their effects.

complete diabetes. The acetone found in this case represents 70 gm. of incompletely burned fat. From metabolism studies, it has been calculated that about 100 gm. of fat was metabolized. If we were to add to the urine the acetone that was excreted through the lungs, a not inconsiderable figure, it would probably be shown that all fat was incompletely burned. The acetone in this case disappeared after the administra-

balance was shown. Attention is called to the fact that a nitrogen balance was established without a substantial increase in the calories above the preinsulin level. In all cases in which the urine nitrogen has been followed (more than twenty), no difficulty has been met in

TABLE 2.—Urinary Nitrogen of a Patient with Diabetic Coma (Case 2)*

Date	Urine Sugar	Urine Nitrogen	Food Calories
12/ 8/22.....	29 ?	.....	.....
12/ 9/22.....	47	12.18	.....
12/10/22.....	50	16.65	.....
12/11/22.....	45	13.30	1,340
12/12/22.....	38	10.83	1,340
12/13/22.....	19	7.66	1,340
12/14/22.....	21	6.90	1,340
12/15/22.....	15	5.48	1,340

* Basal calories, 1,200; food nitrogen, 8 gm.; carbon dioxide in percentage by volume: 12:30 p. m. (12/7/22), 14; 6:45 p. m., 13.6; 10:30 a. m. (12/8/22), 59.5.

establishing a nitrogen balance, even with total loss of carbohydrate tolerance. Table 2 is the urinary nitrogen of a patient with diabetic coma (Patient 2). In four days, a nitrogen balance was established. To recall the doubtful success of low protein, high fat diets without insulin, Table 3 is shown. Here are six

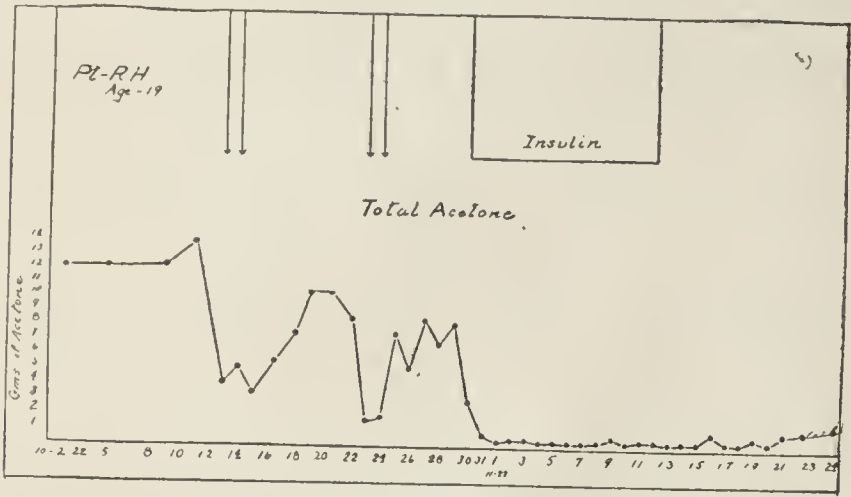


Chart 4.—Reduction of ketonuria in Case 2.

tion of insulin, the diet containing 30 gm. of carbohydrate and 50 gm. of protein. It is significant that in the course of the month's treatment shown, the acetone bodies did not completely disappear from the urine, but fractions of a gram, up to a gram of total acetone, were found every day. The same observation has been made on other patients. From the standpoint of the ketogenic-antiketogenic balance, no acetone should have appeared. In Chart 4, after the administration of insulin was stopped, the acetone excretion never reached its former level, even after ten days. This patient left the hospital to go on a carbohydrate spree, and returned in coma with an accompanying high degree of acetonuria.

NITROGEN BALANCE

One of the most striking influences of insulin administration on metabolism is the rapidity with which nitrogen balance is established in a severe case. Charts

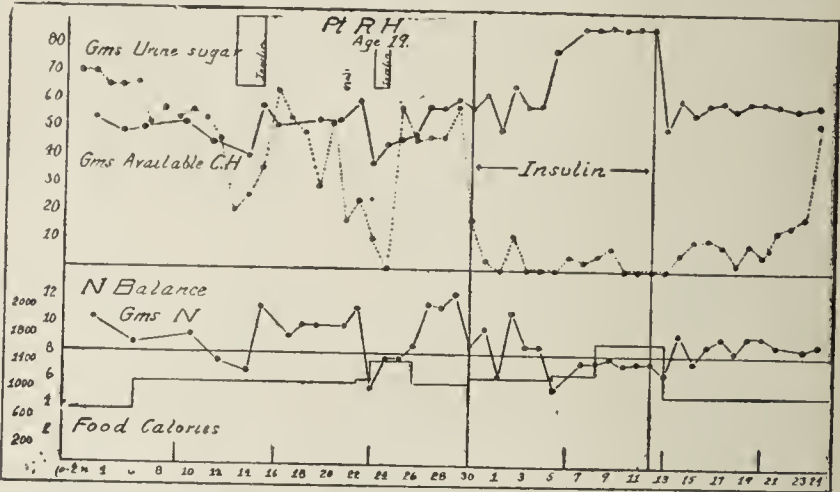


Chart 6.—Available carbohydrate in the urine in Case 2: Average insulin dosage, 14 R. D. a day; sugar excretion before insulin, from 55 to 60 gm.

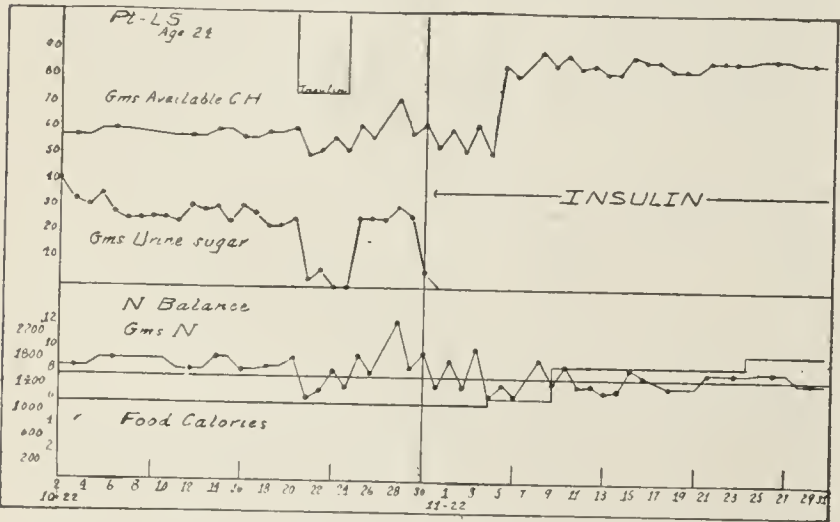


Chart 5.—Available carbohydrate in the urine in Case 1. Nitrogen multiplied by 3.3 plus food starch. The food nitrogen was kept at 8 gm. during the whole two months. Average insulin dosage, 7 R. D. a day; sugar excretion before insulin, from 25 to 30 gm.

5 and 6 illustrate the effect of insulin administration on the nitrogen balance in the same two patients shown in previous charts. Both were losing from 0.5 to 2 gm. of nitrogen daily. The first day of insulin administration established a positive nitrogen balance in both. When insulin was stopped, a negative balance resulted, and on the administration of insulin again, a positive

patients with diabetes, all with a carbohydrate tolerance below 10 gm. Although four of the six were fed from 200 to 500 calories in excess of their basal requirements, all but one were in negative balance. No better illustration of the protein-sparing properties of carbohy-

TABLE 3.—Nitrogen Balance (Before Insulin) in Cases of Severe Diabetes Treated with High Fat-Low Protein Diets

Case	Carbohydrate Tolerance Gm.	24 Hour Basal Calories	Basal Rate	Food Calories	Food Nitrogen	Urine Nitrogen	Balance
5	0	1,330	-12	1,820	8	11.4	-3
6	10	1,200	....	1,500	8	8.65	-0.65
7	0	1,240	-11	1,100	8	9.50	-1.5
8	5	1,360	-7	1,820	8	10.40	-2.4
9	0	1,280	-19	1,460	8	7.86	+0
10	5	1,170	....	1,100	8	8.90	-0.9

drate can be shown than the effects of adequate doses of insulin to the patient with severe diabetes. The value of fat in this respect must be considered entirely subsidiary.

TOTAL METABOLISM

Insulin offers a particularly inviting opportunity to study the rise of the metabolic rate in patients with severe diabetes. Table 3 shows the usually low rates

attained in severe cases. Before insulin, the lower the rate the less bodily tissue was consumed. We have seen rates as low as 30 per cent. below the normal for age and sex. With the feeding of these patients, the basal rates rise but very slowly. Tables 4, 5 and 6 show three such cases. Usually it requires from fourteen to twenty-one days for rates as low as 20 per cent. below normal to rise to a level of 10 per cent. below normal—the lower limit of the normal variation. The depths to which undernutrition has hindered oxidative processes may be clearly realized. With insulin available for use, it becomes unnecessary to force metabolic rates so low. In fact, undernutrition

TABLE 4.—Basal Metabolism in Case 11*

Date	Days after Insulin	Basal Rate %	Basal Calories per 24 Hrs.	Food Calories	Units Insulin
11/14/22	4	27.3—	992	1,336	22.4
11/20/22	10	29.0—	881	1,563	25
11/26/22	16	19.0—	993	1,831	25
12/ 2/22	22	12.7—	1,036	1,890	25
12/12/22	32	7.3—	1,063	2,140	30
12/19/22	39	10.0—	1,048	2,096	40
12/28/22	48	10.0—	1,070	2,188	40

* Mrs. S., aged 47; the food calory tolerance was less than the twenty-four hour basal requirement.

TABLE 5.—Basal Metabolism in Case 4*

Date	Days Before or After Insulin	Basal Rate %	Basal Calories per 24 Hrs.	Food Calories	Units Insulin
12/ 3/22	4	19.0—	1,159	1,215	..
12/ 6/22	1	22.0—	1,147	1,215	..
Insulin treatments begun 12/7/22					
12/ 7/22	..	19.0—	1,187	1,215	20
12/12/22	5	11.0—	1,324	1,350	18
12/18/22	11	10.7—	1,339	1,472	35.3
12/19/22	12	21.0—	1,159	1,472	26.4
12/20/22	13	12.0—	1,291	1,469	26.4
12/27/22	20	12.0—	1,276	1,350	26.4
1/ 2/23	26	11.6—	1,291	1,980	26.4

* R. S., aged 24; the food calory tolerance was less than the twenty-four hour basal requirement.

TABLE 6.—Basal Metabolism in Case 12*

Date	Days Before or After Insulin	Basal Rate %	Basal Calories per 24 Hrs.	Food Calories	Units Insulin
11/10/22	6	19.5—	860	1,221	..
11/13/22	3	16.0—	890	1,189	..
Insulin treatments begun 11/16/22					
11/19/22	2	15.5—	915	1,200	7
11/22/22	6	19.3—	885	1,341	20
11/26/22	10	8.5—	995	1,787	20
11/27/22	11	7.2	1,000	1,787	20
11/28/22	12	11.5—	967	1,787	20
12/11/22	25	6.9—	1,056	1,913	10
12/18/22	32	5.6+	1,140	1,890	26
12/27/22	41	Normal	1,082	1,905	35
1/ 2/23	47	5.8+	1,173	1,791	36

* Mrs. M., aged 33.

must give way to normal, or perhaps slightly subnormal, metabolism. Even with the use of the extract, it will not be possible, in some cases, to feed sufficient work calories, and mild degrees of undernutrition will be necessary. Experience with undernutrition leads to the belief that low rates always reduce resistance to infection, and the best that can be said for extreme degrees of undernutrition is that it is a lingering death.

SUBJECTIVE SYMPTOMS

Those who have been interested in the treatment of patients with severe diabetes have been impressed with the listlessness, weakness and inertia shown. The earliest manifestation shown after the administration of insulin is the return of energy. Patients voluntarily

get out of bed and exhibit evidence of return of strength in their movements. Men often exhibit a definite return of sexual power and libido.

When given without accompanying sufficient carbohydrate, insulin produces symptoms accompanying the hypoglycemia which can be tabulated as in Table 7.

These symptoms pass off rapidly with administration of carbohydrate food. Animals (rabbits) in a con-

TABLE 7.—Symptoms Accompanying Hypoglycemia

Subjective		Objective
Headache, giddiness or dizziness, restlessness, numbness of extremities		Restlessness
Chilliness or sense of warmth		Sweating
Trembling		Paleness
Sense of cold		

Stage of Hypoglycemia

Blood sugar, from 0.06 to 0.04

Shaking chill without fever

Muscular tremors, hypothermia

siderable percentage have convulsions when the blood sugar reaches 0.04. As already shown, patients with blood sugars as low as 0.045, although showing marked symptoms, have not, in our experience, reached the convulsive stage.

QUANTITATIVE RELATIONSHIP OF INSULIN TO CARBOHYDRATE BURNED

In the earliest experiments on two patients, the one eliminating just twice as much sugar as the other, it was observed that the amount of insulin necessary to make both aglycosuric amounted in the one case to twice as much as in the other. A mathematical relationship between the dose of insulin and the amount of carbohydrate burned was indicated. Our interest has been centered about the determination of this relationship, and a later paper on the subject is under preparation.

It can be said that in the patient with severe diabetes who is not gaining in tolerance there is apparently a very definite relationship between insulin unitage and

TABLE 8.—Twenty-Four-Hour Course of Blood Sugar in a Patient Receiving One Dose of Insulin Followed by a Meal Containing Two Thirds of the Total Carbohydrate

Time	Blood Sugar per Cent.	Insulin Units	Food		
			Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.
Midnight.....	0.261	..	....	....	....
7 a. m.	0.184	..	....	....	....
8 a. m. ....	....	..	10.8	40.1	8.8
10:30 a. m.	0.200	..	....	....	....
11:00 a. m. ....	....	20	....	....	....
12:30 p. m. ....	....	..	20.4	31.6	59.9
2 p. m.	0.216	..	....	....	....
5 p. m. ....	....	..	20.0	67.3	9.3
7:30 p. m.	0.224	..	....	....	....
10:30 p. m.	0.216	..	....	....	....
Totals.....	....	....	51.2	139.0	58.0

the amount of carbohydrate burned. The relationship is comparable to that found between ketogenic and antiketogenic substances. For each unit of insulin-Lilly given, from 1 to 2 gm. of carbohydrate is burned.

TECHNIC OF INSULIN ADMINISTRATION

At present it is necessary to administer insulin by the subcutaneous or intravenous route. Since it acts vigorously and within one or two hours' time, it must be given when carbohydrate is being absorbed. If

given in the fasting state, hypoglycemia will result, as shown by Table 1. It seems best, therefore, to administer insulin a short time before meals, or possibly twice a day. Such technic means multiple injections, which are objectionable to the patient and especially impracticable after the patient leaves the hospital. The curve of the rate of sugar excretion in the diabetic depends on the time of the administration of meals.

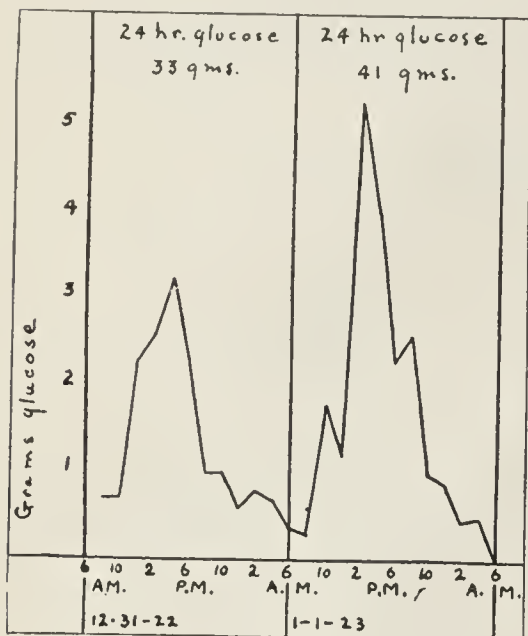


Chart 7.—Rates of glucose elimination (no insulin). Figures on base line are hours. Urine collected every two hours. This chart is only one of several thus charted. Meals at 8 a. m., 12 noon and 5 p. m.

possible to limit the insulin injections to one each day. For five months the following procedure has been used:

Two thirds of the total carbohydrate in the diet is concentrated in the 12 o'clock meal in all patients who are receiving from 20 to 40 units of insulin each day. The total insulin which is being given in twenty-four hours is administered at 10:30 a. m., one and one-half hours before the carbohydrate meal. The morning and evening meals combined are thus restricted to one third of the total carbohydrate. The results have been quite satisfactory. Patients who have been receiving two injections a day were much happier when changed to this procedure. Without its being intentional, it was found that this technic greatly appeals to the psychology of the patient, for it gives him one fairly good meal each day. A trial of the method would, we believe, be especially convincing in this one respect. The disadvantage of the method lies in the volume of the injection necessary. Concentrated solutions of insulin are necessary, at least 10 units per cubic centimeter, and 20 units per cubic centimeter are better.

The question arises, Is this method as efficient as administering insulin in smaller, more frequent doses? Only two patients have been given periods of two injections and also periods of one injection, for comparison. One showed no difference in the amount of sugar burned, and the other burned a few grams more when receiving two injections. Table 8 is the record of the blood sugars of a patient being treated with one injection, and shows the technic of food distribution for three meals.

In using insulin on more than forty diabetic patients, we have never used less than 10 units a day. This adds from 15 to 20 gm. of carbohydrate to the tolerance of the patient, an amount often sufficient, when used with appropriate amounts of fat, to bring about a

positive nitrogen balance in place of a negative one. In such a class of patients, it hardly seems worth while to use smaller amounts of the extract.

Shaffer³ has shown the numerical relationship between the carbohydrate burned and the theoretical amounts of fat that can be burned without ketonuria. For a year and a half, such possible fat tolerance has been evaluated in the metabolism ward by the formula:

$$\frac{\text{Gm. of protein}}{2} + \text{CH in diet} = \text{total carbohydrate}$$

The total carbohydrate multiplied by $2\frac{1}{2}$, equals the possible fat burned without ketonuria. The protein is calculated by multiplying the urine nitrogen by 3.3. Such a simple formula ignores the antiketogenic value of fat and the ketogenic value of protein. But when supplied constantly in work on patients, it has been found practical, and diets can be estimated without tables or slide rule. Table 9 shows the formula worked out. If Shaffer's rules for calculating the ketogenic and antiketogenic balance are applied to this table, it will be found that there are from 100 to 200 antiketogenic millimols in excess of ketogenic millimols. The table shows that by the use of from 10 to 20 units of insulin each day, even the patient with severe diabetes can tolerate 2,000 calories.

Insulin, besides increasing the caloric tolerance, is invaluable in coma and in conditions in which severe infections complicate the disease. Ten patients (Chart 8) in comatose and pre-comatose states have been treated, and all have shown bloodalkali percentages by the Van Slyke method of 25 per cent. or less by volume. Six were below 15 per cent. by volume. In our experience, insulin alone in certain cases does not bring about so rapid a return of blood alkali as when used in conjunction with intravenous alkali. A procedure adapted to the treatment of coma is the administration of 20 units of the extract every three hours. Blood

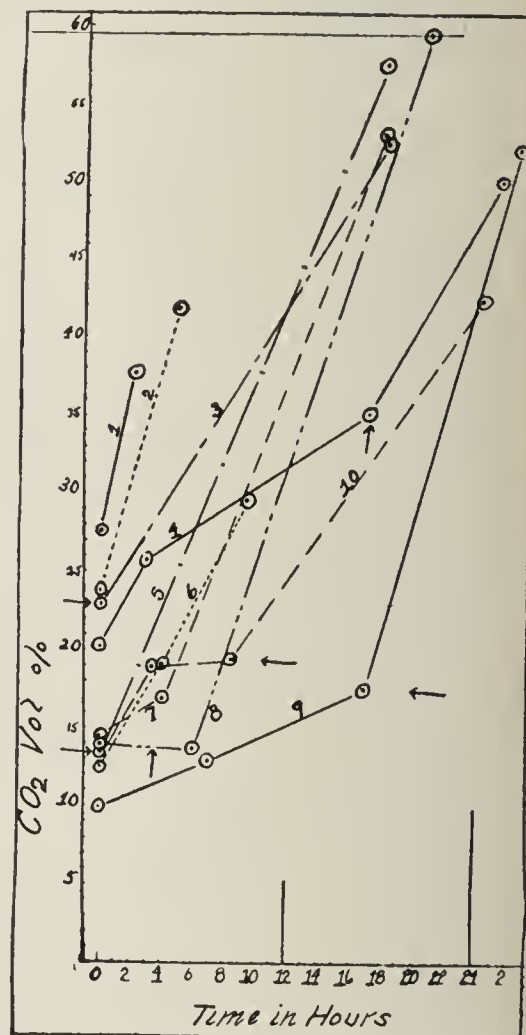


Chart 8.—Rise in blood alkali in cases of severe acidosis. The arrow indicates time when sodium bicarbonate was given intravenously. The amounts of the extract and of alkali shown below were given to bring the blood alkali to normal:

Case	Insulin Units (Lilly)	Sodium Bicarbonate, Gm.
13.....	27	0
14.....	17	8
15.....	25	20
16.....	65	24
17.....	27	56
18.....	70	0
19.....	150	0
20.....	90	36
21.....	118	40
22.....	130	40

sugar and blood carbonate determinations are done before each dose, and future dosage is regulated by the change in the blood sugar. When chemical tests of

3. Shaffer, P. A.: J. Biol. Chem. 54: 399 (Oct.) 1922.

blood are not available, the urine sugar and ferric chlorid reaction must be watched constantly. As soon as the blood carbonate is normal, or the ferric chlorid reaction in the urine becomes faint, the intervals between doses are lengthened to six or eight hours. Carbohydrate food should be given as fruit juices as soon as consciousness fully returns. If, after six hours (60 units), the blood alkali has not risen markedly, we feel that

TABLE 9.—Possible Fat Tolerance *

Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories, (P + CH) × 4; Fat × 9
40	75	10	875
40	100	20	1,140
40	125	30	1,405
40	150	40	1,670
50	87	10	923
50	100	20	1,288
50	137	30	1,553
50	162	40	1,818
50	187	50	2,083
60	175	40	1,975
60	200	50	2,240
60	225	60	2,505
70	237	60	2,653
70	262	70	2,918
70	287	80	3,013

* As shown by $\left\{ \frac{P}{2} + C - H \right\} 2\frac{1}{2} = \text{Fat.}$

bicarbonate should be administered intravenously in doses of from 25 to 50 grams.⁴ Chart 8 shows the recovery from comatose or precomatose states. In Cases 16, 20, 21 and 22, we feel that alkali was especially helpful. Eight of these patients made rapid recoveries from their comatose states. In the two cases in which the patients died, complications were present; in one, complete anuria and in the other, gangrene of the orbit. Of the eight patients making complete recoveries from acidosis and coma, three died at a later time of pyogenic infection, one of pneumonic tuberculosis and one of recurrence of diabetic coma. In the latter case the patient refused to take insulin. We feel that no deaths from diabetic coma should occur when insulin is available for use.

As is well known, when pyogenic infection complicates diabetes, mild cases become quite severe, and patients often pass into coma before they come under suitable treatment. By the use of insulin in such cases, the blood alkali may be restored to normal, and carbohydrate may be administered before the necessary operative procedures are carried out. After such crises, the patients' tolerance may improve to such a degree that insulin may not be required.

When the diabetic patient is operated on, we have found it a useful procedure to give from 20 to 25 gm. of glucose an hour or two before operation and, at the same time, a dose of insulin, which will make possible the burning or storage of this sugar. The evaluation of this dose is based on the assumption that one unit of insulin makes possible the burning of 1.5 gm. of glucose. If the patient is to be operated on in the morning, his usual dose of insulin is added to the dose calculated to burn the glucose. It is of advantage to know the blood sugar level just before the operation, as this information helps evaluate the insulin dosage.

4. The formula of Van Slyke and Palmer is used: Gm. = wt. × K
wt. = weight in kilograms. K = 53 minus the Van Slyke blood alkali reading; gm. = grams of sodium bicarbonate.

Table 10 shows how the blood sugar responds to such procedure.

DOES INSULIN INCREASE THE CARBOHYDRATE TOLERANCE ?

We have observed two patients in diabetic coma, both of which (Cases 7 and 9) showed blood alkali of less than 15 per cent. by volume, which, under insulin, gained in tolerance up to 60 and 75 gm. a day, respectively. This gain is no more than has previously been recorded by Du Bois and Allen. On the other hand, many patients with severe diabetes show no gain in tolerance even after months of insulin administration. The young patient who has a good tolerance is of greater importance than the one who has lost most of his tolerance. Before insulin, the majority of the former class entered the severe class sooner or later. In such cases insulin offers the greatest opportunity to preserve tolerance. Our experience with this group of cases is limited, but the impression is gained that insulin should be administered in small doses, especially to those under the age of 40 who are not overweight. Overweight patients should be reduced by dietary procedures. Great care should be taken in these cases to keep the urine sugar free. We feel that insulin may do great harm if, through its use, laxity in diet results. Even though insulin is being administered, there is no reason to believe that tolerance can be maintained at a high level if the urine contains sugar.

TABLE 10.—Use of Insulin in Surgical Cases

Case	Time	Blood Sugar, per Cent.	Blood Carbonate, % by Vol.	Insulin Units	Glucose, Gm.	Operative Procedure
23	8:00 a. m.	0.154	58.9	..	..
	8:15 a. m.	....	....	40	..	
	9:15 a. m.	....	....	..	40	
	10:15 a. m.	0.145	67.3	..	..
	10:50 a. m.	0.131	64.5	..	..
	10:55 a. m.	....	....	..	..	Nitrous oxid anesthesia 20 minutes
	11:20 a. m.	0.127	61.7	..	..	Amputation midhigh of right leg
24	6:40 p. m.	....	....	40	40	
	8:05 p. m.	0.295	61.7	..	..	Nitrous oxid anesthesia 37 minutes; amputa- tion midhigh of leg
	9:25 p. m.	0.269	51.3	..	..
	11:30 p. m.	0.200	57.0	..	..
25*	10:20 a. m.	0.194	47.5	0	..	Nitrous oxid anesthesia 10 minutes; plaster cast for fracture of femur
	11:30 a. m.	0.228	43.8	..	..
26*	7:00 a. m.	0.160	....	..	..	Ether anesthesia for hysterectomy and ap- pendectomy
	7:05 a. m.	....	....	30	50	
	8:00 a. m.	....	....	..	..	Scopolamin, 1 c.c., mor- phin 0.015
	8:45 a. m.	....	....	..	..	Scopolamin, 1 c.c.
	10:10 a. m.	0.189	52.2	..	..
	10:15-11:15 a. m.	....	....	..	..	Ether anesthetic, 1 hour (4 oz.)
	11:25 a. m.	0.182	47.5	..	..
	12:00 m.	....	....	15	..	
	12:10 p. m.	....	....	..	..	Rectal tap, 750 c.c. H ₂ O
	4:35 p. m.	0.134	54.1	..	..
	7:05 p. m.	....	....	..	..	Rectal tap, 500 c.c.
	10:00 p. m.	....	....	..	..	25 c.c. orange juice
	1:30 a. m.	....	....	10	25	+ 100 c.c. lemon juice

* In Case 25, the patient had no insulin, and only ten minutes of nitrous oxid; the blood sugar rose and the blood alkali fell. In Case 26 the patient had one hour of ether anesthesia and laparotomy. Both patients had mild diabetes, and showed approximately the same carbo-
hydrate tolerance.

The use of insulin, more than ever before, lays a great responsibility on the physician to train the patient in the knowledge of dietetics. Food and insulin must be most carefully balanced so that the blood sugar will be as near normal as possible. Under these conditions the fullest opportunity is given for a gain in tolerance.

A STUDY OF THE ACTION OF CALCIUM IN EXPERIMENTAL COCAIN POISONING*

IRA FRANK, M.D.
JEROME F. STRAUSS, M.D.
AND
WILLIAM A. SMILEY, M.D.
CHICAGO

Toxic symptoms arising after the use of cocain have been observed by practically all men with an extensive practice. Their frequent occurrence was recently emphasized by a report on anesthesia in nose and throat work.¹ This report was prepared by a committee of the Section on Laryngology, Otology and Rhinology of the American Medical Association, and cites the occurrence of thirty-two deaths from local anesthetics in a period of about three years. Of these, twenty-two deaths were verified, and eleven of the twenty-two were due to cocain alone. Cocain combined with procain, apothecin or alypin was responsible for seven more deaths, while the other four were due to procain or apothecin.

The symptoms of cocain poisoning usually appear quite promptly. They are ushered in by a period of nervousness and excitation, sometimes almost of hysteria. Respiration is rapid and deeper than normal, and the pulse is markedly accelerated. The throat is dry, and the patient may complain of a choking sensation. The pupils are dilated, owing possibly to direct action on the muscular fibers of the iris. Convulsions generally follow promptly in the severe cases, but may be absent. They are at first tonic in type, later becoming clonic. Respiration may be entirely suspended during a convulsion, the patient becoming markedly cyanotic. Death may follow quickly from respiratory arrest or from exhaustion, the convulsions following one another in rapid succession. Recovery may occur after a convulsive dose of cocain, but it is the exception. The pharmacologic action of cocain is at first that of a stimulant. The cerebrum is first affected, and later the lower segments of the nervous system. The period of stimulation is short in the severe cases, being quickly followed by a period of depression. Cushny² states that both stimulation and depression may be present at one time in different segments of the brain and stem. The period of stimulation may be so short that it is scarcely noticed, depression being present from the onset of symptoms.

The treatment of cocain poisoning has been entirely symptomatic. General anesthetics have been used to control the convulsions. Morphin has been used for the same purpose, further depressing the exhausted respiratory center. Strychnin has been used for its stimulant effect, but it increases the convulsions. Hofeendahl³ has used chloral hydrate, barbital sodium, and sodium diethylbarbiturate in the treatment of experimental cocain poisoning.

The extensive researches of Auer and Meltzer with calcium chlorid, in which they showed its stimulating effect on the respiratory center, suggested to Mayer the possibility of its usefulness as an antidote in cocain

poisoning. Mayer,⁴ in a series of experiments, investigated this question and reported favorable results. His conclusions, drawn from experiments on the excised frog heart and guinea-pig uterus, may be disregarded because of the necessity of having calcium present in the perfusing solution if the muscles are to retain their activity. Frogs, guinea-pigs and dogs were experimented on, and the conclusion was that calcium is antagonistic to cocain. The antagonistic action is due, according to Mayer, to the calcium ion; and any calcium salt may be used. He reports one clinical case of cocain poisoning in which he used calcium chlorid solution, 10 per cent. intravenously, with satisfactory results. Fabry⁵ also reports a case in which calcium chlorid was used with excellent results.

With the idea of confirming the results obtained by these observers, a series of experiments was undertaken, since, if calcium is actually antagonistic to the depressant toxic effect of cocain, we should have in the use of calcium a valuable, and perhaps life-saving, measure. Rabbits were used throughout the series. Cocain hydrochlorid, 2 per cent., in physiologic sodium chlorid solution, was prepared and sterilized. Sufficient solution of this strength was prepared for twenty-five rabbits, thus assuring a standard solution throughout the experiment. From the literature, it was learned that the lethal dose of cocain for rabbits is about 13 mg. per kilogram of body weight, injected subcutaneously. The lethal dose for the solution prepared was then established, and care taken not to inject any of the solution intracutaneously.

SERIES 1.—EXPERIMENTS TO DETERMINE THE SEQUENCE OF SYMPTOMS AND THE LETHAL DOSE OF COCAIN

EXPERIMENT 1.—A rabbit, weighing 1,050 gm., was injected with 6.8 c.c. of 2 per cent. cocain solution, equivalent to 13 mg. per kilogram of body weight, given subcutaneously. Slightly increased movements occurred after two minutes. Paralysis of the hind legs was noted in seven minutes. In nine minutes, the front legs spread apart, the ears dropped, and the head was markedly flexed on the body. In twelve minutes, the rabbit went into a strong convulsion, clonic in type. This lasted about one minute. There was slight opisthotonos. Respirations were too rapid to count, as was also the pulse rate. There was marked salivation. Urination and defecation occurred. Slight convulsive movements persisted for eighteen minutes. In twenty minutes after the onset of convulsions, the rabbit attempted to raise the head. It was able to maintain an upright position in thirty-eight minutes, and was returned to its cage in one hour.

EXPERIMENT 2.—A rabbit, weighing 1,050 gm., was injected with 8.4 c.c. of the cocain solution, equivalent to 16 mg. per kilogram of body weight. A convulsion occurred in five minutes. This was tonic, followed by the clonic type. There was a short, involuntary cry during the convulsion. Convulsive movements lasted for fifteen minutes, and after thirty minutes, the rabbit was sitting upright. It was returned to its cage in forty-five minutes.

EXPERIMENT 3.—A rabbit, weighing 1,110 gm., was injected with 10.5 c.c. of the solution, equivalent to 19 mg. per kilogram of body weight. A convulsion occurred in ten minutes, and the rabbit died twenty minutes after the injection. Any dose of cocain less than 16 mg. per kilogram of body weight was not to be used, and the lethal dose was evidently between 16 and 19 mg. per kilogram of body weight.

SERIES 2.—EXPERIMENTS WITH CALCIUM LACTATE

EXPERIMENT 4.—A rabbit, weighing 1,290 gm., was injected with 13.2 c.c. solution, equivalent to 20.5 mg. per kilogram of body weight. This was an increase of about 6 per cent.

* From the Nelson Morris Memorial Institute for Medical Research of the Michael Reese Hospital.

1. Mayer, Emil; Skillern, R. H.; Sonnenschein, Robert, and Chamberlain, W. B.: Anesthesia in Nose and Throat Work, *J. A. M. A.* **77**: 1336 (Oct. 22) 1921.

2. Cushny: Pharmacology and Therapeutics, p. 356.

3. Hofeendahl, A.: Treatment of Cocain Intoxication in Animals, *Ztschr. f. Hals-, Nasen- u. Ohrenh.* **1**: 233 (March 22) 1922.

4. Mayer, Karl: The Prevention and Treatment of Cocain Poisoning, *Ztschr. f. Ohrenh.* **82**: 42 (March) 1922.

5. Fabry, F.: Calcium Chlorid in Cocain Poisoning, *München. med. Wchnschr.* **69**: 969 (June 30) 1922.

over the lethal dose. A convulsion occurred in five minutes. An injection of 10 c.c. of 5 per cent. sterile solution of calcium lactate was given subcutaneously in the back. The rabbit died in twelve minutes.

EXPERIMENT 5.—A rabbit, weighing 1,025 gm., was injected with 9.75 c.c. of cocain solution, equivalent to 19 mg. per kilogram of body weight, preceded, two minutes before, by an intravenous injection into the jugular vein of 10 c.c. of 5 per cent. calcium lactate. A convulsion occurred in three minutes, and the rabbit died in five minutes. This rabbit had previously received an injection of 16 mg. per kilogram of body weight in Experiment 2.

EXPERIMENT 6.—A rabbit, weighing 1,100 gm., was injected, through the jugular vein, with 10 c.c. of 5 per cent. sterile calcium lactate solution. This was followed immediately by the subcutaneous injection of 8.8 c.c. of cocain solution, equivalent to 16 mg. per kilogram of body weight. A convulsion occurred in four minutes, and the rabbit was dead in eight minutes. This injection of cocain was the same as that used in Experiment 2.

In these three experiments it was found that the injection of calcium lactate did not increase the lethal dose of cocain in rabbits, as none of them survived. One rabbit has received about 6 per cent. more than the lethal dose, one had been given a lethal dose, while the third received less than the certain lethal dose of cocain.

SERIES 3.—EXPERIMENTS WITH CALCIUM CHLORID

A solution of calcium chlorid, 10 per cent., in distilled water, was then prepared and sterilized. Before it was used in the treatment of a cocainized animal, it was thought best to try its effect on the normal rabbit.

EXPERIMENT 7.—A rabbit, weighing 1,100 gm., was injected intravenously with 5 c.c. of 10 per cent. calcium chlorid solution. No deleterious effect was noted. The respiration rate and the pulse rate remained practically constant.

EXPERIMENT 8.—A rabbit, weighing 1,480 gm., was injected, through the ear vein, with 5 c.c. of 10 per cent. calcium chlorid solution, followed in three minutes by the subcutaneous injection of 11.1 c.c. of the cocain solution, equivalent to 15 mg. per kilogram of body weight. A severe convulsion occurred in six minutes, with marked opisthotonos. The convulsion lasted for nine minutes, with slight interruptions. In fifty minutes, the rabbit was apparently normal. This rabbit had received less than the lethal dose of cocain, and the recovery could not be attributed to the action of the calcium chlorid.

EXPERIMENT 9.—A rabbit, weighing 1,000 gm., was injected, through the marginal ear vein, with 5 c.c. of calcium chlorid solution. It was injected subcutaneously, five minutes later, with 8 c.c. of the cocain solution. This was equivalent to 16 mg. per kilogram of body weight. A convulsion occurred in four minutes and the rabbit was dead in nine minutes.

EXPERIMENT 10.—A rabbit, weighing 1,550 gm., was injected subcutaneously with a mixture of 12.4 c.c. cocain solution (16 mg. per kilogram of body weight) and 10 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in five minutes, and lasted for fifteen minutes. The rabbit recovered. This rabbit had been used in Experiment 8.

EXPERIMENT 11.—A rabbit, weighing 1,035 gm., was injected with a mixture of 8.3 c.c. of cocain solution (16 mg. per kilogram of body weight) and 8 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in seven minutes, and the rabbit died in forty minutes.

EXPERIMENT 12.—A rabbit, weighing 1,910 gm., was injected with 15 c.c. of 2 per cent. calcium chlorid solution, mixed with 15.25 c.c. of 2 per cent. cocain solution (16 mg. per kilogram of body weight). A convulsion occurred in two minutes, and the rabbit died in thirty minutes.

EXPERIMENT 13.—A rabbit, weighing 1,675 gm., previously used in Experiments 8 and 10, was now given a mixture of 16 mg. of cocain per kilogram of body weight, or 13.4 c.c. of 2 per cent. solution, combined with 10 c.c. of physiologic sodium chlorid solution. A convulsion occurred in five min-

utes and lasted for about twenty-five minutes. The rabbit was normal in one hour.

EXPERIMENT 14.—A rabbit, weighing 1,880 gm., was injected with a mixture of 16 c.c. cocain solution (17 mg. per kilogram of body weight) and 10 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in six minutes, and the rabbit died in thirty-seven minutes.

EXPERIMENT 15.—A rabbit, weighing 1,660 gm., was injected with a mixture of 13.3 c.c. of cocain solution (16 mg. per kilogram of body weight) and 10 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in eight minutes. A partial recovery was followed by death in one hour and fifteen minutes.

EXPERIMENT 16.—A rabbit, weighing 1,735 gm., previously used in Experiments 8, 10 and 13, was now given an injection subcutaneously of 16.5 c.c. cocain solution (19 mg. per kilogram of body weight), mixed with 15 c.c. of 2 per cent. calcium chlorid solution. A convulsion occurred in five minutes; recovery ensued in thirty-five minutes.

EXPERIMENT 17.—A rabbit, weighing 1,715 gm., was injected with a mixture of 18 c.c. of cocain solution (19.9 mg. per kilogram of body weight) and 10 c.c. of 2 per cent. calcium chlorid solution, as in Experiment 15. Convulsion occurred in eight minutes; the rabbit died in twenty-two minutes. This was the same animal used in Experiments 8, 10, 13 and 15.

SUMMARY OF EXPERIMENTAL RESULTS

From the experiments it appears that the action of calcium lactate and calcium chlorid is not directly antagonistic to that of cocain. Convulsions occurred as quickly following the injection of cocain, even though a large dose of calcium had been given previously. The rabbits did not survive a dose of cocain appreciably larger than the lethal dose after the injection of either calcium preparation. When the cocain and calcium solutions were mixed, there seemed to be a slightly increased tolerance for cocain, but this may have been due to the greater dilution resulting from the mixture, thereby decreasing the rate of absorption.

CONCLUSIONS

The statement of Mayer that calcium acts antagonistically to the toxic effects of cocain by overcoming the depression of the medullary centers caused by cocain could not be confirmed by experiments on rabbits.

The results obtained experimentally do not warrant the use of calcium lactate or calcium chlorid as a therapeutic measure which can be relied on in acute cocain poisoning.

The Health Salesman.—The executive or organizer who seeks to interest a community in the control of tuberculosis will be able most easily to visualize his task if he considers himself as a salesman selling health. The tuberculosis executive, however, must do more than merely sell health. He must sell a very specific and concrete idea as a part of his general health concept, namely that infection with tuberculosis can be avoided and reduced to a comparative minimum, and that a normal physical resistance will help to ward off breakdown with tuberculosis even after infection has entered the body. The psychology of selling a particular idea such as tuberculosis control, will appeal to the health salesman as sound when he stops to analyze the proposition. No one is ever sick with public health and no one dies with public health. On the other hand, there is hardly a man in any community who does not know of someone who has been sick with or who has died of tuberculosis. To him tuberculosis is a concrete concept, while health is an abstract concept. The tuberculosis executive will gain health for his community much more rapidly by selling this narrower conception than by attempting to sell the larger idea.—Jacobs: *The Tuberculosis Worker*, Williams and Wilkins Company, Baltimore, 1923.

Clinical Notes, Suggestions, and New Instruments

A PERSONAL EXPERIENCE WITH SPRUE

S. M. LAMBERT, M.D., NEW YORK

Along the coast of North Queensland, Australia, there are endemic areas of sprue. In December, 1918, I began field work for the control of hookworm disease in this region, succeeding a man who had been invalided home with sprue. Previous to his departure, I had lived in close association with this man for six weeks. In January, 1919, I developed a condition that was diagnosed as sprue by Dr. Philip S. Clarke, a physician of Cairns, who has had years of experience with this infection. There were no mouth symptoms at first, but I had all the gastro-intestinal symptoms attendant on the disease: intestinal fermentation, and the characteristic frothy, straw colored stools, enormous in amount, which would begin early in the morning and continue until afternoon. These were accompanied by a mental depression out of all relation to the condition. I restricted my diet to bananas and milk, and this measure in a few days checked the number of stools. It brought about a severe constipation, however, but this was finally relieved by liquid petrolatum. In the district in which I was working, it was almost impossible to obtain bananas and fresh milk outside of Cairns, and when the supply of fruit and milk that I took with me on my field trips gave out and I tried other food, my sprue motions invariably returned.

By the early part of March, my weight had fallen from 232 to 193 pounds (from 105 to 87.5 kg.). About that time, my attention was called to an article by Brown,¹ who had studied the gastro-intestinal contents of a Porto Rican suffering from sprue, and had found them entirely lacking in hydrochloric acid and pancreatin. The patient showed marked improvement when these substances were administered to her.

I obtained a supply of the acid and pancreatin, and determined to give them a thorough trial. That night I took a dose of the acid and then, for the first time in two months, ate a hearty dinner. This included deviled crab and beefsteak. Half an hour later, I took 10 grains (0.65 gm.) of pancreatin, and passed a tranquil evening and night, though I had some distention with gas.

I continued the treatment until September, taking 15 minims (1 c.c.) of 0.2 per cent. hydrochloric acid before, and 10 grains of pancreatin after, each meal without dietary precaution. During this period I modified the method by sipping the acid in a large glass of water with my food. One day in May, I forgot my medicine, and was forced to eat a meal without it; the next day I was awake from very early morning with sprue stools. Fasting for one meal and resuming treatment corrected the difficulty. In July, I tried to discontinue the medication, but after five days I was forced to resume it, as this time I had a sore mouth as well as sprue stools. My tongue still shows the effects of this experience. By September, I found that I could do without the medicine, and I remained in Australia in endemic centers for another year without the recurrence of symptoms.

The hydrochloric acid-pancreatin treatment spread into general use along the Queensland coast, and was found quite satisfactory in the treatment of many early cases. We cannot expect it to be effective in cases of long standing when we remember the extreme destruction of tissue occurring in such cases.

I am giving my experience with this treatment because it saved my health and enabled me to continue my work, and I think that it merits more general attention than it has attracted.

1. Brown, T. R.: The Gastro-Intestinal Findings in a Case of Sprue, with a Note on the Treatment of These Findings, *Bull. Johns Hopkins Hosp.* 26: 289 (Oct.) 1916.

New and Nonofficial Remedies

PEPTONE IN THE TREATMENT OF MIGRAINE

Preliminary Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following statement on the experimental status of Peptone in the treatment of migraine.

W. A. PUCKNER, Secretary.

Drs. Joseph L. Miller and B. O. Raulston report on the effects produced by the intravenous administration of Peptonum Siccum-Armour in the treatment of migraine.¹ The authors report that twenty-five patients have been under observation for a sufficient period of time to permit conclusions to be drawn in regard to the results of the treatment. Of these patients, nine were much improved in that they were free from headache for two months or longer after the treatment was discontinued. When the headache returned, it was again controlled by the administration of Peptonum Siccum-Armour. Expressed in percentages, 36 per cent. were much improved; 48 per cent. were moderately improved, and 16 per cent. were not benefited. The authors report that in several hundred injections, they have never observed any symptoms resembling anaphylactic shock. Another physician, however, has observed marked urticaria following a single injection of peptone in two cases, and the opinion is expressed that different preparations may differ in composition.

Commercial peptones are heterogeneous mixtures of uncertain composition. No adequate tests and standards have been developed whereby the uniformity of a given brand of peptone may be controlled, and it is probable that different lots differ in composition. The results that are reported from the use of the peptone used by Miller and Raulston may have been due to tissue impurities rather than chemical peptone itself. It is evident, therefore, that the reported results cannot be made the basis for a rational treatment of migraine. However, if physicians decide to carry out controlled experiments along the lines indicated, it is most important that the identity of the peptone which is used be determined as far as possible.

The peptone preparation used by Miller and Raulston in their clinical study was Peptonum Siccum-Armour, manufactured by Armour & Co., Chicago. This product is stated to contain 90 per cent. proteins. Seventy per cent. of the protein content is stated to be in the form of peptone and secondary proteoses, while the remaining 30 per cent. is in the form of amino-acids. Those who wish to confirm the report of Miller and Raulston should use the particular product used by them or one which has essentially similar composition.

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

AMIDOPYRINE (See New and Nonofficial Remedies, 1923, page 250).

Amidopyrine-Abbott.—A brand of amidopyrine-N. N. R. The Abbott Laboratories, Chicago, distributor. No U. S. patent or trademark.

Tablets Amidopyrine, 5 grains.

EPINEPHRIN CHLORIDE SOLUTION-ABBOTT.—A solution containing epinephrine chloride, equivalent to one part of epinephrine in 1,000 parts of physiological solution of sodium chloride, preserved by the addition of benzoic acid, 0.2 per cent., and by saturation with carbon dioxide.

Actions and Uses.—(See Epinephrine, N. N. R., 1923 p. 112).

Dosage.—(See Epinephrine, N. N. R., 1923, p. 112).

Prepared by the Abbott Laboratories, Chicago. No U. S. patent or trademark.

The epinephrine used in the preparation of Epinephrine Chloride Solution-Abbott complies with the requirements for Epinephrine-N. N. R. Epinephrine Chloride Solution-Abbott is standardized on dogs by the blood pressure method.

1. Miller, J. L., and Raulston, B. O.: Treatment of Migraine with Peptone, this issue, p. 1894.

PROCEEDINGS OF THE SAN FRANCISCO SESSION

MINUTES OF THE SEVENTY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT SAN FRANCISCO, JUNE 25-29, 1923

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 25

The House of Delegates met in the Civic Auditorium, San Francisco, and was called to order at 10 a. m. by the Speaker, Dr. F. C. Warnshuis, Grand Rapids, Mich.

Preliminary Report of the Committee on Credentials

The Chairman of the Committee on Credentials made a preliminary report for this committee, stating that the committee desired at this time to report progress, and that more than a quorum of delegates had qualified.

As there was no objection, the report was accepted.

Next in order was the roll call by the Secretary.

The Secretary stated that the registration of the delegates in attendance recorded the presence of more than a quorum.

A quorum being present, the Speaker announced that the House was constituted and ready for the transaction of business.

The next order of business was the presentation, correction, and adoption of the minutes of the Seventy-Third Annual Session.

The Secretary stated that the minutes had been printed and circulated among the members of the House of Delegates, with the request for criticisms or corrections, but none had been received.

It was moved that the reading of the minutes of the Seventy-Third Annual Session be dispensed with and approved as printed.

Seconded and carried.

Addresses of Executive Officers

Drs. F. C. Warnshuis, Speaker; G. E. de Schweinitz, President, and Ray Lyman Wilbur, President-Elect, addressed the House. See addendum in next week's issue.

Report of Officers

REPORT OF SECRETARY

Dr. Olin West, secretary, presented the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

Alexander Righter Craig died at Port Deposit, Md., Sept. 2, 1922. Elected Secretary of the American Medical Association at Los Angeles in 1911, his very life was devoted to its interests until the day of his death. Only those whose privilege it was to be actively and intimately associated with Dr. Craig will ever be able to appreciate how entirely he gave himself to his task, or to measure the value of his service. Never conspicuously aggressive, but always modest and unassuming, he was nevertheless determined and persistent in standing out for what he conceived to be best for the American Medical Association, and, through it, for the profession of medicine and for humanity. He shirked no duty; he evaded no responsibility which was his to assume nor which was imposed on him by his fellows; he made no compromise where principle was involved.

A professed Christian, Dr. Craig lived his religion. A sincere physician, he steadfastly upheld the traditions and ideals of his profession. An earnest and efficient servant of medical organization, he labored tirelessly and unselfishly for the promotion of its cause and for the extension of its beneficent service to mankind.

MEMBERSHIP

On May 1, 1923, the membership of this Association, according to records in the office of the Secretary, was 88,519, as compared with 89,048 on the corresponding date of the preceding year. The decrease to be noted is apparent, rather than actual and is to be accounted for by the removal of names from the roster which had been carried over for lack of specific instructions from state secretaries authorizing their removal. The membership figures presented in the accompanying table for the individual state associations do not represent the maximum number of members enrolled for the year in all cases, but the actual number of members reported by state secretaries to May 1, 1923, for the current year.

The fiscal year of most of the constituent associations has been made to correspond with the calendar year, though such action has not been taken in several states. No uniform procedure is followed in dropping members for nonpayment of dues. One constituent society continues names of members on its roll for three years, another for two years before removing them for nonpayment of dues. Another drops the names of all members not paid on January 1, the beginning of its fiscal year, while others have adopted April 1 as the date for removal of the names of all unpaid members. The adoption of the calendar year as the fiscal year and the adoption of, and strict adherence to a uniform rule for removing names of unpaid members would make it possible to have the membership records of the state associations and of the American Medical Association in exact agreement at all times, and to report the maximum enrolment for each state at each annual meeting of this House. A letter has been addressed to the secretary of each constituent association offering these suggestions. Two or three have indicated in their replies that it is preferred to follow present methods, some of which have been long established.

COMPONENT SOCIETIES

The 2,049 component societies reported represent approximately 2,400 counties, since in some instances the membership embraces physicians from two or more counties.

In some of the 595 counties reported as unorganized, societies have become dormant after varying periods of organizational activity. While most of the county societies maintain active operation, there are undoubtedly too many that exist in name only. Such societies have few meetings or none at all, fail to send delegates to their state associations, and, of course, do not have any beneficial influence on the lives of their members or in their respective communities. There is, beyond question, work that is greatly needed to be done by the councils of some of the constituent associations to the end that organizational efficiency may be increased. On the other hand, it is most gratifying to note that a great many component societies are broadening the scope of their work and rendering constantly increasing service for the improvement of their members and for the public welfare. These have regular meetings with well prepared scientific programs. Many of them have weekly or monthly bulletins. Diagnostic clinics and postgraduate courses of instruction appear to be gaining favor with some of the most active and progressive societies.

In many instances county societies are splendidly maintaining the leadership which naturally devolves on the medical profession. These are identifying themselves with worthy movements in which other organizations are actively engaged, and are giving them proper direction. Some are operating clinics in which the indigent receive treatment, medical or surgical, and to which those worthy are brought by lay organizations which assume the obligation of protecting the clinics against imposition. Some county societies are providing

newspapers with educational matter for their columns, this being published under the names of the societies. In all these ways, and in others too numerous to mention here, progressive county societies are striving for the improvement of their own members, and rendering public service for the honor and the benefit of scientific medicine.

ORGANIZATION OF CONSTITUENT ASSOCIATIONS

Constituent Association of	Number of Counties in State	Number of Component Societies in State Assn.	Number of Counties in State Not Organized		Physicians in State (8th Ed. Directory)	Number of Members of State Association		Number of A. M. A. Fellows in State	Number of Subscribers to Journal in State*
			1922	1923		1922	1923		
Alabama.....	67	67	..	..	2,313	1,667	1,666	441	293
Arizona.....	14	11	2	3	372	180	143	158	91
Arkansas.....	75	66	12	10	2,303	1,114	1,097	468	177
California.....	58	40	16	16	7,549	3,450	3,335	2,673	1,878
Colorado.....	63	25	27	25	1,882	1,045	1,070	673	365
Connecticut....	8	8	..	..	1,727	1,083	1,112	709	433
Delaware.....	3	3	..	..	265	135	141	88	50
Dist. Columbia.	....	....	..	..	1,924	570	549	370	280
Florida.....	54	29	23	24	1,348	580	622	301	242
Georgia.....	154	93	53	49	3,274	1,858	1,595	612	467
Idaho.....	44	10	18	18	452	313	273	151	96
Illinois.....	102	95	2	4	10,716	7,384	7,175	4,760	2,121
Indiana.....	92	83	2	2	4,353	2,444	2,436	1,365	634
Iowa.....	99	97	..	..	3,490	2,448	2,384	1,401	535
Kansas.....	105	61	38	40	2,492	1,632	1,577	909	345
Kentucky.....	120	110	6	10	3,155	2,158	2,028	743	314
Louisiana.....	64	37	23	25	2,058	1,076	1,109	702	270
Maine.....	16	15	1	1	1,067	748	746	349	144
Maryland ¹	23	21	2	1	2,349	1,291	1,288	808	480
Massachusetts ²	14	18	..	..	5,977	3,944	4,059	2,625	1,075
Michigan.....	83	56	2	5	4,653	3,147	2,972	1,693	846
Minnesota.....	86	38	4	5	2,774	1,704	1,827	1,244	593
Mississippi.....	81	35	2	3	1,792	881	887	306	184
Missouri ¹	114	101	6	6	5,827	3,511	3,564	2,014	768
Montana.....	51	16	32	35	568	372	325	196	132
Nebraska.....	93	56	30	30	1,913	1,077	1,270	714	411
Nevada.....	17	3	14	14	140	99	107	59	33
New Hampshire	10	10	..	..	615	524	520	284	56
New Jersey.....	21	21	..	..	3,362	2,108	1,935	1,347	720
New Mexico.....	29	13	15	15	399	298	325	144	80
New York.....	62	60	1	1	16,857	9,270	9,879	5,937	3,311
North Carolina	100	71	18	20	2,226	1,412	1,367	582	386
North Dakota..	53	14	2	2	517	415	417	289	107
Ohio.....	88	85	1	3	8,086	5,058	4,834	2,553	1,414
Oklahoma.....	77	69	11	8	2,600	1,350	1,586	697	291
Oregon.....	36	16	2	1	1,158	714	578	319	235
Pennsylvania ³	67	63	4	4	11,241	7,429	7,309	4,603	2,063
Rhode Island ²	5	6	..	..	754	380	388	290	139
South Carolina	46	41	5	5	1,368	714	873	422	337
South Dakota ²	68	11	8	1	630	352	356	238	144
Tennessee.....	95	65	29	28	3,228	1,890	1,554	667	350
Texas.....	248	135	69	66	6,094	3,501	3,628	1,696	673
Utah.....	29	6	24	23	497	335	325	218	96
Vermont.....	14	10	2	3	550	402	394	177	102
Virginia ⁴	100	52	35	43	2,503	1,951	1,773	680	143
Washington....	39	19	20	19	1,756	1,113	1,121	620	347
West Virginia..	55	28	14	14	1,751	1,314	1,496	540	366
Wisconsin.....	71	53	1	1	2,772	1,921	1,921	1,169	627
Wyoming.....	22	7	12	12	263	160	134	89	71
Misc., Foreign, Govt. sub. for Army, Navy & U. S. P. H. S. .	..	..	..	..	.....	.....	.....	129	2,935
Alaska.....	..	..	..	..	.....	20	20	..	9
Hawaii.....	5	..	..	..	.....	92	92	45	46
Porto Rico.....	7	..	..	..	.....	127	98	30	37
Philippine Isl. .	..	..	..	..	.....	196	129	51	95
Canal Zone.....	..	..	..	..	.....	91	110	17	32
Totals.....	3,047	2,049	588	595	145,966	89,048	88,519	50,365	28,760
Commissioned Officers, ⁵ Honorary and Affiliated Fellows.....								3,079	
								53,444	

* Not including Fellows of the American Medical Association.
1. Maryland has 23 counties and the city of Baltimore; Missouri has 114 counties and the city of St. Louis.
2. These state associations are divided into district societies, and these are listed in the table as component societies.
3. Provision is made for the physicians of each of these counties to join the component society in an adjoining county.
4. Virginia is perfecting the plan of organization with component county societies which was somewhat recently adopted by the state association.
5. This includes the Medical Corps of the Army, the Navy and the U. S. Public Health Service.

FELLOWSHIP

There was a net gain of 422 in the number of enrolled Fellows during the year, with 53,444 names on the roster on May 1, 1923. Removals were due to: (1) resignations, 1,098; (2) nonpayment of dues, 609; (3) ineligibility, 1,217; (4) not found, 14; (5) deaths, 593. Of those whose Fellowship was discontinued because of ineligibility, 353 were commissioned medical officers no longer on active duty. While 3,531 names were dropped from the Fellowship roster, 3,953 new names were enrolled during the year.

In spite of the fact that more than 60 per cent. of all members are Fellows, there is yet some misunderstanding and confusion with respect to membership and Fellowship. All members of constituent state medical associations are members of the American Medical Association, but those members who wish to become Fellows must make application, must subscribe for THE JOURNAL, and pay Fellowship dues for the current year, these dues and the subscription for THE JOURNAL being included in the one payment of \$6. It appears to be true that many members think they are Fellows when, as a matter of fact, they are not, because they have not made the required application. Only Fellows are eligible for participation in the work of the Scientific Assembly, for election as delegates, or for election as officers of the association.

CONFERENCE OF SECRETARIES OF CONSTITUENT ASSOCIATIONS

The regular annual Conference of Secretaries of constituent state medical associations was held at Chicago, Nov. 17-18, 1922. Thirty-six secretaries were in attendance, and several other officers of state associations were present. The President, the President-Elect, and the members of the Board of Trustees and of the Council on Health and Public Instruction of the American Medical Association attended.

The purpose of this conference, and its only purpose, is to offer opportunity for study and discussion of organizational problems by those who are most directly concerned with them, to the end that the efficiency of medical societies, county, state and national, may be increased.

The prepared programs of these conferences lead to extended and helpful discussions, and their value is greatly enhanced by the opportunities afforded for the secretaries to meet one another and to learn, one from another, how their many problems are approached and solved.

THE AMERICAN MEDICAL ASSOCIATION BULLETIN

The AMERICAN MEDICAL ASSOCIATION BULLETIN is intended to serve as a medium for the interchange of opinion on organization and allied subjects and for the discussion of matters pertaining to medical economics or other matters, not of strictly scientific character, in which the medical profession may be interested. Invitations to use it for this purpose have been repeatedly extended to the members, and particularly to the officers of component and constituent associations. Very few contributions have been made to its columns in response to such invitations, but the BULLETIN seems to be attracting increasing notice, if not commendation. Its monthly circulation is about 5,200 copies. The BULLETIN is sent each month to the presidents and secretaries of all state associations, to the presidents and secretaries of all county societies, to all members of the councils of state associations whose names and addresses are known, and to the members of the House of Delegates and the general officers of the American Medical Association. The subscription list, while now larger than ever before, is still quite small. The subscription price is fifty cents a year. A few county societies have subscribed for their entire membership, under which circumstance subscription is reduced to forty cents for each member. The Speaker of the House of Delegates has offered constructive criticism of the BULLETIN, as well as suggestions for its improvement, and has made personal contribution to its columns. It is hoped that the members of this House and the officers of county societies and state associations will lend their aid toward making this publication more interesting and more useful.

The usefulness of the BULLETIN would be greatly increased if it were received by all Fellows. Such distribution would undoubtedly lead to more liberal contribution to its columns, and its general quality would thereby be improved, while its scope would be enlarged.

HOTEL RESERVATIONS FOR DELEGATES

At Boston, the House of Delegates authorized and instructed the Secretary to make hotel reservations for all members of the House. This instruction to the Secretary was repeated at St. Louis. Accordingly, 150 rooms were tentatively reserved at the Palace Hotel, San Francisco, for the accommodation of Delegates during this meeting. In spite of the fact that this was done on specific instruction by the House of Delegates, there has been very considerable complaint from many states because the Secretary has reserved so many rooms at a leading hotel. Explanations and assurances that abundant hotel accommodations are available have had little effect in lessening such complaint. It seems very probable that if the annual session of the Association should be held at some future time in a city with more limited hotel facilities than are offered in San Francisco, much more objection would be offered.

While every possible effort has been made to prevent, there has been some confusion in the minds of delegates with respect to reservations. There has been, also, objection to hotel rates which have been fixed by the hotels themselves. Some delegates are accompanied by members of their families at annual sessions, and require more than one room for their accommodation. Not infrequently, two or more Fellows, not delegates, are desirous of having reservations at the hotel where their state delegates are registered. The reservation of one or two hundred rooms for delegates and officers makes it difficult for any but the very largest hotels to offer accommodations to other Fellows and, at the same time, to care for their regular transient patronage.

For all these reasons, but chiefly because the reservation of rooms *en bloc* not only engenders ill feeling and resentment but is impractical, it is respectfully recommended that the House of Delegates give the matter due consideration.

AD INTERIM APPOINTMENT OF DELEGATES

In some instances, delegates and alternate delegates duly elected by constituent associations have been unable to attend annual sessions. There is no provision in the Constitution or in the By-Laws giving authority to the officers of state associations to make ad interim appointments to insure representation in this House. It is respectfully recommended that the House of Delegates consider the advisability of conferring authority on the councils of the constituent state associations for electing delegates and alternate delegates when those duly elected at the annual meetings cannot serve.

ORGANIZATION

Medical organization exists for the purposes of (1) creating for its members opportunities for their scientific improvement, and (2) promoting the general welfare of the medical profession. The beneficent service of the profession can be rendered to best advantage only as its members are kept abreast of advances in medical science; the truths and proved methods of scientific medicine can be applied by its practitioners to the best advantage only when their economic status is such that they will be able to devote themselves as wholly as may be to their professional duties.

The achievements and successes of medicine and medical organization have been based on the fact that scientific advancement and helpful service to humanity have been the great fundamental considerations always held in the view of worthy physicians. It is on this basis, too, that the destiny of medicine and medical organization will be worthily fulfilled. It is nevertheless true that the organization which takes no thought for the material interests of its members fails in a most important duty to them and to the public they serve. In striving for economic improvement, we must never lose sight of the fact that the interests of the patient and of the public are paramount.

That the American Medical Association has wrought powerfully for the promotion of medical science and for the enrichment of the scientific knowledge of its members, none will deny. There are those who affirm that it has not labored efficiently for the improvement of the economic status of the medical profession. The fact is that a great deal of thought and effort have been expended by the general officers and the

entire administrative personnel of the Association for making it serve to the greatest possible extent the promotion of the general professional welfare.

Within the last year or so innovations have been made, some of which are succeeding splendidly while some are not yet operating as intended because of conditions which, in time, will be removed. The Bureau of Legal and Legislative Medicine, as will be seen from the report submitted to this House, has been busy with many important matters and has achieved some notable successes, even though the Bureau is only one year old.

The publication of *HYGEIA* has been undertaken with the purpose of giving authentic information to the public for its benefit and to bring about an understanding of the aims, methods and purposes of the medical profession that will result in securing increased respect and esteem for it from the general public.

The creation of a field secretaryship was an effort to increase organizational efficiency. The work of this department was temporarily suspended because conditions arose that were beyond control and that made suspension necessary. It is proposed to resume this work at the earliest possible time.

With a view of establishing closer contact between component and constituent societies and the Association, its President, members of the Board of Trustees, the Secretary, the Field Secretary and several of the department heads have attended meetings of state, district and county medical societies and of councils of state associations during the past year. At these meetings, when opportunity offered, the work of the Association was presented and suggestions were sought as to how it might be made more helpful to medical societies and their members. On specific requests, representatives of the Association have appeared before medical societies whenever possible to discuss organizational problems and methods and to secure information that might be used to good advantage for increasing and extending the service of the parent organization to its component and constituent units. It is proposed to make further development along these lines and to provide speakers to address themselves to subjects of general professional interest, but more particularly to those bearing on medical organization and medical economics. Of course, it cannot be undertaken to provide contributions to scientific programs at society meetings.

Some constituent associations, notably those of Wisconsin, Pennsylvania and North Carolina, have, in cooperation with universities, initiated postgraduate courses of study for members of county medical societies. Some sectional societies, notably the Pacific Northwest Medical Association and the Tri-State District Medical Society, all of whose members are required to be members of this Association, have developed splendid programs with diagnostic clinics as an outstanding feature. It may be feasible, at some time in the not distant future, for the American Medical Association to undertake activities of this nature. The matter is now being considered in the hope that a plan can be worked out whereby teachers and demonstrators for postgraduate lectures and diagnostic clinics can be provided for cooperating county or district societies. It is respectfully recommended that this House authorize the proper officers of the Association to organize such a plan and put it into effect.

The American Medical Association, with its nearly 90,000 members, is made up of more than fifty separate and largely independent organizations, each with its own peculiar problems and its own determining influences. In such a body it is oftentimes difficult, if not impossible, to determine where the weight of opinion lies with respect to any debatable question or procedure. It sometimes happens that when those upon whom administrative responsibility has been placed act to discharge what they conceive to be their duty in given premises, they receive as much of condemnation as of commendation. One large group insists that an attitude of most aggressive opposition should be assumed toward all or toward certain cults and their programs, legislative and otherwise. Another group, just as large and altogether as representative, takes exactly the opposite position. One state association may demand what another definitely objects to.

Our scheme of medical organization is, theoretically, extremely democratic. In its practical application it is evidently the desire of the members and of the officers of this Association that it shall operate along democratic lines to the fullest extent compatible with effective methods and with the possibilities for real accomplishment. It would seem, therefore, that the constituent state association should assume initiative in most organizational affairs and in most movements of interest to the medical profession. There appears to be, however, a very decided difference of opinion as to where the initiative of the American Medical Association should begin and where the responsibility of the constituent state association leaves off. There are those things which the state association must do for itself, which the American Medical Association cannot do for it and should not do if it could. There are those things which the state association can do for itself or which the American Medical Association can do for it. In such matters it would seem wise for the state association to take the initiative and for the parent body to act only on the request of the constituent organization. There are still other things that the American Medical Association can do for its constituent and component societies and their members which they cannot do as independent organizations. These the Association should do on its own initiative and to the limit of its facilities. The publication of six scientific journals and a magazine for the lay public, all of which have won recognition as meritorious periodicals, is evidence that the Association has not been unmindful of its duties and responsibilities. The headquarters organization is a veritable service bureau, in which all departments cooperate in replying to thousands of inquiries of every conceivable kind each year. Numerous other examples of service rendered by the Association in an effort to discharge the responsibilities which devolve directly on it might easily be cited. That so much has been done is an earnest that more will be undertaken, when, as a result of constructive criticism, supplemented with constructive suggestions, methods can be devised and means provided. It is for this House of Delegates, composed of the chosen representatives of the nearly 90,000 physicians who make up its membership, to determine and define the policies of the Association with respect to its relations with component and constituent societies, its relations with other organizations, and its relations with the body politic.

CHANGE IN NAME OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The House of Delegates at St. Louis adopted the report of the Reference Committee on Medical Education with a recommendation that the name of the Council on Medical Education and Hospitals be changed to "The Council on Education and Hospitals of the American Medical Association." This recommendation was offered because, in the opinion of the committee, the present name of the council is unduly long. No change was made in the By-Laws. It is respectfully recommended that the House of Delegates shall make the indicated amendments. If the purpose of the Reference Committee was to shorten the name of the Council, this will not be accomplished by the addition of the words "of the American Medical Association" to the new name suggested. No other council is so designated in the By-Laws.

The following amendments to the By-Laws appear to be indicated: (1) Amend Section 3 of Chapter VII by striking out the word "Medical" in the fifth line of that section. (2) Amend Section 2, Chapter VIII, by striking out the word "Medical" in the ninth line of that section. (3) Amend Section 3, Chapter IX, by striking out the word "Medical" in the caption of that section and also in the second line of that section. (4) Amend Section 4, Chapter X, by striking out the word "Medical" in the fourth line of Paragraph 3 of that section.

In Section 3, Chapter IX of the By-Laws, one function of this Council is declared to be "To investigate conditions of Medical education," while in Paragraph 3 of Section 4, Chapter X, a "Committee on Medical Education" is provided for. In considering the amendments to the By-Laws proposed above, the House may wish to consider also the elimi-

nation of the word "Medical" as here referred to in Section 3, Chapter IX and Section 4, Chapter X.

UNFINISHED BUSINESS

The following amendments to the Constitution and By-Laws were submitted at the St. Louis Session last year, to lie over for action at this session of the House of Delegates.

By Dr. Mongan: Amend Article 5, Section 2 and Section 3 of the Constitution to read:

SEC. 2.—The House of Delegates is composed of delegates elected by the constituent associations. The Trustees shall be ex-officio members of the House of Delegates, but without the right to vote.

SEC. 3.—The total voting membership of this House of Delegates shall not be in excess of 150, which shall be apportioned among the constituent associations in proportion to their actual active membership as hereinafter provided in the By-Laws.

By Dr. Upham: Article 5, Section 2 and Section 3:

SEC. 2.—COMPOSITION.—The House of Delegates is composed of delegates elected by the constituent associations and of delegates from the Medical Departments of the Army and Navy, and the Public Health Service, appointed by the Surgeon General of the respective departments, and of section delegates elected by the sections of the scientific assembly.

The section delegates shall have the privilege of the floor, but only the right to vote on matters directly affecting the activities of the sections. The trustees shall be ex-officio members of the House of Delegates, but without the right to vote.

SEC. 3.—The total unrestricted voting membership of the House of Delegates shall not exceed 150. The Medical Departments of the Army and the Navy, and the United States Public Health Service shall each be entitled to one delegate, and the remainder shall be apportioned among the constituent associations in proportion to their actual membership as hereinafter provided in the By-Laws. The scientific sections shall each be entitled to one section delegate; should the right of the section delegates to vote be challenged on a question before the House, decision shall be made by a ruling of the Speaker, subject to the approval of the House.

By Dr. Mongan: Amend Article 7 of the Constitution by striking out all words after the word "Association."

By Dr. Mongan: Amend Chapter I, Section 2, of the By-Laws to read:

SEC. 2.—TERM.—Delegates and alternates from constituent associations shall be elected for two years. Constituent associations entitled to more than one representative shall elect them so that one half, as near as may be, shall be elected each year.

By Dr. Mongan: Amend Chapter I, Section 4, of the By-Laws to read:

SEC. 4.—REGISTRATION OF DELEGATES.—Each delegate representing a constituent association, before being seated, shall deposit with the Committee on credentials a certificate signed by the Secretary and under the seal of the constituent association, stating that he has been regularly elected by that constituent association.

The following communication is submitted to the House for its consideration:

UNITED STATES VETERANS BUREAU WASHINGTON

May 1, 1923.

Dr. Olin West, Secretary,
American Medical Association,
535 N. Dearborn Street,
Chicago, Illinois.

Dear Doctor:

It is the desire of the Director and the Medical Adviser that this Bureau be represented in the future at the annual meetings of your association.

Will you kindly indicate how such representatives should be accredited in order to appear as official delegates of the Bureau to the Association, provided such arrangement is feasible under your organization. A copy of a preliminary program will be appreciated.

By direction,

(Signed) J. R. McDILL,
J. R. McDILL, M.D.,
Chief Consultant.

Numerous activities of the Association in which the Secretary has been called on to participate, not touched on in this report, are referred to in other reports to be submitted to this House.

The sudden and unexpected death of Dr. Craig brought about a somewhat trying situation, because he alone was familiar with many details of affairs administered by the Secretary's office. The most generous cooperation has since

been extended to that office by all the officers of the American Medical Association and of the constituent and component societies, for which sincere gratitude is hereby acknowledged.

OLIN WEST, Secretary.

REPORT OF THE BOARD OF TRUSTEES

Dr. Oscar Dowling, Chairman, presented the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

SUBSCRIPTION DEPARTMENT

In the tables in the addenda to the Trustees' report will be found the main facts regarding the circulation of THE JOURNAL covering last year—1922. Table 1 indicates that there were 4,204,844 copies of THE JOURNAL printed, and a weekly average of 80,862. Table 2 shows the number of physicians in the United States, the number receiving THE JOURNAL, and the approximate percentage in each state (the copies sent to the U. S. Army, the U. S. Navy, the Public Health Service and to advertisers, and the complimentary and exchange copies are not included). It will be noted that in twenty-seven of the states more than 50 per cent. of the physicians are receiving THE JOURNAL. Minnesota shows the highest percentage, 69; North Dakota the next highest, 67; California, Connecticut and Illinois, 65. Table 3 indicates the number of Fellows and subscribers each year from Jan. 1, 1900, to Jan. 1, 1923, and shows that with two exceptions there has been a steady annual increase in the number of Fellows, the exceptions being in 1911, a decrease of about 240; and in 1918, of about 700. There also has been a steady, consistent increase so far as subscribers are concerned, although the number of these is more likely to go up and down than the number of Fellows, for the reason that the Fellowship roll is continually being augmented by transfers from the subscription list. The vast majority of Fellows originally were subscribers, and were transferred to the Fellowship list; last year 2,898 were so transferred; in 1921, 3,329; and in 1920, 3,914.

For the first time in many years, there was an actual falling off in the bona fide circulation of THE JOURNAL. This occurred only once before, viz., in 1916, the second year of the World War. The decrease last year was only 112, and this could be explained by the fact that the government services decreased their order by 136. However, there has been quite a little falling off because of the \$6 subscription price: many physicians have written that they understood the increase in price was to be only temporary, and that the \$5 rate soon would be restored.

ADVERTISING DEPARTMENT

A reference to the Auditor's report will show that the Advertising Department of THE JOURNAL earned during the year a little over \$600,000—\$31,421 more than in 1921. This earning exceeded the amount received from subscription and Fellowship dues, which was \$463,586. The increase in advertising receipts is accounted for, not by an increase in advertising space sold, but by the increase in rates which went into effect in January, 1922. It is needless to say that the high standard of the advertising pages has been maintained.

COOPERATIVE MEDICAL ADVERTISING BUREAU

This bureau now represents all but one (twenty-nine) of the state journals. These twenty-nine journals, however, represent thirty-four state societies: the *California State Journal of Medicine* is the official publication of the California and Nevada state societies; *Southwestern Medicine*, the official journal for Arizona and New Mexico; and *Northwestern Medicine*, for Oregon, Washington, Idaho and Utah. The bureau evidently is proving satisfactory to all the journals it represents; not only does it secure for them advertising which many otherwise would not be able to procure, but it also relieves those personally responsible for these jour-

nals—many of whom are active practitioners—of work in which they are not at all interested and which is entirely out of the sphere of activities of physicians. The bureau is self-supporting, and for the last three years has been able to return to the journals a bonus out of the commissions earned by it.

SPANISH EDITION

The publication of the Spanish Edition has been seriously handicapped on account of the exchange difficulty, as was emphasized in our report to you last year. The conditions in this regard have not improved; rather, in some of the countries they have become worse. This handicap affects both advertising and subscription, not only because of the depreciated currency of the different countries, but also because the difficulty in sending small amounts, since it is necessary for our Latin-American subscribers to send remittances on the dollar basis. However, arrangements have been made which we believe will solve this problem so that from now on we may look for improvement, so far, at least, as circulation is concerned.

The loss on the publication of this journal last year was \$11,171.08, of which amount the Rockefeller Foundation paid one half.

The representatives of the Foundation in Latin-American countries and in the Philippine Islands have reported to the Foundation that the journal is doing good in various ways, and have expressed the hope that it could be continued. It is published every two weeks, contains the cream of the scientific matter appearing in THE JOURNAL itself, and is highly appreciated by the educated physicians in these countries. There is no doubt of this; letters received at the central office confirm it.

The present circulation is practically 3,000. Mexico has the largest, 598; Cuba, the next largest, 455; Argentina, 335; Spain, 224; Philippine Islands, 209; Brazil, 194; Colombia, 107; and the other copies are distributed in practically all the Spanish-speaking countries.

SPECIAL JOURNALS

A satisfactory report can be made regarding the five special journals now being published by the Association. The circulation of the ARCHIVES OF INTERNAL MEDICINE for 1922 was 2,526; of the AMERICAN JOURNAL OF DISEASES OF CHILDREN, 2,841; of the ARCHIVES OF NEUROLOGY AND PSYCHIATRY, 1,203; of the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, 1,316; and of the ARCHIVES OF SURGERY, 2,931.

In considering the circulation of these five journals, it is well to bear in mind that all are of special character and appeal not so much to the general practitioner as to the physician who is specializing in some particular line. For instance, we cannot expect that the ARCHIVES OF SURGERY will appeal to any but the more progressive surgeons. So also with the ARCHIVES OF INTERNAL MEDICINE: it is a medium for the publication of extended articles—articles representing advanced work and thus appealing only to the progressive internist. The AMERICAN JOURNAL OF DISEASES OF CHILDREN appeals to the pediatrician, and to the progressive general practitioner who is especially interested in this branch of medicine. The ARCHIVES OF NEUROLOGY AND PSYCHIATRY and the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY naturally have a limited circulation, since they appeal practically only to those who limit themselves to the specialties represented by these two journals.

Three of these journals—the ARCHIVES OF INTERNAL MEDICINE, the AMERICAN JOURNAL OF DISEASES OF CHILDREN, and the ARCHIVES OF SURGERY were published at a profit; two—the ARCHIVES OF NEUROLOGY AND PSYCHIATRY and the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY—at a slight loss. There was a net gain on the special journals of \$9,266.85, but only actual cost was charged against them; i. e., no overhead was included. It may be that your Board of Trustees will find it convenient to reduce the price of the AMERICAN JOURNAL OF DISEASES OF CHILDREN and also of the ARCHIVES OF INTERNAL MEDICINE, unless there should be an increase in the cost of their production. On the contrary, it may be

necessary to increase the price of the ARCHIVES OF NEUROLOGY AND PSYCHIATRY and of the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY. However, the board proposes to consider this question at its fall meeting; at that time it will be possible to estimate the developments of the present year. It is unnecessary to say that the object of the Association is to supply these high-class scientific periodicals at only slightly above cost. The printing plant of the Association, its various facilities for procuring material, etc., make it possible to publish and to supply these special journals to subscribers at a less cost than they otherwise could be supplied.

AMERICAN MEDICAL DIRECTORY

The Eighth Edition of the American Medical Directory has been completed and will be in the hands of the subscribers before this session is held. Eight thousand five hundred copies have been printed. The number of prepublication subscriptions was practically the same as two years ago—approximately 7,000; presumably the demand for the book after publication will be as great as that for the Seventh Edition. It is impossible to tell definitely what the actual income on an edition is until it is known how many copies are sold before the next edition appears. The financial report for the last edition shows that the expenses were \$136,884.39; and the receipts from subscriptions, advertising, etc., \$135,045.40; thus there was an apparent loss on the Seventh Edition of \$1,838.99. However, all the expenses connected with the Biographical Department have been charged to the Directory. The Biographical Department was being conducted before the publication of a directory was given consideration; the work carried on in it is a continuing one, but inseparable from that connected with the Directory. But the work in this department and that on the Directory are so closely connected that it is impossible to separate the charges. Under all the circumstances, the Directory may now be regarded as self-supporting.

QUARTERLY CUMULATIVE INDEX

The QUARTERLY CUMULATIVE INDEX is another of the publications issued by the Association solely in the interest of scientific medicine. The circulation for 1922 reached 1,129, which must be regarded as entirely satisfactory. It seems to be giving great satisfaction, and librarians are especially gratified; several report that the INDEX is so much used that it has become necessary for them to secure two copies. The outlook locally is very good. At the time this report was prepared, there was an increase of thirty-four over last year at the same time.

It may be interesting to note how the INDEX is taking abroad. It has a circulation of twenty-six copies in Canada; twenty-two in Great Britain; twelve in India; nine in China; five in Japan; four in Spain; three in Cuba, Hawaii, Philippine Islands, Africa, Denmark and Holland; two in Greece, Italy, Sweden and Switzerland; and one in Porto Rico, Austria, Belgium, Germany and Portugal. This makes a total foreign circulation of 127. There is a slow but steady increase in this foreign circulation, and it undoubtedly will continue to increase as the INDEX becomes generally known.

The financial statement shows a loss of a little over \$5,000. The character of this publication is such that it probably never will be published at a profit. If the price were placed sufficiently high to cover the cost, the circulation naturally would drop. But the Association can afford to publish this book at a loss, in view of its very practical value.

HYGEIA

An active campaign of promotion of HYGEIA was begun among physicians in December and continued until about the middle of March. This promotion was in the form of advertisements in THE JOURNAL and through circulars. This campaign resulted in securing approximately 15,850 orders. About the middle of March, at the time the periodical appeared, a similar, active campaign was inaugurated among the public, appeals being made through circulars and personal letters to presidents of universities, state and county superintendents of schools, educational boards, women's clubs,

teachers, etc. On the first of May, there were about 19,500 subscribers, the majority being those who had accepted the special offer. Since the first of May, orders have been continuing to come in at the rate of about twenty-five a day.

THE PROPAGANDA DEPARTMENT

The interest on the part of the public in THE JOURNAL's educational work on the nostrum evil, quackery and pseudo-medicine increases yearly. Especially does the public show an intelligent appreciation of the task which the American medical profession has assumed of warning the layman against the pitfalls of the nostrum vender, the cultist and the quack. More letters from laymen were received during the last year than in any previous year. The activity of various lay organizations (women's clubs, chambers of commerce, advertising associations, etc.) which have called on the Propaganda Department for information also reflect the interest of the public. Letters have come not only from every state and every dependency of the United States, but also from such widely separated places as Australia, China, New Zealand, the British Isles, France, Germany, and some South American countries.

Although there is a noticeable laxity in the advertising standards of many newspapers and magazines, there are an encouraging number of lay publications that honestly try to protect their readers against fraudulent medical advertising copy. As a result, the number of inquiries from men and concerns interested in truthful advertising has steadily increased. Then, too, a not inconsiderable portion of the correspondence of the department has been with teachers and students of schools and colleges. The fact that several standard textbooks on home economics, civic biology and related subjects deal at least incidentally with the nostrum evil explains this interest on the part of students and teachers.

The second volume of "Nostrums and Quackery," which has now been on the market for more than a year, is selling steadily. Since the issuance of "Nostrums and Quackery," the individual pamphlets on the nostrum evil have been brought down to date, reedited and new editions published.

There is no question that the commercialization of the pseudoscientific vagaries of Albert Abrams of San Francisco is the most remarkable phenomenon of its kind since the days of the historic Perkins' Metallic Tractors. Certain members of the medical profession were at first disposed to give Abrams and his theories serious consideration, but with the publication of various articles on the subject in the Propaganda department of THE JOURNAL, Abrams' clientele shifted from that of the low-grade medical man to the osteopath. The unprecedented publicity given Abrams through sensational lay magazines, and the fact that the exploitation appeals alike to the faddist and to the mercenary, are responsible for the attention that has been given the subject. The material published in the Propaganda department of THE JOURNAL has been reprinted in pamphlet form with additions from other sources. Thousands of these reprints have been called for by the profession and the public, and the demand continues.

The first issue of HYGEIA has brought to the Propaganda department additional inquiries on the subject with which the department deals, and there is every reason to believe that as HYGEIA becomes better known the department will be called on more heavily than ever before, for the attention of the public will be drawn to the fact that in the Propaganda department the public and the profession have a clearing house for information on the nostrum evil and quackery, and that the data it furnishes are both reliable and authoritative.

COUNCIL ON PHARMACY AND CHEMISTRY AND THE CHEMICAL LABORATORY

During 1922, the Council and the Chemical Laboratory have continued their work in the interest of rational therapy. Each year finds an increasing number of physicians who are supporting this work, for the profession is realizing that the Council provides it with unbiased and dependable information concerning proprietary and new therapeutic agents.

The second volume of "Propanda for Reform in Proprietary Medicine" was issued during the year, bringing the infor-

mative material up to date and making more available the important reports of the Council, the Laboratory and THE JOURNAL issued from 1917 to May, 1922.

The Council is devoting, and must continue to devote, a considerable part of its time to the routine examination of the new proprietaries that are brought out yearly. An increasing number of American firms are engaged in producing what promise to be worth-while additions to our materia medica. Even France, which in the past has been content with supplying for the most part ordinary drugs or drug mixtures under fancy titles or in fancy packages, is beginning to send to this country some of its products of importance.

The shotgun proprietary mixtures which handicapped scientific medicine fifteen or twenty years ago now give little concern. Today the pressing problems are the "mixed" vaccines, the pluriglandular preparations, products especially elaborated for intravenous therapy, and the attempts to commercialize our new knowledge of vitamins. The Council continues to examine each "mixed" vaccine that is offered, but has accepted few of such mixtures. In spite of an extensive propaganda by certain firms which specialize in the manufacture of mixtures of endocrine substances, little, if any, scientific, controlled, clinical evidence has been presented to justify the almost ludicrous claims made by promoters.

During the year, the Council has issued three reports bearing on vitamins: "Yeast Preparations," "Therapeutic Research into the Clinical Field of Yeast," and "Yeast Preparations and Vitamin B Concentrates." These reports will, it is hoped, convince physicians that vitamin deficiency is best overcome by the selection of proper foods and not by the use of proprietary preparations claimed to be vitamin concentrates.

As the routine work of the Council is becoming systematized, more time is given by the members of the Council to broader questions concerning medical advance. At the present time, an appeal is being formulated against unnecessary intravenous medication, which, the Council believes, should be limited in application; its use in those cases in which there is no definite warrant for the procedure is still a serious menace both to medical science and to public welfare.

The changing tendencies of the times are best shown by the methods used to introduce new drugs. In years gone by, the favorite method of introducing a new drug was by supplying physicians with free samples. In return, the promoter asked for—and frequently received—reports from the physicians as to the results they obtained from the use of these samples. The ability properly to weigh clinical and empiric evidence is not accorded to every observer; therefore, uncritical, laudatory reports were the rule, and these were promptly published. It required considerable time and controlled experimental work to produce accurate evidence to counteract such hastily published testimonials. Today, physicians look with a more critical eye on the evidence for new drugs, and the far-seeing manufacturer hesitates before investing money in a new drug that does not possess real merit. The Council has adopted a plan which, in time, should do much to prevent the flooding of the market with drugs that eventually will be found of little value. The plan includes the issuing of preliminary reports which enable the clinician to experiment with products of known composition that seem to have therapeutic promise.

The Chemical Laboratory continues to aid the Council in passing on new substances through an examination of the claims that are made for them regarding their chemical composition. It gives much time to the elaboration of standards for products that are admitted to New and Nonofficial Remedies, and thus insures that the products accepted for the book shall be of uniformly reliable composition. The Laboratory answers many inquiries in regard to the composition of medicines which come to THE JOURNAL from its readers; and, when the requested information is not available and the subject of inquiry is of sufficient importance, it undertakes analysis of these products. The Laboratory is largely responsible for the fact that the secret nostrum exploited to the profession is waning. Furthermore, it endeavors to accomplish a

certain amount of original investigation in fields of materia medica.

APPROPRIATIONS FOR RESEARCH

For many years the Board of Trustees has provided funds for the encouragement of research. This money is distributed through two committees: the Committee on Scientific Research and the Committee on Therapeutic Research. The grants are made to investigators of recognized ability and, in the main, provide funds only for the purchase of materials.

The Committee on Scientific Research is composed of: Dr. Ludvig Hektoen (chairman), Chicago; Dr. F. F. Russell, Washington, D. C.; Dr. Herbert C. Moffitt, San Francisco; Dr. G. N. Stewart, Cleveland, and Dr. Charles H. Frazier, Philadelphia. The object is to further meritorious research on subjects relating to scientific medicine and of practical interest to the medical profession, which otherwise could not be carried on to completion. During the year the following appropriations were made:

Grant 55: \$200, to Reynold A. Spaeth, School of Hygiene and Public Health, Johns Hopkins University, for a study of the influence of fatigue on infection.

Grant 56: \$200, to John F. Churehman, Loomis Laboratory, Cornell University, New York, for a study of the action of certain chemicals in the treatment of acute arthritis.

Grant 57: \$250, to Yandell Henderson, Laboratory of Applied Physiology, Yale University, for apparatus necessary for a study of the physiology of respiration.

Grant 58: \$225, to E. B. Krumbhaar, Philadelphia General Hospital, for a study of inguinal granuloma.

Grant 59: \$225, to F. W. Mulsow, University of Iowa, for a practical study of culture mediums for the gonococcus.

Grant 60: \$400, to H. M. Evans, Anatomical Laboratory, University of California, for the continuation of the study of the relation of endocrine glands to ovulation.

The Committee on Therapeutic Research is a committee of the Council on Pharmacy and Chemistry, and the funds appropriated for it are used to aid in investigating therapeutic questions. A special grant of \$1,000 has been made to a committee appointed by the Committee on Therapeutic Research to investigate the toxicity and availability of local anesthetics. This work has been in hand for some time, and much valuable information regarding this important question is being secured. The committee is composed of: Dr. Emil Mayer, chairman, New York (laryngology); Dr. Robert A. Hatcher, secretary, New York (pharmacology); Dr. Elliott C. Cutler, Boston (surgery); Dr. Henry S. Dunning, New York (stomatology); Dr. Robert S. Lamb, Washington, D. C. (ophthalmology); Dr. David I. Macht, Baltimore (medicine); Dr. Charles Norris, New York (pathology), and Dr. Alexander Randall, Philadelphia (urology). The committee has formulated a plan for carrying out an extensive investigation, and it is believed that the results will prove interesting and of practical value. To indicate the general character of the work carried on under the direction of the Committee on Therapeutic Research, we submit a list of the investigations conducted under the committee, the results of which were published during 1922:

The Effects of Some New Local Anesthetics: M. L. Bonar and Torald Sollmann: *J. Pharmacol. & Exper. Therap.* **18**: 467 (Jan.) 1922.

Uterine Effects of Intravenous Injections of Fluids: H. G. Barbour and F. H. Rapoport: *J. Pharmacol. & Exper. Therap.* **18**: 407 (Jan.) 1922.

Studies of Strychnin: Soma Weiss and R. A. Hatcher: *J. Pharmacol. & Exper. Therap.* **19**: 419 (July) 1922.

Seat of the Emetic Action of the Digitalis Bodies: R. A. Hatcher and Soma Weiss: *Arch. Int. Med.* **29**: 690 (May) 1922.

Action of Emetin Hydrochloride upon the Uterus: Paul Martin: *Am. J. Obst. & Gynec.* **3**: 241 (March) 1922.

Experimental Erysipelas: F. P. Gay: *J. Infect. Dis.* **31**: 101 (Aug.) 1922.

The Treatment of Syphilis by Mercury Inhalations: History, Methods and Results: H. N. Cole, A. J. Gericke and Torald Sollmann: *Arch. Dermat. & Syph.* **5**: 18 (Jan.) 1922.

The Relative Therapeutic Efficiency of Arsphenamine and Gelatin Arsphenamine: Jean Oliver: *Proc. Soc. Exper. Biol. & Med.* **20**: 56, 1922.

BUILDING

The report of the Board of Trustees last year contained a brief historical outline of the Association property and building; referred to the fact that the previous year—1921—the Trustees considered it advisable, on account of the high cost

of labor and material, to postpone the erection of the additions, and stated that by the time of their annual meeting in February prices had gone down sufficiently to make them feel justified in authorizing the completion of the plans. The general contract was signed, May 29, 1922, but the contract for the steel—the most important item among the material—was signed, June 31, at a price of \$62.50 a ton erected. The next day (July 1) the price advanced, and increased steadily until it reached \$102 a ton. In view of the fact that it is requiring approximately 800 tons, this item is an important one. Other prices—of labor and of material—also went up almost immediately after our various contracts were signed.

Progress on the building has been extremely slow, owing mainly to labor conditions. The addition on the east, covering the 40 foot lot purchased last year, was sufficiently completed the middle of April to permit of the transfer to it of several departments. At the present time, the outlook is that the complete building will be ready for occupancy sometime late in the fall.

When completed, the Association will own a building, 160 feet on Grand Avenue and 100 feet on Dearborn Street, with six stories and a high basement, of steel and concrete construction—a building which, while not ornate, will be substantial, a credit to the Association, and well fitted for the purpose for which it has been constructed.

REDUCTION IN DUES

At the last meeting of the House of Delegates, the By-Laws were modified authorizing the Board of Trustees to change the annual dues, under certain limitations. At its last meeting, the board favorably considered reducing the annual dues and subscription to the old rate of \$5. Final action will be taken at the October meeting, and unless unforeseen developments warrant otherwise, the board will at that time order this decrease put into effect.

REORGANIZATION OF THE BOARD OF TRUSTEES

It is the unanimous opinion of the Board of Trustees that the three-year period of Trusteeship is too short to enable a member to gain a sufficient knowledge of the affairs of the Association to make his services of real value; that it takes two years before he becomes thoroughly acquainted with all its various activities. Further, the three-year term and the election of three members annually may result in a majority of the board being replaced by new members in too short a period; in fact, this has occurred: In 1907-1908, within a period of approximately twelve months, five new and inexperienced men were elected to membership on the board. Since 1883, at the time *THE JOURNAL* was started and the board created—forty years—fifty-nine Fellows of the Association have served as members of the Board of Trustees: twenty-three, from one to three years; seventeen, from four to six years; eight, from seven to nine years; five, twelve years, five, fifteen years; and one, eighteen years.

The board unanimously recommends that the term of service shall be five years and that a Fellow shall not be eligible to serve more than two consecutive terms as a Trustee. In the case of an election to fill a vacancy caused by the resignation or death of a member, the new member shall be regarded as having served one term, provided he has served three years.

The president, the president-elect, the speaker and the Board of Trustees all have certain duties and responsibilities in the administration of the affairs of the Association and the carrying out of the policies adopted by the House of Delegates. There should be cooperation of all these. The board believes that this cooperation would be more easily accomplished and the duties and responsibilities carried on more efficiently if the President, the President-Elect and the Speaker were ex-officio members of the board. As the Association is incorporated in Illinois, and the statutes of the state place the responsibility for the administration of financial affairs and the care of the property of a corporation upon the board of directors—in this case, the Board of Trustees—who are duly elected members of that body, it was considered wise to consult the attorneys of the Association

regarding the matter. The attorneys have given the opinion that the President, President-Elect and Speaker may be ex-officio members of the board without the right to vote, but otherwise to have equal power with the duly elected members.

It has been the practice of the board recently to invite these officers to attend its meeting, and the Board of Trustees now recommends that the Constitution and By-Laws be changed to make these officers ex-officio members of the board.

These recommendations, if adopted by you, will require an amendment to the Constitution which will have to lay over for one year, and a modification of a by-law which can be acted on this year, viz.:

Amend Section 1, Chapter 6 by adding: The President, the President-Elect, and the Speaker of the House of Delegates shall be ex-officio members of the Board of Trustees, but without the right to vote.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

At the Annual session in 1922, last year, you authorized the Board of Trustees to create a bureau of legal medicine and legislation; the activities of the Association along these lines had, since 1910, been under the jurisdiction of the Council on Health and Public Instruction. In accordance with this authorization, the Board of Trustees established this bureau, and elected as its executive secretary Dr. W. C. Woodward, formerly commissioner of health of the District of Columbia, and later of Boston. Dr. Woodward is especially qualified for this position, not only because of his active work in the past in public health and medicolegal matters, but also because, while a resident of Washington, he had much experience in connection with federal legislation as pertaining to the District of Columbia. He is further qualified because he has had legal training and holds a degree of Master of Laws. His report for the year to the Board of Trustees will be found among the addenda to this report. Dr. Woodward will present an abstract of his report to the House.

DEATH OF DR. ALEXANDER R. CRAIG

On Sept. 2, 1922, Dr. Alexander R. Craig, Secretary of the Association, died at his country home in Maryland.

The majority of the Fellows and members of the Association never will know the loss sustained in the passing of Dr. Craig. He was so modest, so free from any assumption of unusual knowledge and so entirely devoid of a dictatorial spirit that his great influence made itself known by accomplishment rather than by a display of effort to bring about results. His advice and counsel were especially valuable in the many difficult problems presented in the program of organization of the profession which came under the jurisdiction of his office. He was always able to see the point of view of the other fellow, and his adherence to the principles of the Golden Rule enabled him to bring harmony out of what gave promise of discord. He not only filled the position of Secretary of the Association efficiently, but he was also the secretary and executive officer of the Council on Scientific Assembly and of the Judicial Council. As secretary of the Judicial Council, his character and exceptional tact were evident. He was a rare type of man, with a spirit devoted to service for this Association, which he loved.

On the death of Dr. Craig, Dr. Olin West, the Field Secretary of Association, was assigned to the work of the Secretary, and at the meeting of the Board of Trustees held Nov. 16, 1922, Dr. West was appointed Secretary of the Association for the unexpired term.

MEMORIAL TABLET AT HEADQUARTERS

In accordance with the action of this House made at the St. Louis session, the President, Dr. George E. de Schweinitz, appointed Drs. Wendell C. Phillips, George H. Simmons and Frank Billings to serve with him on a committee to select a suitable bronze tablet and its placement in the headquarters building in memory of the late Dr. Joseph N. McCormack. The placement of the tablet will be made when the new additions to the headquarters building shall have been completed;

naturally the place for such a tablet will be in the new assembly hall.

A. M. A. BULLETIN COMPLIMENTARY TO FELLOWS

In his report, the Secretary recommends that the A. M. A. BULLETIN be sent complimentary to Fellows of the Association, as well as to officers of state and county societies as at present. The Trustees endorse this recommendation.

AN APPRECIATION

For a period of twenty-five years, Dr. George H. Simmons has devoted his entire time and energy to service for the Association. The members of the board are unanimously of the opinion that an expression of appreciation should be made to him at this time. As Editor and Manager, he has manifested remarkable literary ability, and it is due chiefly to his editorial management that THE JOURNAL is recognized as the foremost general medical publication of the world, with a circulation at home and abroad of 80,000 copies weekly. He has shown rare and efficient administrative skill, which has won the respect and confidence of all the general officers, the members of the Board of Trustees, the members of the councils and committees, the personnel at headquarters, and the Fellows of the Association who have been fortunate enough to come in close contact with him. He has been honest, individually unselfish, loyal, and his efforts have been productive of the greatest service to the Association.

Respectfully submitted,

OSCAR DOWLING,
D. CHESTER BROWN,
CHARLES W. RICHARDSON,
W. T. SARLES,
A. R. MITCHELL,
WALTER T. WILLIAMSON,
FRANK BILLINGS,
WENDELL C. PHILLIPS,
THOMAS McDAVITT.

ADDENDA TO TRUSTEES' REPORT

SUBSCRIPTION DEPARTMENT

TABLE 1.—The following table indicates the number of copies of THE JOURNAL printed each week, the total number for the year, and the weekly average:

January 1.....80,296	July 1.....80,092
January 14.....80,747	July 8.....80,106
January 21.....80,729	July 15.....80,127
January 28.....80,717	July 22.....80,701
.....322,489	July 29.....80,452
.....401,478	
February 4.....80,565	August 5.....80,603
February 11.....80,630	August 12.....80,724
February 18.....80,426	August 19.....80,571
February 25.....80,889	August 26.....80,563
.....322,510	.....322,461
March 4.....80,609	September 2.....80,320
March 11.....80,880	September 9.....80,275
March 18.....80,591	September 16.....80,498
March 25.....80,626	September 23.....83,425
.....322,706	September 30.....84,079
.....408,597	
April 1.....80,603	October 7.....83,333
April 8.....80,335	October 14.....80,935
April 15.....80,822	October 21.....80,716
April 22.....90,800	October 28.....80,975
April 29.....80,126	.....325,959
.....412,686	
May 6.....80,111	November 4.....80,552
May 13.....80,281	November 11.....80,731
May 20.....80,460	November 18.....80,870
May 27.....80,176	November 25.....80,555
.....321,028	.....322,708
June 3.....80,243	December 2.....80,145
June 10.....80,349	December 9.....80,668
June 17.....80,144	December 16.....80,061
June 24.....80,149	December 23.....80,197
.....320,885	December 30.....80,266
.....401,337	
Total (52 issues).....4,204,844	
Weekly average.....80,862	

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL

TABLE 2.—The number of physicians in the United States (based on the Seventh Edition of the American Medical Directory), the number receiving THE JOURNAL, and the approximate percentage in each state, are indicated in the following table. The copies to the U. S. Army, U. S. Navy, U. S. Public Health Service, etc., are not included.

State	Physicians in State 7th A. M. Directory	Number Receiving JOURNAL	Approximate Percentage 7th A. M. Directory
Alabama	2,405	745	31
Arizona	380	245	64
Arkansas	2,450	646	26
California	6,766	4,392	65
Colorado	1,817	1,041	57
Connecticut	1,729	1,136	65
Delaware	262	141	54
District of Columbia.....	1,689	641	38
Florida	1,281	585	46
Georgia	3,406	976	29
Idaho	553	241	44
Illinois	10,651	6,925	65
Indiana	4,446	2,026	46
Iowa	3,536	1,942	55
Kansas	2,550	1,278	50
Kentucky	3,323	1,064	32
Louisiana	2,001	973	48
Maine	1,105	500	45
Maryland	2,364	1,312	55
Massachusetts	5,959	3,715	62
Michigan	4,593	2,531	55
Minnesota	2,628	1,801	69
Mississippi	1,761	497	28
Missouri	5,921	2,795	47
Montana	620	317	51
Nebraska	1,965	1,102	55
Nevada	147	89	60
New Hampshire	641	351	55
New Jersey	3,260	2,085	64
New Mexico	529	229	43
New York	16,284	9,146	56
North Carolina	2,236	966	43
North Dakota	556	376	67
Ohio	8,092	3,949	49
Oklahoma	2,622	979	37
Oregon	1,145	559	49
Pennsylvania	11,348	6,716	60
Rhode Island	778	432	56
South Carolina	1,452	672	46
South Dakota	658	380	58
Tennessee	3,328	1,021	31
Texas	6,205	2,356	38
Utah	496	307	62
Vermont	594	281	47
Virginia	2,545	1,119	44
Washington	1,797	947	53
West Virginia.....	1,717	901	52
Wisconsin	2,750	1,753	64
Wyoming	267	158	59

TABLE 3.—The number of Fellows and of subscribers (not including advertisers, exchanges, libraries, colleges, etc.) on THE JOURNAL mailing list each year, beginning with 1900, are given below:

Year	Fellows	Subscribers
January 1, 1900.....	8,445	4,633
January 1, 1901.....	9,841	8,339
January 1, 1902.....	11,107	10,795
January 1, 1903.....	12,553	12,378
January 1, 1904.....	13,899	14,674
January 1, 1905.....	17,570	15,698
January 1, 1906.....	20,826	17,669
January 1, 1907.....	26,255	20,166
January 1, 1908.....	29,382	20,880
January 1, 1909.....	31,999	18,983
January 1, 1910.....	33,032	19,832
January 1, 1911.....	33,540	20,504
January 1, 1912.....	33,250	21,620
January 1, 1913.....	36,082	19,863
January 1, 1914.....	39,518	19,751
January 1, 1915.....	41,254	20,430
January 1, 1916.....	41,938	22,921
January 1, 1917.....	42,744	22,156
January 1, 1918.....	43,420	23,117
January 1, 1919.....	42,366	24,687
January 1, 1920.....	44,340	30,032
January 1, 1921.....	46,669	31,347
January 1, 1922.....	48,937	30,175
January 1, 1923.....	49,651	29,201

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association
for the year ending December 31, 1922

ASSOCIATION RESERVE FUND

Reserve Fund as at December 31, 1921.....	\$308,672.60
Interest—Bonds	\$12,743.80
Interest—Uninvested Balance.....	769.68 13,513.48
Reserve Fund as at December 31, 1922.....	\$322,186.08

DAVIS MEMORIAL FUND

Bonds (at cost) as at December 31, 1921.....	\$ 3,708.25
Bank Balance December 31, 1921.....	\$ 314.90
1922 Interest on Bonds.....	170.00
1922 Interest on Bank Balance.....	9.97 494.87
Total Fund as at December 31, 1922.....	\$ 4,203.12

AUSTIN A. HAYDEN, Treasurer.

AUDITORS' REPORT

CHICAGO, January 9, 1923.

To the Board of Trustees,

American Medical Association, Chicago, Illinois.

Dear Sirs:

In accordance with your instructions, we have audited the accounts of the American Medical Association for the year ended December 31, 1922, and have prepared therefrom the following statements, which are appended hereto.

Exhibit "A"—Balance Sheet as at December 31, 1922.

Exhibit "B"—Income Account for the year ended December 31, 1922.

Schedule "1"—Journal Operating Expenses—Year 1922.

Schedule "2"—Association and Miscellaneous Expenses—Year 1922.

The Balance Sheet submitted properly presents, in our opinion, the financial position of the Association as at December 31, 1922, and the Income Account, the results of the operations of the Association for the year then ended; subject to the remark that no provision has been made for accrued interest, taxes and "Journal" subscriptions paid in advance, and that no valuation has been placed on subscriptions and memberships due and unpaid.

We verified the cash in bank by certificates received from the various depositories, and that on hand by actual count. The receipt of the Continental and Commercial National Bank, covering \$200,000.00 of U. S. Government Securities, held by it for safekeeping, was produced to us.

We also inspected the securities for the investments of the Association Reserve Fund and found them in order; these securities are stated at cost, without regard to the market value prevailing at December 31, 1922.

The Surplus Fund of the Association has increased since December 31, 1921, \$263,470.91, representing the net income for the year 1922, and the recovery of 1921 expenses in the year 1922. This increase is spread over the assets and liabilities as follows:

Increase in Fixed Assets.....	\$201,818.19
Increase in Current Assets.....	16,811.53
Increase in Prepaid Expenses.....	49,556.70
	\$268,186.42
Less:	
Increase in Accounts Payable.....	\$ 1,660.97
Increase in Advance Payments.....	3,054.54 4,715.51
	\$263,470.91

During the course of the audit we made an exhaustive test of the various sources of income and verified the expenditures against properly approved vouchers on file. We have pleasure in reporting that the accounts are well and accurately maintained.

Yours truly,

MARWICK, MITCHELL & Co.

EXHIBIT "A"

BALANCE SHEET AS AT DECEMBER 31, 1922

ASSETS:

Property and Equipment at Cost, less Depreciation:	
Real Estate and Buildings.....	\$ 394,305.19
Machinery	51,158.25
Type and Metal.....	7,378.76
Furniture and Equipment.....	20,839.41
Chemical Laboratory.....	1,983.74
Library	596.28
Total Property and Equipment.....	\$ 476,261.63

Reserve Fund Investment:

Government and Railroad Bonds—at Cost....	\$287,624.05
Funds in Bank Awaiting Investment.....	34,562.03 322,186.08

Current Assets:

Cash in Bank and on Hand.....	\$ 29,641.09
U. S. Government Securities.....	200,000.00
Notes Receivable	955.38

Accounts Receivable:

Advertising	\$67,794.00
Cooperative Medical Advertising Bureau	7,381.80
Reprints	6,038.19
Miscellaneous	10,728.25
	\$91,942.24

Inventory of Materials, Supplies and Work in Progress	\$ 90,008.68 412,547.39
---	-------------------------

Prepaid Expenses:

Insurance Premiums.....	\$ 2,781.38
Session—1923 Expenses.....	359.12
Directory—8th Edition.....	46,585.93
Hygeia Journal.....	2,689.71 52,416.14

Total.....	\$1,263,411.24
------------	----------------

LIABILITIES:

Accounts Payable:

Cooperative Medical Advertising Bureau.....	\$ 5,519.58
Miscellaneous	31,787.22

\$ 37,306.80

Advance Payments on Publications.....	18,093.75
---------------------------------------	-----------

Association Reserve Fund (invested as noted above):

Amount thereof as at December 31, 1921.....\$308,672.60

Interest received on Bonds owned and un-

vested Cash—Year 1922..... 13,513.48 322,186.08

Surplus Fund:

Amount thereof as at December 31, 1921.....\$622,353.70

Add Adjustment applicable to prior period.... 1,782.37

Net Income for the year ended Dec. 31, 1922. 261,688.54 885,824.61

Total.....	\$1,263,411.24
------------	----------------

EXHIBIT "B"

INCOME ACCOUNT

FOR THE YEAR ENDED DECEMBER 31, 1922

JOURNAL:

Gross Earnings:

Fellowship Dues and Subscriptions.....	\$ 463,586.76
Advertising	600,499.99
Jobbing	17,589.36
Reprints	8,652.59
Books	11,297.77
Insignia	7,058.73
Miscellaneous Sales	12,595.76
Interest	12,644.44

Gross Earnings from JOURNAL.....	\$1,133,925.40
Operating Expenses—Schedule "1".....	764,289.21

Net Earnings from JOURNAL.....	\$ 369,636.19
--------------------------------	---------------

Miscellaneous Income:

Rents	\$ 1,937.50
Special Journals.....	11,030.28
Cooperative Medical Advertising Bureau.....	497.65
Miscellaneous	4,511.70 17,977.13

Gross Income.....	\$ 387,613.32
Association Expenses—Schedule "2".....	\$ 99,850.52
Less—Session 1922.....	5,510.30

Miscellaneous Expenses—Schedule "2".....	\$ 94,340.22
	31,584.56 125,924.78

Net Income.....	\$ 261,688.54
-----------------	---------------

SCHEDULE "1"

JOURNAL OPERATING EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1922

Wages and Salaries.....	\$328,708.80
Editorial, News and Reporting.....	11,550.29
Paper—JOURNAL Stock.....	235,321.43
Paper—Miscellaneous	9,731.66
Electrotype	18,634.85
Binding	1,252.65
Ink	6,996.45
Postage—First Class.....	22,395.13
Postage—Second Class.....	38,736.44
JOURNAL Commissions.....	6,231.00
Collection Commissions.....	1,543.69
Discounts	16,865.30
Express and Cartage.....	3,754.05
Exchange	1,968.70
Office Supplies	1,365.03
Telephone and Telegraph.....	1,884.88
Office Jobbing.....	8,065.98
Power and Light.....	4,451.90
Fuel	4,513.80
Factory Supplies.....	9,740.01

Repairs and Renewals—Machinery.....	5,541.69	
Bad Debts—Nct.....	930.98	
Miscellaneous Operating Expenses.....	14,649.55	
	<u>\$754,834.26</u>	
Depreciation of Property and Equipment:		
Machinery	10%	\$5,684.24
Furniture and Equipment.....	10%	1,780.11
Factory Equipment.....	10%	535.37
Type	10%	311.56
Metal	20%	1,143.67
		<u>9,454.95</u>
		<u>\$764,289.21</u>

SCHEDULE "2"

ASSOCIATION AND MISCELLANEOUS EXPENSES FOR THE YEAR ENDED DECEMBER 31, 1922

Association Expenses:

Association	\$ 35,498.17
Health and Public Instruction.....	8,740.37
Pharmacy and Chemistry and Chemical Laboratory.....	21,119.00
Medical Education and Hospitals.....	23,951.68
Organization and Field Secretary.....	3,546.59
Therapeutic Research	1,139.99
Legal, Medicine and Legislation.....	5,634.31
Laboratory Depreciation—10%.....	220.41

Total Association Expenses.....\$ 99,850.52

Miscellaneous Expenses:

Insurance and Taxes.....	\$ 10,285.60
Legal and Investigation.....	984.74
Sundry Publications.....	12,436.35
Building Expense.....	974.93
Building Depreciation—5%.....	6,836.69
Library Depreciation—10%.....	66.25

Total Miscellaneous Expenses.....\$ 31,584.56

REPORT OF THE BUREAU OF LEGAL MEDICINE AND LEGISLATION

Dr. William C. Woodward presented the report of the Bureau of Legal Medicine and Legislation, which was submitted to the Board of Trustees.

To the Board of Trustees:

The creation of a bureau of legal medicine and legislation, at headquarters, was authorized by recommendations made by the Reference Committees on Legislation and Public Relations, on Hygiene and Public Health and on Reports of Officers, all adopted at the St. Louis session by the House of Delegates. The scope of the proposed bureau was stated at some length in the report of the Reference Committee first named, as follows:

The committee recognizes in the several reports of officers, and in the report of the Council on Health and Public Instruction, a consensus of opinion that a central bureau should be established for the consideration of all legislative matters pertaining to medicine or the practice of medicine, and of the public health, relieving the Council on Health and Public Instruction of these duties, which must be carried out in view of the extension of the functions of the Council in the matter of public education, and it is recommended:

1. That the trustees be memorialized to establish a bureau of this character, under whatever name, with such whole-time assistance as may be necessary, the duties of which shall pertain to legislative matters and medicolegal problems in which the whole medical profession may be interested, and which shall be to (a) coordinate the activities of the several constituent state associations, (b) ascertain and crystallize the opinions of the medical profession and the said constituent state associations, and (c) represent the American Medical Association.

In this connection, your committee desires to point to the desirability of the national organization reflecting the will of the great bulk of the medical profession, and that the bureau contemplated and these recommendations should act in matters of general policy, following instructions of the House of Delegates, or in emergencies following expression of opinion from the proper authorities of the several constituent state associations.

In this connection, further, it is recognized that the details of organization and operation of the contemplated bureau may not be decided upon at this time. The discussion of this problem in the report of the Council on Health and Public Instruction is referred to.

Having been appointed executive secretary, I entered upon my duties, June 9. I respectfully submit the following report of my activities for the year next ensuing. The following are the more important matters that have come before the bureau during that period:

NATIONAL PROHIBITION ACT

The following resolution, adopted by the House of Delegates, was referred to the Bureau of Legal Medicine and Legislation for action:

WHEREAS, The medical profession has been subjected to criticism and unfavorable comment because of present conditions associated with the enforcement of the Volstead law, and

WHEREAS, The results of a referendum conducted by THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, covering 54,000 physicians, indicates that 51 per cent. of physicians consider whisky "necessary" in the practice of medicine, and

WHEREAS, The dosage, method, frequency and duration of administration of this drug in any given case is a problem of scientific therapeutics and is not to be determined by legal or arbitrary dictum, and

WHEREAS, The experience of physicians, as reported in THE JOURNAL, indicates that the present method of control, limitation of quantity and frequency of administration, licensure and supply of a satisfactory product constitutes a serious interference with the practice of medicine by those physicians who are convinced of the value of alcohol in medical practice, therefore be it

Resolved, That the House of Delegates of the American Medical Association in convention assembled, representing a membership of over 89,000 physicians, appeals to the Secretary of the Treasury and to the Congress of the United States for relief from the present unsatisfactory conditions, and recommends that provisions be made for supplying bonded whisky, for medicinal use only, at a fixed retail price to be established by the government.

An appeal was made to the Commissioner of Internal Revenue to limit the distribution of whisky for medicinal use to whisky bottled in bond, except in those cases in which the quantity ordered by the physician did not correspond with the quantity in any such container. As a result of that appeal and of the activities of other agencies toward the same end, the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, Dec. 22, 1922, issued Treasury Decision No. 3418, which provided that after April 1, 1923, only such spirits, not including alcohol, as are bottled in bond may be withdrawn for medicinal purposes from distillery warehouses and other like establishments. This decision will gradually make bottled-in-bond liquor available in all retail pharmacies holding retail liquor permits. The advisability of restricting retail sales to bottled-in-bond packages and providing for the issue of packages in such sizes as will make such retail distribution convenient and economical is now under consideration in the office of the Prohibition Commissioner.

Wholesale liquor permits issued only to vendors of "patent" and proprietary medicines. The Prohibition Commissioner, March 17, 1923, notified a firm of pharmaceutical chemists that had applied for a wholesale liquor permit that such a permit could not be issued because the firm did not sell "patent" and proprietary medicines. The matter was brought to the attention of this bureau, which thereupon took the matter up with the Prohibition Commissioner. The firm directly affected by the demand, although it had not theretofore sold "patent" and proprietary medicines and had no desire to engage in the business, put in a stock of such articles in order that the business of the establishment might not be interfered with, and thereupon a wholesale liquor permit was issued. It is to be presumed, of course, that the ruling and practice of the Prohibition Commissioner, with respect to the sale of "patent" and proprietary medicines, is general in its application. An effort is being made, therefore, to find the basis for it, so that corrective action may be instituted.

HARRISON NARCOTIC LAW

Proposed inquiry into narcotic addiction. At the St. Louis session, the House of Delegates adopted the following resolution:

Resolved, That the House of Delegates of the American Medical Association approve House resolution number 258 (House of Representatives, Washington, D. C.), providing for a select committee of fifteen to inquire into the subject of narcotic conditions in the United States, the personnel of the Congressional committee to include all physicians who are now members of the House of Representatives.

The resolution then pending in Congress, to which the resolution of the House of Delegates related, lapsed at the close of the Sixty-Seventh Congress, March 4 last, not having been acted on.

Reduction of tax under Harrison Narcotic Law. An effort has been made to procure a reduction in the tax imposed on physicians under the Harrison Narcotic Act, which can be effected only by Congress. Through the courtesy of Hon. John J. Kindred, a representative from New York and a Fellow of this Association, a bill to accomplish that end was introduced. The Sixty-Seventh Congress expired without having acted on it. A revision of the Revenue Act of 1921 will probably be undertaken by the Congress that is to convene in December next, and the desirability of reducing the narcotic

tax imposed on physicians has been brought to the attention of the prospective chairman of the House Committee on Ways and Means, which will have the revision in charge.

Model state narcotic law. There was received, Nov. 16, 1923, from the Council on Health and Public Instruction the draft of a proposed model state narcotic law, prepared by a committee of the Council in conference with various representatives of the drug trades and others. The representatives of the drug trades have referred this proposed model law to their respective principals for consideration. It has been published in the Bulletin for such action as our several constituent associations may see fit to take with respect to it. Obviously, too, views of the law enforcement officers are essential to a thorough understanding of the situation. The matter of a uniform state narcotic law is now under consideration by the National Conference of Commissioners of Uniform State Laws, through a special committee on the subject.

Narcotic and prohibition regulations to be promulgated only after notice. In prescribing and administering liquor and narcotic drugs, the physician is dominated by two laymen, the Commissioner of Internal Revenue and the Secretary of the Treasury. They promulgate regulations to which the physician must conform. To these officers, the promulgation of such regulations is merely an incident in a busy day's work, and they must be guided largely by the advice of others. It seems unfortunate, however, that in the selection of their advisers they should have come to rely so largely on officers and employees serving under them, since the views of such men are unavoidably tinged by the official atmosphere in which they live. Certainly, better results would be accomplished were the Commissioner of Internal Revenue and the Secretary of the Treasury to seek the advice also of the practicing physicians of the country, for that would tend toward a better understanding by the medical profession, and toward simplicity, certainty, and practicability in the regulations promulgated.

This entire situation was called to the attention of the Commissioner of Internal Revenue some time ago, and, in connection with a proposed revision of the prohibition regulations, he has since invited suggestions by the bureau. It is now understood that a preliminary draft of so much of the proposed revision as is of interest to physicians will be submitted to the bureau for criticism. Such, however, should be the ordinary course in reference to all regulations; it should be recognized as a matter of right, not a mere matter of courtesy, for the physician to know and to discuss such legislation affecting him as is pending in the Treasury Department, before it is finally adopted. It is hoped that this point of view will ultimately be accepted by those vested with authority to regulate the practice of physicians in the matter of prescribing liquor and narcotics, without rendering necessary efforts to make it effective through the statutory enactment.

VETERANS' BUREAU AND CHIROPRACTIC

The following resolution, adopted by the House of Delegates relative to the training of veterans as chiropractors by the Veterans' Bureau, was referred to the Bureau of Legal Medicine and Legislation for action:

WHEREAS, The St. Louis Medical Society on May 16, 1922, by Memorial and Resolutions vigorously protested against the approval by the U. S. government of the School of Chiropractic as a means of vocational training for disabled ex-service men, and

WHEREAS, It appears that more than 250 ex-service men from all parts of the country, seventy of whom represented the Ninth District, composing the states of Missouri, Iowa, Kansas and Nebraska, are now enrolled in one Chiropractic School in this District with the sanction and approval of the U. S. government, therefore, be it

Resolved, That the House of Delegates of the American Medical Association, in annual session assembled, representing over 89,000 legally qualified physicians, adequately trained in the arts and sciences (the only foundation for the recognition, control and prevention of disease), approves the sentiments expressed in the Memorial and Resolutions adopted by the St. Louis Medical Society, which have been submitted to this House, and hereby directs that the proper officers of the American Medical Association memorialize and petition the federal government, particularly those officers charged with the responsibility for the rehabilitation of disabled ex-service men, and to take such action in the interest of the welfare of all the people, and also for the protection of those who honestly desire to administer to the sick, to the end that the ex-soldiers seeking vocational training, which will fit them for ministering to the sick and aiding in the recognition, control and prevention of

disease, shall, at least, meet the requirements and shall receive such adequate training as is defined in the classification of medical schools of the American Medical Association, known as Class A, or acceptable medical schools—a standard which is approved by all right-thinking people moved by a desire for public welfare.

An investigation has been made to determine the basis on which the Veterans' Bureau gave its approval of chiropractic as a calling suitable for disabled veterans, but no such basis has been found. No record was found of any inquiry made by the bureau to determine through disinterested agencies what chiropractic was or what were the prospects of its permanence as a means of livelihood in the years to come. Apparently, the Veterans' Bureau never sought the advice of the Medical Department of the Army, the Navy, or the Public Health Service, nor did the Rehabilitation Division of the Veterans' Bureau, under the authority of which chiropractic training was given, ever take the advice even of the Medical Division of the Veterans' Bureau itself concerning the matter. Evidence of anything resembling adequate supervision and control over the courses of training for which the government was paying was apparently entirely lacking. The absurdity of the situation was pointed out to the Veterans' Bureau and protest was made against the continuing of chiropractic training at public expense and the implied approval of chiropractic as a means for treating the sick and injured. As a result, July 25, 1922, the Assistant Director in Charge of the Rehabilitation Division issued a letter purporting to limit governmental training of chiropractors to trainees professing their intention to practice in states wherein the practice of chiropractic had been legalized and to trainees who were high school graduates or had an equivalent education. The limitations were indefinite and easily evaded and seemed likely to accomplish no good. Protests were, therefore, patiently continued, but without apparent effect. April 27, 1923, the Director of the Veterans' Bureau announced that no new contracts for chiropractic training would be entered into except as might be authorized by him, personally. This announcement was recalled, however, May 18, and the Veterans' Bureau again stands sponsor for the doctrine that head lice, syphilis, gonorrhea, tuberculosis and intestinal parasites can be cured by spinal adjustment. The contest begun more than a year ago will, therefore, have to be continued. The fact that the Veterans' Bureau is at present under investigation by a select committee created by the U. S. Senate for that purpose will afford an opportunity for a consideration of the situation by a new tribunal and an appeal already has been made to it.

SHEPPARD-TOWNER MATERNITY ACT

The resolution adopted by the House of Delegates relative to the Sheppard-Towner Maternity Act was referred to the Bureau of Legal Medicine and Legislation. It reads as follows:

WHEREAS, The Sheppard-Towner law is a product of political expediency and is not in the interest of the public welfare, and

WHEREAS, The Sheppard-Towner law is an imported socialistic scheme unsuited to our form of government, and

WHEREAS, The Sheppard-Towner law unjustly and inequitably taxes the people of some of the states for the benefit of the people of other states for purposes which are lawful charges only upon the people of the said other states, and

WHEREAS, The Sheppard-Towner law does not become operative in the various states until the states themselves have passed enabling legislation, therefore be it

Resolved, That the American Medical Association disapprove the Sheppard-Towner law as a type of undesirable legislation which should be discouraged.

As the Sheppard-Towner Maternity Act had already been enacted by Congress, the resolution set forth above was directed rather to state activities than to the federal situation. The Bureau has confined itself, therefore, to cooperation with the state societies that have sought aid in efforts to defeat legislation looking toward the acceptance by the state of the law named. Since the last session of the House of Delegates, several states have passed laws agreeing to submit to the terms of the act. Bills looking toward state submission to the terms of the act have been rejected in some instances. The act is now before the Supreme Court of the United States for the determination of its constitutionality.

REORGANIZATION OF FEDERAL HEALTH ACTIVITIES

A conference was called in Washington, January 17, by Brig.-Gen. C. E. Sawyer to consider a plan formulated by the Joint Committee on the Reorganization of the Administrative Departments of the Federal Government for assembling all health activities of the government except those pertaining to the Army and Navy, all educational and welfare activities, and the work of the Veterans' Bureau in a proposed executive department, to be known as the Department of Education and Welfare. There were present, in addition to General Sawyer, the Surgeon Generals of the Army, the Navy, and the Public Health Service, the president of the Conference of State and Provincial Health Authorities of North America and the members of the executive committee of that organization, officers of the American Institute of Homeopathy and of the Eastern Homeopathic Medical Association, the Executive Secretary of your Bureau of Legal Medicine and Legislation, and others. The plan as submitted to the conference proposed that the department be called "The Department of Education and Welfare." The conference agreed, however, that if the health activities of the federal government are to be included, the department should be known as the Department of Education, Health and Welfare. The plan as officially announced to the public later did not provide, however, for this change of name. Moreover, in the announced plan it was provided that each of the four bureaus of the proposed department should be under the direction of an "assistant secretary" and not under the direction of a "director general," as proposed in the plan submitted to the conference. The latter change suggests the possibility that the activities of the several bureaus of which the department is to be made up are to be under the direction of political appointees, liable to change with each presidential election, and not under the direction of permanent, technically trained heads. The entire matter will probably come before Congress at its next session and should receive now the serious consideration of the Association. It might be well for the House of Delegates to define its position with respect to the matter and to instruct its officers and councils accordingly.

FEDERAL INCOME TAX

Liability of state associations. A demand having been made on the Nebraska State Medical Association by the Collector of Internal Revenue at Omaha for returns under the federal income tax law, with a view to the collection of the tax from that association, if any should be found to be due, the matter was referred to the Bureau of Legal Medicine and Legislation. The collector's demand was based on the hypothesis that the association, because it maintained a medical defense service for its members, lost the exemption to which it was entitled as a scientific body not organized for profit. The matter was taken up with the Commissioner of Internal Revenue, who held that the association was not required to make the returns demanded.

Expenses of attending meetings of medical associations not deductible. On or about March 1, 1922, the collector of internal revenue at Marion, O., notified a physician practicing in that city that traveling expenses incident to a meeting or convention of a medical society could not be deducted in computing his federal income tax. The physician appealed to the Commissioner of Internal Revenue, but the commissioner, after having referred the matter to the solicitor, sustained the collector's ruling. The matter came to the notice of the Association only through the publication of the commissioner's decision in the Internal Revenue Bulletin of June 26, 1922. Diligent efforts were made to convince the Commissioner of Internal Revenue that the ruling was not justified by the law and the facts in the case and to induce him to rescind it, but without effect. It is possible that relief may be afforded in connection with the proposed revision of the Revenue Act of 1921, to which reference has already been made. Otherwise, the only remedy is through the courts.

Search of clinical records under federal estate tax law. Representatives of the Commissioner of Internal Revenue have recently claimed the right of search, without search warrant, of the private records of a practicing physician, in an alleged effort to determine the extent to which the estate of a person at one time treated by that physician is liable to payment of a federal estate tax. The supposed basis of the

claim to the arbitrary right of search is that the deceased patient might have disposed of property some time or other in anticipation of death, for the purpose of relieving his estate of the payment of taxes. The matter has been taken up with the Commissioner of Internal Revenue.

DEFENSE AND INDEMNITY IN MALPRACTICE SUITS

At the St. Louis Session, in May last, the Reference Committee on Reports of Officers said: "We approve legal defense indemnity in malpractice suits, and the Board of Trustees is requested to report a concrete plan at the next annual session." This report was adopted by the House of Delegates. The duty of investigating the situation with a view to the formulation of the plan requested was assigned to the Bureau of Legal Medicine and Legislation.

Letters have been sent to each constituent association to learn the nature and extent of the medical defense service furnished by it. From six, no replies have been received. Of the remainder, thirty-two, representing a membership of 75,324, provide legal defense, and of these, one, representing a membership of 3,335, for a specified annual premium indemnifies such of its members as subscribe for the service against loss through the award of damages. Fifteen constituent associations, representing a membership of 8,355, provide neither legal defense nor indemnity.

Twenty-one constituent associations furnished information as to the financing of their legal defense activities. In one state, where such service has been maintained for fourteen years, the per capita allotment to the medical defense

Membership	Court Action			Total Cost	Cost per Member
	Trial Courts	Appellate Courts	Total		
143	3	0	3	\$404.63	\$2.83
1,112	3	0	3	201.00	.18
2,436	12	2	14	740.00	.30
1,577	3	0	3	1,310.96	.83
1,109	..	..	?	350.00	.32
4,059	60 queries yearly			1,408.20	.35
2,973	43	2	45	4,242.26	1.43
1,827	..	..	?	1,412.09	.77
417	5	6	11	1,220.00	2.92
578	11	1	12	683.19	1.18
7,309	..	..	?	310.00	.04
3,628	21	11	32	1,843.68	.51
1,121	19	1	20	4,626.76	4.13
1,921	11	1	12	3,500.76	1.85

fund has never exceeded 75 cents, and during 1918-1919 was reduced to 25 cents; and yet the fund contains a substantial balance at the present time. In one other state, 75 cents is set aside for the medical defense fund, out of the dues paid by each member. Four states set aside out of the dues, or collect, \$1 per member; four set aside or collect \$2; one sets aside \$3; one collects \$5, and one collects \$7. In one state the fund is made up by voluntary contributions of \$10 each. In the other states from which replies were received, the expenses of medical defense are paid as needed out of the general funds of the association, apparently no special allotment for that purpose being made. In the one state in which indemnity is provided, the cost per subscribing member per annum is \$30, and in one year an assessment of \$10 per member was levied in addition.

The returns are not sufficiently complete to permit a statement of cost to be made on the basis of the number of members actually eligible for medical defense service. Computations have been made, therefore, on the basis of the total membership of the associations reporting the cost of operations. Such operations include activities outside of cases pending in trial and appellate courts, and in stating costs, the number of court cases so pending have been given merely as indexes to the volume of work done. In the absence of complete information, it has been deemed best to omit from the table the names of the states to which the figures relate; their publication would seem to come properly in a table giving data for all states, and the publication of such a table is not yet feasible. It will be noted that the per capita cost during 1922, the year of these figures, varied from \$.04 to \$4.13.

In reply to the direct question, "In what ways, if any, can the American Medical Association best serve its constituent

associations, component societies, and individual members in the matter of protection and defense against claims based on alleged malpractice?" various answers were received, of which the following are fair illustrations:

"Make it unpopular for one physician to testify against another. The cause of most of our cases is due to unguarded comment of one physician regarding the work of another."

"By preaching in and out of season the value to physicians of loyalty to each other. Over 50 per cent. of suits that attain court life are due to jealousies and factional fights among the profession. Probably 45 per cent. of the remainder of the suits are due to loose talking and criticism of treatment given patients of which the physician has no knowledge whatever aside from hearsay."

"As malpractice defense is so much of a local matter, it seems as if the state society were a better agent to care for this than the national organization."

"By educating the doctors to stand together. Possibly by providing indemnity."

"Some states undertake successfully auto insurance for the profession and carry on the business very satisfactorily and at a much less cost than insurance companies. There seems no good reason why the American Medical Association could not carry on cheaply and successfully insurance to protect the profession generally, if they comply with the requirements."

"Do not believe it would be wise or practical [for the American Medical Association to enter the field] as conditions are different in nearly every state."

"Only by making defense a national matter instead of a state matter."

"By furnishing briefs."

"Try to educate its members not to instigate suits by careless remarks to a patient about a previous physician. I cannot speak for other states, but . . . is large enough and has sufficient members to take care of itself."

There have been correspondence and conferences with some of the more important companies engaged in medical defense insurance, but without developing any matters or principles other than appear from the foregoing statements.

So far as any conclusion may be drawn from the information now at hand, the following is submitted:

1. There is no evidence yet available to show that the American Medical Association could wisely undertake the organization of a medical defense service for its Fellows and members, or that services of this character cannot be best maintained by the constituent associations.

2. There is no evidence yet to show that the American Medical Association could wisely undertake to organize an association or corporation, mutual or otherwise, to indemnify Fellows and members of the Association against loss through judgments rendered in malpractice suits.

3. It is possible that the American Medical Association might serve its constituent associations by assembling records, not merely decisions, of malpractice cases, including records of proceedings in both inferior courts and appellate courts, and analyzing them from both medical and legal standpoints; and by the record of such analyses make available to constituent associations the procedure adopted successfully, or unsuccessfully, in cases that have come to trial.

The foregoing suggestions are submitted for consideration, in the hope that by discussing them something of value may be developed to guide the Bureau of Legal Medicine and Legislation in its further duties and activities in this field. Its inquiry into the relations of the national association to the state associations will be continued unless instructions be issued to discontinue it.

MEDICAL PRACTICE ACTS

The inadequacy of many of our medical practice acts to protect the public against ignorance and fraud has been shown by the efforts that have been made in various state legislatures to procure new or supplementary acts. It is shown, too, by the very large number of chiropractors and others who ply their callings without hindrance from prosecuting officers and courts, in jurisdictions that are protected by what are supposed to be effective medical practice acts. Despite vigorous campaigns for better laws, in only four states, Texas, Oklahoma, Missouri and Idaho, were substantial gains made.

Chiropractors, osteopaths, etc. Chiropractors have been more vigorous during the present year than ever before, in

their efforts to gain legal foothold in new fields of activity. Their efforts have always been directed, too, toward establishing themselves as independent of all of the healing arts. Teaching in their schools, as they do, methods of getting business, including the art of self-exploitation, they seem to have little difficulty in raising large sums of money from their following, who get out of their contributions in the way of advertising much more than they put in. During the past year, too, they have adroitly gotten much free advertising out of the press of the country, and have won much ill-bestowed sympathy, through deliberate violations of the law and insistence on going to jail to pay the penalty, rather than pay even a small fine. This method of self and group exploitation is seemingly an integral part of their campaign for legislation, and, in order to mitigate any supposed hardship that might otherwise fall on chiropractors who go to jail, an organization is maintained which undertakes to pay the office rent of chiropractors while they are serving jail sentences in communities in which legislation is being sought, and to compensate them at the rate of \$100 per month while they are serving their terms. To see legislators seriously considering the demands of such men for the legal recognition of a cult that teaches that head lice, syphilis, gonorrhea, tuberculosis, typhoid fever, appendicitis and other diseases cannot exist without a displacement of one or more vertebrae and can be cured by replacement, makes one wonder whether after all those psychologists who gaged the mental age of the American people at 14 years, did not place the figure much too high.

In California, where liberal provisions had already been made by law for licensing chiropractors, osteopaths, and all other healers under liberal conditions, both chiropractors and osteopaths carried their respective issues before the people, under the initiative, and had them voted on at the state election. Public attention was attracted to the movement by the procuring of jail sentences for law-breaking chiropractors, and by all other available means of publicity. In their campaigns, organized chiropractors spent \$64,211, and organized osteopaths \$40,481. How much was spent by individual and by unorganized groups is not known. The result was, however, the adoption of both measures. California has now a board of chiropractic examiners and a board of osteopathic examiners, independent of rational contacts or supervision. Laws creating independent boards of chiropractic examiners were passed by the legislatures of Nevada and Tennessee. Similar laws were defeated in Alabama, Ohio, South Carolina and Wyoming.

Basic medical sciences bills. In an effort to require as nearly as may be possible adequate basic training of all who practice the healing art in any of its branches, so-called basic medical sciences bills were submitted to the legislatures of Maine, Minnesota and Wisconsin. These bills have sought to create in each state a nonmedical board to examine all applicants in the so-called basic medical sciences, namely, anatomy, pathology and physiology. Applicants passing the examination were to be certified by the board for further examination by the medical licensing boards and the chiropractic, osteopathic and other such boards, where they exist. In this way, none of the boards last named could lawfully examine a candidate who had not had an adequate basic medical training, as certified to by the state board of examiners in the basic sciences. These bills uniformly met strenuous opposition from the groups that frankly recognized that their members were without knowledge of the basic medical sciences, and by reason of that fact, they were uniformly defeated.

ANIMAL EXPERIMENTATION

Organized forces opposing the use of animals for research have been active during the year. In Congress, a bill was introduced to prevent the use of living animals for experimentation in connection with the Army and the Navy. In California and in Colorado, under the initiative, proposed laws forbidding animal experimentation came before the people to be voted on, November 7. In Louisiana and New York, bills were introduced to prohibit the use of dogs for research. In the Ohio legislature and in the Denver city council, measures were introduced to permit to be delivered to medical schools, for educational and research purposes, vagabond dogs duly impounded. None of these measures were enacted.

The situations which arose under the initiative in California and in Colorado, and a similar situation that arose under the referendum in the state of Washington with respect to the medical inspection of school children, emphasize the necessity for effective state-wide organization on the part of our constituent associations, particularly in those jurisdictions in which the initiative and referendum may be called into operation. The problem of enlightening legislatures directly and through their constituents as to the fallacies of proposed legislation is much less difficult than the problem of enlightening the people individually and as a whole, so as to induce them to vote wisely. In any event, however, whether the effort is to secure wise legislation through the legislature or by direct vote of the people, events have abundantly proved the necessity for effective organization throughout each state.

COOPERATION

Field work. The Executive Secretary has endeavored to meet as far as possible the wishes of constituent associations desiring his presence within their several jurisdictions. Two visits have been made to Colorado, three to New York State, and one to Connecticut and to Ohio. Visits to Washington have been made at various times for conferences with the Commissioner of Internal Revenue, Brigadier-General Sawyer and others, on the business of the Association. He attended the annual meeting of the American Public Health Association in Cleveland, the Ohio State Medical Society in Dayton, Ohio, the Connecticut Conference of Social Agencies in Hartford, Conn., and the National Antinarcotic Conference in Washington, D. C.

Office activities. A large volume of correspondence has been conducted with our several constituent associations and their members, with respect to matters of legislation, medical defense, income tax law, the national prohibition law, the Harrison narcotic law and other matters. An effort was made during the legislative sessions of the past year to keep as closely in touch as possible with state activities, but with only fair success. It is hoped that as time goes on, and as our constituent associations come to realize that the Bureau is the best agency through which each association can help all others, and through which it can obtain help from all others, the Bureau will be able through their aid better to collate and analyze for the service of each of our several constituent associations the experiences of all.

Respectfully submitted,

WILLIAM C. WOODWARD,
Executive Secretary.

REPORT OF THE JUDICIAL COUNCIL

Dr. M. L. Harris, Illinois, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Report of Officers:

To the Members of the House of Delegates of the American Medical Association:

A large number of communications have been addressed to the Judicial Council during the past year, some of which more properly should have gone to local councils, as they dealt with local ethical matters the principles governing which are already set forth in the principles of medical ethics. These communications have dealt principally with questions of ethics which should be determined by the boards of censors of component county medical societies or, on appeal, by the boards of councilors of constituent state medical associations. Of course, appeal from boards of councilors of constituent state medical associations can always be taken to the Judicial Council of the American Medical Association. The Judicial Council is not disposed to refuse to accept responsibilities that may be imposed upon it with respect to questions which can best be adjudicated by this Council, but feels that the boards of censors of component county medical societies and boards of councilors of constituent state medical associations first should attempt to adjust local matters involving their own members. Adequate machinery has been provided for the fair adjudication and settlement of misunderstandings and disputes between individual physicians, or between physicians and medical socie-

ties, and adequate provision has been made for orderly appeal from decisions which may not be acceptable to parties concerned. The Judicial Council stands ready at all times to give advice or assistance in the settlement of questions which may be presented to boards of censors or boards of councilors; but while it is desirous of being helpful to officers of component and constituent societies, it is also desirous of avoiding even the appearance of interfering with the operations of established agencies of the county and state medical societies.

A great many communications have been received with advertisements used by individual physicians, group clinics, pay clinics and hospitals owned by individuals or groups. Practically all of the advertising that has been thus submitted, some of which has been sent anonymously, has been found objectionable. This council wishes to state, however, that the members of state associations who use objectionable advertising are responsible to and under the control of the censorial agencies of the societies of which they are members. The Secretary has been directed, therefore, to refer communications of this nature to the secretary of the constituent medical association concerned, with the suggestion that they should be brought to the attention of the board of councilors, or, through them, to the attention of the board of censors of the component society concerned.

An interesting communication which was presented to the Council during the year was one inquiring as to the propriety of the use of radio broadcasting stations by individual physicians for the dissemination of medical information. It is the opinion of the Judicial Council that radio broadcasting is a form of publicity and its use is subject to the same rules as those which apply to newspaper advertising and, therefore, is to be governed by the ethical principles of the profession. The decision of any special question concerning radio broadcasting in individual cases falls within the jurisdiction of component medical organizations.

In a communication received from a group clinic, inquiry is made as to the ethics involved in the admission of an osteopath into the clinic group. It seems that an osteopath had actually been admitted into this particular group and that a complaint had been registered with the county medical society. The Judicial Council is of the opinion that it is not in keeping with the Principles of Medical Ethics of the American Medical Association for members to associate themselves with osteopaths; that the by-laws of component societies not in conflict with by-laws of their state associations or of the American Medical Association cannot be ignored; that under the Principles of Medical Ethics, physicians cannot act with or support those who base their practice on an exclusive dogma or sectarian system; and that physicians associated with an osteopath in a clinic or otherwise cannot be debarred from membership in the American Medical Association in the absence of action by their component society.

From another source, inquiry was made of the right of a county medical society to withhold membership or to withdraw the privileges of membership from a registered physician who graduated from an osteopathic school. This inquiry came from Texas, in which state a diploma from a high grade osteopathic school entitles the holder thereof to take the examination by the state board of medical examiners for a license to practice medicine. This examination must be in all respects the same as that to which a graduate of a medical school is required to submit, and the graduate of the osteopathic school who passes the examination successfully is granted the same kind of license to practice medicine as that granted to a graduate of a reputable medical school. The Judicial Council is of the opinion that a legally registered physician who has complied with the requirements of the law in securing a license by the state to practice medicine and who, having secured such license, has not practiced or claimed to practice sectarian medicine, but has conformed to the requirements of the Principles of Medical Ethics of the American Medical Association, and who has been accepted into membership in a county medical society, cannot be expelled therefrom without cause.

It seems to be true that a concerted movement has been organized covering most of the states, to secure entrance to

"regular" hospitals for osteopaths and chiropractors, and possibly for followers of other sects and their patients. In response to several inquiries, received almost simultaneously, the Judicial Council formulated and submitted the following opinion:

The board of control of any hospital (not maintained by general taxation) has the legal right for reasons sufficient to the board to refuse the privileges of the hospital at any time to any practitioner regardless of his so-called school of practice. The fact that the person applying for permission to bring to and treat in the hospital a particular patient is licensed by the state to practice does not alter the situation. The medical staff of a hospital likewise has the moral right to refuse to accept as an associate any person whom the staff may consider objectionable for reasons sufficient to the staff, and should insist on maintaining that right.

Section 1 of Chapter XI of the By-Laws of the American Medical Association provides that "a member of a constituent association who removes to, and engages in the practice of medicine at, a location in another state in which there is a constituent association, shall forfeit his membership in this Association, and the Secretary shall remove his name from the roster of members of the American Medical Association unless within one year after such change of residence he becomes a member of the constituent association in the state to which he has moved." Section 3 of Chapter XI of the By-Laws provides that "a Fellow who changes the location at which he practices medicine, from the state through whose constituent association he holds membership in the American Medical Association to another state in which there is a constituent association, is eligible to membership in the component society of his new location. . . . He shall forfeit his Fellowship in the American Medical Association one year after such change of location, unless he becomes a member of the constituent association of the state to which he has moved."

A number of the Fellows of the American Medical Association have moved to states other than those in which their membership is held. Some of these are engaged in the private practice of medicine; some are engaged in teaching, and others are engaged in other special lines of professional work. In some instances, these Fellows are not eligible to membership in the county societies and state associations of the states in which they have taken up residence, for the reason that they are not legally registered as licensed practitioners in those states. In some instances, these Fellows would be required to submit to an examination by the boards of examiners in order to secure license. For that reason and for reasons sentimental and otherwise, some of these Fellows are greatly averse to relinquishing their membership in the associations of the states from which they have moved.

In the case of a teacher in the medical school of a state university, the claim has been made that he is not engaged in the practice of medicine, since he attends no patients except those seen in the university hospital in the course of his work as a teacher.

The claim is made by some Fellows of the Association who have moved to other states than those in which they hold membership that because they are engaged in certain special lines of work, as for instance radiology, they are not engaged in the practice of medicine and that there is, therefore, no occasion for securing license in the states in which they have moved. Without license, they are ineligible to membership in the medical societies of such states. They, therefore, wish to continue their membership in the societies of the states from which they have moved.

The Judicial Council is of the opinion that the provisions of the Constitution and By-Laws of the American Medical Association apply equally to those physicians who practice in institutions and to those in private practice. It is urged, therefore, that Fellows who have removed from one state to another shall seek to secure membership in the component county medical societies at their new locations within one year of the time of removal, in order that they may be continued as Fellows of the American Medical Association, and in order that they may give their active support to medical organization in the communities in which they have taken up residence.

The House of Delegates, at St. Louis in 1922, provided for the appointment by the President of a special committee for revision of the Principles of Medical Ethics. The President appointed the Judicial Council to serve as that committee. After a careful study of the Principles of Medical Ethics, the following amendments are recommended:

The heading to Section 2, Article I, Chapter II, page 6, should read, "Medical Societies" rather than as it now reads, "Duty of Medical Societies."

The heading of Section 1, Article III, Chapter II, page 11, should be changed by the substitution of the word, "Encouraged," for the word, "Required," so that this heading should read, "Consultations Should Be Encouraged."

The word, "may," in the third line of Section 5, Article III, Chapter II, page 13, should have substituted for it the word, "should," so as to make the first three lines of this Section read, "After the physicians called in consultation have completed their investigations of the case, they should meet by themselves to," etc.

The following sentence should be added to Section 1, Article IV, Chapter II, page 15, at the end of the section: "In embarrassing situations or wherever there may seem to be a possibility of misunderstanding with a colleague, the physician should always seek a personal interview with his fellow."

The fourth line of Section 1, Article VI, Chapter II, page 18, should be changed by the elimination of the words, "by societies," and transposition of the word "endowed," so that this line shall read, "physician. But endowed institutions," and

Section 1, Article VI, Chapter II, page 19, should be further changed by the elimination of the words, "should be accorded no such privileges," which now appear at the end of that section, and the substitution therefor of the words, "have no claim upon physicians for uncompensated services." These changes will make Section 1, Article VI, Chapter II, read as follows: "Section 1.—The poverty of a patient and the mutual professional obligation of physicians should command the gratuitous services of a physician. But endowed institutions and organizations for mutual benefit, or for accident, sickness and life insurance, or for analogous purposes, have no claim upon physicians for uncompensated services."

The heading of Section 2, Chapter III, page 20, should be changed by the substitution of the words, "Public Health," for the present heading of this section.

No other changes are thought to be necessary.

M. L. HARRIS, Chairman.

W. S. THAYER.

I. C. CHASE.

J. N. HALL.

J. H. J. UPHAM.

OLIN WEST, Secretary.

REPORT OF THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

Dr. John M. Dodson, Chicago, secretary, presented the report of the Council on Health and Public Instruction, which was referred to the Reference Committee on Reports of Officers:

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The Council on Health and Public Instruction has held three meetings during the year: at St. Louis, May 19-22, 1922; at Chicago, Nov. 16-17, 1922, and at Chicago, March 6-7, 1923.

At the St. Louis session it was voted to recommend:

That legislative and legal matters heretofore referred to the Council be transferred to the Bureau of Legal Medicine and Legislation to be created by the Board of Trustees with a full-time secretary.

That a sum of \$200 be appropriated for the National Health Council; that the Chairman of the Council be the delegate of the Council on Health and Public Instruction to this organization.

That the pamphlets of the Council on the Protection of Scientific Research, about twenty-eight in number, be condensed into two or three pamphlets under the supervision of Dr. Cannon of the Council.

That the pamphlets in the series on the Conservation of Vision, on Cancer, and on other subjects be revised and condensed into a smaller number by suitable committees, to be appointed for that purpose.

That the Secretary of the Council be authorized to use a sum not to exceed \$3,000, if available or procurable, for the purpose of providing such educational material (addresses, syllabi, charts and other illustrated matter) as the present immediate demands of the medical profession may make useful for the instruction of the public.

The suggestion that food charts be prepared by the Council was not approved.

It was also voted not to publish a manuscript on "The Venereal Peril" which had been prepared.

The Chairman and the Acting Secretary of the Council were directed to advise with the Board of Trustees in selecting a permanent secretary.

It was voted that the Council invite the Medical Women's National Association to select a committee to coordinate the activities of their association with the work of this council.

It was voted that it would be in the interests of health and honesty in medical practice if existing statutes relative to obscenity and crime were amended so as not to hamper the licensed physician in advising his patients in the matter of prevention of conception with the proviso that he is given no right to advertise or exploit such means in any way whatsoever.

It was voted to recommend that the Council be authorized by the House of Delegates to prepare suitable forms for the examination of persons supposedly in health, and that county medical societies be encouraged to make the announcement that their members are prepared and ready to conduct such examinations; only the indigent to be examined free of charge, all others to pay for such examinations.

The secretary reported that a total of 141,500 pamphlets has been sent out in response to requests during the previous year.

MEETING OF THE COUNCIL, NOVEMBER 16-17

At its meeting, Nov. 16-17, 1922, in Chicago, Dr. Vaughan was elected Chairman for the ensuing year.

It was voted to send a complete file of the publication of the Council to the National Health Council Library.

That Dr. Daniel Morton, who had prepared a Catechism of Public Health, be requested to submit a full text of it for further examination.

That the Bureau of Legal Medicine and Legislation be requested to use its facilities to secure the passage of the Model Vital Statistics Law in the three states not having such legislation. The bureau was requested to take cognizance of the inadequacy of enforcement of the vital statistics law in many states.

In reference to the new journal for the laity, the following action was taken by the Board of Trustees in conference with the Council:

(a) The Name of the new journal will be: "HYGEIA, A Journal of Individual and Community Health; Founded and Published by the American Medical Association."

(b) The journal shall appear as a monthly publication.

(c) Each issue shall consist of about sixty-four pages of double column reading matter set in double leaded ten point.

(d) The price of the journal will be three dollars a year or twenty-five cents per copy.

The Chairman of the Council made the following recommendations which were approved by the Board of Trustees:

(a) The editorial control of the journal shall be vested in the Council on Health and Public Instruction with such assistance as this Council may require.

(b) The executive editorial committee shall consist of Victor C. Vaughan, Arthur J. Cramp and Morris Fishbein.

(c) The Council on Health and Public Instruction will not prepare a budget for the expense of running the journal. All such expense shall be submitted to the General Manager,

and it is expected that the Board of Trustees will pay all bills approved by the Council on Health and Public Instruction and endorsed for payment by the General Manager.

In reference to narcotic drugs, the following action was taken:

The report of the conference with representatives of the professional organizations of the dentists, pharmacists, and of veterinary surgeons and of the drug manufacturing and trade organizations was accepted, and it was ordered that the draft of the proposed model state Narcotic Drug Law be transmitted to the Legal Bureau of the American Medical Association, with the recommendation that it be not altered without notifying members of the conference group of the proposed changes and reasons therefor.

It was voted that the preparation of literature dealing with smallpox and vaccination shall be in the hands of the Council on Health and Public Instruction, and its distribution shall be supervised by the Bureau of Legal Medicine and Legislation.

The Chairman was authorized to appoint a committee to confer with Dr. Meanes of the Women's Foundation for Health, as to the revision of the booklets in the Positive Health Series of the Foundation.

It was voted that \$500 be appropriated for the financing of the educational propaganda of the Council through the women's organizations where these expenses are not properly a charge on the Women's Foundation for Health or one of the constituent organizations.

It was ordered that an item be included in the next budget to defray the expense of advertising in the lay magazines the educational publications of the Council, and to cover the cost of revision of these pamphlets pending such time as revised texts may be published in HYGEIA.

The Chairman, as editor of HYGEIA, was authorized to appoint an editorial board to advise with him and the Council on the policy and material for publication in HYGEIA.

The Conference of State Secretaries was requested to suggest members of a committee to confer with the Council on the preparation of forms for periodic medical examinations of persons supposedly healthy.

Statement of expenditures of the Council was presented by Dr. West, Acting Secretary, showing a total expense for the year 1922, up to November 1, of \$12,933.78, leaving a balance of \$8,151.22. Detailed report is shown on a subsequent page. He also made report on the publications of the Council.

COUNCIL MEETING, MARCH 16-17, 1923

The Chairman of the Council stated that the first number of HYGEIA was ready and that a subscription list of 12,800 had been secured.

Dr. John M. Dodson was appointed as Acting Secretary of the Council and Editor-in-Chief of HYGEIA.

A report of the subcommittee cooperating with the National Education Association for the study of Health Problems in Education was presented and placed on file. The report showed very gratifying progress in this important movement, and that a detailed program of training and education for health in the public schools, from the kindergarten through the normal school, is now in process of preparation by the Joint Committee and a technical committee of expert educators.

It was voted that Dr. Cannon be appointed a committee of one to prepare a Source Book on Protection of Medical Research and also to revise and condense the pamphlets on this subject for reprinting and lay distribution.

A blank form for periodic medical examination of presumably healthy persons was presented by Dr. Emerson, discussed by members of the Committee of the Conference of State Secretaries. It was ordered that Dr. Emerson, with Drs. Sleyster, Throckmorton, Hines and West, of that committee, be requested to revise the form and accompanying text in accordance with suggestions made in the discussion; to prepare a final text as soon as possible with authorization to publish it in the AMERICAN MEDICAL ASSOCIATION BULLETIN as soon as ready.

The Council recommended an appropriation of \$250 for the National Health Council for the current year.

It was voted that the Board of Trustees be requested to appropriate the sum of \$25,000 for the work of the Council for the year 1923.

It was voted to hold a meeting of the Council each year at the time and place of the session of the American Medical Association, this year in San Francisco, the place and exact time to be arranged by the Chairman.

The reports of the Subcommittee on Health Problems in Education are appended. The reports of the Subcommittee on Narcotic Drugs, and of the Committee on "Periodic Examinations of Healthy Persons" were printed in the A. M. A. BULLETIN for April, 1923, copies of which will be distributed to the House of Delegates.

There is a continuous and steady demand for most of the pamphlets published by the Council. The report to date is as follows:

Series	No. of Vols. in Series	Calls for in 1922	No. Now On Hand
Infant Welfare	7	235,520	81,176
Sex Education	5	11,300	11,325
Public Health	8	60,290	4,200
Health Problems in Education...	4	3,200	15,470
Cancer	10	3,279	8,975
Conservation of Vision.....	20	4,432	14,950
Protection of Research.....	28	2,300	23,310
Miscellaneous	9	200	16,100
Totals	91	320,521	175,506

REPORT OF THE JOINT COMMITTEE ON HEALTH PROBLEMS IN EDUCATION

To the Council on Health and Public Instruction of the American Medical Association:

The second annual conference of the committees of the several state medical societies on health problems in education was held in St. Louis, May 23, 1922. Addresses were given by Drs. Welch of Alabama, Rankin of North Carolina, Leathers of Mississippi, McCormack of Kentucky, Hager of Maryland and Leiser of Washington. It is recommended that no further conferences of this sort be held until the members of the state committees have expressed a desire for such.

At the meeting of the National Education Association in Boston last July, \$1,000 was appropriated for the work of the Joint Committee, and it was recommended that a similar amount be appropriated for the use of the committee. The National Education Association also appropriated \$1,500 for the special work of the Joint Committee in drafting a comprehensive program of health education. It is *not* expected that this special appropriation will be duplicated by the American Medical Association. Dr. William B. Owen, member of the Joint Committee, was elected president of the National Education Association for the current year.

Two important reports were issued by the Joint Committee during the summer of 1922, namely, "Health Improvement in Rural Schools" and "Health Service in City Schools." An edition of 5,000 copies of each of these reports has been printed for distribution in response to demand. The report of the chairman of the Joint Committee, Dr. Wood, under date of June 19, 1922, presents an admirable summary of the activities of the committee for the last decade and of its plans for future work.

Your Committee on Health Problems in Education would recommend that diligent effort be made during the ensuing year to arouse greater activity on the part of the committees of the several state medical societies approved by the House of Delegates at its meeting in New Orleans. This can be most effectively accomplished by personal contact, and we would recommend that the Secretary of the Council or some member thereof or some member of your Committee on Health Problems in Education attend as many as possible of the meetings of the state medical societies during the coming year.

A meeting of the Joint Committee was held in Cleveland, March 1, 1923, at which were present eight members of the National Education Association group and two members of the American Medical Association contingent. At this meeting a detailed report was made by Dr. Wood of the progress of the technical committee in preparing a program of health

education. Mrs. Ira Couch Wood presented for the special Committee on Ventilation and Heating a report somewhat revised from that of last year. In brief, the essence of this report is that ventilation by open windows and ventilator shafts for outgoing air is more effective than any of the mechanical systems. This report is to be submitted to each of the members of the Joint Committee. When finally revised as approved, it was recommended that an edition of 5,000 copies be printed.

It was voted to print 5,000 copies of the report on "Daylight in the Schoolroom," prepared by a special committee, of which Dr. Edward Jackson was the chairman.

Attention is called to the fact that again this year the American Medical Association and the National Education Association will hold their annual meetings in close proximity as to time and place. This committee would recommend that the House of Delegates appoint a committee of the American Medical Association to attend the meeting of the National Education Association in Oakland to convey greetings from the American Medical Association and express the great appreciation of the medical profession for the prompt and satisfactory response of that organization to the request made by the American Medical Association, at its session in Los Angeles in 1911, that more attention be paid to health problems in education.

Approved.

VICTOR C. VAUGHAN, Chairman.
W. S. RANKIN.
HAVEN EMERSON.
MILTON BOARD.
W. B. CANNON.
JOHN M. DODSON, Secretary.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Dr. A. D. Bevan, Illinois, Chairman, presented the report of the Council on Medical Education and Hospitals, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

The present report of the Council makes reference to (1) the progress of the year in medical education; (2) the problems in medical practice; (3) hospital improvement; (4) nurse education and service, and (5) graduate and postgraduate medical schools.

1. PROGRESS OF THE YEAR IN MEDICAL EDUCATION

Since our report a year ago, the number of medical schools in the United States has decreased from eighty-three to eighty-one through the closing by the state universities of Michigan and Ohio of their separate homeopathic medical schools. It is interesting to note that the number of medical schools at the present time is just half the number that existed in 1906, when there were 162 colleges—the largest number—which was more than half of the world's supply and many more than were really needed in this country.

MEDICAL COLLEGES

A new medical school is being established on an elaborate plan by the University of Rochester, N. Y., and is expected to begin active teaching in 1924. Two state university medical schools, those of Wisconsin and Missouri, which now offer only two years of the medical course, are enlarging their plants in order to give the full four-year course. During the last fifteen years, in addition to many new, enlarged or remodeled buildings in medical schools, greatly enlarged medical plants have been established in eleven universities;¹ similar large plants are now under construction in five other universities;² and plans for large plants have been prepared for still six others,³ and construction of the buildings will begin in the early future.

1. These universities are Cincinnati, Georgia, Emory, Johns Hopkins, Harvard, Indiana, Minnesota, Nebraska, St. Louis, Washington and Yale.

2. Universities of Colorado, Illinois, Oregon, Rochester, N. Y., and Wisconsin.

3. Universities of Chicago, Iowa, Northwestern, Ohio, Vanderbilt and Western Reserve.

MEDICAL STUDENTS

In 1919, the total enrolment in all medical schools was 13,052—the lowest number recorded since 1890. Of this number, however, approximately 90 per cent. possessed higher educational qualifications⁴ as compared with only 6.2 per cent. in 1904. Since 1919, the total enrolment (Table 1) in all medical schools has increased at the rate of about 1,000 students each year, the total in 1922 being 16,140, and an estimate based on reports from all but a few of the schools shows that the present enrolment is approximately 17,700, the largest enrolment since 1912. There is now an average of 218 students in each of the eighty-one medical colleges, as compared with 176 students in each of the 160 medical colleges existing in 1904.

TABLE 1.—*Enrolments of Medical Students for Eight Years, Showing Variation in Numbers by Classes*

College Session	Freshmen	Sophomores	Juniors	Seniors	Intern Year	Totals
1914-15	3,373	3,919	3,675	3,864	...	14,891
1915-16	3,582	3,094	2,559	3,727	...	14,022
1916-17	4,107	3,117	2,866	3,674	...	13,764
1917-18	4,283	3,521	2,893	2,933	...	13,630
1918-19	3,104	3,587	3,272	2,967	122	13,052
1919-20	4,234	2,837	3,464	3,263	290	14,088
1920-21	4,825	3,588	2,637	3,416	406	14,872
1921-22	5,412	4,219	3,355	2,649	505	16,140
1922-23*	5,224	4,626	3,972	3,278	600	17,700

* Estimate.

The light line drawn through the table underseors the figures which show the lowest ebb in the enrolment in the respective classes following the adoption of higher entrance requirements. A temporary diminution in the numbers, shown by the dotted line, began with the freshmen in 1918-19 which was due to the enlistments in the World War. While the figures for 1922-23 are estimated, they are fairly accurate, since reports from all but a few colleges were obtained.

MEDICAL GRADUATES

The class of 2,529 students who graduated in 1922 was small because it was the "war class," made up of the few students who matriculated in 1918. The larger numbers enrolled in the three following years, as may be noted in Table 1, indicate that there will be approximately 3,000 graduates this year, about 3,800 in 1924, and about 4,500 in 1925. The last figure mentioned will bring the annual output of physicians to about what it was in 1907, when there were 4,980 graduates from the 159 medical schools. In 1907 there were only thirty-one graduates on the average from each college, while in 1925, according to our estimate, the eighty-one colleges will graduate approximately fifty-seven students each. At present, also, more than 90 per cent. of all graduates possess higher qualifications in both preliminary and professional education, as compared with less than 10 per cent. of those who graduated in 1907.

AGES OF GRADUATES

As shown in Table 2, the average age of the students graduating in the class of 1922 was 26.8 years. In 1916⁵ the average age was 26.5. It is evident, therefore, that the increase in the average age of students on graduation since the adoption of higher entrance requirements has been only a fraction (three tenths) of a year.

MEDICAL CURRICULUM

During the last few years, in the conferences on medical education, the need of a reorganization of the medical curriculum has been emphasized. During the campaign for the greatly needed standardization and development of medical education, as the need of instruction in certain subjects was recognized they were added, so the curriculum has grown to be an accumulation of many courses with a certain number of hours allotted to each. The result has been the development of a more or less rigid curriculum in which the various laboratory subjects are taught in so-called "water-tight com-

partments." There is now a general movement in teaching to secure a better correlation between the laboratory and clinical subjects. One marked improvement has already been made. Instead of allotting in a detailed manner a specified number of hours to each minute subject in the curriculum, each laboratory and clinical department is allotted a total number of hours, which may be used by that department in the manner that will produce the best results. Thus the head of the department is free, if he thinks wise, to establish courses in cooperation with other departments, whereby a student may see the application in the clinic of the ideas he has just obtained in the laboratory.

IMPROVED TEACHING PLANTS

Another step toward bringing about a better correlation between laboratory and clinical subjects is indicated in the plans for new teaching plants which are already in process of construction or which have been adopted by several of our prominent university medical schools. The plans for the new hospitals of the Universities of Chicago, Colorado, Rochester, Vanderbilt, and others place the medical school and hospital in the same building where the laboratories are in intimate contact with the hospital wards. Such an arrangement will bring the medical student throughout his medical course in constant contact, not only with the teachers of both laboratory and clinical departments, but also with interns, house physicians, and the members of the attending staff, all in the same building where sick people are being constantly cared for. All will have a common meeting ground in the medical library, which will also be in the same building.

This single building arrangement is in marked contrast with medical schools where the laboratories are widely separated from clinical departments, the latter sometimes being in separate and distant cities. The extreme situation is found in the two-year medical schools where the student goes necessarily not only to a distant city, but also to a different medical school for his two years of clinical instruction.

The tabulation gives also, comparatively, the numbers of hospitals in the various states in the years 1921 and 1923. The number in the latter year in some states is smaller than in the previous year, owing to the fact that more than 500 "homes" have been eliminated from the list, since they were found not to have hospital departments. Names of several hospitals that have ceased to exist have also been struck from the list. The number of hospitals now totals 6,570, a net increase of 334 since 1921.

2. PROBLEMS OF MEDICAL PRACTICE

The rapid expansion of medical knowledge has brought with it several problems in medical education and practice, including:

(a) The modern training of general practitioners.—The training of the general practitioner is a matter of special importance since they should always constitute the great majority of physicians and will be called on to care for patients representing all varieties of diseases and injuries. This is a problem for further study by the Council in the early future.

(b) The training of the specialist.—Part 5 of this report deals in full with this subject.

(c) The relationship of the general practitioner to the specialist and the proportion of each type which is needed.—Reliable estimates are that from 80 to 90 per cent. of all cases of illness can be properly cared for by well qualified and resourceful general practitioners. While there is a legitimate and important field for properly trained specialists, therefore, the need of them should not be overemphasized. The trouble at the present time is that many physicians are posing as specialists without having first obtained the essential training.

(d) The proportion of patients which require hospitalization.—A reliable estimate states that over 90 per cent. of all patients can be cared for efficiently in their homes or in the physicians' offices without the need of the hospital.

(e) The development and function of group practice.—This is dealt with in Part 3 of this report.

(f) The measure by which the benefits of modern medical knowledge and practice can be furnished to the entire public, including the supplying of physicians to rural communities.

4. Two or more years of college work in addition to a four year high school education.

5. See Table 1, Average Age of Graduates of 1916, American Medical Association Bulletin, March 15, 1917, pages 214-217.

SUPPLYING PHYSICIANS FOR RURAL COMMUNITIES

The difficulty of providing medical care for rural communities is still one of the problems of medical practice. Particularly is this true in communities where the population is scattered or where the physician has to practice under extreme difficulties.

The reasons for the scarcity of physicians in rural districts are mostly economic and are briefly outlined as follows:

(c) Also, aided by public choice, there has been a rapid trend in recent years for the treatment of patients in hospitals, especially where surgical procedures are required.

(d) Furthermore, with rare exceptions, hospitals are built only in cities where the population is sufficiently large to support them.

(e) With the improved transportation facilities, wealthy people in rural districts have developed the habit of obtaining

TABLE 2.—Average Age of Graduates of 1922*

	Number of Graduates at Various Ages																	Total Stu- dents	Total Years	Aver- age Age
	Under 21	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	Over 35			
College of Medical Evangelists.....	2	7	2	..	2	2	2	2	..	2	..	..	2	23	631	29.1
Stanford University	1	1	4	9	1	1	1	2	3	..	..	..	5	28	833	29.7
University of California.....	2	11	9	9	3	1	2	..	2	1	..	1	41	1,148	28.0
University of Colorado.....	1	3	4	2	2	1	1	1	..	..	..	..	15	418	27.8
Yale University	2	3	4	6	4	1	..	1	..	..	1	1	..	..	23	607	26.3
Georgetown University	1	10	4	3	1	1	..	..	..	..	..	2	..	..	22	564	25.6
George Washington University.....	1	4	3	1	..	..	..	..	1	..	..	..	..	1	11	287	26.0
Howard University	1	6	1	6	..	1	..	1	1	1	2	1	..	2	22	633	28.7
Emory University	1	3	5	12	10	6	2	2	5	1	1	1	..	..	..	1	50	1,283	25.6
University of Georgia.....	1	3	3	2	2	2	..	..	..	..	..	..	..	..	13	332	25.5
Hahnemann Medical College.....	1	2	2	2	2	1	..	1	..	1	..	1	..	..	13	365	28.0
Loyola University	1	5	7	11	6	4	6	10	4	1	..	2	2	5	64	1,831	28.6
Northwestern University	7	12	18	11	7	8	4	3	3	3	..	..	2	78	2,170	27.8
Rush Medical College.....	1	1	7	16	26	13	10	16	6	5	6	3	..	4	4	118	3,305	28.0
University of Illinois.....	4	8	19	3	6	4	3	1	1	..	1	1	..	51	1,367	26.8
Indiana University	2	5	8	7	3	2	3	2	..	1	..	..	..	..	33	864	26.1
State University of Iowa.....	7	10	8	6	1	3	3	..	..	..	..	..	..	38	993	26.1
University of Kansas.....	1	1	2	3	4	3	3	1	..	1	..	1	1	3	24	706	29.4
University of Louisville.....	1	1	5	6	2	4	..	1	..	..	1	1	..	..	22	591	26.8
Tulane University	2	7	21	7	11	6	4	4	1	1	1	1	3	..	3	72	1,903	26.4
Johns Hopkins University.....	1	3	5	27	15	7	10	3	..	1	..	1	3	..	3	79	2,108	26.6
University of Maryland.....	..	1	1	4	8	8	9	13	5	3	1	2	..	..	..	..	..	55	1,431	26.0
Boston University School of Medicine.....	4	4	6	..	1	1	3	..	1	1	..	..	2	23	643	27.9
Harvard University	1	5	19	22	19	13	7	8	6	2	3	1	1	1	3	111	2,971	26.7
Tufts College Medical School.....	..	1	3	14	14	15	11	6	2	3	6	1	..	..	..	..	1	77	1,967	25.5
Detroit College of Medicine and Surgery.....	1	2	2	2	2	1	2	2	3	1	1	1	1	1	1	22	623	28.3
University of Michigan (R).....	1	4	15	13	15	4	4	4	..	2	1	1	..	..	2	66	1,784	26.6
University of Michigan (H).....	1	1	1	1	1	..	..	..	..	..	..	1	1	1	7	207	29.5
University of Minnesota.....	11	6	8	6	2	1	2	..	1	1	..	1	1	39	1,071	27.4
Kansas City University of Phys. and Surgs....	1	3	..	2	..	2	5	1	..	2	..	14	30	1,033	34.4	
St. Louis University.....	5	7	13	5	4	1	2	..	..	..	..	..	2	39	1,048	26.8
Washington University	2	9	8	13	4	4	1	3	..	..	1	2	..	1	48	1,277	26.6
Creighton Medical College.....	5	6	5	3	..	1	..	..	..	..	..	..	..	20	510	25.5
University of Nebraska.....	1	2	3	6	3	1	1	..	..	..	..	..	..	..	..	17	440	25.7
Albany Medical College.....	1	..	2	4	2	1	..	1	..	1	..	..	..	..	..	12	309	25.7
Columbia University Coll. of Phys. and Surgs.	4	9	19	19	6	2	1	4	1	..	2	..	..	..	1	68	1,693	24.8
Cornell University	5	4	17	6	4	1	1	2	1	..	..	2	..	..	43	1,116	25.9
Long Island College Hospital.....	1	2	19	9	4	7	..	1	1	..	1	..	1	1	..	47	1,202	25.5
New York Homeopathic College.....	1	3	4	..	1	2	1	2	..	..	..	..	4	18	526	29.2
Syracuse University	1	3	9	7	7	3	2	1	1	2	..	..	..	..	..	36	922	25.6
University and Bellevue.....	6	10	24	20	7	5	2	1	..	1	1	1	..	..	..	78	1,916	24.5
University of Buffalo.....	3	5	6	2	3	..	..	1	..	..	..	..	..	2	22	576	26.1
Eclectic Medical College.....	1	3	4	4	1	6	4	2	5	..	..	..	..	4	34	979	28.7
Ohio State University (R).....	5	8	7	2	4	..	1	1	..	..	..	..	2	30	802	26.7
Ohio State University (H).....	2	4	..	..	1	..	..	..	..	..	..	..	7	183	26.1
University of Cincinnati.....	2	5	10	8	12	2	1	1	2	1	2	..	..	..	46	1,223	26.5
Western Reserve University.....	8	7	4	2	1	2	..	..	..	1	..	..	..	25	644	25.7
University of Oklahoma.....	2	3	5	..	1	1	1	..	..	..	1	..	1	15	411	27.4
University of Oregon.....	3	1	..	1	1	1	1	..	1	..	..	..	2	10	308	30.8
Hahnemann, Philadelphia	6	2	..	2	2	3	..	1	1	..	..	..	..	17	454	26.7
Jefferson Medical College.....	1	15	14	26	13	8	5	4	1	..	..	..	1	..	..	88	2,226	25.2
Temple University	1	1	3	2	4	2	1	1	..	1	1	..	2	19	556	29.7
University of Pennsylvania.....	3	10	27	31	21	7	9	3	2	..	2	1	..	..	1	117	2,906	25.6
University of Pittsburgh.....	2	..	7	9	1	2	1	..	1	..	1	2	..	..	..	26	673	25.8
Woman's Medical College, Pa.	3	5	5	3	2	4	2	..	4	1	..	..	..	3	32	907	28.3
Medical College of South Carolina.....	3	1	3	4	..	1	..	..	..	..	..	..	..	1	13	350	26.9
Meharry Medical College.....	3	7	3	3	1	1	1	2	1	..	2	..	..	4	28	786	28.0
University of Tennessee.....	1	..	1	3	1	1	1	..	1	..	..	..	2	11	336	30.3
University of West Tennessee.....	1	1	1	1	..	..	..	..	..	..	..	..	..	4	102	25.5
Vanderbilt University	1	3	1	4	1	..	1	..	..	..	..	..	1	1	1	13	351	27.0
Baylor University	3	6	3	2	1	..	2	1	..	1	..	2	1	22	620	28.1
University of Texas.....	1	6	9	9	8	3	3	2	..	1	..	..	..	..	..	42	1,063	25.3
University of Vermont.....	3	5	3	1	2	1	1	..	..	..	..	..	..	16	417	26.0
Medical College of Virginia.....	2	6	4	5	1	1	3	..	..	1	..	2	..	2	27	710	26.2
University of Virginia.....	1	3	5	4	2	1	..	1	1	..	..	..	..	..	2	20	526	26.3
Marquette University	1	7	7	4	1	2	..	..	..	1	..	..	..	23	631	27.4
Totals.....	..	3	35	141	391	481	424	249	169	137	93	64	41	32	33	15	95	2,403	64,508	26.8

* This table gives the ages of all students graduating in the class of 1922 for whom the information was available. It is noteworthy that all but one of the fifteen colleges having the lowest age average are Class A institutions, while four of the fifteen medical schools having the highest age averages are rated in Class B or Class C. The highest average, 34.4, is that of the graduates of the Kansas City University of Physicians and Surgeons, an institution which gives liberal advanced standing to graduates of osteopathic colleges, and

which does not require of all students admitted two years of work in a reputable college of arts and sciences or a full equivalent education. The age average, therefore, does not depend so much on the amount of premedical education as it does on the acceptance of older students who have previously been engaged in other occupations. It appears, therefore, that the adoption of higher entrance requirements has tended to lower and not increase the average age on graduation.

(a) Many physicians in rural communities graduated before medical schools had undergone the tremendous developments that have taken place during the last fifteen or twenty years. Although many of these, in spite of handicaps, have kept in touch with the progress in medical knowledge, there are some who, for financial or other reasons, could not get away to secure a postgraduate education.

(b) Recent graduates in medicine naturally prefer to live in the city with its better social, educational and living conditions.

most of their necessities from nearby cities. They go there, also, to secure hospital care or to physicians who have, or are supposed to have, established reputations.

(f) Except in emergencies, therefore, the country practitioner has only the mild cases and patients who are unable to or do not pay reasonably high fees.

(g) While there always has been a scarcity of physicians in rural districts, the situation became more pronounced when the war called many physicians away from the country districts. Then, at the close of the war, they took the opportunity

to obtain postgraduate work and to locate in more favorable communities. Meanwhile, investigation of many rural districts from which requests for physicians have come, shows that in most them physicians could not make a livelihood without undue sacrifice and difficulty.

It is believed that any community that can support a physician can get one if its citizens are willing to pledge themselves to guarantee an income of from \$2,500 to \$3,000 a year and to interest the community in the physician's support. This plan has worked out satisfactorily in a Middle West community where the physician selected secured from his practice

TABLE 3.—Number of Physicians and Hospitals in the United States and Dependencies

United States	Physicians			Hospitals, etc.	
	1921	1923	Gain or Loss	1921	1923
Alabama.....	2,405	2,313	92—	70	78
Arizona.....	380	372	8—	47	66
Arkansas.....	2,440	2,303	137—	43	56
California.....	6,766	7,549	783+	253	419
Colorado.....	1,817	1,882	65+	90	111
Connecticut.....	1,729	1,727	2—	83	92
Delaware.....	262	265	3+	13	20
District of Columbia.....	1,689	1,924	235+	57	41
Florida.....	1,281	1,348	67+	49	58
Georgia.....	3,406	3,274	132—	87	94
Idaho.....	478	452	26—	35	49
Illinois.....	10,651	10,716	65+	365	379
Indiana.....	4,446	4,353	93—	170	164
Iowa.....	3,536	3,490	46—	106	195
Kansas.....	2,550	2,492	58—	119	137
Kentucky.....	3,290	3,155	135—	112	114
Louisiana.....	2,001	2,058	57+	82	75
Maine.....	1,105	1,067	38—	65	77
Maryland.....	2,364	2,349	15—	136	107
Massachusetts.....	5,959	5,977	18+	334	340
Michigan.....	4,593	4,653	60+	188	218
Minnesota.....	2,628	2,774	146+	217	230
Mississippi.....	1,761	1,792	31+	52	61
Missouri.....	5,921	5,827	94—	163	163
Montana.....	610	568	42—	59	71
Nebraska.....	1,965	1,913	52—	92	128
Nevada.....	147	140	7—	22	27
New Hampshire.....	641	615	26—	61	57
New Jersey.....	3,260	3,362	102+	177	154
New Mexico.....	427	399	28—	46	50
New York.....	16,284	16,857	573+	670	597
North Carolina.....	2,236	2,226	10—	112	125
North Dakota.....	554	517	37—	50	53
Ohio.....	8,092	8,086	6—	304	302
Oklahoma.....	2,622	2,600	22—	71	82
Oregon.....	1,145	1,158	13+	69	80
Pennsylvania.....	11,348	11,241	107—	456	409
Rhode Island.....	778	754	24—	46	36
South Carolina.....	1,452	1,368	84—	55	52
South Dakota.....	658	630	28—	46	54
Tennessee.....	3,328	3,228	100—	100	98
Texas.....	6,205	6,094	111—	192	205
Utah.....	496	497	1+	25	35
Vermont.....	594	556	38—	33	35
Virginia.....	2,545	2,503	42—	119	113
Washington.....	1,797	1,756	41—	120	142
West Virginia.....	1,717	1,751	34+	64	62
Wisconsin.....	2,750	2,772	22+	215	217
Wyoming.....	267	263	4—	27	30
Total.....	145,376	145,966	490+	6,236	6,570
Dependencies of the United States					
Alaska.....	63	60	8—	19	28
Canal Zone.....	113	112	1—	7	7
Hawaii.....	175	193	23+	24	59
Philippine Islands.....	781	854	73+	41	61
Porto Rico.....	304	312	8+	38	45
Guam, Samoa, Virgin Islands...	29	28	1—	0	3
Total.....	1,470	1,564	94+	129	203
Addresses unknown.....	3,175	4,078	903+		
Total in the United States.....	145,376	145,966	590+	6,236	6,570
Total in United States and Dependencies.....					
	150,021	151,603	1,587+	6,365	6,773

an income larger than the amount pledged, so that the guarantors have not been called on to pay out any money.

The points in favor of this plan are that (a) the people of the community have a voice in the selection of their physician, and (b) the fact that they have pledged themselves to his support will induce them to patronize him so far as is possible and not go to physicians in distant cities. A third point is that many young physicians are short of funds at the time they complete their medical training and will be attracted to places where some reasonable income is guaranteed. Reasonable guaranties from rural districts, it is believed, will be attractive to recent graduates and will bring a physician to any community having a population sufficient to support one.

In New Hampshire, a law has just been enacted which permits any town to appropriate sufficient money to support a resident physician when the town cannot otherwise obtain one.

3. REPORT OF HOSPITAL WORK

The Council on Medical Education and Hospitals in its relation to hospitals maintains three main lines of work, namely, (1) information about all hospitals, for publication in THE JOURNAL and in the Directory; (2) the list of hospitals that furnish acceptable internships, and (3) information service bureau, to answer inquiries and give assistance on hospital problems.

Along with the preparation of hospital data for the eighth edition of the Directory, a complete recanvass of all hospitals has been made. As a result, we have published in the Directory, not only revised data on all hospitals, but also a list of special hospitals and related institutions classified according to the kind of cases received, and a revised list of the hospitals approved for internships. The list of special hospitals is published as a convenience to physicians in referring special cases and contains 38 schools for backward and mentally defective children; 52 schools for the blind; 100 children's hospitals; 27 convalescent and rest homes; 59 schools for the deaf; 53 drug addiction and alcoholic sanatoriums; 55 eye, ear, nose and throat hospitals; 49 epileptic hospitals; 243 maternity hospitals; 548 nervous and mental hospitals; 45 orthopedic hospitals; 15 skin and cancer hospitals; 16 schools for speech defects; 577 tuberculosis hospitals, and 5 trachoma hospitals.

The mass of data that has been collected from individual hospitals, and now being prepared for publication, will include reliable statistics heretofore unobtainable on such items as number of roentgen-ray departments; clinical laboratories; nurse training schools; hospitals having no resident physicians or interns; proportion of superintendents having M.D. degree, R.N., or other; capacity and number of hospitals supported by the different units of government, as state, federal, county and municipal, as well as those supported by private means such as individuals and partnerships, churches, fraternities and private corporations.

The 627 hospitals that were on the approved list for internships on May 22, 1922, have during the past year been canvassed as thoroughly as was possible by correspondence and otherwise, giving us new data about each institution for the approved list. Twenty hospitals were removed from the list, and 47 have been added, making a net gain of 27, making a total of 654 at present on the approved list. Thirty-seven hospitals that have applied for recognition are being held in abeyance pending the completion of certain improvements. The 654 approved hospitals represent a capacity of 187,314 beds and afford 3,671 internships. These internships include 3,103 in general hospitals, which would be sufficient to absorb the entire annual output of the medical colleges in the United States. The other 568 internships are devoted to the various specialties and should be considered as supplementary to a general internship. Women interns are admitted by 183 of the approved hospitals.

Next in importance to the improvement of internships is the hospital information service of the Council. The most frequent demands for assistance are concerned with plans for buildings, staff organization and administration problems touching professional ethics. A count of these service calls for certain weeks in the year indicates that the whole number of calls for information and assistance relative to hospitals was over 1,200 per year.

PRESENT NUMBERS OF PHYSICIANS AND HOSPITALS

As shown in Table 3, from figures based on the 1923 edition of the American Medical Directory, there are now 145,966 physicians in the United States, or 590 more than in 1921. There has been a decrease in the numbers of physicians in thirty-two states, but this decrease has been more than offset by the increases in seventeen states. The small increase in the two years is due partly to the small class—2,529—graduating in 1922, the war class, consisting of the few who matriculated in 1918. The proportion of physicians to population is now 1 to every 724 people.

SURVEY OF GROUP CLINICS

A survey of group clinics was made in 1922 in connection with the Council's survey of dispensaries. While this survey was being launched by the Council, the Trustees of the American Medical Association, in connection with the Judicial Council, was planning an investigation into the status of group medicine and pay clinics. By common consent the work of actually canvassing the clinics was done by the Council on Medical Education and Hospitals, and a preliminary report was made to the Trustees and to the House of Delegates in May, 1922. A perpetual file of groups is now being maintained, and reports of new groups are added as their existence becomes known.

An outstanding fact about the whole subject of group medicine is the loose way in which the terms "clinics," "group," "diagnostic group," "group practice," "medical group" and a number of similar terms are ordinarily used. Out of a total of 270 groups that have been listed up to the present time, not more than 100 would answer to even a liberal definition of group medicine, and still fewer have been found to be actually correlating the services of specialists as a routine in the examination and treatment of patients. Many situations that are learned of as "groups" turn out to be simple business arrangements for the common use of a building, including the sharing of the waiting room, telephone, clerical assistance, nurses, laboratory, roentgen ray and other facilities not available to the independent practitioner. The various types of groups may be thus classified:

1. *Closed Hospital Group*.—Relatively very few, the members of the staff of a "closed hospital" conducting a "clinic" in a suite of their private offices, and each member of the staff usually collecting his own fee.

2. *One Man Group*.—More numerous than any other type. Other specialists on salaries or paid on the percentage basis.

3. *Diagnostic Group*.—Work confined solely to diagnosis.

4. *Cooperative Group*.—A group more or less closely organized for the purpose of private medical practice, the aim being for each member to be a mature specialist along a chosen line, and to care for work pertaining to his specialty.

(a) *Primitive Type*: A cooperative organization composed of general practitioners from the same community.

(b) *Departmental Type*: A cooperative group organization composed of men, each of whom has already devoted a certain number of years to acquiring a thorough training in some special field of medicine or surgery, and is confining his private work to that specialty.

The geographic distribution of group clinics plainly shows the influence of certain of the larger clinics from which have developed numerous others. The states having the highest number of group clinics, without applying a strict definition to the term, are:

Wisconsin	36	Indiana	10
Minnesota	31	Washington	10
Texas	28	Arkansas	9
Illinois	13	California	9
Louisiana	11	Montana	9
Michigan	11		

On the average, there were nine physicians connected with each of the groups from which lists were received. This would make a total of approximately 2,430 physicians in the 270 groups listed.

That there is a growth in actual group medicine is certain, but the rate of such growth is hard to ascertain because of the difficulty of obtaining detailed returns from the groups. It is also certain that a large number of groups are dissolved on the death, withdrawal or removal of one or more members, and this prevents the phenomenal growth that is sometimes ascribed to group practice.

Group medicine is a type of practice which, if properly organized and conducted, will afford efficient service to the 15 or 20 per cent. of the sick and injured who may require specialized treatment. However, there is an opportunity afforded the groups efficiently to aid the general practitioner in consultations, and in the diagnosis and treatment of his patients. The attitude of the group in its relations to the general practitioner should be characterized by the same

fundamental principles and standard of ethics that apply to the individual physician who is called into consultation by the general practitioner.

Some of the larger and properly conducted group clinics are also providing graduate instruction both in general practice and in the specialties. Groups that develop research work and furnish a high quality of treatment can add materially to their service to the profession by providing residencies for those who seek to develop proficiency in the various specialties.

OTHER CLINICS AND DISPENSARIES

The Survey of Dispensaries and Clinics not only gave us the most complete information yet obtained regarding group medicine, but also yielded a mass of facts that have been digested and published regarding dispensaries and clinics and in fact all forms of organizations for the examination and treatment of ambulatory patients.

Excluding group practice the number and classification of dispensaries covered by the survey are as follows:

General dispensaries	935
Special dispensaries:	
Tuberculosis	888*
Venereal disease	831*
Nervous and mental	345*
Baby and child hygiene	566
Outpatient departments of eye, ear, nose and throat hospitals	37
Outpatient offices and stations of the United States Public Health Service	139
Outpatient departments of orthopedic hospitals	16
Miscellaneous	53
	2,875
Industrial (enumeration not completed)	3,811
	134
Total dispensaries known	3,944

* Including special clinics of general dispensaries as follows: tuberculosis, 221; venereal, 344; nervous and mental, 85. Exclusive of duplications, the total number of individual dispensaries known is 3,294.

The total number of individual patients in all the general and special dispensaries within a year is approximately 8,000,000, and the number of visits made by them is approximately 29,500,000 per year.

The survey brought out the fact that whereas the services of dispensaries were formerly almost entirely free, the idea of allowing the indigent to contribute a small amount has grown until now fully 60 per cent. of all the dispensaries of the country receive partial compensation from at least some of their patients. There is evidence that the abuse of medical charity in dispensaries is held down to a reasonable minimum. There is, however, absolute lack of uniformity or consistency in the schedules of charges to dispensary patients.

4. NURSE TRAINING

The suggestion regarding nurse education in the address of the Speaker to the House of Delegates, May 22, 1922, was referred to the Council on Medical Education and Hospitals. In accordance with the instructions of the House, and after conference with the Executive Committee of the Board of Trustees, a special committee⁶ was appointed to make a preliminary investigation of the problems of nurse education and to recommend what should be done.

The creation of the committee was completed early in November, 1922, and the investigation covered a period of about four months. An extensive exchange of ideas by correspondence was carried on, and the chairman held numerous conferences with groups of physicians, leaders in nursing education, and such members of the committee as were in the eastern part of the country. No complete survey of the nursing field was either possible or necessary, since the detailed report of the recent extensive survey made under

6. This committee consisted of: Dr. Robert W. Lovett, Boston, chairman; Dr. Austin Flint, professor of obstetrics and gynecology, University and Bellevue Hospital Medical College, New York; Dr. Lawrence R. DeBuys, professor of pediatrics, Tulane University School of Medicine, New Orleans; Dr. Richard O. Beard, associate professor of physiology, University of Minnesota Medical School, Minneapolis; Dr. Thomas McCrae, professor of medicine, Jefferson Medical College, Philadelphia; Dr. Winford Smith, superintendent, Johns Hopkins Hospital, Baltimore; Dr. George B. Sommers, superintendent, Stanford University Hospital, San Francisco.

the auspices of the Rockefeller Foundation was placed at the service of the committee. The wide extent of the committee's investigation, made in so short a time, is indicative of the vigor and activity of the chairman, Dr. Lovett, to whom a great deal of credit is due. The report presented by this committee to the Council is abstracted as follows:

THE EDUCATION OF THE TRAINED NURSE

The growth of the nursing profession has been very rapid. In 1880 there were fifteen training schools for nurses in the United States, with 323 pupils; in 1920 there were 1,755 schools with 55,000 pupils, and the number of women applying for admission to training schools shows no signs of falling off.

The course of study in nurse training schools has not kept pace in educational development with the rapid increase in numbers. As a result, many problems have arisen which require investigation and adjusting by the cooperative action of both physicians and nurses, and not by either physicians or nurses alone. In the hospital the pupil nurse is directly responsible to the superintendent of nurses, but on leaving the hospital, while engaged in private nursing, she becomes responsible to and acts as the assistant of the physician.

The carrying out of a sound scheme of nursing education, therefore, should be a cooperative enterprise between the physicians and the nurses, and differences of opinion should be settled by frank discussion. The best results can be obtained by a united effort of the two professions, and adequate service to the public is the reason for which both these professions exist.

PRESENT STATUS OF NURSE TRAINING

Nurse training in the United States today is not standardized, systematic or uniform in the matter of entrance requirements, length of the course, and methods of teaching. The nurse training schools connected with the great modern hospitals differ widely from those existing throughout the country away from medical centers.

Legislation cannot be looked to as a solution. All states except New Mexico have laws governing the registration of nurses. Wide variations are allowed in entrance requirements and length of course which account, perhaps, for the equally wide variations in the methods of administration of nurse training schools and in the character of the courses offered.

The defects in the training schools of today are:

1. The course, on the whole is unsystematized, unstandardized, and far from uniform.
2. There is too little systematic instruction in practical work and too much theory, and certainly a lack of correlation between the two elements.
3. Too many of the teachers are poorly qualified.
4. There is too much waste of the pupil nurses' time in uneducational routine work.
5. Many schools are connected with hospitals having utterly inadequate clinical facilities.

THE CHARACTER OF THE NURSE TRAINING COURSE

An analysis of twenty-three schools of reasonably typical character shows that, although the curriculums include the same general subjects, there are wide variations in sequence and methods of teaching. In certain schools, part of the fundamental instruction bears no relation to the nurses' work, and there is a wide variation of time allotted to the subjects taught. In bacteriology it varied from eleven to eighty hours; in nursing procedures it varied from fifty-five to 222 hours; in dietetics, from seventeen to sixty-four, and in chemistry, from ten to 150 hours. These instances are typical of the lack of uniformity in the curriculums of today.

Theoretical effective class room instruction must be correlated with practical bedside work on patients, and this requires the cooperation of the visiting physician, the head nurse of the ward, and the superintendent of nurses. It is essential that the nurse should be trained in "doing things" as well as hearing why they should be done. There are three fundamental needs: (a) sound fundamental theory stripped of all nonessentials; (b) bedside demonstrations, and (c) practical work on patients to the largest possible extent.

EQUIPMENT OF TEACHERS

In January, 1921, there were in the United States approximately 1,800 schools of nursing and 55,000 students, graduating about 15,000 a year. Many teachers are required, who must be medical men and nurses working in cooperation.

As teachers, the medical men cannot be retained or prepared for this special task. Some will be good teachers and some bad; some will be enthusiastically helpful, while others will be indifferent and frankly bored. The physician lectures about what he pleases, with little or no correlation with his colleagues, or with the school in general. Physicians cannot escape some blame for the present situation, and, if an attempt is made to make the nurses' training an orderly, systematic education, we are sure that physicians will assist with interest and spirit.

Some of the teaching nurses, both intellectually and pedagogically, are often unfit to teach. The teaching nurse has generally drifted into the teaching position by force of circumstances, perhaps without any adaptability. To establish an effective educational scheme will require the education of the teacher nurse; more and better instructors will be needed in an effective educational scheme, and this most important function of the university schools of nursing should be emphasized and utilized.

WASTE OF THE PUPIL'S TIME

The nurse is to be trained only by educational means and methods. In the training of an artist, a musician, a teacher, a stenographer, the educational problem alone is considered; but in the training of nurses the hospital needs come in, and the hospital expenses are conserved by having pupil nurses, for an unprofitably long time, perform duties that should fall to cleaning women, maids, cooks, waitresses, messengers, head-nurses, and the like. Reports state that such profitless duties consume about two hours daily, or one fifth of the nurse's time.

Although the heavy cleaning is supposed to be done by paid workers, the dusting, cleaning and sweeping for the patients under the care of the nurse require in different hospitals from one-half hour to one and a half hours a day or even longer. In many hospitals the time devoted by the student to the cleaning of lavatories, service rooms, bathrooms, care of the linen closets, patients' clothing, the condition of the serving kitchens, and other similar duties, is far in excess of what is of practical value to her training.

Much time also is spent in special routine duties. In some hospitals the nurse gets more credit for making routine records than for caring for the patients. If she has an unusual number of very ill patients, she cannot complete the routine records, or has to slight them. But for her standing in the training school, the routine is frequently more important. A nurse has been known to be severely reprimanded because she had not kept the record of temperature of the ward each hour when she could not leave a very sick patient. Ward routine must be learned by the nurse, but the continuation of it for too long a time is without profit.

Authorities on hospital problems state that hospital organizations of the future should include a permanent staff of paid workers, trained nurses and others. The needs of the hospitals must be met, and the sick cannot be neglected; but the pupil nurse must not be sacrificed to this end. This will mean an increased cost to the hospital for maintaining the training school. The hospitals are none too well supported now, and any additional expense is to be deprecated. Nevertheless, the object of the training school is to educate nurses who are competent to care for the sick; and, if nurse-training is to be put on an educational basis, the expenditure of time on profitless ward routine duties must be reduced.

CONNECTION WITH INADEQUATE HOSPITALS

It is a question how an effective training school can be conducted with such meager clinical facilities as are offered by many hospitals.

A series of instances taken at random from the tables in a recent survey shows how inadequate is the number of patients in certain hospitals as compared with the number of pupil nurses enrolled. For example: One hospital which

maintained a training school had a daily average of five patients and five pupil nurses, while seven other hospitals had, respectively, 193 patients and 111 pupil nurses; 192 patients and 22 nurses; 8 patients and 7 nurses; 10 patients and 10 nurses; 21 patients and 15 nurses; 75 patients and 41 nurses, and 40 patients and 27 nurses. Adequate instruction is hardly possible in these institutions, and they should be discouraged from maintaining so-called training schools.

RECOMMENDATIONS

The recommendations of the committee were, briefly:

1. That a committee be appointed, made up of (a) physicians who are competent clinical teachers, (b) representative nurses, and (c) at least one educator who is neither a physician nor a nurse; that this committee be arranged for by the American Medical Association in conjunction with the National League of Nursing Education, each having equal representation and appointing its own representatives, and that the educator be selected by the other members of the committee when appointed.

2. That a standard minimum curriculum for the training of nurses be formulated and put into effect; that this standard define the lower level of the education of the bedside nurse; that the university school of nursing be developed in order to educate more and better teachers for nurse training schools, and that graduate courses of instruction of at least eight months' duration be established for graduate nurses who desire to specialize, to teach, or to become administrators.

3. That the educational standard of nurse training include (a) entrance requirements consisting of a four year high school education; (b) that the length of the course be two years and four months, or twenty-eight months; (c) that the waste of the student nurses' time in noneducational ward routine be greatly reduced; (d) that better teachers from both the medical and nursing professions be secured in the schools; (e) that the character and sequence of the subjects taught, the percentage of time allotted to each subject, and the correlation of practical and theoretical instruction be considered with special care, and (f) that the standard be such that it may be carried out by relatively small as well as the large hospitals.

4. That there be a classification of nurse training schools in which only those which conform to the standard outlined be considered as acceptable.

The committee appreciated the fact that these changes in nurse training schools may cause increased expenses in the hospitals maintaining nurse training schools. Nevertheless, it was believed that the improvements would more than offset this expense in preventing serious results and greater expense which might accrue to the hospitals from the present increasingly chaotic conditions in nurse education.

5. GRADUATE MEDICAL EDUCATION

Since October, 1922, an inspection of all graduate medical schools in the United States has been made by the Secretary of the Council and Dr. Louis B. Wilson of the Mayo Foundation. Inquiry was made in regard to the opportunities not only for formal graduate study in preclinical and clinical branches, but also for informal graduate study in hospitals through internships, residencies, etc.

Inquiry in each instance was made regarding the corporate character of the institution, its relationships to other institutions, its financial resources and annual expenditures, its teaching resources in laboratories, hospitals, dispensaries, libraries and museums, the number and qualifications of its teaching staff, its standards for admission of students, the length and character of its courses of study in various fields, its methods of determining and recording the progress made by its students, and the character and form of certificates granted by the institution.

Two previous surveys of graduate medical schools have been made, the first in 1915, by Dr. Horace D. Arnold of Boston and the Secretary; the other, in 1919, by Dr. Bevan, the chairman of the Council, and Dr. Louis B. Wilson, in certain instances in company with Dr. William Pepper, Dr. James Ewing, or other individual members of the Council's special committee on graduate medical education.

GRADUATE EXTENSION WORK

The Council calls attention to the increasing opportunities afforded to county, state and district medical societies to organize and operate once or twice each year diagnostic clinics such as those which are being conducted by the Tri-State District Medical Society, the Pacific Northwest Medical Association and others, as well as the extension courses of lectures and clinics given under the auspices of the Universities of North Carolina, Pennsylvania, Wisconsin and Washington and by several of the state medical societies and state university medical schools. The Council will be very glad to cooperate with any county, state or district medical society in the securing of clinicians or other instructors when it is desired to organize similar courses or clinics. Details in regard to these courses were presented at the Conference of State Secretaries held last November, and the report containing the discussions was published in the January number of the AMERICAN MEDICAL ASSOCIATION BULLETIN.

The Council's present report, however, deals chiefly with the opportunities for study found in various postgraduate medical schools and hospitals.

PROGRESS SINCE LAST SURVEY

There has been a decided improvement in the character of the graduate medical schools in the United States since the survey in 1919. Thorough work on the highest plane of university graduate study is in progress in some institutions, while in others the conditions are almost inconceivably bad. As compared with the needs, the development of opportunities for graduate study is still far from adequate.

OPPORTUNITIES FOR PRECLINICAL WORK

In several university medical schools, opportunities for graduate study in the preclinical branches have long existed, usually as a part of the graduate school of the university in which the students are working for higher degrees in arts or sciences. As far as can be seen, there has been no material increase in the number of graduate students availing themselves of these opportunities except where graduate medical education is being emphasized.

ADVANCED STUDY IN CLINICAL FIELDS

The demands for advanced instruction in the clinical fields come from two groups of physicians: (1) Those desiring to prepare themselves for the practice of some specialty, and (2) those desiring to improve themselves in general practice or in the practice of a specialty in which they are already engaged.

1. *Long Term Students.*—The first group consists largely of (a) recent graduates who wish to fit themselves in a special field, either preclinical or clinical, and usually without having engaged in general practice as a means of livelihood; or (b) older graduates who have been in general practice for several years and who wish to fit themselves for, usually, special practice in some clinical field, using their experience in general medicine as a basis for their further study.

The larger numbers of graduate students in both of these groups are still obtaining their preparation informally in advanced internships, residencies, assistantships, apprenticeships and various minor teaching positions in medical schools and the hospitals attached thereto. Their ability to practice in a chosen field is usually a matter of self-determination, occasionally aided by advice from their immediate superiors. At present no university or accrediting body certifies to their special qualifications, and there is no means for public recognition of their attainments except through membership in one or more of the associations or societies of specialists. At present only two universities, the Universities of Minnesota and Pennsylvania, have well organized opportunities for preparation in clinical fields, including supplementary study in the supporting laboratory sciences and, when the graduates have attained proficiency, recognize it by the granting of advanced degrees. The University of Minnesota gives the degrees of Master of Science and Doctor of Philosophy, modified by the name of the specialty selected. The University of Pennsylvania gives the degrees of Master of Science and Doctor of Science, modified by the words "in Medicine."

2. *Short Term Students.*—The second group consists of physicians desiring to make further preparation, either in general practice or in some clinical specialty in which they

are already engaged. This group includes men and women of all degrees of preparation, from the most meager to the most advanced. They seek opportunities for study, ranging from a few days or a few weeks of intensive instruction to a year of laboratory or clinical experience. To provide courses of instruction, therefore, which they may take without too long an absence from their practice is a most complicated problem. There is a great need for continuation work for both the general practitioner and the specialist, aside from what is obtainable in daily practice and through personal reading, such as the new developments in diagnosis and treatment and the later diagnostic methods and operative procedures.

Too frequently the period that the practitioner can afford to take is so brief that his instructor, who is responsible for the care of patients, does not feel warranted in trusting him with any of that responsibility. Much good, however, is being accomplished by lectures and laboratory courses and clinical demonstrations, however brief. The instruction, therefore, must usually be limited to lectures, demonstrations and laboratory work. When periods of several months can be spent in one field, the instructor may gradually place clinical material at the disposal of the practitioner-student.

CERTIFICATES

A number of institutions grant diploma-like certificates of attendance to practitioner-students for unreasonably short periods of study. Two institutions, indeed, grant such certificates after one week of study. It is fundamentally wrong to grant diploma-like certificates which may be used for wall display to any except those whom the institution knows are proficient in a particular field. It is sometimes urged that these are certificates of attendance only, but the name of the student and the name of the specialty are stated in so conspicuous a manner as quickly to catch the eye of the observer. The public cannot easily distinguish between such a certificate and a diploma in the specialty named; hence they assume that the physician is truly qualified to practice the specialty named. This often false impression is all the more harmful if the certificate bears the name of some well-known university or if the name of some special field, as surgery or ophthalmology, is included in the name of the institution, or if it bears the legible signatures of men widely known as specialists in any field of medicine or surgery. Such certificates may readily be, and undoubtedly are, frequently used by unqualified physicians to mislead the public as to their qualifications in the fields named on the certificates.

If a graduate school determines that one of its students is thoroughly competent to practice in any special field of medicine or surgery, there is no reason why it should not give him a certificate or confer on him an advanced degree. If, however, it does not know that he possesses such competence, it is wrong to grant him a certificate that can be readily displayed on the wall of his office to mislead his patients. Therefore, no diploma-like certificate should be granted to any one who is not known to be proficient in that field, nor to any one under any circumstances, who has not completed at least one academic year in full-time study of a single special subject in the institution granting the certificate. For lesser degrees of proficiency and shorter periods of study, the most that should be granted in the way of a certificate should be a statement in letter form or, better still, on a card that does not contain all the essential data on one side.

These principles should apply also to certificates from hospitals for internships in special fields in which the special field is named. They should not necessarily apply to certificates from hospitals for general internships or resident service in which no special field is named.

PRINCIPLES REGARDING GRADUATE OR POSTGRADUATE MEDICAL SCHOOLS, SCHOOLS OF LABORATORY TECHNIC, AND OTHER INSTITUTIONS PROFESSING TO FURNISH COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE

The following principles are recommended as a basis for the grading of graduate medical schools by the Council:

1. *Admission Requirements.*—The minimum admission requirement for those wishing to prepare themselves for the

practice of a specialty should be graduation from an acceptable (Class A) medical college and completion of at least one year's internship in an approved hospital. In the case of reputable physicians who desire to improve themselves for general practice, lenient admission requirements are justified. Courses for general practitioners should be open to all physicians who have received the degree of Bachelor or Doctor of Medicine from medical colleges considered acceptable by this Council, or to reputable physicians who were licensed in certain states before graduation was required.

2. *Records.*—Records are just as essential in a graduate as in an undergraduate school. Graduate physicians, indeed, will vary more in their preliminary and professional qualifications than the present-day undergraduates, and a knowledge of these qualifications is essential to decide the character and grade of the work to which the graduate student should be assigned. Again, a knowledge of his proficiency in the work to which he is assigned is essential to know whether he is worthy of advancement, or whether he can be trusted with responsibility for the diagnosis and treatment of patients who may be assigned to his care.

Records should be kept by each institution, therefore, showing (a) the preliminary and professional entrance qualifications of every student, which should be verified by authentic or documentary evidence; (b) previous attendance at graduate courses and grades obtained; (c) the subjects for which he is enrolled; (d) evidence of his faithful attendance at his work; (e) evidence of the student's proficiency as demonstrated by his routine or research work, examinations or otherwise, and (f) whether an advanced degree or certificate was granted.

3. *Supervision.*—There should be careful and intelligent supervision of the entire school by a dean or other executive officer who holds, and has sufficient authority to carry out, fair ideals as determined by the present day needs of graduate medical education.

4. *Curriculum and Grading of Instruction Offered.*—The graduate school should have its various courses of instruction so graded that the student, if he desires, can obtain progressive work in a continuous course of two or three years, as may be necessary to prepare him satisfactorily for the practice of a chosen specialty. If it is found that at some previous time the student has satisfactorily completed certain portions of the work, he might be given advanced standing and thereby enabled to complete his preparation in a shorter time.

Where short courses are offered in any of the clinical specialties, these also should be so graded that, in effect, they would be segments of and, in total, the time and educational equivalent of the longer courses. These segments might be taken at different times, but would ultimately lead the student to the same objective. With the exception of the courses in general medicine, all short courses should fit in with a scheme, the ultimate aim of which would be a complete and satisfactory training in the specialty for which the graduate school provides instruction. Any institution offering work in any specialty, therefore, should provide (a) review courses in anatomy, pathology and the other basic preclinical sciences which apply to the respective specialties; (b) clinics in which students can have the opportunity personally to examine patients in hospital wards and outpatient departments and in which various therapeutic and operative procedures can be demonstrated; (c) courses of operative and laboratory technique; and (d)—to be assigned only when the student's previous training will warrant—assistantships in which, under the supervision of a physician already having recognized skill in the particular specialty, he can gradually assume responsibility in the diagnosis and therapeutic or operative treatment of the sick. Opportunity should be provided also for research work in the chosen specialty bearing on both the fundamental sciences and clinical fields. With courses so graded, no student should be admitted to any advanced short course unless, on careful investigation, he is found to possess the knowledge and skill, such as are obtainable in the other prerequisite courses.

5. *Teachers.*—In some institutions it was found that courses of instruction were being given by those not qualified either by training or by teaching experience in the subject or subjects to which they were assigned. The general practitioner

who can spend only a short period in acquainting himself with the newer things in diagnosis and treatment should receive his instruction from the very best men available. Certainly, their instruction should not be left to recent graduates of inferior schools or others who have not been able to obtain teaching recognition in acceptable medical schools.

The graduate medical school, therefore, should be supplied with a corps of teachers well trained in and responsible for the work in all subjects in which opportunities for study are announced. This should include teachers for essential review or advanced work in the preclinical sciences, as well as those who have in charge work in clinical subjects. The teaching staff should be made up of graduates of or teachers in Class A medical colleges or other high grade educational institutions. The faculty should be organized under the various teaching departments in which work is offered, and a competent teacher should be at the head of each department.

6. *Laboratories.*—The school should possess well-equipped laboratories to provide proper review or advanced work in both laboratory and clinical subjects essential for the specialty or specialties in which opportunities are offered. There should also be an adequate supply of special apparatus, such as stereopticons, balopticons, photomicrographic outfits and roentgen-ray equipment.

7. *Library and Museum Facilities.*—All graduate work in medicine demands intensive reading in the field studied. Library facilities in most of the graduate schools are either totally lacking or woefully inadequate. In some instances, however, this lack is provided for by good medical libraries attached to other nearby institutions. The graduate school, therefore, should have a medical library which should include an ample supply of modern text and reference books, files of bound medical periodicals, and the essential indexes. It should also receive regularly thirty or more standard medical periodicals, the latest numbers of which should be on tables or in racks where they are easily accessible to the graduate students.

The school should be supplied with adequate museum facilities, including anatomic and pathologic specimens.

8. *Hospitals and Dispensaries.*—Graduate courses in clinical subjects cannot be presented profitably in lectures only. There are objections to allowing short term graduate medical students to assume responsibility for the diagnosis and treatment of patients; nevertheless, ample clinical material must be available for demonstrations for short course students and for the personal use of properly qualified students in the longer term. The graduate medical school, therefore, should have a teaching hospital with a daily average of 200 or more patients, and an outpatient clinic with an average of 100 or more patients each day; or, if teaching is limited to a single specialty, a hospital of not less than twenty-five patients daily, and an outpatient clinic of at least fifty patients daily. In brief, it should have sufficient clinical material to enable it to provide satisfactory clinical study in the specialty or specialties for which opportunities are offered. In connection with the courses for general practitioners, ample clinical material should be available so that the student may be given the opportunity personally to examine patients in hospital wards and in the outpatient department, and to make the essential laboratory examinations.

9. *Annual Announcements.*—The graduate school should publish annually announcements, bulletins or catalogues giving detailed information in regard to its teachers, laboratories, dispensaries and hospitals; outlines of the various opportunities for study offered in both fundamental and clinical branches; a complete list of the students enrolled during the last preceding year, showing their medical schools and years of graduation and the subjects for which they registered, and a list of those to whom advanced degrees or diploma-like certificates were granted.

10. *Advanced Degrees, Diplomas, Certificates.*—No advanced degree of diploma-like certificate should be granted to any one who is not known to be proficient in the specialty pursued; nor to any one, under any circumstances, who has not completed at least one academic year in full-time study of a single special subject in the institution granting the certificate; and unless scholarship records of the student show that, throughout the period, he has faithfully attended to his work,

and unless reasonable tests show that he has diligently and satisfactorily completed the work for which he was registered.

SUMMARY

The following points in the Council's complete report are of particular interest:

MEDICAL EDUCATION

1. Greatly enlarged or entirely new teaching plants have been completed during the last fifteen years in eleven medical schools and are now under construction or planned for the immediate future in eleven others.

2. The total number of medical students has increased since 1919 at the average rate of 1,162 each year.

3. During the next three years indications are that the numbers of medical graduates will be increased by about 900 each year, reaching 4,500 in 1925.

4. The adoption of higher entrance requirements in medical schools has advanced the average age of students graduating by only three tenths of a year. The average age in 1922 was 26.8, as compared with 26.5 in 1916.

5. In order to establish a better correlation between laboratory and clinical teaching in medical schools, two definite measures are being adopted: (a) Making the curriculum more flexible by omitting detailed requirements, and (b) by erecting new plants whereby hospital and college will be in one building, where laboratories and hospital wards will be in immediate contact.

PROBLEMS OF MEDICAL PRACTICE

The rapid expansion of medical knowledge has brought with it several problems in medical education and practice, including:

1. *The modern training of general practitioners.* The training of general practitioners is a matter of special importance, since they should always constitute the great majority of physicians and will be called on to care for patients representing all varieties of diseases and injuries. This is a problem for further study by the Council in the early future.

2. *The training of the specialist.* Part 5 of this report deals in full with this subject.

3. *The relationship of the general practitioner to the specialist and the proportion of each type that is needed.* Reliable estimates are that from 80 to 90 per cent. of all cases of illness can be properly cared for by well qualified and resourceful general practitioners. While there is a legitimate and important field for properly trained specialists, therefore, the need of them should not be overemphasized. The trouble at the present time is that many physicians are posing as specialists without having first obtained the essential training.

4. *The proportion of patients that require hospitalization.* A reliable estimate states that over 90 per cent. of all patients can be cared for efficiently in their homes or in the physicians' offices without the need of the hospital.

5. *The development and function of group practice.* There are at present 270 groups listed with a total staff membership of approximately 2,430 physicians. These groups are divided into (a) the Closed Hospital Group, very few; (b) the One Man Group, most numerous; (c) the Diagnostic Group; (d) the Cooperative Group. (See Part 3 of this report.)

6. *The measures by which the benefits of modern medical knowledge and practice can be furnished to the entire public, including the supplying of physicians to rural communities.* The best solution at present appears to be for citizens of a community to guarantee a physician an income of \$2,500 or more each year for a term of five years. By this measure, it is believed that any community having a sufficient population to support a physician can secure one.

HOSPITALS AND DISPENSARIES

In 1921 there were 6,236 hospitals, sanatoriums and homes listed. In the two years since that time about 512 "homes" which did not have hospital departments have been eliminated and the names of about 846 other hospitals have been added, making a total of 6,570 at the present time.

Of the hospitals for intern training, the required number of beds in those eligible for approval has been increased to

100; nevertheless the number of those approved for intern training has been increased from 627 to 654 and provision is made for 3,671 interns.

There are listed 3,294 dispensaries and clinics (excluding group practice) which provide care each year for approximately 8,000,000 *patients* who during the year make approximately 29,500,000 *visits* to the dispensaries. An increasing check is being kept regarding the financial status of the patients so that the abuse of medical charity in dispensaries is being held down to a reasonable minimum.

NURSE TRAINING

The suggestion regarding nurse education in the address of the Speaker to the House of Delegates, May 22, 1922, was referred to the Council on Medical Education and Hospitals. In accordance with the instructions of the House, a special committee was appointed to make a preliminary investigation of the problems of nurse education and to recommend what should be done.

The committee's report shows that the defects in the training schools of today are:

1. The course, on the whole, is unsystematized, unstandardized, and far from uniform.
2. There is too little systematic instruction in practical work and too much theory and certainly a lack of correlation between the two elements.
3. Too many of the teachers are poorly qualified.
4. There is too much of the pupil nurses' time wasted in uneducational routine work.
5. Many schools are connected with hospitals having utterly inadequate facilities.

RECOMMENDATIONS

The committee recommended:

1. That a committee be appointed made up of (a) physicians who are competent clinical teachers; (b) representative nurses, and (c) at least one educator who is neither a physician nor a nurse; that this committee be arranged for by the American Medical Association in conjunction with the National League of Nursing Education, each having equal representation and appointing its own representatives, and that the educator be selected by the other members of the committee when appointed.
2. That this joint committee prepare a standard minimum curriculum for the training of nurses; and
3. That it prepare a classification of nurse training schools in which only those which conform to the standard outlined be considered as acceptable.

THE COUNCIL'S RECOMMENDATIONS

After careful consideration, the Council makes the following recommendations:

- (1) That the three following named individuals be selected to represent the American Medical Association in dealing with the problems of nurse education and service in cooperation with a similar committee appointed by the National League of Nursing Education:

Chairman, Dr. William Darrach, Dean of the Columbia University College of Physicians and Surgeons, New York.

Dr. Winford H. Smith, Superintendent of the Johns Hopkins Hospital, Baltimore.

Dr. Thomas McCrac, Professor of Medicine, Jefferson Medical College, Philadelphia.

- (2) That in order to bring about the proper correlation of the work with the existing educational and hospital policies, it is recommended that the secretary of the Council on Medical Education and Hospitals be the secretary of the committee of three, without voting power.

GRADUATE MEDICAL EDUCATION

During the last year an inspection of all graduate medical schools in the United States has been completed by the Secretary of the Council and Dr. Louis B. Wilson of the Mayo Foundation.

From the data obtained in this investigation, a series of principles has been prepared as a basis for a proposed classification of the various graduate medical schools.

(See the Principles, Pages 23 to 27.)

CLASSIFICATION OF GRADUATE MEDICAL SCHOOLS

Based on the foregoing principles, the following classification of graduate medical schools is recommended:

CLASS A.—Those which have adequate equipment, which are furnishing acceptable and complete graduate courses of instruction in one or more specialties and which grant advanced degrees or diploma-like certificates only to students who are properly qualified.

CLASS B.—Those which (a) are seriously deficient in certain respects, or (b) which have ample equipment and offer acceptable courses but which grant advanced degrees or diploma-like certificates to students who are not properly qualified.

CLASS C.—Those which (a) do not have adequate equipment or teaching facilities, or (b) are not properly organized, or (c) do not adhere to the prescribed educational standards, or (d) offer courses in a specialty too brief or inferior to insure proper qualifications in the specialty, or (e) grant advanced degrees or diploma-like certificates to those not properly qualified.

Respectfully submitted.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS.

ARTHUR D. BEVAN, Chairman.

MERRITTE W. IRELAND.

RAY LYMAN WILBUR.

SAMUEL W. WELCH.

WILLIAM PEPPER.

N. P. COLWELL, Secretary.

REPORT OF THE COUNCIL ON SCIENTIFIC ASSEMBLY

Dr. J. S. Horsley, Virginia, Chairman, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work.

To the Members of the House of Delegates of the American Medical Association:

A meeting of the Council was held in Chicago, Dec. 28 and 29, 1922. All members were present except Dr. Ray Lyman Wilbur, President Elect, and Dr. George H. Simmons, Editor and General Manager, members ex-officio. December 29, the Council held a conference with the secretaries of the Scientific Assembly at the headquarters of the Association. All of the sections were represented by their secretaries or by other officers, with the exception of the Section on Practice of Medicine, the secretary of which, unavoidably absent, submitted a written report.

Assignments for the meeting hours of the different sections for the 1923 annual session were made as follows:

Sections to convene at 9 o'clock in the mornings of Wednesday, Thursday and Friday, June 27, 28 and 29: Practice of Medicine; Obstetrics, Gynecology and Abdominal Surgery; Laryngology, Otology and Rhinology; Stomatology; Pathology and Physiology; Orthopedic Surgery; Urology, and Gastro-Enterology and Proctology.

Sections to convene at 2 o'clock in the afternoons of Wednesday, Thursday and Friday, June 27, 28 and 29: Diseases of Children; Surgery, General and Abdominal; Ophthalmology; Pharmacology and Therapeutics; Nervous and Mental Diseases; Dermatology and Syphilology, and Preventive and Industrial Medicine and Public Health.

A memorial on the death of Dr. Alexander R. Craig, who served as Secretary of the Council on Scientific Assembly for a number of years, was adopted and ordered spread on the minutes of the Council.

Dr. F. H. McMechan requested a session for the anesthetists. Because the dates named in the resolution of the American and Midwestern Associations of Anesthetists, as set out in the letter of Dr. McMechan, appeared to conflict with the dates of the annual session of the American Medical Association, and because the Council believes it mutually advantageous for the members of the regularly established sections of the Scientific Assembly and the anesthetists to have papers on anesthesia and allied subjects before several

sections, it was decided that the request for a session on anesthesia in the Section on Miscellaneous Topics at the San Francisco annual session be not granted. In addition to the reasons stated above for this action of the Council, there was the further reason that, under the provisions of the Constitution and By-Laws of the American Medical Association, none but Fellows may participate in the work of the Scientific Assembly. It appeared that the several associations of anesthesiologists expecting to hold meetings in San Francisco embraced within their membership those who are not Fellows of the American Medical Association, but who would be expected to attend and participate in the program of the session requested. Dr. McMechan was notified of the decision of the Council in a letter addressed to him by the Secretary under date of Jan. 16, 1923, in which the reasons for this decision were set out fully. In this letter it was suggested, as directed by the Council on Scientific Assembly, that the members of the American Association of Anesthetists who are also Fellows of the American Medical Association seek to secure assignments on the programs of the regular sections of the Scientific Assembly.

A letter from Dr. J. M. Anders was transmitted to the Council through Dr. G. E. de Schweinitz, President of the Association, suggesting the creation of a new section in the Scientific Assembly, to be known as the Section on Physiotherapeutics and Hydrology, and presenting argument in support of this proposal.

The Council finds itself in thorough agreement with Dr. Anders' views with respect to the need for arousing the interest of the medical profession in the various forms of physiotherapy, but believes that the best place for papers on subjects pertaining to physiotherapeutics is in the Section on Pharmacology and Therapeutics, and that such papers may well be presented in other regular sections of the Scientific Assembly in which their informative value and their stimulating influence will be greatest. The Council is also of the opinion, as expressed in the report presented to the House of Delegates at St. Louis, that no radical changes should be made in the sections of the Scientific Assembly as they are now constituted. This opinion seemed to have the approval of the Reference Committee, to which the Report of the Council was submitted at St. Louis, as well as the approval of the House of Delegates itself.

January 13, a letter addressed to the President of the American Medical Association was received from Eleanor Clarke Slagle, secretary of the American Occupational Therapy Association, transmitting a resolution adopted at the last annual meeting of that association, in which it is requested that the American Medical Association and other scientific organizations shall set aside, in the program of their respective association meetings for 1923, a section for the discussion of occupational therapy. This letter was received too late for consideration by the Council at its regular meeting. The views of the Council with respect to the creation of new sections were fully set out in its report made to the House of Delegates at the St. Louis Annual Session, and those views have in no wise changed since that report was made.

A vacancy was created in the chairmanship of the Section on Obstetrics, Gynecology and Abdominal Surgery, when Dr. Edward P. Davis, after his election to this office at St. Louis, declared his unwillingness to serve. The By-Laws of the Association make no specific provision with respect to the advancement of the vice chairman of the section in case of the vacancy in the chairmanship. However, as it seemed necessary that the Section on Obstetrics, Gynecology and Abdominal Surgery should have a chairman specifically designated as such, by unanimous vote of the Council, Dr. H. S. Crossen, Vice Chairman, was advanced to the chairmanship, and authorization was given for having Dr. Crossen's name appear on the stationery of that section as its chairman. It is recommended that the By-Laws of the American Medical Association be so changed as to provide for filling any vacancy that may occur in the offices of chairman, vice chairman, and secretary of any section.

Dr. D. Chester Brown, Chairman of the Committee on Scientific Exhibit of the Board of Trustees, appeared before

the Council at its meeting and presented the plans being considered by the Board of Trustees for the advancement of the Scientific Exhibit. The Council on Scientific Assembly feels that the Scientific Exhibit should be used for the promotion of scientific research, but also for the purpose of demonstrating to general practitioners practical methods of diagnosis and treatment; and that there is an important direct connection between the scientific sections and the Scientific Exhibit, because of the possibilities for using this exhibit to illustrate and to demonstrate papers which may be read before the sections. The Scientific Exhibit has been of increasing interest and value each year, and its possibilities for helpful instruction and for stimulating the interest of the Fellows of the Association in scientific methods of investigation, diagnosis and treatment have been demonstrated thoroughly. There undoubtedly should be closer connection established between the sections of the Scientific Assembly and the Scientific Exhibit, to the end that this exhibit shall be developed further as a means of instruction and assistance to the Fellows and members of the Association.

Dr. Frank Billings, Secretary of the Board of Trustees, appeared before the Council for the purpose of discussing the advisability of holding diagnostic clinics at the place of annual session of the Association each year. In the opinion of the Council, diagnostic clinics, to be held at the annual sessions of the Association, will offer splendid opportunity for a very helpful service to the members of the Association who may attend its meetings, and this Council heartily approves of the efforts that are being made by the Board of Trustees to provide for such clinics at the annual sessions.

At the conference of the Council with the section secretaries, held, December 29, a great many matters of importance to the Scientific Assembly were discussed. The benefits of this annual conference have been demonstrated amply, and it is probable that in no other way could the work of the Scientific Assembly be better advanced than by giving opportunity for discussion, between the section officers and the Council, of the many details that must be considered in providing programs of work for the Scientific Assembly.

On suggestion of the conference, which suggestion is heartily approved by the Council, it is recommended that Section 2, Chapter XV, of the By-Laws of the American Medical Association be changed by substituting in the third line of that section for the words, "immediately after it is read," the words, "before reading." Thus Section 2, Chapter XV, of the By-Laws would be made to read as follows:

"Sec. 2. PAPERS MUST BE READY FOR PUBLICATION.—Each author shall hand his paper to the secretary of the section before reading. The secretary shall endorse thereon that it has been read and shall hand it to the chairman of the executive committee. All papers approved by the executive committee shall be returned to the secretary of the section, who shall at once forward them to the editor of THE JOURNAL."

Some of the section secretaries expressed themselves at the conference with the Council to the effect that a rule should be adopted requiring all papers read before a section to be read in the order as presented in the Official Program. A rule of this kind seems to have become necessary, as proved by the experience of certain sections, and the Council has, therefore, adopted Rule No. 10 as follows:

"All papers read before a section shall be read in the order as presented in the Official Program."

Respectfully submitted,

J. SHELTON HORSLEY, Chairman.

ROGER S. MORRIS.

F. P. GENGEBACH.

JOHN E. LANE.

E. S. JUDD.

Ex Officio

RAY LYMAN WILBUR, President-Elect.

GEORGE H. SIMMONS, Editor and General Manager.

OLIN WEST, Secretary.

(To be continued)

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - "Medic, Chicago"

Subscription price - - - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JUNE 30, 1923

THE ETIOLOGY OF TYPHUS FEVER IN
LABORATORY WORKERS

The infectious diseases have all too often taken their toll of human offerings from the ranks of those self-sacrificing investigators who have devoted themselves to the study of the etiology of these deadly maladies. The pathos of this devotion to our welfare has been peculiarly accentuated in the case of typhus fever, to which one distinguished student after another has succumbed, the latest of the victims being the distinguished entomologist A. W. Bacot of the Lister Institute in London, who died a year ago while engaged in investigations of typhus fever at Cairo, Egypt.¹ Certain lessons derived from this untimely loss of an eminent investigator should not be allowed to pass unnoticed. It is commonly stated in current textbooks that there is little, if any, doubt that typhus fever is transmitted by the bite of the body louse whose body harbors the infectious agent.² The exact manner in which laboratory workers, who have presumably been intelligently careful to avoid the bites of infected lice, have become infected with typhus fever has not always been clear. It has usually been accepted that an actual transference of at least one infected louse from the sick to the healthy has occurred. Contact with patients has presumably presented the risk of acquiring infected lice.

Nevertheless, Arkwright and the late A. W. Bacot,³ both of whom became infected in the course of their investigations at Cairo in 1922, engaged to study the added possibility that infection may occur by means of the excreta as well as the actual bites of the louse. Atkin and Bacot⁴ had attempted to infect monkeys by allowing infected lice, *Pediculus humanus*, to feed on them, taking care that the infection should not occur by inoculation of the excreta. Arkwright and Bacot

have pointed out the lack of microscopic evidence suggesting that *Rickettsia* might be transferred from the louse by the act of biting; nor can these bodies be demonstrated in the fore part of the intestine, mouth parts or salivary glands.

In the case of both Arkwright and Bacot, it appears that neither of these workers had recently seen a typhus patient or been near a fever hospital. There is no reason to suppose that living infected lice had found their way to them. Consequently, Arkwright has concluded that probably the excreta of infected lice are one, if not the chief, source of laboratory infections with typhus; but of course other means of infection cannot be ignored, such as a prick with an infected dissecting needle. That the virus in louse excreta can readily enter the body through abrasions or slight wounds is very probable, and this has been shown to happen in the analogous case of trench fever. It is not unlikely that Schüssler met his untimely death after a laboratory infection with typhus, in which the virus was in all probability introduced into the eye or the mouth by the finger. These lessons and suggestions, secured at the cost of precious human lives, must assuredly not be forgotten or allowed to pass without receiving the most serious consideration.

RESEARCH IN EPILEPSY

In spite of extensive clinical and experimental study, epilepsy still remains an unsolved problem. Only within comparatively recent times has it been realized that it is a symptom-complex that may be elicited by many causes, and is not a disease *sui generis*. Even the site of the nervous discharge that is responsible for the convulsions has not been established, and the mechanism of the discharge has been variously ascribed to defective neuron construction, the action of toxins, vasomotor disturbances, and finally to purely psychogenic factors. In the April, May, and June issues of the *Archives of Neurology and Psychiatry* is a noteworthy series of articles reviewing previous work and reporting the results of clinical, ecologic and experimental investigations that show real progress in this baffling problem.

The resemblance between the tonic spasm of the early stage of an epileptic convulsion and the extensor rigidity of the decerebrate animal has been noted by various observers; the clonic spasms, on the other hand, have seemed to correspond with the effects of stimulating the cerebral cortex. Using injections of picrotoxin to excite convulsions, Pollock has demonstrated, in cats and dogs, that both tonic and clonic phases, indistinguishable from those in the intact animal, occur in animals that have been decerebrated by section of the brain stem below the optic thalami. Even after section below the level of the seventh nerve nuclei, similar fits are sometimes evoked, though they are less severe, and a larger dose of picrotoxin is required.

1. Another Martyr to the Study of Typhus—A. W. Bacot, editorial, *J. A. M. A.* 78: 1542 (May 20) 1922.

2. Brill, N. E., and Baehr, G.: Typhus Fever, in Nelson's Loose Leaf Living Medicine 1: 192.

3. Arkwright, J. A., and Bacot, A. W.: Investigation of the Aetiology of Typhus Fever, Especially Undertaken for the Egyptian Government in the Public Health Laboratories, Cairo, *Brit. J. Exper. Path.* 4: 70 (April) 1923.

4. Atkin, E. E., and Bacot, A. W.: Experiments on the Infectivity of Typhus Virus, *Brit. J. Exper. Path.* 3: 196, 1922.

These observations, if confirmed, establish that the cerebral cortex is not necessary for the evocation of a typical fit. From clinical and experimental study, Rosett propounds a highly suggestive and fundamental conception of the epileptic seizure. He points out that typical tonic spasm, and even at times clonic twitchings, can be observed in the every-day reactions of normal people to sudden and unexpected shocks, and that these reactions are influenced, in a manner identical with that shown by the seizures of epilepsy, by the administration of bromids, phenobarbital and caffeine. He also calls attention to the fact that the one constant feature of the epileptic seizure is loss of consciousness, a fact which suggests that ablation of cerebral function is essential. He concludes that the epileptic fit is a discharge of midbrain centers when released from the control of the cerebral cortex, and is not a cortical discharge. This concept of "normal epileptoid reactions" accords well with many otherwise inexplicable facts and agrees with Pollock's findings just described.

Elsberg and Stookey studied convulsions produced by injections of absinth, and have also developed a new method of experimentation which depends on the fact that epileptic convulsions occur after temporary interruption of the cerebral circulation. By clamping off the arteries, it is possible also to establish an artificial circulation and to study the effects of various substances on the living brain. Among other results of their preliminary work, they find that, in cats and dogs, susceptibility to convulsions is increased by thyroidec-tomy and is not diminished by starvation. Even more striking is the conclusion that susceptibility is not exaggerated by diminishing the alkalinity of the blood by the direct injection of lactic acid. This observation appears directly to contradict widely accepted views on the rôle of acidosis in the mechanism of epilepsy. Acidosis is the cornerstone of the theory built up by Cuneo from his remarkable clinical and chemical studies. Cuneo demonstrated the presence of a proteose in the blood which he has been able to find only after an epileptic seizure, and compares it with histon derived from nuclei in which it exists in combination with nucleinic acid. Histon produces convulsions when painted on the cerebral cortex. Cuneo's work, which is appreciatively reviewed by Osnato, leads him to conclude that, contrary to general belief, the acidosis which he conceives as liberating the toxic proteose is due to faulty digestion of starches from deficiency of the alkalization function of the intestinal mucosa and liver, with the consequence that salts of organic acids are set free in the circulation. He found that convulsions were more numerous and severe on a diet rich in starches than on a meat diet, and also that administration of sodium acetate or tartrate to epileptics resulted in such severe fits that the experiment had to be discontinued.

These observations, as yet unconfirmed, open fresh leads which promise results for the future, of impor-

tance not only for the interpretation and eventual rational treatment of epilepsy, but also for the elucidation of some obscure phases of metabolism in uremia and other disorders accompanied by convulsions.

THE TREATMENT OF AMEBIASIS

Amebic dysentery, one of the more important diseases caused by protozoa, has not yet been put into the category of disorders for which a treatment that is both satisfactory and rational has been established. Emetin has long been known to have a toxic action on cultural amebas, and there seems to be little doubt that the drug possesses a definite remedial potency in the endamebic infections in man. However, despite the benefits secured in human therapy with emetin, the management of amebic infections still leaves much to be desired. Sellards and Leiva¹ of the Bureau of Science at Manila, for example, have lately called attention to the circumstance that few of the poorer Filipinos, even though they live in Manila, ever receive adequate and thorough treatment with emetin under satisfactory laboratory control. These investigators have given consideration to several plants belonging to the family *Simarubaceae*, which are very popular among the peoples native to the tropics as remedies for the treatment of dysentery. The outcome of the studies has been the demonstration that *Castela nicholsoni*, the chaparro amargoso of Mexico, possesses a chemical principle distinctly toxic for amebas. Therapeutic doses are well borne by patients suffering from amebiasis; and in several cases examined carefully, extracts of the plant gave prompt relief of symptoms, accompanied by disappearance of the amebas. According to the Philippine investigators, their results with *Castela*, which can be administered very simply, suggest a favorable comparison with emetin, in both the immediate and the final effects of treatment.

Although any drug that affords prompt clinical relief from amebiasis deserves serious consideration, it should be clearly appreciated, in the interest of progress, that neither *Castela nicholsoni* nor emetin, as employed at present, is an ideal agent for the eradication of *Endamoeba histolytica* infections in man. It has long since become evident, through careful examination of the stools of patients, that freedom from clinical symptoms does not constitute a biologic test for the eradication of the invading protozoa. A serious difficulty in the study of drugs detrimental to amebas has been the lack of satisfactory methods for artificial cultivation of the admittedly pathogenic species. From an experimental standpoint it is fortunate that amebiasis can be induced with more or less success in some of the common laboratory animals, notably cats. Spontaneous recovery is rarely noted.

Sellards and Leiva have come to the tentative conclusion, from their observations in treating infected

1. Sellards, A. W., and Leiva, L.: Investigations Concerning the Treatment of Amoebic Dysentery, Philippine J. Sc. 22:1 (Jan.) 1923.

animals with emetin, that recovery from amebic dysentery in man and other species results from a combined action of the natural resistance of the host and a moderate action of the drug on the amebas. The summation of these two factors is necessary for a radical cure. A lowering of either allows the disease to progress. Incidentally, also, they² have come to the conclusion that stasis is probably an important factor in determining the location of the lesions within the large bowel, in spontaneous amebic dysentery in man.

Current Comment

A STUDY OF SALICYLATES IN RHEUMATISM

The use of salicylic acid or its derivatives in clinical medicine is not a novelty. These continue to be employed with satisfactory results in a variety of disorders, among which acute rheumatic fever is outstanding in respect to the improvement or relief of patients affected by it. One cannot ascribe such widely recognized results to the passing enthusiasm for some novelty in drug therapy. Substantiated by years of empiric observation, they must have some more worthy explanation. Obviously, the search for the latter is rendered much more difficult so long as the etiology of the disorder is not clearly established. If we adopt the current hypothesis that rheumatic fever is an infection—a sort of “attenuated pyemia”—it seems logical to think first of all of the possible antiseptic action of salicylic acid in the body fluids, particularly in the inflamed joints where the infection may be localized. In previous issues of *THE JOURNAL* it has been pointed out, however, that the conditions existing in the living body preclude the possibility, or at any rate render it extremely improbable, that salicylic acid can accumulate in bactericidal quantities in the tissues during life. The antipyretic potency of the salicylates does not account for their beneficial effect in rheumatic arthritis, since other potent antipyretics are not equally efficient; and a similar argument of comparison applies to the doctrine of the analgesic virtues of salicylic acid derivatives. Morphine, for example, does not relieve the redness, heat and swelling of inflamed joints. In an attempt to imitate rheumatic arthritis experimentally in animals, Swift and Boots³ of the Hospital of the Rockefeller Institute have noted that rabbits inoculated intravenously with nonhemolytic streptococci, while under the influence of full therapeutic doses of sodium salicylate, developed almost as many inflamed joints as the untreated controls similarly inoculated. The salicylated rabbits, on the other hand, had a much higher proportion of mildly inflamed joints than did the controls. This anti-inflammatory action was most evident in the animals inoculated with streptococci of the lowest virulence, and could not be demonstrated in animals inoculated with hemolytic streptococci. Thus

we stand before the experimentally demonstrated fact that salicylates may modify favorably certain types of inflammation of the joints, while the explanation of this fortunately beneficent result still remains to be ascertained.

ACQUIRED RACIAL IMMUNITY TO INFECTIOUS DISEASES

The problem of successfully meeting the complex and unusual conditions that confront the sanitarian in the less developed semitropical countries of the world is one that tries the patience and engages the intellect of even the most highly trained persons. The principal medical officer of health of the Siamese government has recently remarked that “parlor sanitarians are uncommonly successful in devising ways and means to be applied in combating the epidemic diseases, but practicing hygienists not infrequently discover the impracticability of many of the hard-and-fast rules as decreed, and in no place is this so pronounced as in the Orient.” This hygienist¹ has gained the conviction that students of the subject have overlooked a high degree of natural immunity to infection and resistance to disease that has gradually been acquired by many Oriental peoples. Thus, he believes that the specific immunity to typhoid demonstrable in 15 per cent. of the population of Siam is in the nature of racial immunity, acquired as the result of using for many generations an infected water and food supply. Mendelson believes that the nervous system of Orientals is more resistant to the effects of germ infection than that of Occidentals, and he alleges that, owing to a “general infection immunity,” mortality may often be low even where morbidity from common infectious diseases is high. The instances of so-called “natural” immunity are always interesting to the student of hygiene. Will statistics and a broader experience bear out the thesis that has just been discussed? If they do, it will represent an important generalization in relation to world-wide conditions.

A MAD MOUNTAIN LION

In 1909 a girl, living near Morgan Hill, Calif., was attacked by a mountain lion and seriously bitten. The young woman made an uneventful recovery from the bites and scratches of the animal, but about seven weeks after the time of the injury she developed hydrophobia, and after being ill for one week with this condition, she died. A postmortem examination failed to reveal any other possible cause for the death. A boy who accompanied the girl and who had been severely scratched by the lion also died shortly afterward from a condition pronounced by the attending physician as tetanus, although another physician was inclined to diagnose the condition as hydrophobia. The incident was especially noteworthy because it is a general belief that the California mountain lion does not ordinarily attack human beings; in fact, there had been but one previously recorded instance in which this animal had, without obvious provocation, attacked a human being. Because of his interest in the case,

2. Sellards, A. W., and Leiva, L.: The Effect of Stasis on the Development of Amebic Dysentery in the Cat, *Philippine J. Sc.* 22: 39 (Jan.) 1923.

3. Swift, H. F., and Boots, R. H.: Influence of Sodium Salicylate on the Arthritis of Rabbits Inoculated with Nonhemolytic Streptococci, *J. Exper. Med.* 33: 553 (April) 1923.

1. Mendelson, R. W.: National Immunity to Infection and Resistance to Disease, as Exhibited by the Oriental, with Special Reference to Siamese, *Philippine J. Sc.* 22: 115 (Feb.) 1923.

T. I. Storer,¹ of the Museum of Vertebrate Zoology of the University of California, has made the present investigation. According to the records of the California State Board of Health, rabies has previously occurred in that state in horses, mules, cattle, sheep, goats, hogs, domestic cats, dogs, wild cats, coyotes and once each in the case of a ground squirrel and gray fox. The disease in the mountain lion may be added to the latter instances as a curiosity which, nevertheless, indicates the serious effects of this disease and emphasizes the importance of early Pasteur antirabic treatment in any instance in which a human being is bitten by one of the lower animals, particularly when it is impossible to determine definitely whether or not the animal is subject to this disease.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Chiropractor Fined.—Mrs. Blanche R. Fisher, a chiropractor of Sheffield, arrested recently on a charge of practicing medicine without a license, was fined \$500, with the understanding that the fine would be reduced to \$50 if she discontinued practice.

University News.—One of the new buildings of the University of Alabama School of Medicine, Tuscaloosa, will be named after Josiah Clark Nott, the founder of the Medical College of Alabama, Mobile, 1859. The college was removed to Tuscaloosa in 1920.

ARKANSAS

State Medical Examiners Elected.—At a reorganization meeting of the state board of medical examiners, in Little Rock, June 12, Dr. William H. Toland, Nashville, was elected president; Dr. Thomas H. A. Ross, Arkadelphia, vice president; Dr. James W. Walker, Fayetteville, secretary, and Dr. John T. Palmer, Pine Bluff, treasurer. Drs. Thad Cothorn, Jonesboro, and Earle H. Hunt, Clarkesville, were elected to fill the vacancies made by the retirement of Drs. Wells F. Smith, Little Rock, and Julius A. Bogart, Forrest City. Revocation of license proceedings against Dr. James Ennis Parramore, Russellville, on a charge of advertising and offering to treat and cure chronic disease, will be continued at the next meeting of the board in November. The application for a license to practice medicine of George J. Henning, Dell, under act No. 244 of the recent legislature, was rejected.

CALIFORNIA

Orange County Medical Society.—At the annual meeting of the society in Santa Ana, May 10, Dr. Bessica F. C. M. Raiche, Anaheim, was elected president; Dr. Rowland P. Yeagle, Santa Ana, vice president, and Dr. Samuel A. Marsden, Santa Ana, secretary.

CONNECTICUT

State Medical Meeting.—At the annual meeting of the Connecticut State Medical Society at New Haven, May 23-24, the following officers were elected for the ensuing year: president, Dr. Elias Pratt, Torrington; vice presidents, Drs. George Newton Bell, Hartford, and Henry Gray Anderson, Waterbury; secretary, Dr. Charles Williams Comfort, Jr., New Haven, and treasurer, Dr. Phineas Henry Ingalls, Hartford.

GEORGIA

Personal.—Dr. Henry L. Akridge, Camilla, has resigned as health commissioner of Mitchell County and will accept a

similar post with Glynn County. Dr. Charles O. Rainey, Camilla, was selected to succeed him.—Dr. John H. Winn has resigned as city physician of Columbus.—Dr. Montague L. Boyd, Atlanta, was the guest of honor at a meeting of the Bartow County Medical Society at Cartersville, in June.

ILLINOIS

Public Health Appropriations Curtailed.—The fifty-third General Assembly, which adjourned, June 19, cut nearly \$200,000 from the biennial budget of the state department of public health. Funds requested in the budget were virtually the same in amount and character as those granted two years ago, so that the curtailment places the department on practically the same financial basis as on July 1, 1919. About \$30,000 was trimmed from the social hygiene budget, while the item of printing was cut 20 per cent. Besides curtailing the regular public health appropriations, the legislature also declined to accept federal funds available under the Sheppard-Towner Act and those available for social hygiene work. It declined also to enact enabling bills, sponsored by the state department of public health, which would provide for the creation of county public health units. According to the state health commissioner, the department of public health will not be able to continue a number of constructive projects already in progress. The safe milk campaign, epidemiologic surveys based on individual reports of typhoid and smallpox, medical inspection of school children, better baby conferences and other similar field service will be limited. No public health legislation other than the bills providing funds for the state health department was enacted.

Chicago

Chicago Medical Society.—At the annual meeting of the Chicago Medical Society, June 19, the following officers were elected for the ensuing year: president, Dr. Archibald Church; president-elect, Dr. Jeremiah H. Walsh, and secretary, Dr. Roy R. Ferguson.

Gifts to Northwestern University.—At the annual commencement exercises of the university, June 18, it was announced that \$100,000 has been received under the will of Mrs. G. F. Swift, and a like amount from Elbert H. Gary, John C. Shaffer and "A Friend."

INDIANA

Hospital News.—The contract has been let for the erection of the Cass County Hospital at Logansport, for \$78,532. Other contracts for heating, plumbing and electrical work have also been let for \$32,387.—The County Hospital, Noblesville, will be closed indefinitely after July 1, pending the installation of new heating equipment, it is announced.—The new Clinton County Hospital, Frankfort, was formally opened, June 10. Rooms have been furnished and equipment donated by private and group funds. The institution will accommodate sixty-eight patients.

KENTUCKY

Laboratory for Louisville University.—The University of Louisville Medical Department will have three additional chemical laboratories erected that will double the capacity of the present laboratory, it was recently announced by Prof. A. W. Homberger, director of the chemistry department. Industrial chemistry, a new course teaching the relation of the science to all branches of industry, will be added to the list of allied subjects already taught at the university. Other courses will be extended to include more advanced work.

LOUISIANA

New Orleans Free from Bubonic Plague.—The U. S. Public Health Service has declared the port of New Orleans to have been completely free from any trace of bubonic plague for the last two years, and will entirely withdraw its services. Precautionary work in rat eradication and tests will be undertaken by the city board of health. A test of 200,000 rats caught in the last two years revealed no trace of infection whatever.

MAINE

Dr. Hagerthy to Succeed Dr. Searle.—Governor Baxter has appointed Dr. George R. Hagerthy, Bar Harbor, a member of the Maine Board of Registration of Medicine, to succeed Dr. Frank W. Searle, who has retired on account of ill health.

1. Storer, T. I.: Rabies in a Mountain Lion, California Fish and Game 9: 45 (April) 1923.

Child Welfare Campaign.—The Maine Public Health Association has appointed a committee to draft a state-wide program of child health work for volunteer health workers. Dr. E. D. Merrill, Dover-Foxcroft, is chairman. The high death rate in Maine among children, especially children of pre-school age, has been a matter of great concern to health workers throughout the state.

MARYLAND

Conference of Health Officers.—The annual conference of health officers and boards of health from the counties of Maryland was held at the Medical and Chirurgical Faculty Building, Baltimore, June 8. It was determined at this time to secure a full-time health officer for every county in the state. This method of conducting public health service, previously advocated by the state department of health, was given particular impetus at the meeting by an address on the subject by Dr. Warren F. Draper, assistant surgeon-general of the U. S. Public Health Service. At present, Allegany and Montgomery counties are the only two which have the services of a full-time health officer.

MASSACHUSETTS

State Medical Meeting.—At the annual convention of the Massachusetts Medical Society in Pittsfield, June 12-13, the following officers were elected for 1923-1924: president, Dr. Enos H. Bigelow, Framingham; vice president, Dr. Ayers P. Merrill, Pittsfield; secretary, Dr. Walter L. Burrage, Brookline, and treasurer, Dr. Arthur K. Stone, Framingham. Dr. Dean Lewis, Chicago, delivered the annual Shattuck lecture, June 12.

Hospital News.—The new forty-bed Methuen General Hospital, Lawrence, was formally opened, recently. This institution was equipped by Drs. Timothy Daly, Harry Penn, Constant Calitri and James I. Lawlor, local physicians who will comprise the staff. Drs. Wyman Whittemore, Frederick B. Lund, A. J. Leary and Russell Sullivan of Boston will be attending physicians.—The New England Deaconess Hospital, formally opened its new hospital in Boston, which was erected at a cost of \$400,000. The new extension has a capacity of 125 beds, making a total of 175 for the entire building. Bishop Hughes, dedicated the building and Governor Cox gave an address.

MINNESOTA

Hospital News.—The name of the Hopewell Hospital, Minneapolis, has been changed to Parkview Sanatorium.—The St. Paul City and County Hospital has been renamed the Ancker Memorial Hospital in honor of the late Dr. Arthur B. Ancker.—Two new buildings will be erected at the Willmar State Hospital, Willmar, at a cost of \$166,000, it is announced.—A three-story addition to Naeve Hospital (now the City and County Hospital), Albert Lea, to cost \$65,000, is under construction.

Personal.—At the recent commencement exercises of McGill University, Montreal, the honorary degree of doctor of laws was conferred on Dr. William J. Mayo of Rochester. Dr. Mayo has sailed for Europe, where the degree of master of surgery will be conferred on him by Trinity College, the University of Dublin, and the degree of doctor of science by the University of Leeds. He will present a paper before the International Surgical Congress, July 17.—Dr. Frederic Wharton Rankin of the Mayo Clinic, Rochester, has been appointed professor of surgery at the University of Louisville Medical Department, Louisville, Ky. Dr. Rankin was recently married to Miss Edith Mayo.

MISSOURI

Leper at Large.—It is reported by the state board of health that Emery Lambert Langley, of Essex, Stoddard County, afflicted with leprosy, is at large in Missouri, having escaped from the government clinic at Hot Springs, Ark., where he had been sent for treatment, and where it was discovered he had leprosy.

Applicants for Licenses Examined.—The state board of health examined 142 applicants for license to practice medicine at the meeting held in St. Louis, June 6-9. This is the last examination which will be held under the law passed in 1921 removing the word "reputable" from the statute. The new law passed in 1923 restoring the word "reputable" became effective June 18.

NEW JERSEY

Amendment to Midwifery Act.—During the last session of the legislature of New Jersey, the midwifery act was amended to require 1,800 hours' training in a period of not less than nine months to make a candidate eligible for examination for a midwifery license.

Campaign Against Rabies.—The board of health of Bayonne made an emergency appropriation of \$1,000, June 12, with which to combat the stray dog nuisance in the city. Dr. William W. Brooke, health officer, is making an effort to have all the dogs in the city vaccinated. Fourteen persons have been bitten by dogs and cats recently. Eleven of the dogs were found to have rabies and the eleven persons bitten by them are under treatment. The cost to the city of each case will be \$40.

NEW YORK

Personal.—Dr. George F. Mills, formerly health officer of Oneida, has been appointed on the staff of the public health lecturers employed by the Council on Health and Public Instruction of the American Medical Association.—Dr. John S. McCormick, Albany, has been appointed to the medical staff of the workmen's compensation bureau of the state department of labor.

Hospital News.—A drive has just been completed in which the sum of \$50,000 was collected for the new fifty-five bed Wyoming County Community Hospital, to erect an addition to the present Warsaw Hospital.—The Southside Hospital, Babylon, L. I., will move into its new home at Bayshore, L. I., July 1.—The board of managers of Tarrytown Hospital have voted to use the Dr. Coutant Memorial Fund of \$14,000 to construct a nurses' home, if the plan meets with the approval of Mrs. Coutant. The fund was raised among citizens of the community as a memorial to Dr. Coutant. A tablet will also be placed in the main hospital building in memory of the late physician.—Charles H. Hornby has resigned the superintendency of St. John's Riverside Hospital, Yonkers, and will locate at Schenectady. Mr. Hornby was for twelve years superintendent of the Flower Hospital, and for eight years head of the New York Medical College and Hospital for Women, New York.—In accordance with a bill passed by the last legislature, plans are being prepared for a new hospital for the care of mental cases at Kings Park, L. I., to be erected at a cost of \$1,500,000. It is planned to concentrate at this institution all the war veterans now scattered through the state hospitals for the insane. Ground will be broken by Governor Smith, July 4. An elaborate program has been arranged for that occasion.

New York City

Worthless Checks Cause Physician's Arrest.—According to reports, Dr. David B. Ballin, New York, was arrested, May 31, in New Orleans, on complaint of the Memphis, Tenn., police that he had passed several worthless checks while in that city recently.

Death Rate This Year.—The death rate for New York City for the week ending June 16 was below that of the corresponding week of last year, that week and the one previous being the only ones during the last three months of which this is true. This was 10.26 as compared with 11.21 for the corresponding week of last year. The mortality for the first twenty-four weeks of 1923 has been 13.79, as compared with 14.06 for 1922.

NORTH CAROLINA

Hospital News.—Through a gift from William H. Williamson of Raleigh, additions are being made to the Rex Hospital, Raleigh. The former surgical department is being made over into a children's ward and new quarters are being provided in the building for surgical service. Twenty beds will thus be added to the institution.—Another unit will be added to Salisbury Hospital, Salisbury, at the same time as the repairs made necessary by a recent fire are being made.

Course in Internal Medicine.—Graduate courses in internal medicine will be conducted in several western North Carolina cities during the next three months under the auspices of the extension division of the University of North Carolina. This work was started in 1916, but lapsed and was revived in 1922, when courses were given in various places in the state. The courses proved so popular that the university decided to continue and extend them. Asheville, Charlotte, Raleigh and New Bern will be centers for the circuits. Twelve lec-

tures and clinics, one each week, will be held at specified times and places. Dr. Frank A. Chapman, instructor in medicine, Rush Medical College, Chicago, will conduct the courses.

OHIO

Bill to Protect Hospitals.—Senate bill 104, which becomes effective July 22, increases the penalty for defrauding a private hospital by permitting the trial judge to impose a penitentiary sentence of from one to five years.

Personal.—Mayor Carrell has appointed Dr. Miffin B. Brady a member of the city board of health of Cincinnati, to succeed the late Dr. George A. Fackler.—Dr. George P. O'Malley, Lakewood, has been awarded the distinguished service cross for "extraordinary heroism in action in France" during the World War.—Dr. Raphael Isaacs, Cincinnati, has been appointed instructor in medicine at Harvard Medical School, Boston, and assistant physician at the Huntington Hospital.—Dr. George M. Logan delivered an address on "Gas Gangrene" before the Summit County Medical Society at Akron, June 5.—Physicians of Ashland County gave a dinner in honor of Dr. William H. Reinhart, Polk, and Dr. Oliver B. Richards, Nova, two of the oldest members of the profession in the county, June 26.—Dr. Porter C. Pennington, has resigned as coroner of Hancock County. His successor has not yet been named.

OREGON

State Health Officers Convene.—The Oregon State Health Officers' Association was organized in Portland, June 12-13. Dr. George Parrish, city health officer of Portland, was elected president of the association, and Dr. Frederick D. Stricker, state health officer, was elected secretary. Dr. Richard B. Dillehunt, dean of the University of Oregon Medical School, spoke on "Preventive Medicine." A symposium on syphilis was the feature of the afternoon session, June 12.

PENNSYLVANIA

State Health Commissioner Entertained.—Members of the Luzerne County Medical Society gave a dinner, June 1, at Wilkes-Barre, in honor of Dr. Charles H. Miner, state health commissioner. Dr. Edgar M. Green spoke on "Community Health," and Dr. Frank R. Wheelock, city health officer of Scranton, on "The Relation Between the City and State Health Departments." Col. P. M. Ashburn, commandant at the army field medical school, Carlisle, also gave an address.

Personal.—Dr. Lawrence Litchfield, Pittsburgh, president of the state medical society, was the guest of honor of the Venango County Medical Society at Oil City, May 18. Dr. Litchfield gave an address on "Diagnostic Problems of the General Practitioner."—At the fifty-fifth commencement of Muhlenberg College, Allentown, June 14, the honorary degree of doctor of science was conferred on Dr. William A. Hausman, Jr., dean of the surgical department of the Sacred Heart Hospital, Allentown.

Philadelphia

University News.—Dr. Bowman C. Crowell, Charleston, S. C., has been appointed professor of pathology in the Jefferson Medical College of Philadelphia, to succeed Dr. William M. L. Coplin, who resigned.—At the election of the general alumni of the University of Pennsylvania, Dr. John Norman Henry was reelected president.—Members of the Hahnemann Medical College and Hospital of Philadelphia, 325 in number, gave a testimonial dinner to the thirty-one graduates of the 1923 class. Dr. Harvey W. Wiley, Washington, D. C., delivered the principal address at the commencement exercises.—Dr. Collier F. Martin has resigned the chair of proctology; Dr. Eugene J. Asnis has resigned the chair of pathology and bacteriology, and Dr. Harry Z. Hibshman has been advanced to clinical professor of proctology at the Temple University Department of Medicine, Philadelphia.

SOUTH CAROLINA

Personal.—Dr. William M. Bevis, past assistant surgeon, U. S. Veterans' Hospital No. 78, North Little Rock, Ark., has been appointed medical director of the Waverley Sanatorium, Columbia, to succeed Acting Director Dr. Connie M. Guion, who has returned to her practice in New York City.—Dr. Julius H. Taylor, Columbia, and Dr. Robert E. Able, Chester, were appointed members of the state board of medical examiners by the governor, June 4.

University News.—Announcement that the degree of doctor of philosophy, in addition to the master's degree, will be

offered by the University of South Carolina was made, June 5, by the university authorities. A preliminary education equivalent to the full university course, and three years of full-time work will be required of applicants for the doctor's degree. The announcement states:

This degree aims to foster the spirit of scientific research and to register its results in the form of an approved dissertation which shall either add to the sum of human knowledge or shall contribute to the solution of some important problem by the systematic and original rearrangement of knowledge already acquired.

TENNESSEE

County Society Reorganized.—The Robertson County Medical Society was reorganized, May 1. Dr. William W. Porter, Springfield, was elected president; Dr. Will F. Fyke, vice president, and Dr. Benjamin F. Fyke, secretary-treasurer.

WEST VIRGINIA

West Virginia State Medical Association.—At the fifty-sixth annual convention of the state medical association in Beckley, June 19-21, Dr. Robert A. Ashworth, Moundsville, was elected president; Dr. Charles S. Smith, Beckley, vice president; Dr. Delivan A. MacGregor, Wheeling, secretary, and Dr. Hugh G. Nicholson, Charleston, treasurer. The 1924 session will be held at Wheeling.

WISCONSIN

Hospital News.—A new nurses' home will be erected in the near future at South View Hospital, Milwaukee.—Waldheim Park Sanatorium, Oconomowoc, operated by Dr. John H. Vojc, has been purchased by the Toren Restoration Hospital. Dr. Julius A. Toren, Chicago, will be medical director. Improvements and remodeling are planned.—The Holy Family Hospital, Alverna, near Manitowoc, has taken bids on a \$300,000 addition.—Plans are being prepared for the Methodist Hospital building to be erected at Richland Center. Bids will be called for about July 1.

CANADA

Personal.—Dr. Charles K. Clarke, Toronto, delivered the Maudsley lecture before the Medico-Psychological Association of Great Britain and Ireland, May 24.—Dr. Albert E. Best, Toronto, has returned to West China for a second term of service. He will lecture on internal medicine at the Union University, Chengtu.—Dr. Helen MacMurchy, Toronto, recently received the honorary degree of doctor of medicine from the University of Toronto.—Dr. Orfila, professor of gynecology at the University of Montevideo, Uruguay, and Dr. Leiva, professor of anatomy at the University of Salvador, Central America, were recent visitors to Toronto, Ont.—Dr. C. D. Parfitt, Toronto, was elected president of the Canadian Tuberculosis Association at the annual convention in Edmonton, Alta., recently.—Dr. W. Easson Brown, Toronto General Hospital, read a paper on "Ethylene as a General Anesthetic" before the Canadian Society of Anesthetists at Montreal, recently.—Dr. Thomas C. Routley, secretary of the Canadian Medical Association, has left Toronto for San Francisco to attend the annual session of the American Medical Association as representative of the Canadian association. He will attend medical meetings in Victoria, Vancouver, Calgary, Saskatoon and Winnipeg on his way back.—Dr. Stewart S. Skinner has resigned as registrar for New Brunswick on account of his health. Dr. John S. Bentley will succeed him.—Dr. Archibald L. C. Gilday has been appointed superintendent of the Western General Hospital, Montreal.—Dr. Arthur Rousseau, dean of Laval University Faculty of Medicine, Quebec, and Dr. Louis De L. Harwood, dean of the University of Montreal Faculty of Medicine, were appointed delegates to represent the governments of Quebec and Ottawa as well as their respective universities at the convention in Strasbourg in June.—Dr. Charles M. Anderson, Toronto, has been appointed director of laboratories for the Ontario Board of Health to succeed H. M. Lancaster, Sc.—Dr. Joseph W. Warren, Calgary, has been appointed director of the department of radiology at the Provincial Royal Jubilee Hospital, Victoria, B. C.

CANAL ZONE

Yellow Fever in Colombia.—The International Health Board announces an outbreak of yellow fever in the Republic of Colombia, at Bucaramanga, 450 miles in the interior. A statement was received from the national director of hygiene, Gogata, Colombia, giving his opinion that the disease was "ictero-epidémica de Weil," with some cases of pernicious

malaria, but Surgeon Joseph H. White, U. S. Public Health Service, May 16, confirmed the diagnosis of yellow fever. Seventy-three cases appeared within four months, with fifteen deaths.

PORTO RICO

Tuberculosis in Porto Rico.—The U. S. Public Health Service announces, following a five months' study by Dr. J. G. Townsend, that the death rate in Porto Rico from tuberculosis is more than 200 per 100,000, which is higher than in any state in the Union except Colorado. The rate in Porto Rico is especially high among laborers and is largely due, it is said, to housing and diet conditions.

GENERAL

Medical Journal Changes Hands.—Owing to the death of Dr. Harold C. Ernst, Boston, editor of the *Journal of Medical Research* since 1896, that journal has become the property of the American Association of Pathologists and Bacteriologists and will be published in the future by a board of editors appointed by the council of the association. It will be devoted to the prompt publication of original observations and investigations in the field of pathology. Papers in the field of medicine covered by the journal are solicited for publication. All communications should be addressed to the editor-in-chief, Dr. F. B. Mallory, Boston City Hospital, Boston. Members of the association will receive the journal as in the past.

Society News.—The first convention of the American Child Health Association will be held in Detroit, October 15-17. The program will be designed to cover child health from prenatal life to maturity.—The annual meeting of the Southern Minnesota Medical Association was held in Fari-bault, Minn., June 11-12, at the Minnesota School for the Deaf. Members and visitors were entertained by the Rice County Medical Association. Clinics were held by Drs. E. Starr Judd, Rochester, Minn.; Archibald MacLaren, St. Paul; Archa E. Wilcox, Minneapolis, and Olin W. Rowe, Duluth, Minn.—The eleventh annual meeting of the Eugenics Research Association was held in Cold Spring Harbor, N. Y., June 16. Judge Olson, chief justice of the municipal courts of Chicago, presided.—The annual meeting of the Valley of Virginia Medical Society was held in Winchester, May 31. Dr. Hunter H. McGuire, Winchester, is president of the society.

LATIN AMERICA

Yellow Fever in Bahia.—The director of the public health service at Rio de Janeiro has received information from Bahia to the effect that the yellow fever epidemic has declined, only four cases being reported during the previous month.

New Medical Organization in Brazil.—The Sociedade Brasileira de Hygiene has been formed in Rio de Janeiro for the study of sanitation questions, under the presidency of Dr. Carlos Chagas. Its first congress will be held Sept. 7, 1923.

New Medical Journal in Central America.—The first number of the *Boletín de la Subsecretaría de Higiene y Salud Pública*, San José, Costa Rica, has made its appearance, with the statement that there is no other strictly scientific publication in that country. Dr. Solón Núñez, the undersecretary of the public health department, is the editor.

Public Assistance in Peru.—A bureau of public assistance has been organized in Peru, headed by Dr. Felipe Chueca. The new bureau is divided into four sections, namely, first aid, venereal prophylaxis, laboratory and dental clinics, headed, respectively, by Drs. J. Romero, M. García Godos, J. Monteverde and J. E. Bellido. A syphilis hospital-dispensary has also been opened to give treatment, free of charge.

Prizes Offered by the Academy of Sciences of Cuba.—The prizes to be awarded in May, 1924, are: the Dr. Suárez Bruno prize consisting of a diploma and 300 pesos, for the best work on "Anemias of Parasitic Origin"; also a diploma and 100 pesos; the Cañongo prize of 250 pesos for the best work without specified topic; the Gordon prize of a gold medal for the best work on the "Respiratory Functions and the Circulation in Cubans." The competing articles, written in Spanish, English or French, must be sent anonymously, with the author's name in an accompanying sealed envelop, and must be received before March 30, 1924.

Personal.—Dr. Enrique Bazterrica has been elected president of the new board of directors of the Surgical Society of Buenos Aires. Other officers elected are: Drs. José M. Jorge, vice president; Oscar Copello, general secretary;

Guillermo Zorraquín, corresponding secretary; Adrian J. Bengolea, manager of publications; Guillermo Bosch Arana, librarian; Marcelo Viñas, treasurer, and Enrique Finochietto and Luis Lenzi.—Dr. Alvaro Alvim has returned to Rio de Janeiro from his trip to Europe where he went for treatment of a persistent professional radiodermatitis, and has resumed his practice at the Alvaro Alvim Institute of Radiology. His twenty-eighth anniversary as founder and director of this institute was recently celebrated in company with professional associates, friends and representatives of the press.—Dr. A. Navarro, professor of surgery at Montevideo, has been elected foreign corresponding member of the Instituto Médico Sucre in Bolivia.—The *A. M. M.*, the official organ of the Mexican Medical Association, states that Drs. Gabriel Malda and Quevedo y Mendizábal of Mexico City have left for Europe to attend some of the medical congresses this summer in France.—Dr. Salvador Zubirán y Anchondo of Mexico, is in New York for postgraduate work in internal medicine.

FOREIGN

Investigation of Health Conditions in Japan.—As a result of the request of Dr. Miyajima at the fourth conference of the International Health Commissioners at Geneva, in 1922, the conference committee recently sent experts to Japan to investigate health conditions, especially the methods for the prevention of epidemic diseases. The investigating committee is working at the laboratories of the department of home affairs in Tokyo, Yokohama, Kobe, Osaka, Nagoya and Kyoto.

Royal Institute of Public Health.—The annual meeting of the Royal Institute of Public Health was held in Scarborough, England, May 16-21. Dr. J. R. Kerr read a paper on the "American Industrial Doctor," outlining the progress in medical and surgical care for employees in the United States during the last fifty years. The second day was devoted to discussions on venereal disease, and the third to problems of birth control. Sir Leonard Rogers called attention to the intimate relation between leprosy and rainfall; Whittingham and Rock described their work on the prevention of phlebotomus fever in Malta; and Major Frost, R. A. M. C., read a paper on "The Interaction Between Syphilis and the Ductless Glands."

League of Nations Health Committee.—At the sixth session of the League health committee, at Paris, May 26, the development of intergovernmental cooperation in public health matters was discussed. As regards epidemiologic intelligence and public health statistics, a regular and rapid method for distributing information has been installed. Three committees were formed: the first, to investigate the prevalence of epidemic (lethargic) encephalitis and tuberculosis in tropical Africa since the World War; the second, to investigate the quantity of opium and other habit-forming drugs required annually by the various nations for legitimate purposes, and the third to collect information for a conference among various European states having navigable inland waterways, for the purpose of coordinating and strengthening sanitary control, without interfering with the normal functions of the waterways. A report was made of research work conducted in laboratories scattered all over the world during the last eighteen months, aiming at an international standardization of serums. A similar program was proposed in regard to insulin, digitalis, and pituitary extract. Public health courses are being conducted for public health officials in Warsaw, Kharkov and Moscow under the auspices of the health organization of the League, and, by an arrangement with the Soviet Russian delegation at the Genoa conference, the members of the health committee, together with a delegate from the central health authorities of Soviet Russia, constitute a special international commission for discussing the anti-epidemic campaign as it affects Russia.

Deaths in Other Countries

Dr. T. R. L. P. Pillai Avl, assistant surgeon to the Viceroy of India; aged 52; of angina pectoris.—Dr. Eric A. Lanford of London, Eng., at sea, May 22.—Dr. John Chiene, emeritus professor of surgery at the University of Edinburgh, Scotland, recently.—Col. James C. Robertson, Indian Medical Service, at Simla, of pneumonia, May 13.—Dr. James M. G. Swainson, demonstrator in anatomy, St. Thomas's Hospital Medical School, London, Eng., aged 50.—Dr. Henry Willey, aged 84, at Reigate, Eng.—Dr. Edward V. B. Harley, professor of pathological chemistry, University College, London, suddenly, May 21, aged 59.—Dr. Henry F. E. Harrison in London.—Dr. F. C. R. M. Knight of London, May 7, following an operation.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 3, 1923.

The Prevention of Venereal Disease

A committee appointed more than a year ago by the ministry of health to inquire into and report on the best medical measures for preventing venereal disease in civilian communities has presented an important report. The committee, consisting of a number of specialists, held twenty-eight meetings and examined a large number of medical witnesses, including medical officers in charge of clinics for venereal disease, health officers, medical women and social workers. Under the terms of reference, the committee was confined to the consideration of medical measures, but it records its conviction that these alone can never be an absolute preventive; their success must always depend largely on the cooperation of the community. Such cooperation can be hoped for only if full knowledge of the nature of the problems becomes common property. Such measures as extension of knowledge as to the nature of venereal disease and its consequences should be employed contemporaneously with medical measures. The community should be made to appreciate, as far as possible, that promiscuous intercourse is the main cause of venereal disease; that there is no absolute preventive except continence; that a large number of sufferers are innocent persons; that syphilis is a disease of great gravity if not treated early; that it causes serious results and is transmissible to children; that gonorrhea is a more serious disease than is commonly supposed, and that these diseases are a menace to the maintenance and advancement of the physical and intellectual standard of the race. Measures should also be taken to diminish those conditions of life which tend to foster promiscuous sexual intercourse and the spread of disease.

Medical measures are divided into two classes—those for preventing disease or minimizing the risk in persons exposed to infection, and measures for rendering noninfective and for curing diseased persons. With regard to prevention, the committee thinks that a man who, after exposure, thoroughly and promptly uses disinfectants runs little risk of infection. But the chances of failure increase rapidly as the interval between exposure and the application of disinfectants lengthens. In syphilis, disinfection within an hour would generally be successful, and in gonorrhea, there is a prospect of success after a longer interval. But it is extremely difficult for a woman to disinfect herself, and the prospects of success in disinfection by another person, however skilful, are less than in the case of a man. Though chances of success are greater in the case of skilled disinfection than in that of self-disinfection, an intelligent man, furnished with reasonable instruction, should, in favorable conditions, be able to disinfect himself. Should public facilities be afforded for disinfection? There is little direct evidence on the point. The committee thinks that the success of any public facilities for self-disinfection in the civil community is likely to be small. The law should be altered so as to permit pharmacists to sell *ad hoc* disinfectants, provided in an approved form with instructions from a competent authority. The Medical Research Council should be invited to draw up the instructions. The commercial advertisement of *ad hoc* disinfectants should be prohibited. The instruction of male patients by medical officers of venereal disease clinics in the preventive use of disinfectants would be a useful means of educating the community. But money spent on a general system of providing facilities for self-disinfection would be less profitable

than money spent either on treatment or on measures of education and improvement of social conditions. The chances of the success of skilled disinfection must necessarily be much limited by reason of the time that generally elapses between exposure and disinfection. The cost of any general system of skilled disinfection would be large; the system is inappropriate to rural districts or small towns, and the committee does not recommend its adoption as part of any general system.

With regard to the treatment of the disease, the general physician is not yet adequately equipped with the most advanced knowledge to enable him to deal competently with all cases. The venereal disease clinics are doing valuable work, which should be extended and improved. One of the difficulties is the tendency of patients to cease to attend clinics before they have completed their course. As to notification, it would be of little value unless supported by a system of compulsory treatment, and, if necessary, detention. In the present state of public opinion, any system of compulsory notification would tend to concealment and would be a backward step. Another difficulty in the way of compulsion is that there is no generally accepted standard of noninfectivity or cure. The attention of public authorities should be directed to the entry into the country of persons suffering from venereal disease. This may be a serious source of danger. The treatment of seamen suffering from venereal disease is important, and requires special organization. A considerable number of mental defectives suffer from venereal disease, and the arrangements for their control and treatment are inadequate. In certain areas, special measures for prevention would be justifiable, such as measures for dealing with defaulters, or, in a large seaport, public ablution centers, for disinfection in the neighborhood of docks. So far as conclusions can be drawn from figures of attendances at clinics, venereal disease is declining, as it was before the war.

Presentation to Dr. Byrom Bramwell

At the Royal College of Physicians of Edinburgh, a large and distinguished company assembled for the presentation of portraits of Dr. Byrom Bramwell, one to himself and another to the college. Subscriptions for the purpose, amounting to more than \$2,300, had been received and were still coming in. The subscribers numbered more than 250, and were physicians not only from all parts of the British Isles but also from the dominions and the colonies and from the United States. The original intention was to present Dr. Bramwell with a portrait from old medical friends and pupils; but, in view of the large number of subscriptions, the second portrait was presented to the college, of which he had been a distinguished president. Sir David Drummond, in making the presentation, referred to Dr. Bramwell's great abilities as a teacher, and the esteem in which he had been held by generations of students. As a worker, he had always occupied the first rank of clinical investigators. His works and his recorded cases had always commanded the confidence and attention of the profession, and his opinion as a physician had been sought far and wide. Sir Humphry Rolleston, president of the Royal College of Physicians of London, in presenting the second portrait, said that Dr. Bramwell's pupils welcome the opportunity of expressing their admiration for a clinical teacher of world-wide fame. To no other physician-teacher of the Edinburgh school had outsiders looked up, during the last thirty or forty years, as they had to him.

The New Buildings at University College

The king and queen visited University College to lay the foundation stones of the new obstetric hospital and new nurses' home, and to open the new anatomy buildings. These

have been made possible by the munificent gift from the Rockefeller Foundation of \$6,000,000. The anatomy building has five floors, the ground floor being devoted to dissecting and radiography, the second to teaching and museums, the third and fourth to research in anatomy, histology and embryology, and the fifth to microscopic anatomy. There is accommodation for live animals and a room for cinematographic study of animal movements. The king said that there could be but few instances in which such a gift had been received from a single benefactor. It was the more impressive as it had been bestowed by a citizen of the United States on a college and hospital in London, and thus on the people of Great Britain. It created another tie of sympathy and friendship which linked us with the United States, and was also evidence of the conviction that the progress of science and the welfare of mankind were not limited by national or racial boundaries. The Rockefeller trustees were influenced in their decision by the establishment at the college of the "unit system" of medical teaching, which was a substantial development of the traditional British system of entrusting the teaching to men actively engaged in private practice. But the advance of knowledge had necessitated this reorganization, which would give impetus to the more effective training and equipment of the British practitioner. The underlying principle was as old as Ecclesiasticus: "The wisdom of a learned man cometh by opportunity of leisure; and he that hath little business shall become wise." Among the distinguished company present were the staff of the American embassy and Dr. G. E. Maclean, director of the American University Union in Europe.

PARIS

(From Our Regular Correspondent)

June 1, 1923.

The Criminal Liability of Trephined Persons

Prof. Jean Lépine, dean of the faculty of medicine of the University of Lyons, recently presented to the Academy of Moral and Political Sciences a communication on the subject of the criminal liability of persons who have been trephined. Persons who have suffered skull injuries, when prosecuted for a misdemeanor, often plead as an excuse the mental upset caused by their wound. This excuse, which, for sentimental reasons, has considerable weight when ex-service men are concerned, has secured indulgent verdicts from many juries and even from tribunals. The plea has the twofold disadvantage of gradually establishing unfortunate judicial precedents (for, before long, the benefits of this partial exemption from punishment will be extended to traumas received elsewhere than on the battle field) and of being not strictly scientific. Misdemeanors for which the sequels of a cranial wound might most legitimately be invoked are, more especially, attacks on the person, or acts due to impulsiveness. Lépine endeavors to show that this impulsiveness, which may reach the height of frenzy of an epileptic equivalent, and, like an epileptic seizure, be not consciously felt by the subject, is not due solely to the presence of the wound. It depends to a great extent on the temperament of the person, and still more on the action of toxins, such as alcohol. Alcohol plays a decidedly important part in the impulsiveness of persons who have suffered skull injuries, as well as in their susceptibility to epileptic attacks. The problem is a delicate one, because simple cerebral shock due to an explosion, without exterior trauma, may produce the same results as a trephining operation. It is very doubtful, however, whether many persons who have suffered cranial injuries but who are able to live a normal life may justly claim total irresponsibility. For the more numerous class of persons in whom the skull wound exerts no real effect or, at most, constitutes only an accessory

element, the reduction of penalties is pernicious. Whether responsible or not, delinquents of this type are a menace to society. They should be kept under surveillance and treated. Neither our present penal institutions nor our psychopathic hospitals seem to satisfy this double need.

The League of Mental Hygiene

A formal gathering of the Ligue d'hygiène mentale was recently held in the main amphitheater of the Sorbonne, under the chairmanship of M. Justin Godart, former undersecretary of the Army Medical Corps and honorary president of the league, in honor of Mr. Beers, general secretary of the national committee of public hygiene in the United States, and the foreign delegates, Professors Christiansen (Copenhagen), Ley (Brussels), Ferrari (Boulogne), Ladislav Haskovcc (Prague), and Dr. Belarmino Rodriguez (Barcelona).

After the reading of the report of the general secretary, Dr. Genil-Perrin, who called attention to the world-wide movement in favor of mental hygiene, Professor Ley spoke in behalf of the foreign delegates. He praised Mr. Beers and read a translation of the latter's address. Dr. Henri Claude, professor of psychiatry at the Faculté de médecine of Paris, afterward delivered a lecture on what he termed "social" poisons, morphin and cocain, stressing particularly the peculiar system of proselytism in vogue among drug addicts, which justifies the suppressive measures taken, showing that, in the campaign that has been launched, international laws would be the most effective to shut off the supply of the poison, and setting forth the utility of services for mental prophylaxis in the campaign against voluntary intoxications. A letter from M. Paul Bourget was read, the conclusion of which ran thus:

To warn all trades and professions and all classes of people of the psychoses that threaten, in modern life, to upset the inner equilibrium of civilized man, is to confer a great benefit upon them. Fortunately civilization is like the legendary sword of the warrior of whom Homer tells us, which cured the wounds that it inflicted. While it is true that modern civilization exposes the individual to many things that tend to weaken and destroy his mental and moral fiber, it gives him, at the same time, many opportunities for conservation and cure. The purpose of your league, I take it, is to place these opportunities at the disposal of the increasing number of persons who are in need of them. There is, to my mind, no more useful undertaking.

Results of the Pasteur Tag Day

More than 15 million insignia (tags) were sold, for the benefit of the scientific laboratories, on Pasteur tag day. In the environs of Paris alone, the sum collected reached around 600,000 francs. There were several different forms of insignia, all of them designed by our best artists. The "tag" designed by Maurice Denis represents Pasteur leaning over his work table, examining with a microscope the milk he is taking from various bottles. In the foreground is the figure of a young mother, seated, with a sick child on her lap, the drawn lines on her face betraying her great anxiety. The man who pushed back death is the theme developed by Paul Albert Laurens. His design represents an angel thrusting back the scythe swung by the skeleton figure draped in white, which has been for centuries the incarnate conception of death. Poulbot designed a vignette which represented a young boy bitten by a mad dog, thus recalling the discovery of the antirabic vaccine. Abel Faivre was content to perpetrate an amusing pun. The scientist is represented with a halo about his head, while beneath are inscribed the words: *Le bon Pasteur* (the Good Shepherd).

Cases of Plague Within the Environs of Paris

About ten days ago, five cases of plague developed in the northern environs of Paris. Two cases have resulted fatally. A child is still under treatment at the hospital, but appears to be on the road to recovery. The minister of

health has been informed that the outbreak may be regarded as terminated, and the special services hold the same opinion. No new cases have developed during the last six days. The patients, when discovered, were immediately isolated. All persons who might have been in contact with them, even though for only an instant, have been vaccinated, and rigorous disinfection measures have been instituted.

Death of Dr. Georges Gaillard

Dr. Georges Gaillard, former director of the Ecole odontotechnique de France, has died at the age of 78. He was born, Feb. 10, 1845; became doctor of medicine in 1879, publishing, at the time, a noteworthy thesis on the deviations of the dental arches and their treatment. He was trained in the art of dentistry by his father, Dr. Eugene Gaillard. Their collaboration was so intimate that it is almost impossible to distinguish what was contributed by the one and what by the other in the different works and in the different methods of treatment for which we are indebted to them. Reduction of dental irregularities, gold fillings, prosthesis—they were interested in everything pertaining to the dental art. Being advocates of simple, practical methods, they were instrumental in causing the art of dentistry to make considerable progress in France. At the time they entered the profession, dentistry was practiced only by empirics.

Drs. Eugene and Georges Gaillard endeavored to make of dentistry a true science, not permitting it to be regarded in any wise inferior to the other medical specialties.

It was due to the initiative of Georges Gaillard that the first scientific dental society was founded—the Société odontologique de France—of which he later became honorary president. He was also president of the Société de stomatologie, and chairman of the Congrès de stomatologie held in 1889. A *Traité de stomatologie* was published under his direction, with the collaboration of Dr. Nogué. The last fasciculus of this treatise, which appeared in 1921 and dealt with orthodontia, was from his pen.

BELGIUM

(From Our Regular Correspondent)

May 20, 1923.

Results of Spirometric Examinations of Women

Before the Société d'anthropologie of Brussels, M. Galet reported recently the results of spirometric examinations of several hundred Belgian women. His conclusions coincide very closely with those of MacAuliffe. The vital capacity increases with, but does not parallel, growth. Vital capacity increases with weight up to a certain limit, when obesity diminishes vigor; it increases with age, the maximal capacity being observed between 23 and 30. After 45, diminution is marked, and, with rare exceptions, the capacity drops to from 1.5 to 2 liters after the age of 50. Vital capacity is directly proportional to the "respiratory type" and constitutional robustness. When the vital capacity is insufficient in an apparently healthy person, there is often some accidental cause that will account for this insufficiency. This cause may be an alteration in the respiratory passages: obstruction of a nostril, an old pleural lesion, bronchial catarrh, an anomaly of the circulatory system, or some abdominal disturbance, ptosis of the intestine, gastric upsets, laxity of the abdominal wall, an operative scar or even early pregnancy. From ten to fifteen persons out of a hundred do not know how to breathe deeply and yet present no pathologic trouble that would explain the anomaly. The vital capacity is subject, moreover, to the influence of certain other factors, such as fatigue, asthenia and emotion. Spirometry furnishes precise indications in certain conditions, but these must not be exaggerated. It has unquestionable value in the control of

the progress from physical training and in the determination of fitness. But the vital capacity may be low in healthy subjects and normal in some who are sick.

The Second General Assembly of Young People's Societies

It will be recalled that, at the instance of the Red Cross Society, a new movement for the protection of childhood was launched by the international assembly of young people's societies. Since 1921, the office of the international secretary has been working to bring into touch with one another all young people's organizations whose main object is child welfare, and to broadcast the slogan of these societies, "The young must aid the young." The Union internationale de secours aux enfants and the international committee of the Red Cross Society have cooperated heartily in these efforts of the international secretary.

The second international assembly was held at Brussels in April, and was attended by more than ninety representatives. The plan for practical collaboration in child welfare was the central point of discussion. The international secretary offered several suggestions with reference to the future development of young people's societies. Although it was held that emergency aid to children in misfortune should continue to be the first consideration of the committees, the assembly proclaimed the necessity of rendering aid to children irrespective of the cause and origin of their sufferings. The assembly passed resolutions in favor of a charter setting forth the rights and liberties of children, and of the "international society for the aid of peoples overtaken by calamities," proposed by Senator Giovanni Ciraulo, which is now under consideration by several international organizations (Paris Letter, *THE JOURNAL*, June 16, 1923, p. 1787).

Another question affecting child welfare is the proposal to establish an international outdoor camp for the debilitated children of eastern Europe, under a plan to be elaborated by a commission of experts. The medical responsibility for this project would be entrusted to young physicians, and the organization and practical direction would be placed in the hands of scout masters from different countries. The purpose would be, by means of a sojourn in a healthy climate, a rational and carefully selected diet, and well graduated physical exercises, during two months of the summer, to eliminate for these children the baneful effects of under-nutrition, or at least to lessen, as far as possible, their intensity.

The International Research Council

At the close of hostilities, in 1918, the allied nations had hoped to continue the mutual aid in scientific work that they had given during the war. In various fields this collaboration had excellent effects, and the work of the interallied conference on war surgery, especially, had given very encouraging results. It was as an immediate outgrowth of this conference that two scientific conferences, one dealing with the natural sciences and the other with mathematics, met in London and Paris, respectively. Every branch of science is represented in this international research council, each forming a special league. There are, for example, the international leagues for biology, chemistry, and geodesy and geophysics. At the last meeting of the council, which was held in Brussels, many nations (Belgium, Canada, Czechoslovakia, Denmark, England, France, Greece, Italy, Japan, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the United States) were represented by delegates. The following proposal, presented by the United States, was adopted: "That the International Research Council should organize international research projects requiring the cooperation of men representing several branches of science. They suggest investigation of the energy supply of the world (fuel, solar

energy, etc.) as a promising field of research." Several new leagues were added to the international council (geography, radiotelegraphy, medical sciences). The last, which interests us more particularly, has been kept distinct from the league for biology. The officers of the new international league for the medical sciences are: M. Widal of Paris, president; Dr. Gibson of Baltimore, vice president, and M. Nolf of Liège, secretary.

PRAGUE

(From Our Regular Correspondent)

June 2, 1923.

Antituberculosis Congress

The first Czechoslovak scientific congress against tuberculosis was held in Prague, May 19 to 21. The purposes of the congress were: to discuss scientific problems in tuberculosis with special reference to conditions prevailing in the Czechoslovak Republic; to disseminate knowledge of new methods in the fight against tuberculosis; to stimulate cooperative research in tuberculosis, and to foster friendly relations among the tuberculosis workers of the country. Dr. Ladislav Syllaba, professor of internal medicine at the Czech university in Prague, presided, and Dr. O. Horak served as general secretary. The congress was divided into three sections. The first section was devoted to clinical problems, the second to social questions and the third to veterinary problems. The sessions were arranged so that there were three general sessions in which the main papers were read by the most prominent representatives of the three sections. After the general sessions, separate meetings were held of the three sections. The program was extended, 106 different papers being read during the congress. Yugoslavia was represented by Dr. M. Yovanovicz-Batut, professor of social medicine in Belgrade; Russian physicians were represented by Dr. P. Yourevicz, formerly professor of histology in Petrograd. The general meeting of the Masaryk league against tuberculosis was held one day before the opening of the congress so that all the delegates to the meeting, who are largely physicians, could participate in the congress. During the congress, a tuberculosis exhibit was organized showing the development of the antituberculosis movement in the Czech countries up to the present time. One of the most interesting parts of the exhibit was the complete literature on tuberculosis published in the Czech language. After the congress, excursions to tuberculosis institutions were organized for the members of the congress. While the variety of the material presented was a surprise to the participants, it was felt that in the future it would be better to select a few topics to the discussion of which more time should be devoted than was possible at the present congress. The credit for the organization of the congress is due to the Czech Scientific Association Against Tuberculosis, which will publish the transactions and gave financial assistance to many research workers before the congress.

Syphilis in Children

The ministry of health and physical education has issued a decree directing that Wassermann blood tests be performed free of charge by the state Wassermann laboratories for all institutions working with children. The purpose is to popularize the use of the Wassermann test in pediatric practice, especially in the child welfare centers, foundling asylums, orphanages and homes for children. Heretofore, blood tests were performed free of charge only on samples collected by the state health officer. According to the new decree, any physician in a public institution working with children has the right to have the blood test performed by the state laboratory free of charge. This measure is the result of the inves-

tigation of the ministry into the prevalence of syphilis among the population of the Czechoslovak Republic by which it was brought out that, while the rate of new infections with syphilis in adults has been declining since the close of the war, there is a very high rate of hereditary syphilis which was brought into the families by soldiers returning home without having been cured of syphilis acquired during the war.

BERLIN

(From Our Regular Correspondent)

May 26, 1923.

Housing Conditions as Affecting Children

An inquiry among the school children of Pankow, a suburb of Berlin, instituted at the suggestion of the American Friends Service Committee, has shown that only 24 per cent. of the children have a bed to themselves, as compared with 33 per cent. in 1907; 71 per cent. sleep two in a bed, and 5 per cent. (in 1907 only 3.5 per cent.) sleep there in a bed. Forty-seven per cent. live in rear dwellings (on the back of the lot); 26 per cent. in one and two room apartments, with kitchen, for the most part; but, in many instances, one room with kitchen is sublet, or, on account of an apartment being occupied by two families, one family has to dispense with the kitchen. In the case of 13.7 per cent. of the children, persons outside the family were occupying the same apartment, and it was noted that the more children there were in the family, the more strangers had to be taken in, so that in families of ten the number of outsiders constituted more than a third of the number of children. In view of the bad conditions as shown by this survey, together with the enormously high prices for food and clothing of an inferior quality, the following figures are not at all surprising: Of the 485,000 children of Berlin, 29,000 are tuberculous, 77,000 are sick, and 120,000 are undernourished. The total mortality for children of the 5 to 15 age group, in 1914, was 25,730; in 1918, 50,391.

Venereal Disease in the German Army During the World War

Soon after the beginning of the World War, special military hospitals were established for venereal subjects. For every such patient a special record card was introduced, and these records remained under the supervision of the medical service, until, on dismissal of the subjects, they were handed on, for the purpose of further control, to the *Landesversicherungsanstalt* (central health insurance body) to whose jurisdiction they belonged, provided the consent of patients to this procedure was secured. This limitation in the application was bitterly opposed by some authorities, and experience showed that in case the physicians took an energetic stand in favor of such control, the consent of the patients was readily obtained, but that, when the physicians were indifferent, consent was denied. The total number of record cards as finally collated was 306,005, which covered 352,202 cases of illness, so that there were 46,197 more cases of illness than patients. Generaloberarzt Jungeblut, who has made a special study of the statistical material, has just published a report in which, on the basis of these relationships, he reaches the remarkable conclusion that the number of venereal patients in the army during the war was less than in peace times. All who have a clear insight into conditions are well aware that it was not the excessive number of venereal patients that proved such a menace to the health of the home population but rather the fact that, as a consequence of the hasty demobilization, together with the revolution, patients were dismissed from the military hospitals in an uncured and frequently infective condition. Thus, foci of infection were created everywhere, which were all the more dangerous owing to the fact that in

the smaller towns and the rural districts much ignorance prevailed in regard to these questions. Another circumstance that added to the danger was the depression of the moral sense of the people whereby the normal checks on promiscuous sexual intercourse were weakened. We are indebted in no small measure to the activities of the German Society for the Combating of Sexual Diseases for the marked decrease in the incidence of venereal disease.

Periodic Health Examinations

In November, 1919, the Krupp industrial health insurance society perfected an arrangement by which all its members are given the opportunity of receiving a periodic health examination, at least every two years. The examination follows a definitely established method and is very thorough. It not only takes into account the general condition, but includes also the organs of sense and all the internal organs; and, if there is any suspicion of the existence of any particular affection, the necessary clinical investigations are made; examination of the sputum and of the stomach contents after a test breakfast, microscopic examination of the urine, and a blood Wassermann test, together with the cooperation of the various specialists. In all persons past 40 years of age the blood pressure is taken. Of 50,000 insured members, as may be learned from the report of the factory physician Weiss for the year 1921, 3,210 took advantage of this new arrangement. More than 50 per cent. of those examined in the various age groups were found to be healthy. In the 14 to 20 age group, tuberculosis was diagnosed in 4.7 per cent., and "suspected pulmonary tuberculosis" in 12.2 per cent.; in the 20 to 25 age group the corresponding percentages were 3.3 and 11.5, respectively; in the 25 to 40 age group, 5.1 and 7.7 respectively. In the higher age groups, the number of tuberculous and suspectedly tuberculous examinees decreases, whereas, as would naturally be expected, the number of those suffering from cardiac and vascular affections increases from 3.75 per cent. in the youngest to 17.24 per cent. in the oldest members (those over 50 years of age). Also the number of cases of gastric and duodenal ulcer and suspected ulcer was large: 5.8 per cent. in the 25 to 40 age group.

Marriages

FRANKLIN CHAMBERS McLEAN, Peking, China, to Miss Helen Vincent of Boston, at Tientsin, China, June 11.

WILLIAM BENJAMIN HOPKINS, Richmond, Va., to Miss Mary Conrad Nicholson of Littleton, N. C., May 6.

OSCAR BRUTON DARDEN, Richmond, Va., to Miss Mary Wyckoff Dunlap of Dunlap, N. C., June 12.

WALTER ALLEN ANNEBERG, Carroll, Iowa, to Miss Margaret Dolliver of Fort Dodge, June 17.

THOMAS DURLAND VAN ORDEN to Miss Alice Frances Einstein, both of New York, June 6.

JACOB MORRIS CAHAN to Miss Hilda Gertrude Barmach, both of Philadelphia, June 10.

WAYNE KING TEMPLETON, Toledo, to Miss Thelma R. Zipfel of Monroeville, Ohio, June 7.

CHARLES RICE, Mattapan, Mass., to Miss Dora Florence Finn of Dorchester, May 30.

RALPH REUBEN HOLZMAN, Portland, Ore., to Miss Meta R. Winter of Chicago, June 21.

LEROY EDWARD JENSEN to Miss Lorraine Graham, both of Audubon, Iowa, in June.

GEORGE L. APPELBACH, Chicago, to Miss Alice Hotz of Glencoe, Ill., June 28.

LIONEL NEWKIRK MERRILL to Miss Ethel Williams, both of Detroit, June 30.

FREDERICK ROBIN GREEN to Miss Helen Hutchinson, both of Chicago, June 30.

Deaths

Henry Ling Taylor, New York; Medical Department of Columbia College, New York, 1881; died at his home in Montclair, N. J., June 9, from heart disease. Dr. Taylor was born in New York in 1857. In 1902 he was appointed to the chair of orthopedic surgery at the Post-Graduate Medical School and Hospital, New York, which he retained until 1917. Dr. Taylor was surgeon to the New York Hospital for the Ruptured and Crippled, the New York Post-Graduate Hospital, the Mountinside Hospital, Montclair, N. J., and the Fresh Air Home, Southampton, N. Y. In 1908 he was elected president of the American Orthopedic Association; he was one of the founders of the American Posture League and the New York Physical Education Society and secretary of the former. Dr. Taylor was the author of "Orthopedic Surgery for Practitioners" in 1909.

Augustus Korndorfer, Philadelphia; Homeopathic Medical College of Pennsylvania, Philadelphia, 1868; emeritus professor of clinical medicine, Hahnemann Medical College and Hospital of Philadelphia; formerly physician to the Children's Homeopathic, the Hahnemann, Woman's Homeopathic and the Woman's Southern Homeopathic hospitals, Philadelphia, and the J. Lewis Crozer Home for Incurables and the Homeopathic Hospital, Chester, Pa.; aged 79; died, June 10, of senility.

Edward Parker Pitts ♂ Atchison, Kan.; Ensworth Medical College, St. Louis, 1902; eye, ear, nose and throat specialist to the Missouri Pacific Railroad and the State Orphans' Home; aged 43; was instantly killed, June 14, in an automobile accident while en route to San Francisco to attend the session of the American Medical Association.

Francis A. Halliday, Captain, M. C., U. S. Army, retired, Lexington, Texas; Washington University Medical School, St. Louis, 1872; veteran of the Civil, Spanish-American and Indian wars; aged 81; died, June 8, at the station hospital, Fort Sam Houston.

Richard Curd Bowles, Kents Store, Va.; University of Maryland School of Medicine, Baltimore, 1861; member of the Medical Society of Virginia; surgeon in the Confederate navy; aged 86; died, June 7, of senility.

William H. Hope ♂ Union, S. C.; Atlanta (Ga.) College of Physicians and Surgeons, 1910; aged 35; on the staff of the Wallace Thompson Hospital, where he died suddenly, June 8, of internal hemorrhage.

James Alvin Bradbrook, Asherton, Texas; Kansas City Hahnemann Medical College, Kansas City, Mo., 1911; member of the State Medical Association of Texas; served in the M. C., U. S. Army, during the World War; aged 35; was shot and killed, June 9.

Wiley Hugh Billingsley ♂ Shreveport, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1912; served in the M. C., U. S. Army, during the World War; aged 34; died, June 1, of a self-inflicted wound, while suffering from poor health.

George S. Attmore, Stonewall, N. C.; Washington University School of Medicine, Baltimore, 1870; member of the Medical Society of the State of North Carolina; Civil War veteran; aged 77; died, June 2, in a local hospital, of injuries received in a fall.

William L. Shields, Jacksonville, Pa.; University of Louisville (Ky.) Medical Department, 1885; member of the Medical Society of the State of Pennsylvania; for many years member of the school board; aged 62; died, May 27.

William Laurens Dick ♂ Columbus, Ohio; Starling Medical College, Columbus, 1888; for fifteen years member of the board of health; formerly surgeon to the Baltimore and Ohio Railroad; aged 63; died, May 28, of influenza.

George Davis Couch, Hapeville, Ga.; University of Georgia Medical Department, Augusta, 1875; at one time mayor of Hapeville; aged 69; died, May 30, at the Georgia Baptist Hospital, Atlanta, of cerebral hemorrhage.

Henry John Stephens ♂ Detroit; Western University Medical School, London, Ont., Canada, 1911; served in the Canadian Army Medical Corps, during the World War; aged 41; died, May 28, of influenza.

Daniel Seward Brosnan ♂ New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1901; formerly proprietor of the Brosnan Hospital; aged 44; died, June 8, following a long illness.

Jacob Allen Milem, Sikeston, Mo.; University of Louisville (Ky.) Medical Department, 1896; member of the Missouri State Medical Association; aged 56; died, June 6, following a long illness.

Edwin H. Cross, Chicago; Cincinnati (Ohio) College of Medicine and Surgery, 1872; member of the Illinois State Medical Society; aged 79; died suddenly, June 15, of angina pectoris.

Samuel M. Riggs, Muscotah, Kan.; Eclectic Medical Institute, Cincinnati, 1874; aged 69; died, May 28, at the Christian Hospital, Kansas City, Mo., of acute edema of the lungs and influenza.

Charles F. Roulet, Toledo, Ohio; Northwestern Ohio Medical College, Toledo, 1886; formerly county coroner; aged 59; died, May 30, at St. Vincent's Hospital, of meningitis.

John McGinty Ⓢ Fort Smith, Ark.; Kentucky School of Medicine, Louisville, 1884; on the staff of St. Edward's Infirmary; aged 62; died, May 27, following a long illness.

Ambrose J. Herr Ⓢ Lancaster, Pa.; Jefferson Medical College of Philadelphia, 1861; formerly on the staff of St. Joseph's Hospital; aged 85; died, May 27, of senility.

George A. Willeford, Indianapolis; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1907; aged 43; died, June 3, of cerebral hemorrhage.

Alfred Ernest Smolt Ⓢ Newton, Kan.; Rush Medical College, Chicago, 1897; aged 52; died, June 2, at a hospital in Kansas City, Mo., following a long illness.

Charles Adolph Schrader, Tucson, Ariz.; Hahnemann Medical College of the Pacific, San Francisco, 1893; aged 53; died, May 27, of carcinoma of the throat.

Henry William Rover, Denver; Miami Medical College, Cincinnati, 1885; member of the Colorado State Medical Society; aged 61; died, June 5.

George Danforth Bliss Ⓢ Boston; Boston University School of Medicine, 1881; aged 67; died, June 7, at the Johns Hopkins Hospital, Baltimore.

Alfred Victor Marion, Spokane, Wash.; University of Oregon Medical School, Portland, 1892; also a druggist; died, May 26, at Seattle.

James Montgomery Reece Ⓢ Elkin, N. C.; College of Physicians and Surgeons, Baltimore, 1886; aged 64; was found dead in bed, May 31.

Henry E. W. Barnes Ⓢ Santa Ana, Calif.; State University of Iowa College of Medicine, Iowa City, 1873; aged 73; died, May 31, of gangrene.

David Humboldt Strahan Ⓢ Pewamo, Mich.; Albany (N. Y.) Medical College, 1883; aged 66; died, June 1, of mitral regurgitation.

Lydia A. Muma, Salt Lake City; American Medical College, St. Louis, 1894; aged 88; died, June 1, at a local hospital, of senility.

Needham Bryan Herring, Wilson, N. C.; New York University Medical College, New York, 1861; aged 84; died, May 27, of senility.

Joseph Eugene Tucker, San Diego, Calif.; New York University Medical College, New York, 1872; aged 72; died, May 30, of senility.

Samuel A. Brown, Eton, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1893; aged 56; died, May 31, of heart disease.

Alfred M. Newman Ⓢ Canadian, Texas; Medical College of Ohio, Cincinnati, 1884; aged 61; died suddenly, June 5, of heart disease.

James Henry Enloe, Nashville, Tenn.; University of Michigan Homeopathic Medical School, Ann Arbor, 1879; aged 70; died, June 2.

Alexander X. Campbell, Oklahoma City; University of Michigan Medical School, Ann Arbor, 1876; aged 76; died, May 28.

Richard Frederick Viehe, St. Louis; Hahnemann Medical College and Hospital of Philadelphia, 1903; aged 45; died, May 28.

Elijah Haynie Knight, Granville, Tenn. (licensed, Tennessee, 1889); Confederate veteran; aged 82; died, May 29, of senility.

Henry Wald, New York; University of Vienna, Austria, 1872; aged 78; died, June 5, of arteriosclerosis and pulmonary edema.

Albert C. Dillon, Osborne, Kan. (licensed, Kansas, 1901); Civil War veteran; aged 73; died, June 2.

Correspondence

PROTEST AGAINST THE CIRCULARIZATION OF A SCIENTIFIC ARTICLE

To the Editor:—I feel it my duty to inform the readers of THE JOURNAL of an unusual proceeding in which the Lederle Antitoxin Laboratories of New York took part.

I gladly gave the Lederle Laboratories permission to reprint my paper, entitled "The Treatment of Seasonal Hay-Fever and Some Possible Causes of Failure," which appeared in THE JOURNAL, May 5, 1923. During the last week of May and the first week of June, reprints of my paper were sent by the Lederle Laboratories to the profession throughout the country. A card of advertisement of their products was, also, enclosed. It is noteworthy that the customary statement that the article was reprinted through the courtesy of the author was omitted.

Without my knowledge and without authority, my name and address were printed in the upper left hand corner of the envelop. This gave the impression that I personally caused to be mailed the reprints from Washington, although the postmark was that of New York City.

I desire to correct this false impression and to state that I had no participation in the advertising of a commercial product.

HARRY S. BERNTON, M.D., Washington, D. C.

United States Public Health Service.

REQUEST FOR REPRINTS OF ARTICLES ON ORAL HYGIENE

To the Editor:—For many years we have placed on file articles, reprints, leaflets and pamphlets on oral hygiene and related topics. This file is always open for the use of those interested in this work. Will authors and committees who publish such articles kindly place us on their mailing list? Due acknowledgment will be made of the receipt of such articles.

THADDEUS P. HYATT, D.D.S., New York.

Dental Director, Metropolitan
Life Insurance Company.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STENO'S, STENSEN'S OR STENSON'S DUCT

To the Editor:—Will you be good enough to advise the proper appellation of the duct leading from the parotid to the buccal cavity? Cowie, Kerley, Holt and Griffith call it Steno's. Dunn, Cunningham, Gray and Piersoll call it Stenson's. Dorland's dictionary gives it as Steno's or Stenson's. Stedman's dictionary gives it as Stensen's, Steno's or Stenson's. If Niels Stensen discovered it, why is it called Steno's, Stenson's or Stenon's duct? If any one, or if all are correct it would be interesting to know.

A. BRET RATNER, M.D., New York.

ANSWER.—The name given to this duct by the International Anatomical Association, Basle, 1896, is Ductus parotidæus, Stenonis. Niels Stensen, Nikolas Stenson (German form), Steno (Latin form), was born in 1638, and died in 1686. He was professor of anatomy at Copenhagen, Denmark, and afterward apostolic vicar. He was a famous anatomist, physiologist, geologist and theologian. He discovered the connections and functions of this duct in the sheep in 1661. He published, among other works, *De Musculis et Glandulis Observationum Specimen*, 1661; *Observationes Anatomicae*, 1662; *Work on Muscles*, 1667; on the Brain, 1669; *Work on Geology*, including an account of strata, fossils and geologic

formations, 1669. In the latter work, he showed that the "Glossopetrae" of Tuscany were fossil teeth.

In 1669, he became rather romantically converted to the Catholic faith, and his further work was in the line of theology. In the church of San Lorenzo, Florence, is a bust in his memory.

TREATMENT OF DEFECTIVE VISION

To the Editor:—I have read that glasses have been discarded in Germany for the treatment of defective vision among school children. The reason given is that while it is a convenient way of correcting a defect, the ultimate results are worse than no correction at all. This from a prominent layman. Is there any truth in this? Is there a tendency here to treat only gross defects in this way and to let minor defects adjust themselves?

C. E. EATON, M.D., Seattle.

ANSWER.—The recent scientific literature from Germany and Austria does not convey the impression contained in the inquiry. On the contrary, ophthalmologists in Germany are leaning more and more toward the careful refractive methods of their American confrères, and minor refractive defects in vision that, ten years ago were passed over as negligible, are now receiving the attention they deserve. Our correspondent has probably been reading some of the preposterous claims of a New York concern that advertises "perfect sight without glasses." The methods promulgated by this concern are so entirely without the pale of scientific fact as to be laughable.

Medicolegal

Patients Not Alleged to Have Been Human Beings

(*People v. Ryan (Calif.)*, 212 Pac. R. 35)

The District Court of Appeals of California, First District, Division 2, says that this was an appeal taken by the people of the state from an order dismissing an action on the failure of the district attorney to amend an information for misdemeanor, namely, violation of the medical practice act, filed against the defendant, to which information a demurrer had been sustained. The portion of the information material here stated that the defendant did at a certain time and place wilfully and unlawfully "practice, attempt to practice and advertise and hold himself out as practicing a system or mode of treating the sick and afflicted in this state, without having at the time of so doing a valid unrevoked certificate from the board of medical examiners of the state of California." The trial court sustained the demurrer on the ground that the information did not state a public offense, because it did not allege that the sick and afflicted on whom the defendant was alleged to have practiced were "human beings." But in several other cases indictments substantially identical with this one were approved; and the court here, without giving any new reasons, reverses the orders dismissing the action and sustaining the demurrer. A hearing has been denied by the Supreme Court of California.

Exemption of Automobile Used by Physician

(*Spangler v. Corless, Sheriff, et al. (Utah)*, 211 Pac. R. 692)

The Supreme Court of Utah, in affirming a judgment in favor of the plaintiff, a regularly licensed and practicing physician, says that he brought this action to recover the value of an automobile owned by him, which the defendant sheriff levied on and sold to the other defendant in the case—a corporation. The plaintiff averred in his complaint that he used the car in making his professional visits as a physician and surgeon. Subdivision 6 of Section 6925 of the Compiled Laws of Utah of 1917 provides, among other things, that "one horse, with vehicle and harness, or other equipments, used by a physician, surgeon, or minister of the gospel, in making his professional visits" shall be exempt from execution. The jury was instructed that if it believed from a preponderance of the evidence that the automobile in question was in fact, at the time of the levy under the execution, used by the plaintiff as a physician and surgeon in making his professional visits, then, as a matter of law, the automobile was a vehicle and equipment exempt from execu-

tion under the provisions of said statute and was exempt from execution, and any levy on and sale of it by the defendants would constitute an unlawful conversion of the automobile by the defendants for which the plaintiff would be entitled to recover damages. The defendants excepted to this instruction, and the vital question in the case was whether an automobile used by a physician or surgeon in making his professional visits is exempt from execution.

While automobiles were unknown when the Utah statute was first enacted, the intent of the legislature was, nevertheless, to exempt the means of conveyance used by the physician in making his professional calls. An automobile is a vehicle. An automobile is as essential to the physician now as a horse and buggy were in the past. In these days an automobile is his only practical means of conveyance. If, then, the exemption statute is liberally construed, the conclusion is not far fetched that its purpose is to exempt the physician's means of conveyance when calling on his patients. The authorities on this subject, however, are not in harmony.

During the oral argument it was suggested by the defendants' counsel that, if an automobile was held to be exempt, a physician could use a \$5,000 machine and defy his creditors. The same thing would be true if the physician had a \$5,000 carriage, silver mounted harness, and a horse worth as much more. But the value of the horse, harness and vehicle would be wholly immaterial under the exemption law. Nor is the value material when a motor vehicle is owned and used by a physician for professional calls.

Inference as to Injury Causing Death—Medical Certificate Not Evidence

(*Omaha & C. B. St. Ry. Co. v. Johnson (Neb.)*, 191 N. W. R. 691)

The Supreme Court of Nebraska, in reversing a judgment that awarded Mrs. Johnson compensation under the workmen's compensation law for the death of her husband, says that the latter—a man, aged 67—sustained injuries to his head, arm and side; but the nature and extent of the injuries were not clearly disclosed by the evidence. After the accident, the injured man was never able to work. He was troubled with headache and dizzy spells. A complaint of insanity was filed against him about four months before his death, which occurred three years and two months after the accident. No medical testimony was introduced to show the cause of his death. It was the plaintiff's contention that, since the injuries were disclosed, and since disability was shown to have continued from the time of the injury until death occurred, nothing more need be proved, and that an inference arose that death was the result of that injury.

Where an injury is sustained and death immediately results, an inference that the injury was the cause of death may arise without anything further to show it; but as the period of time increases between the time of injury and the date of death, that inference must necessarily weaken according to the length of time that ensues. The evidence in this case did not give that assurance for decision which should support the judgment of a court. The plaintiff must not merely ask the court to guess that the original injury was the cause of death, or merely that it was probable it was, but she must prove it either by evidence or by legitimate inference to be drawn from the facts actually made to appear.

The defendant, on the other hand, introduced, over objection, the medical certificate of death, made out in accordance with the provisions of the Nebraska statute by the physician of the deceased last in attendance, which certificate by the statute is required to disclose the cause of death, and must be filed before a burial permit can be issued. By this certificate the defendant attempted to show, from the recitals therein, that the cause of death was one entirely distinct and apart from the injuries. Such a certificate, however, though filed publicly with the registrar, is not a public record entitled to be introduced as independent evidence in such a case as this. It is filled out by the attending physician in an ex parte manner, without a hearing and without the right of parties interested to cross-examine. In a controversy between individuals, where the cause of death is a material issue, such certificate has no direct evidentiary value, and its recitals must be disregarded by this court.

Society Proceedings

COMING MEETINGS

Montana, Medical Association of, Butte, July 11-12. Dr. E. G. Balsam, 222 Hart-Albin Bldg., Billings, Secretary.
Oregon State Medical Association, Portland, July 10-11. Dr. C. L. Booth, Selling Bldg., Portland, Acting Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

*One Hundred and Seventeenth Annual Meeting, held in New York,
May 22-24, 1923*

(Continued from page 1873)

SYMPOSIUM ON SERUM THERAPY

Pneumonia

DR. AUGUSTUS WADSWORTH, Albany: The work done in New York state in the development of serum therapy in pneumonia was started in 1915, when centers for distribution of Type I antipneumococcus serum were established. This distribution is now more general. The serum has always been of the highest potency, according to the methods developed by Cole. The results from the civil population and from the army camps have been studied. The reduction in mortality is not convincing, although statistics have been influenced by many factors, such as the difficulty of getting control cases, difficulty of getting standardized serum, and delay in treatment until an unfavorable prognosis could be expected. A study of the pneumonic process in man shows that the pneumococci develop in a partially immunized host, and that immunity is preserved by immune serum, although the pneumococci may survive for several days after immunization of the serum. Cases studied at the Rockefeller Institute were recorded under optimal conditions, and the mortality of 1.5 per cent. in 107 cases was very favorable. We have not been able to obtain such standardized serum, nor is serum labeled according to its potency, so that protective results are only approximate. The results reported from various localities and groups give contradictory results. In cases in which the serum is standardized and given early, the treated cases show greatly lessened mortality. In cases in which there is delay in treatment and perhaps serum of low potency, the results are poor. There is no evidence that the serum is harmful unless the technic of administration is careless. The proper dose is from 50 to 100 c.c. four or five times. If Type I antiserum is given, promptly, carefully and regularly, it is of definite value in the treatment of Type I pneumonia.

Poliomyelitis—Epidemic Encephalitis—Bacillary Dysentery

DR. SIMON FLEXNER, New York: There is no serum treatment of amebic dysentery, emetin being specific. Bacillary dysentery is due to a group of organisms, the most vigorous of these being the bacillus of Shiga, which produces a soluble toxin, and also an endotoxin. The exotoxin can be used for immunizing animals. We have an actual, active, accurate method of neutralizing the Shiga bacillus poison, but difficulty exists in establishing the fact that a case of dysentery is of bacillary origin. In this country, however, the problem is not pressing, because only occasional outbreaks of dysentery occur. If there should, there is a supply of anti-dysenteric serum available.

Poliomyelitis and encephalitis are two distinct diseases. They differ as much as measles and scarlet fever differ. Poliomyelitis is a disease which appears sporadically, and lately has appeared epidemically. It is more frequent in children. It is successfully transmitted to monkeys and the value of serum tested out. There is no such thing as artificially produced serum against poliomyelitis, although we have a filtrable virus from the nervous system of patients. We cannot use this material, however, to immunize large animals, such as the horse, in order to get serum. On the other hand, in a recovered case, in monkey or man, there is for many months in the veins an antiserum which neutralizes the virus of poliomyelitis. Curative serum, therefore,

exists. Monkey serum cannot be used for man. The animals are too small and too prone to other diseases to utilize their serum. Some measure of success has been attained in using serum of recovered humans in the treatment of other persons. During an epidemic people are, perhaps, more generous in this respect, and diagnoses are made more readily, but the method must be applied early because such widespread damage occurs to the nervous system that restoration is impossible. Fatality may be avoided, however, even if crippling cannot be prevented. Death follows involvement of the medulla with paralysis of the respiratory centers. The serum is given intraspinally, not intravenously.

Encephalitis is a disease which has appeared in a pandemic form during the past three or four years. There have been descriptions of the disease and of outbreaks before, but not in pandemic form. One explanation of this is that it is concomitant with influenza. There is some relationship to influenza. On the other hand, some workers think it is an independent disease but coincident chronologically. Hitherto the disease has not been so prominent as to make a great impression on the medical profession and laity, so that if you consider it as part of influenza, you must prove your thesis, whereas if you consider it as an independent disease, the approach to study is more effective. We cannot be sure that we have communicated it to animals, although we may have transmitted it to the rabbit. The monkey is not susceptible. The micro-organism which causes it is unknown. I think the solution of this disease is still in the future, for although every effort has been made, so far we have not been able to reach any definite conclusions, as we have with poliomyelitis.

Treatment of the Meningitides

DR. JAMES B. AYER, Boston: In the last ten years there has been no great advance in the treatment of meningitis in any form. For meningococcus meningitis we have no efficient serum; but, if we had, the end of a long channel seems a somewhat illogical approach from which to treat a general disease. There are various conceptions as to the origin and distribution of infection in meningitis. One is that the fluid originates in the choroid spaces of the lateral ventricles, and flows thence downward into the fourth ventricle and into the cisterna magna, upward over the convexities and over the arachnoid spaces. Meningitis is almost always a primary cerebral process; very rarely does the process start near the cord. Later there is a generalized cerebrospinal meningitis. As early as the second or third day there is blocking in the pathways by formation of exudate which obstructs any form of treatment given intraspinally. There may be blocking at one or two points. These facts demand that we seek some method of treating meningitis other than the lumbar route. In three days the canal is full of exudate and fibrin, and the infection has extended to the pia, the crus and the ventricles. There are also small abscesses from infection of the perivascular spaces. Ventriculitis also occurs in man as early as the fourth day. These conditions offer tremendous obstacles to treatment, and it is a wonder that serum ever reaches the brain at all. The fluid passes from the ventricles downward to the cisterna magna, from thence outward, upward and forward into a smaller cistern at the base of the chiasm and to the pons. In 1908, Cushing put a needle into the ventricle and introduced serum. The patient died, but lives were saved later by this procedure. I have lately used a method of puncture of the cisterna magna in 350 patients, without accident, at the Massachusetts General Hospital. My method offers three routes of choice, giving opportunity for irrigation. The ventricle can be approached by the cortex or by puncture of the corpus callosum. The method of approach hitherto has been miles away from the site of infection, and the pathways have early become blocked, making remedial measures impossible because they did not reach the trouble. These cases must be treated early and as near the process as possible. We have a choice of routes by which we can drain and introduce the serum, and we can irrigate efficiently by double or treble punctures, if necessary. If desired, we can reduce the volume of the ventricles by introducing a 30 per cent. hypertonic salt solution.

DISCUSSION

DR. RUFUS I. COLE, New York: Statistics in regard to antipneumococcus serum are very bewildering. There is difference in different hospitals, in different wards in the same hospital and difference from season to season. Personal observations seem to have more merit than statistical study. We have treated 241 cases of Type I pneumonia, with twenty-four deaths, a mortality of 10 per cent., approximately. These were divided into cases in which serum might have been effective; and cases in which no serum treatment would have availed. I have never known of recovery to occur in pneumococcus meningitis, with or without serum. The other class of cases was due to too late, or poorly administered serum treatment. In this class, mortality might have been slightly reduced. In other cases, serum was given early and intensively, until the patient either died or recovered. The best guide to efficacy of the serum is the positive or negative blood culture. Pneumonia is a focal infection, likely to become generalized. Effective serum treatment eliminates bacteremia. If bacteremia persists, it is accompanied by endocarditis or meningitis, so that we do save lives even if not a considerable number. Serum treatment is more difficult for the private practitioner, on account of delay in early diagnosis, but with the aid of the state board of health I think the difficulties are not insurmountable.

DR. W. W. HERRICK, New York: Our conception of meningitic infections has been too narrow. Clinical studies under the right conditions have shown that the disease is primarily a systemic infection with metastases into the meninges or elsewhere. Not only are the meninges involved but also the encephalon. Foci are present throughout the brain as a whole. In the treatment of meningococcus infections in general, if one can make a diagnosis early, I think intravenous treatment, supplemented by intraspinal treatment, is sufficient; but mechanical accidents in these cases are so common that the methods of meeting them are valuable. There are two phenomena: early blocking and late blocking. Early blocking is tragic, and due to inflammatory swelling of the encephalon, causing sudden death in the first twenty-four hours. Necropsy shows wedging of the brain substance down into the foramen magnum. I think the way to meet this situation is by injecting 30 per cent. hypertonic salt solution intravenously, or by injecting 50 per cent. saline sulphate of magnesium by rectum. There are two types. Most often there is involvement of the foramina of Luschka and of Magendie. I have seen one case in the aqueduct of Sylvius, and one case of cord blocking. There is one point of interest which is useful. Before undertaking ventricular puncture or cisterna magna puncture, the lumbar puncture needle can be placed in the foramen and manipulated vigorously (under anesthesia), and if there is an accumulation blocking the foramina, the tissue that roofs over the floor of the fourth ventricle may be moved and cause breaking through of the tenuous subarachnoid adhesions. If this is unsuccessful, we can do a puncture of the cisterna magna, and lastly puncture of the ventricles. Cistern puncture is free from danger. In one case there was hemorrhage from the plexus of veins found in that region into the fourth ventricle. Whether that caused death, I do not know. Dr. Ayer's method is useful in handling the mechanical accidents that so frequently occur in this infection.

DR. GEORGE ROBEY, Rochester: In a case of pneumonia, it takes the physician a day or two to make up his mind and notify the health bureau; it takes the bureau a day or two to type the sputum and get the serum to the physician. By that time the patient, if the case is mild, has a crisis and does not need the serum, so that if the serum is used at all, it is in very sick patients. We have had 126 treated and 126 not treated, and the mortality in treated cases was 5 per cent. less than in untreated cases. Very remarkable results are seen in the treated cases. Case after case of very high temperatures show very early drop after serum injection. This is striking. The results are not all they should be, but this is field work with all kinds of difficulties. If we had had Dr. Cole's management, results would have been better. Hospital results were better than those in home treatment. The

coincidence of improvement, however, was repeated so many times that we feel sure it is satisfactory evidence.

DR. AUGUSTUS WADSWORTH, Albany: We had one case in which serum had been given, and a dose was given ten days later without desensitization, causing anaphylactic shock and death. Careful records should be kept and desensitization insisted on. Serum conserves the immune action in the tissues.

DR. J. B. AYER, Boston: When lumbar puncture has failed, partially or entirely, it is no use waiting; one must do something right away. In the meningitides for which we have no serum, streptococcus, staphylococcus and pneumococcus, lumbar drainage does not work. We must do more. Irrigation is a rational procedure and we must work along that line in suppurative cases.

(To be continued)

AMERICAN ASSOCIATION OF PHYSICIANS

Thirty-Eighth Meeting, held at Atlantic City, N. J., May 1-2, 1923

(Continued from page 1876)

Certain Aspects of Polycythemia

DRS. G. R. MINOT and THOMAS E. BUCKMAN, Boston: In polycythemia there is excessive stimulation of the bone marrow, with increase of red blood cell formation as compared with white blood cell formation. This is comparable to the excess growth of a neoplasm. In these cases the peripheral blood often appears to be normal, but is abnormal to some degree. There is increase of white blood cells as well as red blood cells, but the latter show immature forms. The platelets may be immature and look like giant cells. Signs of a disorderly bone marrow take some time to appear, and the patient may die before the stage at which immature cells appear in the peripheral blood. In fifteen cases studied, there were three cases of polycythemia which was followed by enlarged spleen, then anemia, and finally death. The blood picture looked like that of myelogenous leukemia. In one case that came to necropsy, one year before death the blood picture showed 15 per cent. myeloblasts and 15 per cent. myelocytes. The tissues presented a remarkable picture. The spleen weighed 3,200 gm. and looked like that of myelogenous leukemia. The bone marrow was hyperplastic. The patient had shown a red blood cell count above 8 million for four years. It dropped to 2 million before death. The necropsy findings resembled those of myelogenous leukemia. These diseases are, perhaps, intimately associated. We may have cases of erythema that involve the activities of the bone marrow in all three of its elements. Some basal metabolic determinations were made, and were found to be from plus 6 to plus 10. There is a higher rate when there is greater bone marrow activity. Fluctuations in the formation of red blood cells occur in the course of the disease, and also variations between blood formation and blood destruction. Perhaps there is overcompensation by blood destruction, which causes the anemia following years of excessive bone marrow activity. The bone marrow then is unable to respond to excessive strain and responds with overproduction of immature cells. Many megalokaryocytes were seen in the blood-forming organs at necropsy. The increase of urobilin is very intimately associated with blood destruction, but does not always occur. In these patients the red blood cells are more resistant than normally, and erythemic serum breaks up normal cells more rapidly than usual.

Effects of Operative Interference with the Endocrines on
the Growth and Malignancy of a Transplanted
Tumor of the Rabbit

DRS. WADE H. BROWN, LOUISE PEARCE and C. M. VAN ALLEN, New York: A tumor arising on the site of an old syphilitic lesion on the scrotum of a rabbit was transplanted and followed through twenty generations, and the pathologic reactions following inoculation were studied. This was of interest because of possible relationship of tumors following syphilitic lesions of the mouth. The experimental animals were matched in regard to size and age. Observations on growth, malignancy and metastases of the tumors were made

and tested at necropsy. Different groups of experiments were done to note the effect of removal of thyroid, suprarenals, spleen and thymus, respectively, on the tumor, and a fourth group without endocrine interference was used as a control. Operations were designed to interfere with the function of the organ, but to leave the animal in good condition. Operative procedures were carried out both before and after inoculation of the rabbits. We found that in the thyroidectomized animals the tumor grows steadily and rapidly. With the thymus removed, the tumor grows slowly, as in old animals. With partial thyroidectomy, the tumor at first grows rapidly but is brought under control. With complete thyroidectomy, very widespread metastases occurred in all cases; that is, this operation increased malignancy. A seasonal incidence was noted; namely, that malignancy was low in summer and high in spring. In summer, partial thyroidectomy gave a stronger result. The conclusions were that any operation disturbing the animal economy will disturb the resistance of the animal. This work seems to be in line with that of Dr. Murphy on the lymph structures, and is probably part of the same body mechanism.

Results of Administering Iodin to Patients Having Exophthalmic Goiter

DR. H. S. PLUMMER, Rochester, Minn.: It has been taught that iodine should not be administered to patients with exophthalmic goiter, on the ground that it causes hyperfunction. There are two entities included in the term hyperthyroidism: first, exophthalmic goiter, second, hyperfunctioning adenomatous goiter. In the latter, the basal metabolism is more nearly normal. In exophthalmic goiter there are certain symptoms: (1) nervous phenomena, (2) eye symptoms. The first include purposeful but useless movements. The higher psychic processes are chaotic. The patients cannot explain why they cry or laugh. In the vegetative nervous system there is the same process of imbalance. These signs have given rise to such terms as "sympathotonic" or "vagotonic" goiter. These symptoms seem to be due to underlying metabolic disturbances. Often, after slight operations, the temperature rises and death occurs in a few hours. We judge the differential diagnosis by the nervous phenomena, which, if excessive, point to a great surgical risk. The eye phenomena are two: the exophthalmos, or protrusion of the eyeball, and the stare which fluctuates with the nervous phenomena. Anything that will overstimulate the thyroid can give the clinical picture of exophthalmic goiter. In such cases, the normal hormone, thyroxine, is not completely iodized. This incompletely built up thyroxine, as it leaves the gland, can enter into catabolic reaction faster than the normal, stable molecule and raise the metabolic rate more rapidly. If, therefore, we can change the character of the molecule, we can change the basal metabolism. If there is intense metabolic stress for lack of iodine, death occurs from lack of iodine. From this it follows that if we can change the production of abnormal substance to properly iodized substance we can cut down postoperative mortality, avoid crises, and change the picture of the nervous phenomena. Acting on this plan, we administered 10 drops of compound solution of iodine for ten days following operation, with the result that we have found there is no such thing as postoperative deaths from hyperthyroidism if this dosage has been administered to the patient with regularity. In other words, the patient is relatively short of iodine, and dies from lack of it. When we replace the iodine, we do away with postoperative deaths.

DISCUSSION

DR. H. A. HARE, Philadelphia: Is it not true that, in districts of the United States in which goiter is very prevalent, iodine is lacking? Would it not also be true that in such an area there would be a higher percentage of poor operative results? It would be interesting to know whether in noniodine bearing areas, the surgeons would need to reinforce their procedures by iodine administration.

DR. HAVEN EMERSON, New York: In Rochester, N. Y., there is a lack of iodine, and the municipal health authorities have been putting iodine into the water supply. This would forestall any tendency on the part of the community to

develop endemic goiter. The proportion of iodine in the thyroid gland has some relation to the kind of food, and that varies in the individual, and from time to time, and also in geographic areas, so that the average clinical picture may vary according to the geographic location. In England, the iodine-bearing sea breezes produce a different atmosphere than that in the Mississippi valley, for instance. Probably, the mortality in geographic areas inferior in this respect could be overcome, or balanced, by sufficient iodine supply. In any case in which the gland is cut short of iodine supply there is a potential stimulus to hyperthyroidism because of production of abnormal thyroid secretion.

Clinical Study of Digitalis Toxemia

DRS. HARLOW BROOKS and BLAKE DONALDSON, New York: We used standardized doses (1 c.c., or 1 cat unit). The patients were tested under constant conditions and were observed as to symptoms of toxemia—vertigo, confusion, nausea and vomiting, and also as to heart rate. An average dose of 1.13 cat units per kilogram of body weight has been recorded by Eggleston, but we found wide variation of tolerance as estimated by dosage in relation to body weight. In abnormal hearts we found that the blood pressure was decreased and the ventricular rate markedly reduced in auricular fibrillation. In cases of hypertension with moderate nitrogen retention, the rate was decreased, on an average, 11 points; in more severe cases, 4 points. In normal hearts, pushing digitalis to the point of nausea had no effect on the heart rate. The first sign of digitalis toxemia is nausea. The effect of the drug is on the smooth musculature, and atropine does not relieve the symptoms. Our average dosage was 0.26 c.c. per pound of body weight.

DISCUSSION

DR. H. A. HARE, Philadelphia: I want to protest against carrying the dosage of this drug up to or near the toxic point. I think that the promulgation of this idea will lead to a great deal of error, if it is generally accepted. Many necropsy studies have indicated that there has been excessive digitalis dosage. I think that it will be unsafe in the future to follow the lines of this very sweeping conclusion. In cases of ruptured compensation we may need one or two maximal doses up to the point of nausea and vomiting, but there are hundreds of cases of failing heart in which much smaller doses can be given with excellent result. One difficulty may present itself, and that is that sufficient distinction has not been made between severe ruptured compensation, in which compensation is suddenly broken down and the condition of the patient is grave, and that form of gradual rupture of compensation in which more moderate symptoms are recognized as a manifestation of the condition. In the first case, doses that are approximately toxic can be given. That is practiced by many English physicians. They give large doses until the effect is produced, and then the dose is cut down. In the second type, it is not necessary to give large toxic doses in order to give the heart a rest. Another factor must be borne in mind: Many physicians fail to recognize that digitalis is a distinctly dangerous drug in some abnormal conditions of the circulatory system. When there is partial heart block, the giving of massive doses may complete the heart block. I have seen such a patient moribund from the administration of very massive doses. It has been my practice to give from 15 to 20 minims of a good tincture to rest the heart over a long period of time. The whole theory of administration of digitalis is the rest and better nutrition of the heart muscle. We cannot rest the heart in twenty-four hours. We have to continue the effect of a massive dose by very many small doses. We put a man to bed to rest his body, and we must also use this idea in resting the heart over a long period of time. Satisfactory results cannot be accomplished in any other way.

DR. HORATIO WOOD, Philadelphia: These massive doses often produce a very rapid fall in blood pressure. Another point in question is the prevailing idea that digitalis is to be administered according to pounds of body weight of the patient, based on the cat unit scale. I have learned the value of animal experimentation in the laboratory in working out

the cat unit dose, but it is applicable only to a certain extent. In medical practice there is a different element. Persons do not react according to so many pounds body weight, but according to the type of organism. One naturally supposes that a person of 300 pounds weight needs more than one of 100 pounds, but there are many cases in which there is a moderate degree of dropsy, not very marked, but still in which a dosage of digitalis graduated to scale of body weight would give rise to erroneous conclusions. There is too great a tendency to impress the profession at large with the idea that massive doses must be given in every case, and that each case is not to be handled as an individual entity.

DR. BLAKE DONALDSON, New York: This was not a study of therapy. It was a study of toxic action of the drug. We thought we could develop auricular flutter and possibly increase of rate by increasing the pacemaker. We administered 4 c.c., three times a day, in some cases. In estimating the nausea point in regard to body weight, it was determined by weight, less edema.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

31: 439-545 (May) 1923

- *Ovogenesis During Sexual Maturity. E. Allen, St. Louis.—p. 439.
Postnatal Growth in Weight of Body and of Various Organs in Guinea-Pig. A. N. Bessesen, Jr., and H. A. Carlson, Minneapolis.—p. 483.
Problem of Embryonic Pathology in Mammals; Intrauterine Mortality in Pig. G. W. Corner, Baltimore.—p. 523.

Ovogenesis During Sexual Maturity.—The concept that the definitive ova are already differentiated in the ovary shortly after birth, or at least before the attainment of puberty, requiring that they remain dormant for long periods, is questioned by Allen. The evidence presented by him consists of a description of the earliest stages of ovogenesis in ovaries from sexually mature mice removed at various stages of the estrual cycle. It is asserted that ovogenesis during sexual maturity is a cyclic phenomenon correlated with estruation. A cyclic proliferation of the germinal epithelium gives rise to a new addition of young ova to the cortex of the adult ovary at each normal estrual period. The periodic recurrence of ovogenesis during sexual maturity probably depends on the maturation of a set of follicles from a preceding generation. The evidence is in opposition to the theory that the definitive ova are in a direct line of chromosomal descent from the primordial ova.

Archives of Ophthalmology, New York

52: 209-312 (May) 1923

- Primary Gliomas of Chiasm and Optic Nerves in Their Intracranial Portion. P. Martin, Brussels, N. Y., and H. Cushing, Boston.—p. 209.
Fundamental Considerations in Correction of Squint. A. Whitmire, New Orleans.—p. 242.
Case of Orbital Abscess Producing Clinical Picture of Separation of Retina. Pathological Findings, Including Anemic Infarct of Optic Nerve. R. C. Cheney, Boston.—p. 252.
Case Records in Ophthalmological Clinic. C. Brenns, Jr., and G. E. Sturges, New York.—p. 259.

Boston Medical and Surgical Journal

188: 711-754 (May 10) 1923

- Rôle of Imaginative Faculty in Medicine. J. W. Courtney, Boston.—p. 711.
Profuse Unilateral Hematuria the Result of Malignant Endocarditis as Complication of Cancer of Prostate. W. C. Quinby.—p. 717.
Abnormalities of Bladder Function in Women. W. C. Quinby, Boston.—p. 718.
Intestinal Obstruction: Report of Cases. J. W. Lane, Boston.—p. 725.
One Child Sterility. D. Macomber, Boston.—p. 729.
Household Nursing Association. R. B. Osgood, Boston.—p. 732.
Physical Improvement of Students at Citizens' Military Training Camps. J. R. Kean.—p. 733.
Pulmonary Sequel (Peribronchial Infiltration) of Influenza. O. H. Stansfield, Worcester, Mass.—p. 734.

Circumscribed Proctitis of Traumatic Origin. W. A. Rolfe, Boston.—p. 735.

*Occurrence of Tubercle Bacilli in Feces of Tuberculous Patients. B. M. Fried, Boston.—p. 735.

Doctor's Opportunities. R. E. Dickson, Holyoke, Mass.—p. 737.

Tubercle Bacilli in Feces of Tuberculous Patients.—The stools of 126 patients at various stages of pulmonary tuberculosis, were examined by Fried for tubercle bacilli with positive results in 101 cases. Of 103 cases in which the sputum was positive, the feces were positive in ninety-eight. Of twenty-three cases in which the sputum was negative, the feces were positive in three cases. This is important, from a diagnostic point of view, in people who swallow their sputum, and especially in old people and children. It is also important, from a sanitary standpoint, to disinfect the feces and the linen of the patients.

Canadian Medical Association Journal, Montreal

13: 223-300 (April) 1923

- Problems of Country Practice in New Brunswick. A. B. Walter, Cambridge, N. B.—p. 227.
Diagnosis and Treatment of Duodenal and Gastric Ulcer. E. M. Eberts, Montreal.—p. 230.
*Influence of Chronic Disease of Gallbladder in Producing Stomach Symptoms. F. A. C. Scrimger, Montreal.—p. 235.
Chronic Appendicitis: Its Differential Diagnosis and Treatment. F. B. Gurd, Montreal.—p. 237.
Visceroptosis. R. H. M. Hardisty, Montreal.—p. 241.
Pregnancy and Heart Disease. D. G. Campbell, Montreal.—p. 244.
*Unusual Contents of Ovarian Cysts. Report of Two Cases. W. Bolt, Winnipeg.—p. 250.
*Maternal Mortality. W. B. Hendry, Toronto.—p. 252.
Pyelitis. G. S. Gordon, Vancouver, B. C.—p. 255.
Symptoms of Acute Osteomyelitis. D. E. Robertson, Toronto.—p. 262.
New Bismuth Therapy of Syphilis. C. J. Gross, Montreal.—p. 265.

Gallbladder Disease as Cause of Stomach Symptoms.—The case records of one hundred cases of chronic or recurring gallbladder disease and fifty cases of chronic gastric or duodenal ulcer were analyzed by Scrimger. The large majority of the proved cases of gallbladder disease gave a distinctive and fairly constant history of repeated attacks of pain over a period of months or years, nearly always localized to the "right upper quadrant" "below the right costal border," "in the gallbladder region." The pain was often felt through to the back and sometimes between the shoulder blades; rarely (in two instances) was it noted as being felt in the right shoulder or in the right side of the neck. The pain associated with disease of the stomach, when it was severe, was referred to the back about as often as was the pain from the gallbladder. In a minority of the cases, the main history was a recurrence of periods of dull, aching pain in the epigastrium with eructations of gas, and occasional vomiting. Rarely, however, in a proved case of cholecystitis or cholelithiasis was there not some history of acute pain localized to the right upper quadrant. Pain referred to the shoulder was not frequently noted, and when noted, it was usually brought out as the result of questioning. Jaundice was an infrequent occurrence. In five of the 100 cases there was no history of severe attacks of pain, only a grumbling, gnawing pain relieved by food and alkalis and not to be distinguished by the history alone from the pain of stomach diseases as the history was that of the associated hyperacidity. Throughout the whole series, there was a recurring group of stomach symptoms resembling the picture of hyperacidity, sometimes with a moderate retention. During the acute attack these symptoms are submerged by the more violent ones of pain and vomiting but reappear during the intervals. In others, the lesser signs dominated the picture.

Dermoid Cyst of Ovary.—Bolt reports two cases. The interesting points clinically in the first case were: (1) the lateness of the symptoms (age 61, eleven years after menopause); (2) the large tumor; (3) simulation of malignancy; (a) uterine hemorrhage; (b) irregular and nodular tumor; (c) free abdominal fluid; (d) marked loss of weight. Pathologic examination showed a dermoid cyst and no evidence of malignancy. On cutting the tumor in half, the part which looked spherical from the outside was seen to consist of a round encapsulated mass of the usual greasy material containing hair and teeth, and on top of this, and separated from it by a fibrous capsule, was a darker body, mottled, greyish in parts, reddish in others, broken into lobules by

fibrous strands, and looking like thyroid tissue, which it proved to be. The second patient was 35 years of age. From her a rightsided ovarian tumor was removed. It proved to be a dermoid cyst, containing three teeth, strands of hair, a papillary skin projection, and the usual greasy or buttery substance. In the wall of one side of the tumor was an elevated triangular nodule about three-quarters of an inch high and one and a half inches at the base. On cutting into this nodule, a small triangular area, deep yellow in color, resembling suprarenal cortex was found. Microscopic section of this part showed cells very like those of the cortical layer of the suprarenal, a definite capsule of smooth muscle fibus, a somewhat indefinite zona glomerulosa but a quite definite zona fasciculata of round or cuboidal cells containing a deeply staining nucleus, granules and fat vacuoles, but with no basement membrane.

Maternal Mortality.—Among 6,982 deliveries effected in one hospital during a period of about eight years the maternal mortality was 1.24 per cent. The main causes of death were: placenta praevia, 4 deaths; ruptured uterus, 6 deaths; shock, 5 deaths; cesarean section, 8 deaths; eclampsia, 19 deaths; pneumonia, 17 deaths; septicemia, 8 deaths; pulmonary embolus, 4 deaths.

Journal of Social Hygiene, New York

9: 257-320 (May) 1923

- Centralized French Endeavor in Field of Social Hygiene. T. C. Merrill, Paris, France.—p. 257.
Moral Conditions in Rural New England. G. E. Hall.—p. 267.
New York State Venereal Disease Control Program. J. S. Lawrence, Albany.—p. 271.
North Carolina Venereal Disease Program. J. S. Mitchener, Raleigh.—p. 288.

Minnesota Medicine, Minneapolis

6: 279-362 (May) 1923

- Lung Abscess. G. J. Heuer, Cincinnati.—p. 279.
*Diaphragmatic Hernia. Report of Cases. A. T. Mann, Minneapolis.—p. 285.
Tuberculosis Crusade in Minnesota. H. L. Taylor, St. Paul.—p. 291.
Minnesota's Antituberculosis Campaign. R. Bosworth, St. Paul.—p. 296.
*Status of Present-Day Methods of Examination in Diagnosis of Intestinal Tuberculosis. W. S. Lemon, Rochester, Minn.—p. 300.
Surgical Treatment of Ureter in Tuberculosis of Kidney. W. Walters, Rochester, Minn.—p. 307.
Case of Acute Delirium Apparently Due to Bromidia Poisoning. C. E. Riggs, St. Paul.—p. 310.
Ulcer of Stomach and Duodenum. E. S. Judd, Rochester, Minn.—p. 311.
Dysmenorrhea. J. L. Rothrock, St. Paul.—p. 314.
Mental Aspects in Delinquency. J. C. Michael, Minneapolis.—p. 319.
Roentgen Rays in Thyroid Therapy. M. I. Bierman, St. Louis.—p. 322.

Treatment of Diaphragmatic Hernia.—Mann feels that some cases will be best treated by the abdominal approach, through the right rectus incision down to or below the level of the umbilicus and extending upward in a slight curve along the margin of the cartilages into the sternal notch, and some best by way of the chest, through a long incision between the ribs, with retractors widely spreading the ribs, which seems much better than the resection of long portions of two ribs. When there are abdominal complications and abdominal adhesions, the abdominal route will be chosen. When there are more or less extensive adhesions in the thorax, the best approach will be by way of the chest. When both abdominal complications and extensive adhesions in the thorax are present, the combined method of approach will sometimes be needed.

Diagnosis of Intestinal Tuberculosis.—The diagnosis of intestinal tuberculosis, in Lemon's opinion, must be based on circumstantial evidence collected from the history of the ailment, the examination of the patient, the laboratory data afforded especially by: (1) direct examination of the rectum through the proctoscope; (2) the study of material collected at the proctoscopic examination; (3) the examination of the stools for tubercle bacilli, especially in cases of healed or latent pulmonary disease in which the sputum is negative, or in which there is no demonstrable pulmonary disease; (4) the examination of stools for evidence of ulceration, as in other ulcerative conditions; (5) the very definite and accurate observations of the roentgenologist; and (6) the microscopic examination of tissue removed by the surgeon in operations performed from choice when the diagnosis is certain,

or when advisable because of severity of symptoms, or when an opinion cannot be given with certainty.

Missouri State Medical Association Journal, St. Louis

20: 153-184 (May) 1923

- Birth of Scientific Surgery. L. S. McMurtry, Louisville, Ky.—p. 153.
*Diagnosis of Pernicious Anemia. R. L. Haden, Rosedale, Kan.—p. 158.
*Transfusion in Treatment of Anemia. W. W. Duke and D. D. Stofer, Kansas City, Mo.—p. 161.
Syphilis in Orthopedic Surgery. A. O'Reilly, St. Louis.—p. 166.
Myringotomy from Standpoint of Pathology of Early Otitis Media. A. M. Alden, St. Louis.—p. 169.
Pathology in Cases of Appendicitis with Diarrhea. Report of Cases. J. G. Sheldon and E. P. Heller, Kansas City, Mo.—p. 172.

Diagnosis of Pernicious Anemia.—Haden analyzes the results of the study of twenty-nine undoubted cases of pernicious anemia. The average red cell count was 1,700,000, the lowest was 740,000, the highest, 3,330,000. The anisocytosis, poikilocytosis, basophilia and nucleated red cells are associated typically with very low counts and disappear as the count rises. The white cell counts varied from 1,950 to 6,450 per c.mm. The platelets were usually reduced but were very variable. The color index varied from 0.80 to 1.61, being less than 1 in only three cases. The volume index was much more constant. It was always greater than 1. The saturation index was never more than 1 and usually was less than 1. The results of gastric analysis are available in twenty-three of the twenty-nine patients. Free hydrochloric acid was constantly absent. The combined acid was usually very low and the hydrochloric acid deficit usually very high. No patient found to have a volume index above 1 showed free hydrochloric acid in the gastric contents. The combination of an absence of free hydrochloric acid in the gastric juice and an average sized red cell above normal, as indicated by a plus volume index, Haden says, is constant in pernicious anemia. A plus color index, when present, if correctly determined, has the same significance as a plus volume index, but is not constantly present, however. A diagnosis of pernicious anemia should not be made unless the volume index is above and free hydrochloric acid is absent.

Transfusion in Treatment of Anemia.—From an experience with direct transfusion of blood in more than 400 cases, Duke and Stofer conclude that it is the logical method of treating anemia of almost every type, for three reasons: First, it is harmless if the technic is good and the donors are carefully chosen. Second, the result is immediate. Third, the result is certain. The permanence of the result, of course, depends on the cause of the anemia.

Texas State Journal of Medicine, Fort Worth

18: 589-632 (April) 1923

- Posture Work in Children. F. P. Gengenbach, Denver.—p. 596.
Pyelitis in Infants and Children. J. A. Rawlings and H. Leigh, El Paso.—p. 600.
Colic in Infants. A. H. Braden, Sherman.—p. 604.
Value of Enterostomy in Intestinal Obstruction. J. W. Long, Greensboro, N. C.—p. 606.

Virginia Medical Monthly, Richmond

50: 71-146 (May) 1923

- Some Reactions in Treatment of Syphilis and Their Probable Significances. S. G. Gill, Norfolk.—p. 71.
*Lumbar Puncture in Routine Treatment of Syphilis. W. T. Vaughan, Richmond.—p. 75.
Plea for More Comprehensive View of Correlations in Study of Medicine. J. H. Hiden, Pungoteague.—p. 79.
Prenatal Care and Treatment. R. P. Kelly, Lynchburg.—p. 82.
Cancer, Tribulus Terrestris of Diseases. S. Harnsberger, Warrenton.—p. 85.
Obstetrics, a Neglected Science and Art. G. T. Myers, Norfolk.—p. 86.
Latent Maxillary Sinusitis. J. W. White, Norfolk.—p. 90.
Art as Applied to Anatomy. J. W. Brodnax, Richmond.—p. 92.
Relation of Biology to Surgery. J. S. Horsley, Richmond.—p. 101.
Relationship of Eye to General Diseases. G. B. Dudley, Jr., Martinsville.—p. 110.
Planning Hospital in Chinese City. C. M. Lee, Wusih, China.—p. 114.
Phlyctenular Keratoconjunctivitis. S. Trattner, Richmond.—p. 117.
After-Care of Obstetric Patients. C. J. Andrews, Norfolk.—p. 122.
Diagnosis of Tuberculosis in Childhood. F. B. Stafford, Charlottesville.—p. 124.
Newer Methods of Determining Condition of Nutrition in Children. S. Newman.—p. 127.

Routine Lumbar Puncture in Syphilis.—Vaughan advocates performing at least one lumbar puncture in every case of

syphilis early in the course of the disease. In case of doubt, a diagnostic lumbar puncture will give valuable information. The intrathecal pressure should be roughly estimated, cell count and globulin content should be recorded, and Wassermann reaction should be determined.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 795-840 (May 12) 1923

- *Australian Fauna and Medical Science. W. C. MacKenzie.—p. 795.
- *Pathogenicity and Treatment of Flagellate Dysentery. H. E. Whittingham.—p. 799.
- *Effects of Excess of Calcium on Skeleton. V. Korenchevsky.—p. 802.
- Intussusception Supervening on Congenital Stenosis of Ileum. W. T. Warwick.—p. 804.
- Optic Atrophy. R. E. Wright.—p. 806.
- Diphtheria Carriers. F. W. Sumner.—p. 808.

Value of Knowledge of Applied Comparative Anatomy to Physician.—MacKenzie dwells on the fact that the medical graduate has little concern with that department of biology termed "applied zoology," or better, "applied comparative anatomy." Yet, for the study of causation, without which no true advance can be made or principles enunciated, and intimate knowledge of applied comparative anatomy is essential, since by its means the student is brought into contact with numberless experiments on the part of Nature which call for explanation—experiments that represent the functional struggles through which the human body has been evolved. A recognition that structure is a response to function is all essential to those engaged in the practice of medicine. The teaching of zoology needs complete reorganization; it should be dominated by the needs of those whom it really most concerns—the general medical practitioner. In the Australian Commonwealth are to be found, still living in their natural state, members of the two oldest orders of mammals—namely, monotremes and marsupials, corresponding to life on this planet many millions of years ago. They are examples of living embryology. Through them man is enabled to explore his past. To study these mammals from the point of view not only of structure, but function in relation to medical science, the Australian Institute of Anatomical Research has been founded in Melbourne, and receives an annual subsidy from the government of Victoria. The government has also reserved an area of nearly 600 acres, 80 of which have been converted into a great wire netting cage. Here, for example, the platypus, echidna and koala can be found living, though under observation, in their natural state.

Flagellate Dysentery.—Whittingham emphasizes the following points: Flagellate dysentery is a pathogenic condition which, if allowed to persist, will eventually undermine the health of the patient and cause neurasthenia. Certain cases are simply "carriers" as are some cases of *Endameba histolytica* infection. This in no way proves them non-pathogenic. Such "carriers" are a great source of danger as they may infect others, especially in a military service where they are likely to be drafted overseas. Contrary to what is usually stated, flagellate dysentery may be cured in at least 50 per cent. of cases. Stress is laid on the advisability of the combined treatment by purgation, thymol, emetin bismuthous iodid and lavage of the colon. All cases of recurrent diarrhea or neurasthenia for which no cause can be found, and in which flagellates can be detected in the stools, should have a course of treatment as outlined above.

Effects of Excess of Calcium on Skeleton.—Details of experiments made are given by Korenchevsky and on the basis of the results obtained, the following conclusions are drawn: Butter bought in winter may contain a considerable amount of the antirachitic principle. When the amount of calcium in a normal diet containing 8 per cent. butter and 2 per cent. cod liver oil was increased two or three times, the calcification of the skeleton was either not increased at all or only slightly. The ingestion of even very large quantities of calcium did not cure the rachitic calcium impover-

ishment of the skeleton of rats on a diet deficient in the fat soluble factor. When the exhaustion of the fat soluble factor in the body of rats is not complete, an excess of calcium in diets deficient in fat soluble factor may in some cases slightly increase the amount of calcium in the skeleton, though never sufficiently to make the calcification normal. On the basis of the data obtained from the chemical and histologic examination, the skeletal affections in rats on vitamin A deficient diet must be classed in the group of rachitic affections, which develop even with an excess of calcium in the diet.

Indian Medical Gazette, Calcutta

58: 145-192 (April) 1923

- Beriberi and Epidemic Dropsy Problem. J. W. D. Megaw.—p. 145.
- Relationship of Intestinal Protozoa of Man to Hydrogen Ion Concentration of Their Environment. R. Knowles, L. E. Napier and B. M. Das Gupta.—p. 151.
- Strongyloidosis. S. K. Roy.—p. 155.
- Operative Treatment of Trachoma by Excision of Fornix. D. D. Kapur.—p. 158.
- Day in Life of Port Health Officer. A. B. De Castro.—p. 160.
- *Accessory Mouth. A. B. De Castro.—p. 162.
- *Stone in Bladder Removed by Midwifery Forceps. M. Singh.—p. 163.
- Case of Bronchomoniliasis. S. C. Sen.—p. 164.
- Filariasis and Hemoptysis. R. N. Banerji.—p. 165.
- Case of Idiopathic Dilatation of Colon. J. C. De.—p. 166.
- *Unusual Termination of Pyopneumothorax Secondary to Pneumonia. R. V. Rajam.—p. 168.
- Relapsing Fever in Raichur. S. Mallannah.—p. 168.

Accessory Mouth.—In de Castro's case there was present a horizontal cleft above the hyoid from which the tongue could be protruded, and deglutition performed. The two horizontal rami of the lower jaw were fused together and occupied a position in the center of the floor of the mouth, the capacity of which was very small. On the right ramus there was one molar and two bicuspid teeth, on the left two bicuspids. The upper maxilla was ununited in the middle line of the palate, about the posterior two thirds, and with case two fingers could be passed up to the frontal bone. The palate and throat were anesthetic to a marked degree. The man could drink liquids from this malformed opening as easily as from his mouth. Masticatory work was performed by the natural mouth.

Unusually Large Bladder Calculus.—The stone in Singh's case occupied the whole bladder. Efforts to remove the stone were futile until midwifery forceps were used. The weight of the stone is not given.

Pyopneumothorax Secondary to Pneumonia.—One month after an attack of high fever with cough and dyspnea which lasted for a fortnight, the mother of Rajam's patient noticed a small swelling on the left side of the back. It increased in size. The only trouble the child had was a dry hacking cough, worse at night and in the recumbent posture. The swelling at the back extended from the suprascapular region above to the tenth rib below. Horizontally, it was limited on the outer side by the posterior axillary fold and on the inner side by the spine. On exploring the swelling with a needle and syringe, the piston was suddenly shot out of the barrel with the escape of an odorless gas and subsequently of white thin odorless pus. A one-half inch incision was made at the dependent part of the abscess, and the whole of the pus mixed with air was evacuated. After the evacuation of the cavity, it was noticed that there was sucking in and out of air into the pleural cavity with each respiratory movement. Digital examination through the wound revealed a perforation in the chest wall between the eighth and ninth ribs in the line of the angle of the scapula, and the expanded lung substance could be felt through the fistulous opening in the wall. The abscess was dressed with firm pressure outside. The whole cavity was completely obliterated and the incision healed by first intention in ten days.

Tubercle, London

4: 337-384 (May) 1923

- Diagnosis and Treatment of Tuberculosis of Kidneys and Urinary Tract: Mode of Development and Dissemination of Tuberculosis in Kidneys and Other Organs of Urinary Tract. G. Ekehorn.—p. 337.
- Effects, Immediate and Remote, of Mustard Gas (Dichlorethylsulphid) Poisoning on Respiratory Tract. P. R. McNaught.—p. 345.
- Treatment of Tuberculosis with Colloid of Calcium. D. C. Lloyd.—p. 348.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1923

The following journals have been abstracted in the Current Literature Department of THE JOURNAL during the past six months. Any of the foreign journals, except those starred, will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where located.

- Acta chirurgica Scandinavica. Irregular. 20 kronor. Stockholm.
Acta medica Scandinavica. Irregular. 20 kronor. Stockholm.
Acta Pædiatrica. Irregular. \$6 per volume. Uppsala.
Acta scholae medicinalis universitatis imperialis in Kioto. Irregular. 3.30 yen. Kioto.
American Journal of Anatomy. Bi-m. \$7.50 per volume. 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children. M. \$4. American Medical Association, 535 N. Dearborn St., Chicago.
American Journal of Hygiene. Bi-m. \$6. 310-312 W. Monument St., Baltimore.
American Journal of the Medical Sciences. M. \$6. Lea & Febiger, 706 Sansom St., Philadelphia.
American Journal of Obstetrics and Gynecology. M. \$6. C. V. Mosby Co., St. Louis.
American Journal of Ophthalmology. M. \$10. 7 W. Madison St., Chicago.
American Journal of Physiology. M. \$5 per volume. 1222 St. Paul St., Baltimore.
American Journal of Psychiatry. Q. \$5 per volume. Johns Hopkins Press, Baltimore.
American Journal of Public Health. M. \$5. 370 Seventh Ave., New York.
American Journal of Roentgenology and Radium Therapy. M. \$6. Paul B. Hoeber, 67 E. 59th St., New York.
American Journal of Syphilis. Q. \$7. C. V. Mosby Co., St. Louis.
American Journal of Tropical Medicine. Bi-m. \$5 per volume. Williams & Wilkins Co., Baltimore.
American Review of Tuberculosis. M. \$4 per volume. Williams & Wilkins Co., Baltimore.
Anales de la Facultad de Medicina, Universidad de Lima. Bi-m. 1.50 soles per issue. Lima, Peru.
Anales de la Facultad de Medicina, Universidad de Montevideo. M. 6 pesos per year. Montevideo.
Annales de l'Institut Pasteur. M. 55 francs. Paris.
Annales des maladies vénériennes. M. 52 francs. Paris.
Annales de médecine. M. 55 francs. Paris.
Annali d'igiene. M. 60 lire. Rome.
Annali italiani di chirurgia. M. 70 lire. Naples.
Annals of Clinical Medicine. Bi-m. \$6. Williams & Wilkins Co., Baltimore.
Annals of Medical History. Q. \$8. Paul B. Hoeber, 67 E. 59th St., New York.
Annals of Otolaryngology and Laryngology. Q. \$6. Times Bldg., St. Louis.
Annals of Surgery. M. \$7.50. J. B. Lippincott Co., E. Washington Square, Philadelphia.
Annals of Tropical Medicine and Parasitology. Irregular. £1 2s. 6d per volume. Liverpool.
Arbeiten aus dem anatomischen Institut der kaiserlich-japanischen Universität zu Sendai. Irregular. Price varies. Tokyo.
Archiv für Gynaekologie. Irregular. Price varies. Berlin.
Archiv für Kinderheilkunde. Irregular. 21 Swiss francs per volume. Stuttgart.
Archiv für klinische Chirurgie. Irregular. Price varies. Berlin.
Archiv für Verdauungs-Krankheiten. Irregular. 200 marks per volume. Berlin.
Archives of Dermatology and Syphilology. M. \$6. American Medical Association, 535 N. Dearborn St., Chicago.
Archives of Diagnosis. Q. \$3. Rebman Co., 141 W. 36th St., New York.
Archives Franco-Belges de Chirurgie. M. 55 francs. Brussels.
Archives of Internal Medicine. M. \$5. American Medical Association, 535 N. Dearborn St., Chicago.
Archives Internationales de laryngologie, otologie, rhinologie et broncho-oesophagoscopie. M. 60 francs. Paris.
Archives des maladies de l'appareil digestif et de la nutrition. Monthly except August and September. 45 francs. Paris.
Archives des maladies du cœur, des vaisseaux et du sang. M. \$3. Paris.
Archives de médecine des enfants. M. 40 francs. Paris.
Archives de médecine et de pharmacie militaires. M. Paris.
Archives of Medical Hydrology. Irregular. 15 francs. London.
Archives médicales belges. M. 30 francs. Brussels.
Archives of Neurology and Psychiatry. M. \$6. American Medical Association, 535 N. Dearborn St., Chicago.
Archives of Occupational Therapy. Bi-m. \$5. Williams & Wilkins Co., Baltimore.
Archives of Ophthalmology. Bi-m. \$6. G. P. Putnam's Sons, 2 W. 45th St., New York.
Archives of Radiology and Electrotherapy. M. £2, 2 shillings per year. Rebman Co., 141 W. 36th St., New York.
Archives of Surgery. Bi-m. \$6. American Medical Association, 535 N. Dearborn St., Chicago.
Archivio italiano di chirurgia. Irregular. 80 francs per volume. Bologna.
Archivio italiano di scienze mediche coloniali. M. 36 lire. Tripoli.
Archivio di ostetricia e ginecologia. M. 40 lire. Naples.
Archivio per le scienze mediche. Bi-m. 36 francs. Torino.
Archivos de cardiología y hematología. Bi-m. 24 pesetas. Madrid.
Archivos españoles de pediatría. M. 25 pesetas. Madrid.
Archivos latino-americanos de pediatría. M. \$5. Buenos Aires.
Arquivos do Instituto Bacteriologico Camara Pestana. Irreg. Lisbon.
Atlantic Medical Journal. M. \$3. 230 State St., Harrisburg, Pa.
Beiträge zur klinischen Chirurgie. Irregular. Price varies. Tübingen.
Boletín de Medicina y Cirugía. M. Guayaquil, Ecuador.
Boston Medical and Surgical Journal. W. \$6. 126 Massachusetts Ave., Boston.
Brain. A Journal of Neurology. Irregular. 24 shillings. London.
Brazil-medico. W. 25 milreis. Rio de Janeiro.
Bristol Medico-Chirurgical Journal. Q. 10s. 6d. per year.
British Journal of Children's Diseases. Q. 25 shillings per year. London.
British Journal of Experimental Pathology. Bi-m. £2. London.
British Journal of Medical Psychology. Q. 30s. net per volume. London.
British Journal of Surgery. Q. \$10. William Wood & Co., 51 Fifth Ave., New York.
British Journal of Tuberculosis. Q. \$2.50 per year. London.
British Medical Journal. W. 1 shilling 3 d. per issue. London.
Bulletin de l'Académie de médecine. W. 40 francs. Paris.
Bulletin of the Johns Hopkins Hospital. M. \$4. Baltimore.
Bulletin of the Lying-In Hospital, New York. Irregular. \$1. Bulletin of Lying-In Hospital Press, New York.
Bulletin médical. Semi-w. 20 francs. Paris.
Bulletin of the Medical and Chirurgical Faculty of Maryland. M. (except June, July, August and September) 25 cents. 1211 Cathedral St., Baltimore.
Bulletin of the Naval Medical Association of Japan. Tokio.
Bulletin of the Porto Rico Medical Association. Bi-m. \$3 per year. San Juan, Porto Rico.
Bulletins et mémoires de la Société médicale des hôpitaux de Paris. W. 65 francs. Paris.
Calcutta Medical Journal. M. Rs. 5. Calcutta.
California State Journal of Medicine. M. \$4. Balboa Bldg., Second and Market Sts., San Francisco.
Canadian Journal of Mental Hygiene. Q. \$2. 207 St. Catherine St., West, Montreal.
Canadian Medical Association Journal. M. \$6. 836 University St., Montreal.
*Casopsis lekaruv ceskych. W. 170 k. Prague.
China Medical Journal. M. \$5. Shanghai.
Chirurgia degli organi di movimento. Irregular. 80 francs. Bologna.
Colorado Medicine. M. \$2. Metropolitan Bldg., Denver.
Crónica médica. M. \$3.50. Lima, Peru.
Delaware State Medical Journal. Q. \$1. 309 Shipley St., Wilmington.
Deutsche medizinische Wochenschrift. W. \$6 per year. Leipzig.
Deutsche Zeitschrift für Chirurgie. Irregular. Price varies. Leipzig.
Deutsches Archiv für klinische Medizin. Irregular. Price varies. Leipzig.
Echo medical du nord. W. 15 francs. Lille.
Edinburgh Medical Journal. M. 40 shillings.
Encéphale. M. 70 francs. Paris.
Endocrinology: Bulletin of the Association for the Study of Internal Secretions. Bi-m. \$6. 1100-1103 Title Insurance Bldg., Los Angeles.
Finska läkaresällskapets handlingar. Bi-m. 60 Finnish marks per year. Helsingfors.
Gaceta médica de Caracas. Semi-m. 24 bolívares. Caracas, Venezuela.
Gaceta médica de Mexico. Irregular. \$6. Mexico City.
Gann. Irregular. Tokio.
Gazette des hôpitaux. W. 35 francs. Paris.
Glasgow Medical Journal. M. 30 shillings per year.
Gynécologie et Obstétrique. M. 65 francs. Paris.
Hospitalstidende. W. 30 kroner. Copenhagen.
Hygiea. Semi-m. 24 kronor. Stockholm.
Illinois Medical Journal. M. \$3. 155 N. Ridgeland Ave., Oak Park.
Indian Journal of Medical Research. Q. 10s. Calcutta.
Indian Journal of Medicine. Q. Rs. 6. Calcutta.
Indian Medical Gazette. M. Rs. 18. Calcutta.

- International Journal of Psycho-Analysis. Q. \$6. London.
Irish Journal of Medical Science. M. £1 5s. Dublin.
Jahrbuch für Kinderheilkunde und physische Erziehung. M. 800 marks per volume. Berlin.
Japan Medical World (Nippin No Ikai Sha). M. \$6. Tokio.
Journal of the American Medical Association. W. \$6. 535 N. Dearborn St., Chicago.
Journal of the Arkansas Medical Society. M. \$3. 810 Boyle Bldg., Little Rock.
Journal of Bacteriology. Bi-m. \$5 per volume. Williams & Wilkins Co., Baltimore.
Journal of Biochemistry. Q. \$5.50 per volume. Tokio.
Journal of Biological Chemistry. M. \$5 per volume. Rockefeller Institute for Medical Research, 66th St., and Avenue A, New York.
Journal of Bone and Joint Surgery. Q. \$5. 372 Marlborough St., Boston.
Journal of Cancer Research. Q. \$5 per volume. Williams & Wilkins Co., Baltimore.
Journal de chirurgie. M. 85 francs. Paris.
Journal of Experimental Medicine. M. \$5 per year. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
Journal of the Florida Medical Association. M. \$1.50. 602-603 Consolidated Bldg., Jacksonville.
Journal of General Physiology. Bi-m. \$5. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
Journal of Immunology. Bi-m. \$5 per volume. Williams & Wilkins Co., Baltimore.
Journal of the Indiana State Medical Association. M. \$3. 406 W. Berry St., Fort Wayne.
Journal of Industrial Hygiene and Abstract of Literature. M. \$6. 240 Longwood Ave., Boston.
Journal of Infectious Diseases. M. \$5. 637 S. Wood St., Chicago.
Journal of Iowa State Medical Society. M. \$2.75. Des Moines.
Journal of Kansas Medical Society. M. \$2. 303 Commerce Bldg., Topeka.
Journal of Laboratory and Clinical Medicine. M. \$6. C. V. Mosby Company, St. Louis.
Journal of Laryngology and Otology. M. \$10. Edinburgh.
Journal of Maine Medical Association. M. \$2. Portland.
Journal de médecine de Bordeaux. Semi-m. 25 francs.
Journal de médecine de Lyon. Semi-m. 32 francs.
Journal of Medical Association of Georgia. M. \$3. 208 Professional Bldg., 65 Forrest Ave., Atlanta.
Journal of Medical Research. Irregular. \$5 per volume. 240 Longwood Ave., Boston.
Journal of Medical Society of New Jersey. M. \$2. 14 S. Day St., Orange, N. J.
Journal of Mental Science. Q. 30 shillings. London.
Journal of Metabolic Research. M. \$10. Physiatrie Institute, Morristown, N. J.
Journal of Michigan State Medical Society. M. \$5. Powers Theatre Bldg., Grand Rapids.
Journal of Missouri State Medical Association. M. \$2. 3529 Pine St., St. Louis.
Journal of Nervous and Mental Diseases. M. \$10 per year. 64 W. 56th St., New York.
Journal of Neurology and Psychopathology. Q. 30 shillings. William Wood & Co., 51 Fifth Ave., New York.
Journal of Obstetrics and Gynecology of the British Empire. Q. 42 shillings. Manchester.
Journal of Oklahoma State Medical Association. M. \$4. 508 Barnes Bldg., Muskogee.
Journal of Parasitology. Q. \$3. Prof. H. B. Ward, University of Illinois, Urbana.
Journal of Pathology and Bacteriology. Q. 40 shillings. Edinburgh.
Journal of Pharmacology and Experimental Therapeutics. M. \$6. Williams & Wilkins Co., Baltimore.
Journal of the Philippine Islands Medical Association. Bi-m. \$5. Manila.
Journal de radiologie et d'électrologie. M. 60 francs. Paris.
Journal of Radiology. M. \$5. Radiological Society of North America, 121 S. 33d St., Omaha, Neb.
Journal of Social Hygiene. M. (except July, August and September). \$3. American Social Hygiene Association, 370 Seventh Ave., New York.
Journal of South Carolina Medical Association. M. \$3. Greenville.
Journal of State Medicine. M. 2 shillings per issue. London.
Journal of Tennessee State Medical Association. M. \$2. 154 8th Ave., N., Nashville.
Journal of Tropical Medicine and Hygiene. Semi-m. 30 shillings. London.
Journal d'urologie médicale et chirurgicale. M. 60 francs. Paris.
Journal of Urology. M. \$6. Williams & Wilkins Co., Baltimore.
Kentucky Medical Journal. M. \$5. State and Twelfth Sts., Bowling Green.
Kitasato Archives of Experimental Medicine. Irregular. 3.60 yen per volume. Tokio.
Klinische Wochenschrift. W. \$4 per year. Berlin.
Lancet. W. \$12. London.
Laryngoscope. M. \$6. 3858 Westminster Place, St. Louis.
Lyon chirurgial. Bi-m. 50 francs.
Lyon médical. Semi-m. 25 francs.
Médecine. M. 20 francs. Paris.
Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indië. Irregular. Price varies. Batavia, Java.
Medical Journal of Australia. W. £2 5s. Sydney.
Medical Journal of South Africa. M. £1 5s. Johannesburg.
Medicina contemporanea. W. Lisbon, Spain.
Medizinische Klinik. W. 260 marks per year. Berlin.
Memorias do Instituto Oswaldo Cruz. Irregular. Rio de Janeiro.
Mental Hygiene. Q. \$2. National Committee for Mental Hygiene, Inc., 27 Columbia St., Albany, N. Y.
Military Surgeon. M. \$4. Army Medical Museum, Washington, D. C.
Minnesota Medicine. M. \$3. 403 Central Bank Bldg., St. Paul.
- *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie. Irregular. Jena.
Mitteilungen aus der medizinischen Fakultät der kaiserlichen Universität Kyushu. Irregular. Price varies. Fukuoka.
Mitteilungen aus der medizinischen Fakultät der kaiserlichen Universität zu Tokyo. Irregular. Price varies. Tokio.
*Monatsschrift für Geburtshilfe und Gynäkologie. M. Price varies. Berlin.
Monatsschrift für Kinderheilkunde. M. 320 marks. Leipzig.
Münchener medizinische Wochenschrift. W. \$6 per year. Munich.
National Medical Journal of China. Q. \$2.50. Shanghai.
Nebraska State Medical Journal. M. \$2.50. 609 Omaha Loan and Building Association Bldg., Omaha.
Nederlandsch Tijdschrift voor Geneeskunde. W. 34.50 florins. Haarlem, Netherlands.
Neoplasmes. Bi-m. 18 francs. Paris.
New Orleans Medical and Surgical Journal. M. \$2. 1551 Canal St., New Orleans.
New York Medical Journal and Medical Record. Semi-m. \$6. A. R. Elliott Publishing Co., 53 Park Place, New York.
New York State Journal of Medicine. M. \$2. 17 W. 43d St., New York.
Norsk Magazin for Lægevidenskaben. M. 25 kroner per year. Christiania.
Northwest Medicine. M. \$2. 323 Cobb Bldg., Seattle, Wash.
Nourisson. Bi-m. \$3. Paris.
Ohio State Medical Journal. M. \$3. 131 E. State St., Columbus.
Paris médical. W. 35 francs.
Pediatria. Semi-m. 60 lire. Naples.
Pennsylvania Medical Journal. M. \$3. 212 N. Third St., Harrisburg.
Philippine Journal of Science. M. \$5. Bureau of Science, Manila, P. I.
Policlinico (sez. chir.) and (sez. med.). M. 45 francs each; (sez. prat.) W. 75 francs. Rome.
Polska gazeta lekarska. W. Lwow, Poland.
Practitioner. M. 2 guineas. London.
Prensa médica argentina. 3 times per month. \$6. Buenos Aires.
Presse médicale. Semi-w. 45 francs. Paris.
Progrès médical. W. 25 francs. Paris.
Public Health Journal. M. \$2. York Publishing Co., 207 York Bldg., Toronto.
Quarterly Journal of Medicine. 35 shillings. London.
Repertorio de medicina y cirugía. M. \$4. Bogota, Colombia.
Revista de la Asociación médica argentina. M. 20 pesos. Buenos Aires.
Revista española de medicina y cirugía. M. 20 pesetas. Barcelona.
Revista médica del Rosario. Bi-m. 10 pesos. Rosario, Argentina.
Revista médica del Uruguay. M. 8 pesos per year. Montevideo.
Revista de medicina y cirugía de la Habana. Semi-m. \$4.50. Havana.
Revue de chirurgie. M. 60 francs. Paris.
Revue française de gynécologie et d'obstétrique. Semi-m. 30 francs. Paris.
Revue de médecine. M. 52 francs. Paris.
Revue médicale de la Suisse Romande. M. 22 francs. Lausanne.
Revue pratique des maladies des Pays Chauds. Paris.
Rhode Island Medical Journal. M. \$2. Rhode Island Medical Society, Providence.
Riforma medica. W. 90 lire. Naples.
Rivista di clinica pediatrica. M. 50 lire. Florence.
Rivista critica di clinica medica. 3 times per month. 36 francs. Florence.
Schweizer Archiv für Neurologie und Psychiatrie. Irregular. 35 francs per volume. Zurich.
Schweizerische medizinische Wochenschrift. W. 17.20 francs per half year. Basel.
Sei-I-Kwai Medical Journal. Bi-m. \$2. Tokio.
Semana médica. W. \$5. Buenos Aires.
Siglo médico. W. 20 pesetas. Madrid.
South African Medical Record. Semi-m. 31 shillings 6 pence. Cape-town.
Southern Medical Journal. M. \$3. 807 Empire Bldg., Birmingham, Ala.
Southwestern Medicine. M. \$2. Dr. Warner Watkins, Box 1328, Phoenix, Ariz.
Surgery, Gynecology and Obstetrics with International Abstract of Surgery. M. \$12. Surgical Publishing Co., 30 N. Michigan Ave., Chicago.
Svenska läkarsällskapets handlingar. Q. 24 kronor. Stockholm.
Texas State Journal of Medicine. M. \$2.50. 207½ W. 11th St., Fort Worth.
Tohoku Journal of Experimental Medicine. Bi-m. 6 yen per volume. Sendai.
Tubercle. M. 25 shillings. London.
Tumori. Irregular. 50 francs. Rome.
Ugeskrift for Læger. W. 30 kroner plus postage. Copenhagen.
United States Naval Medical Bulletin. M. \$1.50. Washington, D. C.
Upsala läkareförenings förhandlingar. Irregular. 10 kronor per volume. Uppsala.
Vida nueva. M. 2 pesos. Havana.
Virginia Medical Monthly. M. \$3. Richmond.
West Virginia Medical Journal. M. \$3. Huntington.
Wiener Archiv für innere Medizin. Irregular. Price varies. Berlin.
Wiener klinische Wochenschrift. W. \$4. Vienna.
Wisconsin Medical Journal. M. \$3.50. 514 Wells Bldg., Milwaukee.
*Zeitschrift für Geburtshilfe und Gynäkologie. Irregular. Price varies. Stuttgart.
Zeitschrift für Kinderheilkunde. Irregular. Price varies. Berlin.
Zeitschrift für klinische Medizin. Irregular. 36 marks per volume. Berlin.
Zeitschrift für Krebsforschung. Irregular. Price varies. Berlin.
Zeitschrift für Tuberkulose. Irregular. \$4 per volume. Leipzig.
Zeitschrift für Urologie. M. \$4.50. Leipzig.
Zeitschrift für urologische Chirurgie. Irregular. Price varies. Berlin.
Zentralblatt für Chirurgie. W. 20 Swiss francs per half year. Leipzig.
Zentralblatt für Gynäkologie. W. 20 Swiss francs per half year. Leipzig.
Zentralblatt für innere Medizin. W. 20 Swiss francs per half year. Leipzig.

SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "M," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "B," "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association." The name of the author follows the subject entry in brackets.

For author index see page 2002.

A

- ABDERHALDEN reaction in psychiatry and nervous diseases, 50
- ABDOMEN abscesses, prevention of peritoneal contamination in drainage of, [Eastman] *833
- aches in, [Albrecht] 441
- calcified glands of, [Walker] 142
- chronic abdomen, 1777—E
- diagnosis, improved technic for localization of tender spots, [Del Valle] 215
- diagnosis, paravertebral injections of procain in differential diagnosis, [Läwen] 68
- diseases in and after influenza, [Esau] 1657
- infectious processes in, treatment of, [Pribram] 219
- neurology of abdominal walls, [Söderberg] 884
- pain in upper left quadrant, incidence of, [Friedeuwald & Martindale] 62
- pain, aneurysm of thoracic aorta as cause of, [Mallory] *1356
- pain, right-sided, significance of, [Coffey] 134—ab
- rigidity, differential sign in, [Vale] *321
- sarcoma, primary, retroperitoneal, [Andrews] 1733
- surgery, new technic for closure of abdomen, [Pasman] 1343
- surgery, pillow at foot of bed after abdominal operations, [Cullen] *1521
- surgery, unusual causes for heart failure after, [Brack] 439
- surgical conditions of right side of, [Westmoreland] 206—ab
- wounds, influence of hemorrhage on mortality in, [Mason] 205—ab
- ABNORMALITIES, constitutional, general causes of, [Greil] 146
- ABORTION and premature labor, 717
- bacteriology of fatal systemic infections following, [Moody] 800
- births and miscarriages, [Waldstein] 1658
- criminal, and privileged communications, 1326
- criminal, gangrene from attempted, [de Rouville] 1418
- dying declarations in prosecution for attempting to cause miscarriages, 1171—M
- febrile, [Henkel] 439
- febrile, protein therapy in, [Simon] 442
- French law against, 1255
- infected, treatment of, [Albrecht] 1548
- postabortal hemolytic streptococcemia, [Williams] 353
- therapeutic, [Van Dongen] 1186
- therapeutic, medicolegal aspect of, [Balthazard] 512
- treatment of, [Wagner] 218
- ABRAMS' divining rod: the apotheosis of buncombe, 631—E
- electronic diagnoses, 1317—E
- outdone; diagnosis by machine, 1017
- what Los Angeles thinks of the Abrams cult, 1245—E
- what Milwaukee and some other places think of Abramism, 1459—E
- ABSCISS: See also under names of organs and regions
- ABSCISS, cold, of thorax after thoracocentesis, [Carnot & Blamoutier] 964
- fixation, and Malta fever, [Roziès] 588
- fixation, therapeutic effect on sepsis of local inflammation and abscess formation, [Rolly] 1494
- ischlorectal, followed by gas gangrene, [Berkow & Tolk] *1689
- perpendicular, lumbar incision in, [Lükö] 979
- subdiaphragmatic, [Hodges] *1055
- subphrenic, [Baumanu] 1348
- subphrenic, access to, [Nather] 362
- subphrenic, puncture with, [Hirsch] 809
- subphrenic, roentgen-ray examination of, [Sommer] 1110
- ACADEMY OF MEDICINE of Atlanta, Ga., 407
- Paris, election of officers of, 197
- ACCIDENTS, causes of, 196
- incidence of, among workmen in gas and electric plants and in waterworks, 1162
- industrial, estimation of disability in, 123
- insufficient evidence that accident caused cancer, 1481—M
- physician's report for accident industrial board, 796—M
- preventable, 118
- "Safety First Council," 1085
- ACETONE in urine in measles, [Nagahara] 1104
- ACETYLENE, a new anesthetic, [Gauss & Wieland] 1276, 1383—E, [Luckhardt & Carter] 1476—C, [Jordan] 1712—C
- ACHLORHYDRIA, [Nario] 214
- relation of, to pernicious anemia, [Hurst] 659
- ACHYLIA GASTRICA, etiologic relation of, to combined spinal sclerosis, [Vanderhoof] 1876—ab
- ACID, acetylsalicylic, 1092
- formic, generalized psoriasis following injection of, [Malten] 1819
- hippuric, cause of delay in excretion of, with contracted kidney, [Snapper & Grunbaum] 1112
- hydrochloric, migration of, in body, [Doisy & Beckmann] 429
- hydrocyanic, fumigation with, 699—E
- hydrocyanic, symptoms of chronic poisoning, [Rosenbloom] 581
- Intoxication: See Acidosis
- nucleic, preparation of, from tubercle bacillus, [Johnson & Brown] 429
- Salicylic: See Salicylates
- silicic, in infectious diseases, [Thoma] 1109
- thiosulphuric, in organic fluids, test for, [Pittarelli] 965
- Uric: See Uric Acid
- ACIDOSIS among stokers, [Abe & others] 443
- and narcosis, [György & Vollmer] 440
- cholera, therapy of, [Tsurumi & Toyoda] 207
- diabetic, and action of levulose, [Deszrez & others] 805
- diabetic, essential difference between acidosis of fasting and, [Labbe] 1882
- diabetic, lumbar puncture in, [Bordoní Posse] 1107
- from inanition and from diabetes, [Labbe] 434
- in hyperthyroidism, [Major] *83
- relation of, to nitrogen retention in experimental nephritis, [Vander Hoof & Haskell] 1271
- respiratory center in, [Austin & others] 1727—ab
- without glycosuria, [Claveaux] 361
- ACNE ROSACEA, irradiation in, 1713
- ACRIFLAVINE, NEUTRAL, 1455
- ACROPARESTHESIA, simple, [Heissen] 516
- ACTINOMYCETE, pathogenic acid fast, [Davis & Garcia] 505
- ACTINOMYCOSIS of gastro-intestinal tract, [Brogden] 209
- cancer in actinomycotic lesions, [v. Hedry] 1884
- vaccine therapy in, [Scott] 211
- ADDISON'S DISEASE and pigmentary cirrhosis, [Oddo & Oddo] 359
- bronze-skin not due to, [Sézary & Levesque] 587
- diagnosis of, [Sézary] 359, [Sergent] 587
- diagnosis and operative treatment of, [Peiper] 1350
- histologic condition in, [Hewer] 961
- oldest known case of, [Marañón] 881
- pigment production in, [Blitoff] 1819
- ADENOCARCINOMA of appendix, [Thomas] 1735
- ADENOIDS, cure of pseudo-adenoids, [Trétrop] 1183
- and physical development, [Levene] 1817
- pulmonary ventilation and breathing gymnastics in, [Brisotto] 661
- ADENOMA and papilloma of gallbladder, [Abell] 296—ab, 1484
- ADENOMA of sheep's lung due to parasites, [Hofman] 1279
- ADHESIONS, abdominal, diagnosis of, [Strickler] 1649
- ADIPOSIIS dolorosa and multiple nodular lipomatosis, [Goglia] 730
- ADNEXA: See under Uterus
- ADRENALIN: See Epinephrin
- ADRENALS: See Suprarenals
- ADVERTISING by physicians, 49
- of medical articles in Paris, 334
- personal, by physicians, [Harris] 56—ME
- protest against circularization of scientific article, [Bernton] 1951—C
- AEROPHAGY (alimentary gases), 697—E
- AGE distribution of population of Bavaria, 268
- AGED: See Old Age
- AGGLUTININS in blood of Icelanders, [Jonsen] 970
- third isoagglutinin and iso-agglutinin, [Guthrie & Huck] 1808
- AGRÉGÉS, centenary of agrégés in medicine, 785
- AIR, alveolar, relation of carbon dioxide tension of, to blood chlorides, [Essen & others] 1495
- alveolar, relation of carbon dioxide tension of, to secretion of stomach, [Kauders & Porges] 1494
- AKATHISIA and tasikinesia, [Sicard] 1546
- Haskovec's (Associated phenomena in extrapyramidal rigidity), [Bing] 1654
- AKROPACHIA, [Schlirmer] 1494
- ALASKA September examination, 349
- ALBUMIN, simple and rapid test for, [Exton] *529
- ALBUMINURIA and acidity of urine, [Hanns] 1180
- of pregnancy, [Fuchs & Fekete] 1658
- orthostatic, [Post & Thomas] *293, [Russell] 803
- orthostatic, is it a unilateral disorder? [Quinnan] *899
- visual albuminuria guide, [Cook] 582
- ALBUQUERQUE Morning Journal on electronic diagnoses, 1317—E
- ALCAPTONURIA, heredity in, [Cuthbert] 1415
- ALCOHOL, action of, on acidity of gastric juice, [Frehse] 882
- and disease, 1007—E
- antialcohol education in the school, [Reichel] 1278
- consumption in Sweden, 1322
- defense of wine as a beverage, 1255
- influence of, on prognosis of pneumonia in Cook County Hospital, [Capps & Coleman] *750
- isopropyl, pharmacology of, [Grant] 1341
- liquor ruling overruled, 1157
- medical rules on liquor relaxed, 1859
- new regulations on medicinal whisky, 39—E, 44
- passengers' liquor allowance questioned, 1014
- prescription permits more readily obtained, 1528
- problem of alcohol in teaching adolescents, 711
- prohibitionist movement in Austria, 1862
- protest against alcohol in Germany, 1784
- research, chair established for, 263
- ship's physician may have liquor, 1859
- treatment of drug addicts with, 870
- ALCOHOLISM, biologic and social effects of, 786
- increased frequency of, 569, [Meyer] 1034
- ALGIERS, statistics on cancer at, [Hoffman] 1332—C
- ALIENIST, competent testimony of, 58—M
- and expert testimony, [Williams] 1806
- ALIMENTARY TRACT: See Gastro-Intestinal Tract
- ALKALI therapy, some limitations of, 774—E
- ALKALINE TIDE, [Hubbard & Munford] *304, [Benedict] 869—C
- ALLAN'S Red Wash, 53—P
- ALLEN'S Golder Treatment, 572—P
- ALLERGY: See Anaphylaxis; Immunity
- ALOPECIA and poliosis of eyelids, [Posey] *1204
- differential diagnosis in, [Sabouraud] 880

- ALTITUDES, relation of pulmonary gas diffusion constant to mountain sickness, [Harrop] 1644—ab
Institute for research on physiology of altitudes and tuberculosis, 1859
- AMAUIROSIS, thrombotic cortical, [Mella] 138
- AMBULANCE and sedan combined, [Potts] ★102
- AMEBIASIS: See also Dysentery, Amebic
- AMEBIASIS, intestinal, hidden forms of, [Moutier] 729
treatment of, [Ravaut] 880, 1940—E
- AMENORRHEA, roentgen irradiation in, [Thaler] 735
- AMERICA, medical impressions of, [Speroni] 808
- AMERICAN Association for Advancement of Science on teaching of evolution, 1720
Child Health Association awards scholarships, 1464
Library Association issues book "The Hospital Library," 412
- AMERICAN MEDICAL ASSOCIATION, abstracting reports contained in handbook for presentation to House of Delegates, 481
and public health, 487
annual congress on medical education, licensure, public health and hospitals, 192, 701, 851, 925
annual meeting of Board of Trustees, 481
applications for space in scientific exhibit and for time on motion picture theater program, 114
auditors' report, 1920
Board of Trustees, report of, 1915, 1919
buff subscription blank, 40—E
Bureau of Legal Medicine and Legislation, 481
Bureau of Legal Medicine and Legislation, report of, 1921
California invites, 1551
commercial exhibits at San Francisco, 1575
Committee on Credentials, preliminary report of, 1911
Council on Health and Public Instruction, report of, 1926
Council on Medical Education and Hospitals, report of, 1928
Council of Pharmacy and Chemistry and proper course for proponents of new methods in treating syphilis, [Stokes] 1474—C
Council on Scientific Assembly, report of, 1937
diagnostic clinics at San Francisco session, 481, 1074, 1563
grants for research in therapeutics, 1008
group insurance, 480
health exhibit, 481
hotels for annual session, 1148, 1318, 1698
Hygeia, 402—E, 481, 777
invitation from Medical Society of Hawaii and Governor Farrington, 701
invitation from Oregon State Medical Society, 851
invitation from Pacific Northwest Medical Association, 1008
Judicial Council, report of, 1925
lay editor speaks of Hygeia, 1720
meeting places and section headquarters at San Francisco, 1561
memorial tablets, 480
official call to officers, fellows and members, 1550
post convention tour to Hawaii, 851
preliminary program of scientific assembly, 1566
preliminary report of committee on districting, 1149
president's address, "human welfare and modern medicine," [Wilbur] ★1889
program on cancer, San Francisco Session, 1780
report of committee on elections, 480
scientific exhibit, 481, 700, 1074, 1564
secretary's report, 1911
transportation to San Francisco session, 114, 258, 328, 407, 633, 777, 924, 1460
treasurer's report, 1920
Woman's Auxiliary of, [Kirkham] 573—C, 1008
- AMERICAN Medical Liberty League, a governor's opinion of, 577
- American publications, access to, [Zucker] 1548
- Red Cross: See Red Cross, American
- Society Hygiene Association, report of, on medical researches in venereal diseases, [Hoffman] 1153—ab
surgeons visit Buenos Aires, 1394
- AMETROPIA, accommodation in ametropic eyes after correction with glasses, [Hegner] 1033
- AMIDOPYRINE—Abbott, 1910
- AMINO-ACIDS, action of amino-acids on stomach function in infants, [Hoffmann & Rosenbaum] 1349
catabolism of, in human organism, [Koessler] 1728—ab
in blood, [Desqueyroux] 1180
- AM-O-LOX Ointment, 54—P
Prescription, 54—P
- AMPUTATION, cineplastic, [D'Agata] 1184
excision of fibula in amputations below knee joint, [Noon] 1103
insufficient evidence of damages from, 1337—M1
- AMPUTATION of thigh, [Finochietto] 1547
use of plaster pylon in leg amputations, [Van Gorder] 878
war, results of, and use of prostheses, [Lotsch] 732
weight-bearing capacity of amputation stumps, [Kolliker] 1350
- ANALGESIA: See Anesthesia
- ANAPHYLAXIS: See also Immunity
- ANAPHYLAXIS, [Kopaczewski] 588
anaphylactic chronic colitis, [Richey & Fossey] 1490
anaphylactic conjunctivitis, [Lagrange] 1491
anaphylactic enterocolitis and dyspepsia, [Noir & others] 1490
and antianaphylaxis in typhoid patients treated with vaccines, [Sillitti] 284
and idiosyncrasy, [Sterling] 1712—C
antianaphylactic stage, [Caspari] 1818
antianaphylaxis and toxemia in pregnancy, [Charron] 879
avoidance of anaphylactic shock after second immunizing dose of antitoxin, 1092
blood chemistry in, [Major] 1269
capillary permeability in, [Manwaring & others] ★303
case of hypersensitiveness to silk, [Clarke & Meyer] ★11
cases of delayed and immediate anaphylactic shock, [Fawcett & Ryle] 962
diagnosis of anaphylactic nature of diseases, [Van Leeuwen & others] 443
dysthyroidism, anaphylaxis and epilepsy, [Buscaino] 806
food allergy as cause of bladder pain, [Duke] 1730
heterogeneous, [Kritchevsky] 1412
intestinal lesion in anaphylaxis, [Manwaring & others] ★1437
nonspecific irritation cause of anaphylactic disease in childhood, [Shannon] 1413
physiologic adaptations of fixed tissues in, [Manwaring & Williams] 1486
protein sensitivity in children with negative cutaneous reactions, [O'Keefe] ★1120
protein sensitization, [Gould] ★394
protein sensitization and focal infection, [Coons] 357
role of allergy in pneumococcus immunity, [Mackenzie] 1643—ab
role of, in angioneurotic eruptions, [Ravogli] 140
sensitivity to epidermal and pollen proteins, [Wynn] 874
- ANATOMIC INSTITUTE, difficulties of, 339
- ANATOMY and war, 555—E
place of, in medical curriculum, [Kellier] 953—ab
study of skeleton at different ages, [Landing] 1038
value of knowledge of applied comparative anatomy to physician, [MacKenzie] 1958
- ANEMIA, aplastic fatal, acute, in roentgenologist, [Faber] 592
benzol, toxic agent in, [Fayre-Beaulien & Lévy-Bruhl] 213
cerebral, blood pressure during, [Rogoff & Coombs] 1409
chronic, volume of blood and plasma in, [Keith] 1027
in children, [Lehndorff] 287
in chronic nephritis, [Brown & Roth] 207, 554—E
in infants, [Acuña & Casaubón] 1184
pernicious, [Gilford] 727, [Panton & others] 962, [Autor] 1034
pernicious, and purpura, [Posse & Guerra] 732
pernicious, blood transfusion in, [Götting] 438, [Savolin] 736
pernicious, cause and cure of, [Plitzman] 139
pernicious, diagnosis of, [Haden] 1957
pernicious, diseases which may be associated with, [Giffin & Bowler] 582
pernicious, due to bothrioccephalus in 3 sisters, [Cramer] 65
pernicious, etiology of, [Elders] 443
pernicious, heart in, [Reid] ★534
pernicious, in exophthalmic goiter, [Hansen] 220
pernicious, intestinal lesions precede, [Coates] 1735
pernicious, relation of achlorhydria to, [Hurst] 659
pernicious, splenectomy in, [Holm] 518
pernicious, symptoms and leukocyte count as aids in prognosis in, [Evans] 582
pernicious, treatment of, [Colwell] 582
pernicious, with stenosis in intestines, [Meulengracht] 150
splenic, splenectomy in, [Horgan] 1102
splenic, actual state of problem of Bantli's disease, [Rieux] 1815
Tablets, 343—P
treatment of anemias with colloidal metals, [Aschner] 1495
treatment of anemia by transfusion, [MacLachlan] 1800—ab, [Duke & Stoffer] 1957
- ANENCEPHALIC SYNDROME and aplutalism, [Barlow] 511
- ANESTHESIA, acetylene, [Gauss & Wieland] 1276, 1383—E, [Luckhardt & Carter] 1476—C, [Jordan] 1712—C
and acidosis, [György & Vollmer] 440
and tuberculin reaction, [Biberstein] 1492
blocking nerve in differential diagnosis, [Läwen] 1743
blocking phrenic nerve in injury of diaphragm, [Báron] 1743
blocking splanchnic nerve, [Quarella] 214, [Mirlizzi] 731
blocking splanchnic nerves for abdominal surgery, [Ganduslo & Pototschnig] 360
chloroform, fatal accident in administration of, 1325
effect of anesthetics on lungs, [McDowell], 585
effect of hemorrhage on pulmonary ventilation, [Gesell & others] 354
electronicarcsis, [Neergaard] 362
ether, anesthetic action of pure ether, [Dale & others] 1103
ether, double mask for, [Jatrou & Wessely] 970
ether in blood, milk, urine and breath after ether anesthesia, [Gramén] 1280
ether, oil-rectal administration in childbirth, [Thaler & Hübel] 1423
ether, study of isoagglutinins before and after, [Huck & Peyton] ★670
ethyl chlorid, safe method of anesthetizing children with, [Lumbard] ★321
ethylene as a gas anesthetic, 773, 1003, 1383—E, [Luckhardt & Carter] ★1440, 1476—C, [Jordan] 1712—C
ethylene, a new gas anesthetic, physiologic effects of, [Luckhardt & Carter] ★765
gaseous metabolism and blood flow in brain under narcosis and hypnotics, [Yamakita] 1495
glucose as preventive of operative and anesthesia mishaps, [Tenckhoff] 149
heart massage for resuscitation after, [Bost] 960
incompatibility of mercurochrome-220 soluble with local anesthetics and alkaloids, [Warren] 1091—P
intrasplinal, [Bloch & Hertz] 1105
intravenous, general, [Lehrnbecher] 1421
local, an unexpected epinephrin reaction following infiltration with procain-epinephrin solution, [Downman] ★1069
local and spinal, in children, [Rocher] 434
local, poisoning by, treatment of, [Nielsen & Higgins] 1808
local, with fatalities, [Eldens] 1108
lumbar, intraspinal, [Seyffardt] 364
nitrous oxid analgesia in labor, [Pasman] 967
paravertebral anesthesia in acute suppurative pleurisy, [Seff] ★1612
regional, for abdominal operations, [Hütten] 1185
regional, of uterus, [Cotte] 880
respiratory complications following, [Alkenhead] 208
spinal, [Giaprlini] 965
spinal, ocular accidents in, [Monthus] 1183
sugar content of blood during, [Dewes] 362
- ANEURYSM, aortic, ascending, with secondary endocarditis, [Laubry & Bordet] 1546
aortic, dissecting, roentgen-ray diagnosis of, [Hirschboeck & Boman] 210
aortic, intrapericardial aneurysm of aorta, [Parsons-Smith] 63
aortic, intrapericardial rupture of, [Richey] 1029
arteriovenous, disturbances following, [Nanu & others] 804
femoral, traumatic, [Sacco] 215
gluteal, treatment of, [Adam] 1489
iliac, rupture of, [Billings] 583
of heart with mediastinal pericarditis, [Smith] 62
of large pelvic vessels, [Pascale] 144
of renal artery, [Vogeler] 1186
of splenic artery, [Lundwall & Godt] 1348
of thoracic aorta as cause of acute abdominal pain, [Mallory] ★1356
pulsating exophthalmos from, [Santa Cecilia] 1739
splenic, case of ruptured aneurysm of splenic artery, [Smith] ★1692
splenic, traumatic, [Harnett] 433
- ANGINA PECTORIS, cervical sympathectomy for, [Brown] ★1692
chronic appendicitis simulating, [Bassier] ★1454
diagnosis and treatment, [Allbutt] 1812
prognosis of, [Ribierre & Leconte] 1815
surgical treatment of, [Coffey & Brown] 1029, [Danielopolu & Hristide] 1490, 1631
- ANGIOMA, cavernous, diffuse, of rectum, [Bensaude & Antolne] 1180
- ANGIONEUROSES, surgery of, [Krelblch] 1657
role of anaphylaxis in angioneurotic eruptions, [Ravogli] 140
- ANGIOSPASMS, provocation of, in arteritis and intermittent claudication, [Thomas] 436
- ANILIN dye workers, bladder tumors in, 1058—ab
- ANIMAL EXPERIMENTATION: See under Vivisection
- ANIMALS, do animals talk? [Benedict] 1091—C

- ANKLE**, flail, panastragaloid arthrodesis for, [Steindler] 1646
tuberculosis of tarsus and, [Fitzsimmons] 60
- ANKYLOSTOMIASIS**: See Uncinariasis
- ANOXEMIA** and effect of oxygen administration, [Yamakita & Kato] 1496
from intoxication, 864
- ANTHRAX**, advisory committee on, 500
among animals, 338
bacilli on boxes of oranges, 1627
immunity in, of guinea-pigs and rabbits, [Lukes] 1495
intra-uterine transmission of, report of case, [Regan & others] *1769
prevention of, 121, 122
treatment of, [Cheinisse] 512
- ANTHROPOLOGY**, no signs of race of supermen, 1629
- ANTHROPOMETRY**, weight and size of children of working classes in Vienna, 938
comparative statistics of weight and size of school children, 1863
- ANTIAPHYLAXIS**: See Anaphylaxis
- ANTIBERIBERI** Vitamin Concentrate-Metz, 106
- ANTIBODIES**, action of epinephrin on formation of, [Hrma] 736
effect of splenectomy on production of, [Motohashi] 278
- ANTIGENS**, alcohol precipitate of serum as antigen, [Tsukasaki] 1496
heterologous, prevention of serum sickness by means of, [Kraus] 218
lyophil and lyophobic proteins as antigen and antibody, [Ruppel] 1034
preparation of, 1713
- ANTIKETOGENESIS**, problems in, 256—E
- ANTISEPSIS**, intestinal, [Dragstedt & others] 210, 556—E
- ANTISEPTICS**, effect of, on bacterial flora of upper air passages, [Bloomfield] 1099
- ANTITOXIN**: See also under Diphtheria
- ANTITOXIN**, avidity test of, [Kraus & Botelho] 1347
relation of, to animal experimentation, [Place] 505
titrating, [Kraus] 514
- ANTRUM**, maxillary sinusitis and abscess in orbit, [de Salterain & Munyo] 1184
maxillary sinusitis in new-born, [Collett] 659
- ANURIA**, complete, following mercuric chlorid douche; recovery after decapsulation, [Outerbridge] *102
recovery after decapsulation in uremic anuria, [Niedermeyer] 1657
reflex, report of case with unique blood findings and unusual application of duodenal tube, [McCarthy & others] *1043
reflex, treatment of, [Neuwirt] 663
- ANUS**, artificial, closing of, [Knaus] 1348
artificial, continence of, [Baggio] 514
gonococcus infection of, [Weissmann] 1182
signs of anal fissure, [Svehla] 1885
vaginal, congenital, [Camera] 144
- AORTA**, rupture of, [De Vries] 1112
calcareous degeneration of dorsal and lumbar aortae as cause of backache, [Ridlon & Berkheiser] *1831
- AORTITIS**, abdominal, [Olaechea] 1033
chronic, fissural hemorrhages in, simulating gastroduodenal ulcer, [Chabrol & Blum] 1546
early radiologic diagnosis of, [Bordet] 1815
syphilitic, treatment of, [Schothmuller] 1655
syphilitic affections of aorta, [Thaysen] 1888
ulcerous, in typhoid, [Marchiafava] 730
- APHONIA**, functional, cured under general anesthetic, [Howard] *104
from paralysis of left vocal cord, [Lukin] *1846
- APONEUROSIS**, palmar, retraction of, cured by roentgenotherapy, [Peugniez & Joly] 805
- APOPLEXY**: See Brain, Hemorrhage
- APORRHEGMA** reactions in psychoses, [Whitehorn] 873
- APPARATUS**: See also under Fractures; Instruments; Radium
- APPARATUS** for testing and washing filter candles, [Krock & Holman] *1142
muscle indicator for plotting out field of diplopia and visualizing position of muscle involved with face turning and head tilting, [Miller] *1453
simple apparatus for fractional filtration by gravity or suction, [Parr] *1775
to demonstrate movements in larynx and pharynx, [Talvi] 1496
- APPENDICES EPIPLOICAE**, torsion of, [Black] 508
- APPENDICITIS**, acute, mistakes in treatment of, [Boland] 1540—ab
acute, suppurative arthritis simulating, [Berry] 1273
and hematuria, [Tormey & Tormey] *472
and intestinal worms, 256—E, [Ravenel] 343—C, [Garlough] 422—C, [Hattori] 443, [Eastwood] 1033
- APPENDICITIS** and pulmonary tuberculosis, [Armstrong] 1730
and trauma, [Taylor] 511
and trauma, factors in etiology of, with certain clinical observations, [Ludington] *1418
asthma of appendicitic origin, [Gutmann] 964
chronic, causation of symptoms in cases simulating, [Prince] 1102
chronic, diagnostic value of mononuclear count in, [Dutton] 1808
chronic, simulating angina pectoris, [Bassler] *1454
chronic, end results of, [Deaver & Ravdin] 722
diagnosis and treatment of, [Moore] 1881
earliest recognition of, [Mackall] 572—C, [Ashhurst] 789—C
errors in home treatment of, [Bailey] 276—ab
hematuria and nephritis in, [Anschütz] 68
in women, [Abbott] 133—ab
intestinal obstruction following unrecognized cases of, [Dickinson] 1102
prophylactic serum in, [Brown] 1488
suppurative, primary union after operation for, [Riddell] 1031
value of vomiting in intestinal obstruction and, [Symonds] 1489
- APPENDIX**, adenocarcinoma of, [Thomas] 1735
bismuth calculus in, [Müller] 1423
calculus in, [Navarro] 214
carcinoma of, [Jackson] 1267
in hernia on left side, [Erb] 1186
sliding hernias of cecum and, in children, [David] 134—ab
worms in, 256—E, [Ravenel] 343—C, [Garlough] 422—C, [Hattori] 443, [Eastwood] 1033
- ARCUS juvenilis**, [Adroqué] 514
- ARGYRIA**, 55
- ARIZONA** state board October examination, 871
state board January and April report, 1793
- ARKANSAS** state board November examination, 574
state board November examination, 1168
- ARM**, regional anesthesia for operations on, [Brunin & Vandeput] 804
- ARMY** Medical Corps data, 1530
medical corps, appointments in, 1323
medical school graduation, 1784
medical supplies for, 336
new law regarding enlistment, 1325
- ARNOZAN**, an ovation to, 338
on modern medicine, 566
- ARRHYTHMIA**, diagnosis of, [Lewison] *1520
obesity with, [Faber] 518
Quinidin in: See under Quinidin
- ARSENIC**, fate of, after intrathecal and intravenous injection, [Rudolf & Bulmer] 798
dangers of some new arsenic preparations, 1469
in clothing, danger of, 1072—E
in cocoa, 195
urinary elimination of some arsenical compounds, [Levy & others] 1416
- ARSOLNOL**, dangers of some new arsenic preparations, 1469
- ARSPHENAMIN**: See also under Syphilis
- ARSPHENAMIN**, biologic reactions of, 920—E
complement and syphilis with special reference to biologic action of arspenamin and mercury, [Herb] 429
dermatitis, [Stokes & Cathcart] 505
dermatitis, treatment of, [McBride & Dennie] 505
effect of large doses of, on blood coagulability, [Oliver & Douglas] 1878
endolumbar treatment with, [Wittgenstein] 516
in Japan, 1323
in mental disorders, [Mills & Vaux] 1541
in treatment of neurasthenia, [Ortego Belgrano] 215
in urine, elimination and determination of, [Autenrieth & Taege] 69
infiltrates due to, injections of glucose in, [Klein] 218
injuries, [Meyer] 440
injuries, prophylaxis of, [Schumacher] 1548
jaundice due to, a fatal case, [Golay] 1105
Mallinckrodt, 1775
nitritoid crises and endocrine disturbances, [Levy & others] 1417
nitritoid crisis from defective preparations of, [Lo Vullo] 589
presence of spirochetes during immune phase of experimental recurrent infection that had been vigorously treated with, [Buschke & Kroß] 440
preventive arspenamin treatment, question of, [Poehlmann] 1819
rectal treatment with, in syphilitic children, [Modigliani & Castana] 1816
sensitization to, 1713
serous apoplexy following, [Gouin] 1105
silver, in Wassermann-fast syphilis, [Sutton] *622
- ART**, leprosy in Dutch art, [van Rijnberk] 811
- ARTERIOSESENTERIC OBSTRUCTION** of duodenum, chronic, [Tinkham] 1174
- ARTERIOSCLEROSIS** and neurasthenia, 492
intestinal, [Strauch] 1035
labyrinth deafness due to, [Escat] 1183
nature of, [Evans] 1272, 1415
- ARTERITIS**, provocation of angiospasm in, [Thomas] 436
- ARTERY**, coronary, electrocardiographic changes following occlusion of, [Smith] 1644—ab
carotid, injury to jugular vein and, with ligation and recovery, [Lawrence] *1068
coronary, thrombosis of, [Wearn] 1027
hepatic, aneurysm of, [Friedenwald & Tannenbaum] 798
hepatic, ligation of, [Polettni] 513
iliac, rupture of, from contusion, [Jean] 1652
intercostal, rupture of, [Henrichsen] 1491
renal, aneurysm of, [Vogeler] 1186
renal, influence of temporary closure of, on urine, [Marshall & Crane] 1729
renal, rupture of, by slight injury, [Atkinson] 1031
results of arterial decortication, [Callander] 654
retinal, occlusion of, [Agnew] 1099
simultaneous ligation of vein and artery, experimental study, [Brooks & Martin] *1678
subclavian, left, ligation of, [Henry] 877
- ARTHRITIS**: See also Gout; Rheumatism
- ARTHRITIS**, blood gases and blood flow in, [Hendrix & Crouter] 1270
chronic infectious, [Kinsella] *671
chronic infectious, synovectomy in, [Swett] 724
deformans and syphilis, [Haguenau & Bernard] 1490
deformans, juvenile, [De Raffele] 1184
deformans, metatarsophalangeal, [Blencke] 664
deformans, treatment of, 1868
glucose tolerance in, [Pringle & Miller] 659
gonorrheal, cured by serotherapy, [Weill-Hallé & Turpin] 587
gonorrheal, cytologic variations in exudate during, [Pagniez & Ravina] 1545
of serum sickness, [Boots & Swift] *12
polyarthritides and heart disease, [Ehrstrom & Wahlberg] 1496
portals of infection in arthritis and iritis, [Irons] *1899
rheumatoid, treated with colon bacillus vaccine, [Perkins & White] 1272, [Laurie] 1812
sedimentation of blood in, 218
sodium salicylate in, [Swift & Boots] 1647
suppurative, simulating acute appendicitis, [Berry] 1273
therapeutic application of external heat in, [Pemberton & Crouter] *289
tuberculous, [Ward] 585
- ARTHRODESIS**, Cramer's operation for, [Lasker] 1349
- ASCARIASIS**, experimental, in man, 112—E
- ASCARIS**, appendicitis caused by: See under Appendicitis
in liver and bile ducts, [Hartmann-Keppel] 1346
intestinal obstruction due to, [Baugh] *181
survival and cinematography of ascaris outside of human intestine, [Guiart] 588
- ASCITES**, to aid percussion in diagnosis of, [Chavannaz] 435
chylous and chyloform ascites, [Blankenhorn] 1875—ab
- ASPERGILLUS** scalp lesions, treatment of, [Lynch] 1878
- ASPHYXIA**, acute, laryngeal, [Zorraquin] 1738
hyperchloremia in, [Yamakami] 1495
neonatorum, [Henkel] 1034
of infants delivered by cesarean section, [Küstner] 1422
traumatic, [Traver] *843
- ASPIRIN**: See under Acid, Acetylsalicylic
- ASSOCIATION** for Protection of Constitutional Rights, [Coleman] 1536—C
- ASTHENIA**, depressive melancholia with melanoderma and, [Damaye] 1814
- ASTHENOPIC REFLEX** manifestations between eyes and teeth, [Kahn] *1134
- ASTHMA**, [Barth] 146
anaphylactic, experimental research on, [Petragnani] 1418
and suprarenal inadequacy, [Drummond] 1031
cardiac, pathogenesis and treatment of, [Peller] 1820
diagnosis of, [Eyermaun] *1039
due to cat and dog hair, [Brown] *249
due to ileocecal delay and vagus reflex, [Wolfe] 1649
due to pediculoides ventricosus, [Ancona] 1418
histologic background of, 402—E
of appendicitic origin, [Gutmann] 964
pathogenesis of, [Sonne] 518
pathology of, [Huber & Koessler] 207
relations between asthma, tuberculosis and syphilis, [Acuna & Garrahan] 1816
syphilitic, [Calicó] 146
toxic substances in blood in, [van Leeuwen & Zeydner] 357
- ASYMMETRY**, congenital, of pelvis and leg, [Peremans] 1646
of body, 1327
- ATAXIA**, congenital, [Orrieco] 514
Friedreich's, hereditary element in, [Hanhart] 1547
hereditary, [Mino] 284, [Isola & Artucio] 732

- ATAXIA, hereditary, congenital syphilis with symptoms of, [Linder] 440
Locomotor: See Tabes Dorsalis
- ATHETOSIS and experimental chorea, [Lafora] 361
- ATHLETICS, can sports regenerate the human race? 862
heart and athletics, [Herxheimer] 969
place of physical training and athletics in schools, 196
size of heart after cessation of active physical training, [Secher] 970
- ATLANTIC Medical Monthly, 262
- ATLAS: See under Vertebrae
- ATROPHY, Charcot-Marie, [Potts & Wilson] 1541
muscular, experimental research on, [Meyer] 810
syphilitic macular atrophy, [Castello] 1485
- ATROPIN, action of, on stomach of infants, [Salomon] 287
effect of, on gastric function, [Lockwood & Chamberlin] 207
test and orthostatic tachycardia in examination of nervous system of heart, [Daniélopou & Carniol] 1813
- AUENBRUGGER bicentennial, [Neuburger] 444
- AURICULAR FIBRILLATION: See under Heart
- AUSTRIA, public health arrangements in frontier districts of Austria and Czechoslovakia, 938
resumption of scientific relations with, 337
- AUTHEMOTHERAPY: See under Blood Transfusion
- AUTOMATISM, ambulatory, [Singer] 1340
- AUTOMOBILE, combination sedan and ambulance, [Potts] *102
exemption of automobile used by physician, 1952—MI
failure of action against automobilist for fees, 352—MI
- AUTOPHAGIA, febrile, [Bak] 288
- AUTOPSY: See Necropsies
- AVIATION, examination during actual flight of candidates for, 936
examining units authorized, 639
medicine, army school of, 120
- AVITAMINOSIS: See under Vitamins
- AXILLA, so-called abscesses of sweat glands in, [Rost] 68
- B**
- BACILLUS: See also Influenza Bacilli; Typhoid Bacilli, etc.
- BACILLUS acidophilus and intestinal putrefaction, 186—E
acidophilus, bacteriologic and clinical experience with, [Gompertz & Vorhaus] *90
acidophilus, is action of, a strictly bacteriologic phenomenon? [Kopeloff] *602
acidophilus milk, studies on therapeutic application of, [Cheplin & others] *1896
Acidophilus Milk-Lederle, 323
aerogenes capsulatus and salt-rising bread, 1384—E
aerogenes capsulatus infection within 12 hours at site of hypodermic puncture, [Tennant] *1066
changes of bacilli in gases, [Lorentz] 1277
colon, bacteriophage in treatment of colon bacillus infection of urinary apparatus, [Beckerich & Hauduroy] 1545
colon, biochemical properties of colon bacilli and their relation to specific antigenic reactions, [Pirc] 1279
colon, differentiation of bacilli of colon group, [Vielle] 964
colon, effect of colon bacillus therapy on leukocytes, [Foreman] 1812
colon bacillus vaccine in rheumatoid arthritis, [Perkins & White] 1272, [Laurie] 1812
colon, high enemas in treatment of colon bacillus pyelitis and sepsis, [Sack] 1548
colon, suppurative osteomyelitis caused by, [Winslow] 354
Diphtheroid Allergen-Squibb, 251
enteritidis, action of leukocyte extracts on, [Ronchi] 807
fusiform bacilli and spirochetes about clitoris, [Pilot & Kanter] 1412
Influenzae Allergen-Squibb, 251
para-influenzae, [Rivers] 209
Pfeiffer: See Influenza Bacilli
pneumointes, effect of injection of bacterium pneumointes vaccines, [Oltisky & Gates] 1646
pneumointes, experimental studies with, [Oltisky & Gates] 356
prodigious, acquired resistance of prodigious against roentgen rays, [Meyer] 1656
pyocyaneus bacteriophages, [Okuda] 1658
pyocyaneus, bacteriophage in cultures of, [Cancik] 970
smegma, differentiation between tubercle bacilli and smegma bacilli in urinary sediment, [Lebedev] 1349
supestifer, food poisoning caused by, [Wiseman] 726
- BACKACHE, [Albrecht] 441
calcareous degeneration of dorsal and lumbar aortae as cause of, [Ridlon & Berkheler] *1831
diagnosis of conditions causing, [Straub] *674
- BACKWARDNESS: See under Feebleminded
- BACTERIA, mechanism of bacteriostasis, [Churchman] 1647
ubiquity of, 923—E
- BACTERIOPHAGES, action of gelatin on, [Nakamura] 1495
in treatment of colon bacillus infection of urinary apparatus, [Beckerich & Hauduroy] 1545
pyocyaneus bacteriophages, [Cancik] 970, [Okuda] 1658
- BACTERIOPHAGIA, [Pico] 590, [Costa Cruz] 966
colon bacilli bacteriophage, [Ball] 1493
D'Herelle's phenomenon, [Borchardt] 1656, [Putter & Vallen] 1657
history of, [Pico] 145
without bacteriophage, [Pico] 1420
- BACTERIOSTASIS, mechanism of, [Churchman] 1647
- BAKER'S DERMATITIS, salt is cause of, [deJong] 1812
- BALANITIS, erosive and gangrenous, [Brams & Pilot] 1485
- BALDNESS, endocrine therapy in, 945
- BALLOON, toy, accidents due to, 1017, [Child] *1452
- BALNEOLOGY and pharmacology, [Markwalder] 733
- BANDAGE, double triangle towel shoulder-cap, [Cutler] *471
- BANTI'S DISEASE: See Anemia, Splenic
- BARBITAL poisoning, report of case with fatal outcome, [Cole] *373
- BARBITAL-M. C. W., 1775
- BARDET, death of, 710
- BARIUM, inhalation of, in solution, [Fishel] *102
- BASEDOW'S DISEASE: See Goiter, Exophthalmic
- BATHING BEACH, application of swimming pool sanitation to public bathing beach, [Baker] *907
- BATHS, pressure on veins in baths, [Schott] 216
- BAVARIA, age distribution of population of, 268
- BAYER 205, 406—E
- BED, heated, for transportation of premature infants, [Hess] *1313
- BELGIAN Pediatric Society, 1161
- BELLADONNA poisoning by topical application, [Fried] 958
- BENZENE anemia, toxic agent in, [Fayre-Beaulieu & Lévy-Bruhl] 213
poisoning by, [Faure-Beaulieu & Lévy-Bruhl] 65, [Duvolr] 213
- BENZOL: See Benzene
- BENZYL benzoate, influence of, on nitrogenous metabolism, [Pack & Underhill] 139
- BERIBERI, etiology of, [Fraga] 731
two family outbreaks of epidemic dropsy type of, [Megaw & Banerji] 1179
- BERNALILLO County Medical Society on electronic diagnoses, 1317—E
- BERNARD'S impressions of United States, 122
- BETANAPHTHOL, dosage of, 1023
in hookworm disease, [Leach & Hampton] *8, [Phippen] 1103
- BÉZIAT, consequences of acquittal of, 1628
- BICK'S Sarsaparilla, 343—P
- BILE acids in serum and urine, [Ignatowsky] 441
acids in urine, blood, duodenal and cerebrospinal fluid in icterus, [Borchardt] 1885
and pancreatitis, 326—E
and purin metabolism, [Harpuder] 1817
elements, dissociated retention of, [Lemierre & Lévesque] 963
peritonitis, [Borchardt] 1186
pigments in blood, [Cowen & Patterson] 282
removal of, from urine, 1333
salt content of, [Kröck] 1185
secretion, means to influence secretion, [Specht] 1348
secretion of, pathology of, [Gundermann] 1185
white, in common bile duct, [Judd & Lyons] 276-ab, 1484
- BILE DUCTS, a substitute method for Kehr's drainage of, [Ahrens] 1036
action of nerves on, [Westphal] 969
anomaly of, [Seelig] 1342
common draining of, into duodenum, [Haberer] 1109
common, metabolism in case of congenital occlusion of, [Paul] 442
common, permanent sterile drainage of, [Rous & McMaster] 724
common, white bile in, [Judd & Lyons] 276-ab, 1484
implantation of biliary fistula in duodenum, a new method of treatment, [Lahey] *893
rarer surgical affections of, [Klose & Wachsmuth] 1420
roentgenography of, [Duval & others] 878
- BILHARZIASIS, experimental, [Bettencourt & Borges] 1419
- BILHARZIASIS in Portugal, [Franca] 731, [Bettencourt & Borges] 1419
treatment of, 1868
- BILIRUBIN in Blood: See Blood, Bilirubin in
- BIOCHEMICAL ANALYSIS, some achievements of, 631—E
- BIRTH control attacked, 50
control, committee to consider bill on, 333
control libel action, 1016
control, prevention of conception, [Holmes & others] 573-C
depopulation in France, prizes for essays on, 1859
rate, 195
rate, factors contributing to depopulation, [Avendano & Fernández Dávila] 1034
rate, (miscarriages and decrease of population), 1328
report, communication for, not privileged, 132-MI
- BISMUTH calculus in appendix, [Müller] 1423
paste, pulmonary embolism after injection of, [Leb] 1349
radiographic research on absorption of, [Veillet] 963, [Levy-Bing & others] 1105
- BITES: See under Insects; Snakes; Spiders
- BLACKWATER FEVER, [Patrick] 510, [Barrenscheen & Glaessner] 1494
a disease of metabolism, [Hall] 1881
eleven cases of, with eleven recoveries, [Balf] *1847
not caused by parasite, [Blacklock] 1880
retinal hemorrhage complicating, [Connell] 358
- BLADDER cancer, advanced, [Schmieden] 1350
calculi, endemic urolithiasis in Siam, [Schneider] 148
calculus, sign of, [Gaeta] 1883
calculus, unusually large, [Singh] 1958
cancer, new method of applying radium in, [Buerger] 1486
cancer, radium therapy for, [Smith] 1486, [Burnam & Walker] *1669
cancerous, removal of, [Scheele] 1549
disease, peritonitis with, [Bitschal] 1350
disposition of ureters in certain abnormal conditions of, [Lower] *1200
diverticula of, 197, 283
diverticulum of, in inguinal canal, [Stein] *620, [Eyerly] 870-C
during delivery, [Vogt] 516
elasticity of kidney pelvis and, [Katzenstein & Rosen] 1887
exstrophy, [Brattström] 364
exstrophy and genital abnormality, [Yates] 1542
exstrophy, treatment of, [Camera] 806
hernia in children, [Oliva] 1274
hydatid fremitus in, [Maselli] 144
inflammation, chronic cystitis of unusual etiology, 2 cases, [Lavandera] *32
inflammation, rapid cure of cystitis in children, [Hirst] 1101
inguinal route to, [Meringas] 1820
local suppuration after operations on, [Legueu & Rochet] 1182
management after operation and during pregnancy; further study of residual urine in its bearing on urinary tract disturbances, [Curtis] *1126
nervous symptoms and low position of right testicle, [Adler] 287
pain, food allergy as cause of, [Duke] 1730
paraffin in, nonsurgical removal of, [Melen] *685
prolapse, treatment of, [Frank] 799
rupture of both urethra and, traumatic, [Plisson] 1182
syphilitic disease of, [Plicker] 517
tuberculosis, antithesis of urogenital tuberculosis in tabetic, report of case, [Marshall & Carlson] *1844
tumor of, mixed, [Lenormant] 283
tumors in anilin dye workers, 1058—ab
tumors, transudation through papillary tumors in bladder, [Dobrotworski] 1887
tumors, treatment of epithelial tumors of, [Kidd] 1416
ulcer of, elusive, [Kretschmer] 62
varices in, [Rosenstein] 1278
wound, punctured, and, [Selby] 1103
- BLASTOMA, multiple, of lymph glands, [Ferrer] 1274
- BLASTOMYCOSIS, [Terra] 966
cystic blastomycosis of brain, [Frecman & Weidman] 178
- BLEPHARITIS and its treatment, [Rønne] 518
- BLEPHAROSPASM, chronic, therapeutic akinesia in, [Elschnig] 734
- BLIND, books for war blinded, 1018
relief bills for, 333
writing for, with usual characters, [Cantonnet & Nouet] 1183
- BLINDNESS after migraine, [Löhlein] 67
causes and prevention of, 49
in smallpox, [Hess] 883
- BLOOD, action of hydrotherapy and heat on, [Stückgold] 147
amino-acids in, [Desqueyroux] 1180
analysis, some achievements of biochemical analysis, 631—E

BLOOD, anticoagulants and oxygen capacity of, [Yamakita] 1495
Arneth's blood count in normal infants, [Arneth & Nienkemper] 1036
bile pigments in, [Cowen & Patterson] 282
bilirubin and fibrinogen in, [Levi] 1656
bilirubin, clinical significance of bilirubin determination in serum with regard to diseases of gallbladder, [Strauss & Sandherr] 1884
bilirubin estimation test, [Martini] 285, 1261
bilirubin in blood, elimination of sources of error in determination of, [Adler & Meyer] 515
bilirubin in icterus, [Brule & others] 143
biologic reactions in, during pregnancy, [Oettlingen] 516
calcium, action of endocrines on serum calcium, [Leicher] 882
calcium and phosphates of, influence of guanidin poisoning on, [Nelken] 1493
calcium content of, in thyroidectomized animals, [Parhon] 1807
calcium in spasmodic phylla, [Zahan] 287
calcium, magnesium, potassium and sodium in, new method for determination of, [Mirkin & Druskin] 1100
catalase in cancer, [Zerner] 218
cells, red, and spleen, [Bolt & Heeres] 443, 850—E
cells, red, and their variations, [Rud] 664, 736
cells, red, rate of sedimentation of, [Poindecker & Siess] 735
cells, red, rate of sedimentation of, as a diagnostic aid in gynecology, [Pewny] 518
cells, red, relation between blood viscosity and blood corpuscles and action of caffeine on it, [Drossbach] 1885
cells, red, relation of speed of sedimentation to specific gravity of plasma and erythrocytes, [Opitz & Frei] 440
cells, red, sedimentation of, [Mahnert & Horneck] 591, [Horvat] 591, [Moral] 1031
cells, red, sedimentation of, in arthritis, [Simó] 218
cells, red, sedimentation of, in malignant disease, [Gragert] 1741
cells, red, sedimentation of, in pregnant, [Vignes & Hermet] 806
cells, red, sedimentation of, physical chemistry of, [Höber & Mond] 364
cells, red, thyroid and production of erythrocytes, [Holier] 969, [Unverricht] 1276
cells, white, alimentary, leukocyte, influx into stomach, [Loeper & Marchal] 880
cells, white, alimentary reaction of leukocytes, [Stransky & Langer] 733
cells, white, and epinephrin, [Hess] 1109
cells, white effect of colon bacillus therapy on leukocytes, [Foreman] 1812
cells, white melaniferous leukocytes in diagnosis of malaria, [Clemens] 716—C
cells, white, leukocytic secretions, 254—E
chemistry in allergy, [Major] 2169
chemistry in mental diseases, [Bowman] 873
chlorid content of red corpuscles and their percentage volume, [Buckman & Edwards] 1644—ab
chlorids, hyperchloremia in asphyxia, [Yamakita] 1495
chlorids, relation of carbon dioxide tension of alveolar air to, [Essen & others] 1495
chlorin in blood and tissues after injection of sodium chlorid, [Iversen & Hansborg] 664
cholesterin in, in diabetes, prognostic value of, [Remond & Rouzaud] 878
cholesterin in leishmaniasis, [Castorina] 144
circulation after work, [Lindhard] 727
circulation and nutrition of tissues, [Bier] 1421
circulation, collateral, in portal vein system, [Walcker] 515
circulation, effect of stair running on, [Lundsgaard & Möller] 1175
circulation, functional tests of, and their significance, [Herrick] 1102
circulation, (hemodynamic problems), [Weitz] 733
circulation, influence of sodium citrate on, [Salant & Kleitman] 657
circulation, significance of liver in, [Hess] 364
classification of, [Hesser] 736
clotting, in bladder, prevention of, [Squirru & Figueroa Alcorta] 67
coagulation, action of hypophysis extracts on, [Feissly] 66
coagulation, effect of large doses of arsphenamin on, [Oliver & Douglas] 1878
coagulation, effect of uterine secretion on, [Kross] 960
coagulation, influence of parenteral protein therapy on, [Salomon & Vey] 590
coagulation, method of increasing, [Ludwig] 729
coagulation, value of determination of bleeding and, coagulation time on new-born infants, [Warwick] 210
color of, after carbon monoxid, [Benassi] 730
comparative elimination of inorganic components from, 850—E
count, diazo reaction and leukocyte count, [Svartz] 150

BLOOD count, differential, in puerperium, [Fuss] 1742
count, differential, in surgical affections, [Stahl] 662
count, hematometric differential counting, [Hinkelmann] 210
count, some normal standards for detection of abnormal physiologic performances, 922—E
count, sudden variations of leukocyte formula from physiologic causes, [Tinel] 1815
crisis after constriction of an extremity, [Calvé] 435
cyst in ovary, [Nyström] 70
destruction during exercise, [Broun] 1100
diastase in urine and, as test of renal efficiency, [Harrison & Lawrence] 659
diseases and tumors, [Hirschfeld] 1349
extraglobular parasites of, [Blanchard & Lefrou] 283
ferments, diagnosis of disease of organs from their ferments in blood serum, [Rona & others] 217
fibrinogen and bilirubin in blood, [Levi] 1656
gaseous metabolism and blood flow in brain under narcosis and hypnotics, [Yamakita] 1495
gases, [de Sanctis-Monaldi] 730
gases, effect of hemorrhage on pulmonary ventilation, [Gesell & others] 354
glycolysis in, action of hydrogen, calcium and mercuric ions on, [Rubino & Varela] 1818
goiters and their action on, [de Quervain] 881
grouping, [Meyer & Ziskoven] 1277
grouping and determination of paternity, [Lattes] 1816
grouping, typing of blood of eclamptic mother and child, [Gruhzit] 1877
groups, existence of more than 4 iso-agglutinin groups in blood, [Guthrie & Huck] 1099
groups, unchangeability of, [Mino] 966
hemoglobin and corpuscle volume percentage in young infants, [Drucker] 70
hemoglobin and corpuscles in infants, [Drucker] 1037
hydrogen ion concentration in cancer, [Chambers] 1175
hydrogen ion concentration of blood in carcinoma from carbon dioxide-bicarbonate ratio, [Chambers & Kleinschmidt] 1175
influence of surgical affections on, [Löhr] 662
injection, intraperitoneal, of citrated blood, [Siperstein & Sansby] 797, [Siperstein] 1399—C
injections, amelioration of nutrition of tuberculous patients after intravenous injections of blood of animals, [Kisch] 1658
injections of laked own blood, [Descarpentries] 1180
interchanges between tissue fluids and, [Levy] 1545
iron and hemoglobin in, [Wong] 1543
iso-agglutination in new-born infants and their mothers, [McQuarrie] 1099
lipoids of fetal and maternal blood at conclusion of labor, [Slemons & Stander] 723
microchemical analysis of, [del Valle Sárraga] 959
nitrogen, prognosis in retention of, [Chabanier & others] 283
nitrogen retention in blood, influence of oliguria on, [Pepper] 798
nonprotein nitrogen in, [Arnesen] 1038
nonprotein nitrogen in parturients, [Hellmuth] 1348
nonprotein nitrogen in toxicoes of pregnancy, [Hellmuth] 516
nonprotein nitrogen, action of iodids on, [Grabfield & Alpers] 1643—ab
nonprotein nitrogen, effect of tartar emetic on, [Levy & Dimmitt] 277
oxydases and peroxydases of, [Sabrazès] 804
oxygenation, (determination of hypoxemia), [Kauders & Porges] 1493
phosphates, gravimetric estimation of, [Fetter] 1411
picture changes in children, [Nassau & Schohl] 287
plasma, lability of colloids of, [Darányi] 148
platelets and thromboplasts, [Stahl] 969
platelets, immunologic experiments with, [Menne] 430
platelets, improved method for counting, [Rees & Ecker] *621, [Kristenson] 736
platelets, influence of vitamin A on, [Bedson & Zilva] 1030
pressure, changes of, in affections of kidneys, and their causes, [Arrak] 1742
pressure, clinical determination of capillary tension, [Kylin] 1888
pressure during cerebral anemia, [Rogoff & Coombs] 1409
pressure during operations, [Lehrnbecher] 363
pressure during sleep, [Katsch & Pansdorf] 591
pressure, factors in rise in blood pressure after irritation of splanchnic nerves, [Houssay] 589
pressure, high, [Milne] 507, 1630
pressure, high, after electric shock, [Pfalz] 439

pressure, high, and congenital heart disease, [Bischoff] *547
pressure, high, and diet, 1004—E
pressure, high, and epinephrin, [Houssay] 145
pressure, high, and, protein feeding [Strouse & Kelman] 1028
pressure, high, electricity in, 646
pressure, high, etiology of, [Weltz] 969
pressure, high, [Hartwig] 811, [Müller] 883
pressure, high, essential hypertension, [Kerpola] 1888
pressure, high, hyperglycemia and hypertension, [Herrick] 1804—ab
pressure, high, hypertension heart the most common form of so-called chronic myocarditis, [Fahr] *981
pressure, high, kidney factor in, [Braun] 882
pressure, high, masked, [Jeanneney & Tauzin] 1491
pressure, high, obesity and hypertension, [Aubertin] 1815
pressure, high, relation of, to cardiorenal disease, [Foster] 135
pressure, high, retinitis associated with renal disease and, [Ellis & Marrack] 1812
pressure, high, share of epinephrin in hypertension induced by irritation of splanchnic nerve, [Houssay & Marconi] 1740
pressure, high, sodium chlorid treatment of hypertension, [Allen & Sherrill] 1879
pressure, high, treatment by physical means, [Grober] 663
pressure, high, a warning in toxemia of pregnancy, [Le Lorier] 879
pressure, high, systematic purging in treatment of permanently high blood pressure, [Kisch] 1819
pressure, high, with hyperglycemia and hyperuricemia, [Kylin] 1658
pressure in psoriasis, lichen planus and erythematous lupus, [Roussel] 61
pressure, Korotkow's method of determination of, [Rumph] 1034
pressure, lowering of, by extracts of lymphatic glands, [Scarpa] 67
pressure of healthy men and women, [Symonds] *232
pressure, relation of number of erythrocytes to, [Lenaz] 1654
pressure, some original blood pressure observations, [Kinney] *1767
pressure, spontaneous variability of, [Mosenenthal & Short] 1804
pressure, variations of, caused by phenolic compounds, [Pomaret] 142
proteins, origin of serum proteins in body, 1696—E
ratio between hemoglobin and corpuscles, [Norgaard & Gram] 444
regeneration of blood in infancy, [Opitz] 591
serotherapy and hematotherapy, [Lyon] 1814
serum and quantitative analysis, [Leendertz] 216
serum, certain physical properties of, [Koopman] 812
serum, inorganic constituents of, in nephritis, [Denis & Hobson] 1175
stain, Giemsa's, simple method of using, [Lyon] *473
sugar, action of drugs on blood sugar, [Grossmann & Sandor] 1494
sugar, action of protein treatment on intermediary metabolism and glycemia, [Volmer] 1885
sugar, action of phlorizin on sugar in blood and urine in diabetes and nephritis, [Rosenberg] 1657
sugar after ingestion of glucose, [Foster] 1175
sugar, alimentary hyperglycemia, and glycosuria, [Traugott] 217
sugar and alimentary glycemia in the old, [Punschel] 969
sugar content in arterial and in venous blood, [Hansen] 970
sugar content during anesthesia, [Dewes] 362
sugar curve after heat puncture, [Jacobowsky] 1038
sugar, diminished glycolysis in blood in diabetes, [Thalhimer & Perry] *1614
sugar, diurnal variation in, of rabbit, [Eadie] 1027
sugar, effect of insulin on glucose hyperglycemia, [Eadie & Macleod] 1729
sugar estimations, [John] 209
sugar, hyperglycemia and hypertension, [Herrick] 1804—ab
sugar, hypertension with hyperglycemia and hyperuricemia, [Kylin] 1658
sugar in blood and tissues in diabetics, [Barat & Hetenyi] 1655
sugar in spinal fluid and, [Polonovski & Duhot] 964, [Mestrezat] 1654
sugar, influence of carbohydrates on, [Eilasow] 516
sugar, influence of perfused insulin on, [Murlin & others] 1729
sugar metabolism of salivary glands, [Anrep & Cannan] 727
sugar, method of stating sugar determinations, [Strouse] 1713—C

- BLOOD** sugar, modification of Folin-Wu blood sugar method, [Morgulis & others] 1100, [Evans & others] 1727—ab
sugar, nature of, [Winter & Smith] 727, [Hewitt] 1488
sugar, rapid test for, [Christiansen] 444
surgical import of histologic findings in, [Bruggmann] 1884
test of paternity, [Lattes] 1816
transfusion, [Houtin] 1180
transfusion, autohemotherapy in dermatitis of pregnancy, [Lévy-Solai] 435
transfusion (autotransfusion), [Burch] 275—ab, 938
transfusion by citrate method in hemorrhages of new-born, [Falls] *678
transfusion from animals to men, [Cruchet & Ragot] 1653
transfusion, chills following, [Lewisohn] *247
transfusion, clinical and experimental researches on, [Nürnberg] 517
transfusion, fatal outcome of retransfusion of own blood, [Schafer] 1422
transfusion, general reactions following, 39—E
transfusion in hemorrhage, [Stegemann] 1108
transfusion in new-born, simplest method of, [Lewisohn] 1166—C
transfusion in purpura, [Larrabee] *838
transfusion, intraperitoneal, 257—E, 921—E
transfusion, intraperitoneal, with citrated blood, [Siperstein] 1097, [Sansby & Siperstein] *1763
transfusion, mistreatment of furnisher of, 275—M
transfusion of chicken blood in pneumonias in children, [Berger & Montgomery] 1176
transfusion, therapeutic, [Recio & Figueras] 1107
transfusion, varieties of, [Tzanck] 66
urea in, in diphtheria and its changes in specific treatment, [Glesinger-Reischer & Glesinger] 1819
uric acid in, 327—E, [Weil & Guillaumin] 729
uric acid in, in diagnosis and prognosis of nephritis, [Czoniezer] 216
uric acid in, quantitative determination of, [Harpuder] 1277
vessels, erosion of, by drainage tubes, [Schonbauer & Gold] 1420
viscosity, action of iodids on, [Deusch & Frowein] 216
viscosity, specific viscosity of serum, [Neuschloss] 1740
viscosity, relation between blood viscosity and blood corpuscles and action of caffeine on it, [Drossbach] 1885
volume in pregnancy, [Gueissaz & Wanner] 729, [Koch & Jakobovits] 733, [Kaboth] 1887
volume studies in obesity, [Keith & Brown] 1728—ab
with deep roentgen-ray therapy, hydrogen-ion concentration, alkali reserve sugar, and nonprotein nitrogen, [Hirsch & Petersen] *1505
yeastlike bodies in, [Fleisher & Wachowlak] 800
- BODY**, relative weight of parts of, 1024
- BONES**, brittle bones and blue sclerotics, [Straat] 812
destruction and parathyroid hyperplasia in generalized carcinomatosis, [Klemperer] 583
grafting, [Adams] 584
grafting and bone regeneration, [Christophe] 1180
grafts, experimental, [Poletti] 360
grafts, fate of, [Troell] 1112
grafts of embryonal bones, [Simon & Aron] 65
grafts, osteoperiosteal, [Delagenière] 434
infections, chronic, new method of treatment for, [Orr] 1101
local development of, [Maass] 515
marble bones, [Alexander] 1805
marrow, compensatory action of ultraviolet rays on avitaminotic disturbances of, [Ishido] 1657
marrow in course of immunization process, [Magarinos Torres] 731
marrow, lymphoid metaplasia in, [Krumblhaar] 277
membranous defects of bone in diabetes insipidus and exophthalmus, [Grosh & Stifel] 655
modification of structure of, under mechanical strain, [Müller] 363
sarcoma, diagnosis of, report of case, [Eising] *1429
suppuration as cause of renal calculus, [Paul] 1809
surgical correction of crooked limbs, [Cadenat] 1652
suture of, [Kirschner] 662
syphilis of, manifestations of syphilis in joints and, [Gastou] 1815
syphilis of long bones, [Dambrin & Migniac] 1345
tender bone points, diagnosis and therapeutic importance of, [Bastianelli] 801
tuberculosis, [Reh] 148, [Simon] 1421
tuberculosis of ankle joint and tarsus, [Fitzsimmons] 60
- BOOKKEEPER** without power to employ physician, 275—M
- BORAX** as a food preservative, 1317—E
- BORCHERT'S** Malt, Cod Liver Oil and Iron iodide, 1143
- BOTHRIOCEPHALUS**, pernicious anemia due to, in 3 sisters, [Cramer] 65
- BOTULISM**, bacillus botulinus, distribution of, 185—E
bacillus botulinus in California, [Coleman] 506, [Meyer & Dubovsky] 506
bacillus botulinus in United States, [Meyer & Dubovsky] 506
bacillus botulinus, identification of, by serologic methods, 1855—E
bacillus botulinus, isolation of, [Dubovsky & Meyer] 506
bacillus botulinus, pathogenicity of, [Coleman & Meyer] 507
bacillus botulinus spores, heat resistance of, [Esty & Meyer] 507
clinical and pathologic consideration on, [Pisani] 213
epidemic of, [Corbus & others] 1805
experimental, in dogs, [Graham & Eriksen] 430
experimental, influence of calcium chlorid on, [Hall & Davis] 1647
ocular syndrome of, [Saint-Martin] 1183
pathologic physiology of, [Edmunds & Lloyd] 1875—ab
report of commission on, 1852—E
spores in Alaska and Canada, [Dubovsky & Meyer] 506
spores in Belgium and other countries, [Meyer & Dubovsky] 507
spores in Hawaiian Islands and China, [Schoenholz & Meyer] 507
- BOWEL**: See Intestine
- "BOYD'S EMANOMETER,"** 1017
- BRADYCARDIA**, false, bigeminal pulse with, [Rosello] 214
- BRAIN**: See also Cerebellum; Corpus Callosum; Dura; Pituitary; Pons
abscess, [Kerr] 276—ab
birth injuries to, and their consequences, [Siegmund] 1493
brains of eminent scientists, musicians, statesmen and scholars, study of, 1256
bulbar hemiparesis, [Marinesco & Draganesco] 1180
chemistry of, in dystrophy, [Ederer] 1110
cyst, traumatic, [Dowman] 1540—ab, [Wagner] 1548
cystic blastomycosis of, [Freeman & Weidman] 1878
disease, localization of, from ocular symptoms, [Stibbe] 288
entrance of air into vascular system: its removal from right ventricle by heart puncture, [Bingel] 1743
frontal reflex in some cerebral affections, [Holmgren] 1888
gaseous metabolism and blood flow in brain under narcosis and hypnotics, [Yamakita] 1495
hemorrhage, intracranial, in apparently healthy adolescents, [Hawthorne] 358
hemorrhage, purpura with, [Portu Pereyra] 144
hernia of, in wound of frontal lobe, [Fenicola] 1817
hydatid cyst in, [Morquio] 514, [Chiappori] 1419
injuries, acute, [Shoulders] 1406—ab
injury of, [Ritter] 439
injury, syndrome from injury of centrum ovale, [Juarros] 438
intracranial hypertension in children, [Segers] 1492
intracranial pressure, administration of hypertonic salt solutions for relief of, [Fay] *1445
pituitary gland in cerebral lesions, [Desogus] 806
pneumoventriculi cerebri following fracture of skull, [Teachenor] 133—ab
sensory disturbances from cortical lesions, [Sarno] 1107
spirochaeta, recurrens in, [Buschke & Kroó] 515
syphilitic encephalitis of base, [Roxo] 1347
topography of cerebral cortex, 50
traumatic lesions of, [Newell] 205—ab
tuberculosis of base of, [Harbitz & Monrad-Krohn] 1038
tumor, simulating dementia paralytica, with operation and complete neurologic and mental recovery, [Rosenheck] *470
tumor in cerebellopontine angle [Lossius] 812
tumor, recovery after removal of tumor in parietal lobe, [Fracassi] 1883
tumors, [D'Allocco] 1883
tumors, dangers of lumbar encephalography in presence of, [Denk] 1743
tumors, radiotherapy of, [Béclère] 1417
tumors, roentgen localization of, [Whimmer] 970
tumors, secretion of fluid after extirpation of, [Schloffer] 968
tumors, ventriculography in, [Bassoe & Davis] 874
- BRAZIL**, four years of public health in, 119
- BREAD**, bacillus welchii in bread, [Koser] 1412
salt-rising bread and Welch bacillus, 1384—E
- BREAST** as an excretory organ, 557—E
cancer, [Morton] 802, [Tixier] 1182
cancer and benign growths of, [Macrae] 133—ab
cancer, artificial production of, [Yamagawa & Murayama] 585
cancer, early symptom of, [Rowntree] 1880
cancer, local recurrences following operations on, [Czifer] 810
cancer, radium therapy of breast carcinoma, [Willis] 1732
cancer statistics, [Sadlier] 960
cancers in men, [Müller] 515
carcinoma treated surgically and by roentgen ray, clinical and postmortem findings, 2 cases, [Rose] *1750
endothelioma of male breast following injury, [Griffith] 586
lipoma of mammary region, [Torraca] 285
syphilis of, [Castex & Bouzat] 590
traumatic fat necrosis of, [Cohen] *770
tumors, [Erdmann] 1173
tumors arising during pregnancy and lactation, [Kilgore] 801
tumors, study of 255 cases, [Haggard & Douglass] *445
- BREATH** sounds, discoverer of mode of production of, [Bushnell] *895
- BREATHING**, nasal, and treatment of lungs, [Wotzilka] 217
costal and abdominal, [Deppe] 148
- BRILL'S DISEASE**: See Typhus Fever
- BRITISH GUIANA**, medical impressions of, [de Souza Araújo] 966
- BRITISH MEDICAL ASSOCIATION**, memorial book of honor of, 1627
- BRONCHIAL GLANDS**, differential leukocyte count in tuberculosis of, [Raffauf & Grimm] 442
spinal phenomena in diagnosis of tuberculosis of, [Langer] 442
tuberculosis, clinical and roentgen-ray study of, [Frazer & MacRae] *1292
- BRONCHIECTASIS**, chronic, terminating in acute phthisis, [Bray] 721
graded extrapleural thoracoplasty for, [Hedblom] 140
lobectomy for, [Graham] 723
postural treatment of, [Schaefer] 1493
surgical treatment of, [Ribadeau-Dumas & Mocquot] 587
with unusual complications, [Davies] 1103
- BRONCHITIS**, better treatment for tuberculous patients with, [McClure] 1651
chronic, and pulmonary emphysema, [Sargent] 142
postural treatment of, [Schaefer] 1493
spirochetal, [Aráoz Alfaro & others] 215
- BRONCHOLITH** or pneumolith, [Fox] *175
- BRONCHUS**, unsuspected foreign body in, simulating chronic bronchitis, [Halphen] 1490
- BRONZE-SKIN** not due to Addison's disease, [Sézary & Levesque] 587
- BROWN'S** New Consumption Remedy, 495—P
- BRUCK'S** centrifuge method in serodiagnosis of syphilis, [Teichmann] 286
- BUCHARDI**, Conradi, and rejuvenation operations, 121, 489
- BUDAPEST**, annual report on health of, 1256
- BULBAR** hemiparesis, [Marinesco & Draganesco] 1180
- BUNDLE OF HIS**—arborization of right and left branches of, [Rothschild] 1727—ab
- BURNS**, epinephrin in, [Plaza] 438
of skin, [Schridde] 734
treatment of toxemia of, in children by exsanguination-transfusion, [Robertson & Boyd] 797
- BURSUM** Bill, favored by house, 46
vetoed, 120
- BUSACCA'S** intracutaneous reaction in tuberculosis of skin, [Palmieri] 1654
- BUTTER** fat, influence of yeast and, on magnesium and phosphorus assimilation, [Bogert & Trail] 429
- BUTTOCK**, congenital papilloma of, [Ludlow] 1178
- BUTYN** poisoning, treatment of, [Nielsen & Higgins] 1808
- BYRON**, Lord, lameness of, 1254

BOOK NOTICES

- Abdomen, Topographical Anatomy of Thorax and Abdomen of the Horse, 794
Alimentary Tract, Upper, Diseases of Stomach and, 131
Alkaloids, die Pflanzenalkaloide, 1094
Aloha Around the World, 871
Anatomy, Cunningham's Text-Book of, 1794
Anaesthesia, Chloroform Anaesthesia, 273
Anesthesia, Art of, 950
Arnold, R., Taschenbuch der Röntgenologie für Aerzte, 57
Auenbrugger's Inventum Novum, 576
Baar, G., Die Indicanämie: ihre Bedeutung als Nierenfunktionsprobe, 949

- Bacteria, Investigations into Occurrence and Classification of Haemoglobinophilic Bacteria, 1794**
Bacteriologic Studies, 424
Bacteriology, Technik und Methodik der Bakteriologie und Serologie, 1403
Bacteriophage: Its Role in Immunity, 1170
Barboza, J., Semiologia dos Sopros Diastolicos da Base, 793
Barker, L. F., Clinical Medicine: Tuesday Clinics at the Johns Hopkins Hospital, 57
Bassler, A., Diseases of the Stomach and Upper Alimentary Tract, 131
Behavior, Abnormal; Pitfalls of Our Minds, 949
Bennett, A., "Suggestion" and Common Sense, 1337
Bertrand, L., Lessons in Pathological Histology, 872
Biedl, A., Innere Sekretion, 424
Biology, Injury, Recovery and Death, in Relation to Conductivity and Permeability, 1093
Bladder Diseases, (Encyclopédie Française d'Urologie), Vol. IV, 650
Blanchard, P., Abnormal Behavior, Pitfalls of Our Minds, 949
Blessig, E., Verletzungen des Auges in klinischen Bildern, 1404
Blood Chemistry, Untersuchungen über die Körperlichen Störungen bei Geisteskranken, 57
Blood Diseases, Sang, Organes Hématopoïétiques Rate, Os, 649
Bock, V., Die Friedmann-Methode, 1169
Body Mechanics and Health, 794
Bon, H., Encéphalite Hyperthermique, 719
Bon, J., Encéphalite Hyperthermique, 719
Bonola, F., La Lachicentesi ed il Liquido Cefalo-Rachidiano, 1025
Bordier, H., Diathermie et Diathermotherapie, 424
Boruttau, H., Handbuch der Gesamten medizinischen Anwendungen der Elektrizität Inschliesslich der Röntgenlehre, 57
Bory, L., Les Phénomènes de Destruction Cellulaire Autolyse-Hémolyse-Bactériolyse-Organolyse-l'Importance de Leur Rôle en Pathologie, 949
Boston Psychopathic Hospital, History of, 1639
Bradley, O. C., Topographical Anatomy of Thorax and Abdomen of Horse, 794
Brain Abscess: Its Surgical Pathology and Operative Technique, 1639
Briggs, L. V., History of Psychopathic Hospital, Boston, 1639
Bronchoscopy and Esophagoscopy, 1025
Brugsch, T., Allgemeine Prognostik, oder die Lehre von der ärztlichen Beurteilung des gesunden und Kranken Menschen, 1718
Brumpt, E., Précis de Parasitologie, 1639
Burnham, A. C., Text-Book on Minor Surgery, 1094
Callejas, J. J., Consejos Practicos de Higiene Infantil, 576
Calmette, A., L'Infection Bacillaire et la Tuberculose chez l'Homme et chez les Animaux, 1265
Carotinoids and Related Pigments, the Chromolipoids, 1403
Carriers in Infectious Diseases, 1093
Carrion, H., Endocrine Glands and the Sympathetic System, 204
Chandler, A. C., Animal Parasites and Human Disease, 423
Chemistry, Wonder Book of, 1538
Chloroform Anaesthesia, 273
Chromolipoids: Carotinoids and Related Pigments, 1403
Cifuentes, P., El Método Operatorio de la Derivación Urinaria y sus Aplicaciones Terapéuticas, 350
Clarke, J. J., Protists and Disease, 1539
Coakley, C. G., Manual of Diseases of Nose and Throat, 1480
Core, D. E., Functional Nervous Disorders, 502
Cotoni, L., Pneumocoques et Affections Pneumococciques, 950
Cragg, M., Nerve Exhaustion, 1869
Crotti, A., Thyroid and Thymus, 1265
Crowther, J. A., Principles of Radiography, 350
Cummer, C. L., Manual of Clinical Laboratory Methods, 1169
Curzon-Miller, A. G., Physiology for Dental Students, 1336
Dakin, H. D., Oxidations and Reductions in Animal Body, 1480
Deare, B. H., Treatise on Materia Medica and Therapeutics, 351
Delgado, H. F., Algunos Aspectos de la Psicología del Niño, 793
Dentistry, Lehrbuch der Grenzgebiete der Medizin und Zahnheilkunde für Studierende, Zahnärzte und Aerzte, 501
Dentition, Origin and Evolution of Human Dentition, 1169
Desnos, E., Encyclopédie Française d'Urologie, 650
d'Helle, F., Bacteriophage: Its Role in Immunity, 1170
Diagnosis, Physical, 948
Diagnosis, Process of Diagnosis Including the Method of History-Taking, and Physical Examination of Surgical Cases, 502
Dias, H. A., Lições de Clínica Médica, 794
Diathermie et Diathermotherapie, 424
Dick, J. L., Rickets, 950
Dietetics, Food and the Principles of, 1404
Dietetics, Lectures on, 424
Dietetics, Vorlesungen über Diätbehandlung innerer Krankheiten, 1869
Disease, Human, and Animal Parasites, 423
Eagleton, W. P., Brain Abscess: Its Surgical Pathology and Operative Technique, 1639
Ear, Diseases of the Ear, Nose and Throat, Medical and Surgical, 1403
Ear, Handbook of Aural Surgery for Students and Practitioner, 1169
Eastwood, A., Bacteriologic Studies; Review of Recent Work on Pneumococci, 424
Eastwood, A., Bacteriologic Studies; Serological Difference Amongst Pneumococci, 424
Eckhart, F., Grundlagen der Osmotherapie; zur Technik der Intravenösen Injektion, 350
Einhorn, M., Lectures on Dietetics, 424
Electrotherapy, Handbuch der Gesamten medizinischen Anwendungen der Elektrizität Inschliesslich der Röntgenlehre, 57
Encéphalite Hyperthermique, 719
Encephalitis, Contribution à l'Étude des Manifestations Tardives de l'Encéphalite Epidémique, 1480
Encephalitis, Ectodermoses Neurotropes Poliomyélite, Encéphalite, Herpès, 1170
Encephalitis, Epidemische, 502
Encephalitis, da Pathogenia do Sommo, Particularmente na Encephalite Lethargica, 204
Endocrine Glands and the Sympathetic System, 204
Esophagoscopy and Bronchoscopy, 1025
Eugenics, Genetics and the Family, 1480
Eugenics in Race and State, 1480
Evolution, I Believe in God and in Evolution, 949
Exercise in Education and Medicine, 1794
Eye, Anatomy of Human Eye and Orbit, 1719
Eye, Verletzungen des Auges in klinischen Bildern, 1404
Fabre, J. H., Wonder Book of Chemistry, 1538
Feer, E., Text-Book of Pediatrics, 1404
Fischer, L., Diseases of Infancy and Childhood, Their Dietetic, Hygienic and Medical Treatment, 576
Flagg, P. J., The Art of Anaesthesia, 950
Food and the Principles of Dietetics, 1404
Forrester-Brown, M. F., Treatment of Injuries of the Peripheral Spinal Nerves, 204
Fractures, Traité des Fractures des Membres, 1538
Fractures, Treatment of Fractures with Notes upon a Few Common Dislocations, 871
Fuchs, H. E., Text-Book of Ophthalmology, 1869
Gastro-Intestinal Diseases, Leçons de Pathologie Digestive, 131
Gastro-Intestinal Diseases, Röntgendiagnostik der Magen- und Darmkrankheiten, 649
Gengerich, W., Die Syphilis des Zentralnervensystems, Ihre Ursachen und Behandlung, 1480
Gerhartz, H., Leitfaden der Röntgenologie, 274
Ghosh, R., Treatise on Materia Medica and Therapeutics, 351
Glaucoma et de l'Hypotonie, 575
Gold-Headed Cane, 949
Goldnamer, W. W., Anatomy of Human Eye and Orbit, 1719
Goldthwait, J. E., Body Mechanics and Health, 794
Greek Biology and Greek Medicine, 719
Greek Biology and Medicine, 719
Greene, C. W., Kirke's Handbook of Physiology, 1336
Gregory, W. K., Origin and Evolution of Human Dentition, 1169
Griffith, F., Bacteriologic Studies; Types of Pneumococci, 424
Guillain, G., Études Neurologiques, 274
Guillaume, A. G., Endocrine Glands and the Sympathetic System, 204
Gynecology, Clinical and Operative, 423
Gynecology, Lehrbuch der Geburtshilfe, 1869
Haden, R. L., Clinical Laboratory Methods, 1169
Hardenburg, W. E., Mosquito Eradication, 131
Harris, L., Diseases of Heart, 719
Harvier, P., Endocrine Glands and the Sympathetic System, 204
Heart as a Power-Chamber, 204
Heart, Diseases of, 719
Heart, Semiologia dos Sopros Diastolicos da Base, 793
Herpes, Ectodermoses Neurotropes, Poliomyélite, Encéphalite, Herpès, 1170
Hertzler, A. E., Diseases of Thyroid Gland, 794
Hess, J. H., Premature and Congenitally Diseased Infants, 719
Hess, J. H., Principles and Practice of Infant Feeding, 650
Hewlett, R. T., Pathology: General and Special, for Students of Medicine, 1025
Hirsch, H., Taschenbuch der Röntgenologie für Aerzte, 57
Histology, Pathological Lessons in, 872
Hoffmann, P., Untersuchungen über die Eigenreflexe (Sehnenreflexe) menschlicher Muskeln, 502
Holzknicht, G., Dosierungstabelle für die Röntgen-Therapie, 793
Hutchison, R., Food and the Principles of Dietetics, 1404
Hygiene, Personal Hygiene Applied, 793
Immunology, Les Phénomènes de Destruction Cellulaire: Autolyse-Hémolyse-Bactériolyse-Organolyse-l'Importance de Leur Rôle en Pathologie, 949
Indicanämie: Ihre Bedeutung als Nierenfunktionsprobe, 949
Infancy and Childhood, Diseases of, Their Dietetic, Hygienic and Medical Treatment, 576
Infant Feeding, Principles and Practice of, 650
Infants, Consejos Practicos de Higiene Infantil, 576
Infants, Premature and Congenitally Diseased, 719
Infectious Diseases, Carriers in, 1093
Influenza Bacilli, Distribution and Serological Characters of, 424
Innere Sekretion, 424
Internal Secretions, Problemas Actuales de la Doctrina de las Secreciones Internas, 793
Jackson, C., Bronchoscopy and Esophagoscopy, 1025
Jarrett, M. C., The Kingdom of Evils, 575
v. Jaschke, R. T., Lehrbuch der Geburtshilfe, 1869
Jaundice, Chronische Hereditäre Hämolitische Ikterus, 871
Jones, R., Orthopedic Surgery, 1719
Judet, H., Traité des Fractures des Membres, 1538
Keen, W. W., I Believe in God and in Evolution, 949
Keen, W. W., Selected Papers and Addresses, 1480
Kerr, J. M. M., Clinical and Operative Gynecology, 423
Kidney Disease, Modern Methods in Diagnosis and Treatment of Renal Disease, 1094
Kingdom of Evils, 575
Kirke's Handbook of Physiology, 1336
Klimmer, M., Technik und Methodik der Bakteriologie und Serologie, 1403
Krause, P., Handbuch der Gesamten Medizinischen Anwendungen der Elektrizität Inschliesslich der Röntgenlehre, 57
Kristensen, M., Investigations into Occurrence and Classification of Haemoglobinophilic Bacteria, 1794
Laboratory Methods, Clinical, 1169
Laboratory Methods, Manual of Clinical Laboratory Methods, 1169
Lagrange, F., Du Glaucoma et de l'Hypotonie, 575
Laurens, G., Oto-Rhino-Laryngology for Student and Practitioner, 793
Lereboullet, P., Endocrine Glands and Sympathetic System, 204
Levaditi, C., Ectodermoses Neurotropes Poliomyélite, Encéphalite, Herpès, 1170
Levy, A. G., Chloroform Anaesthesia, 273
Lévy, G., Contribution à l'Étude des Manifestations Tardives de l'Encéphalite Epidémique, 1480
Levy-Dorn, M., Die Röntgenphysik, die Allgemeine Röntgentechnik, das Diagnostische Röntgenverfahren (Allgemeiner Teil) 57
Lindsay, J. A., Medical Axioms, Aphorisms and Clinical Memoranda, 793
Lipoids, zur Biologie der Lipide mit Besonderer Berücksichtigung ihrer Antigenwirkung, 351
Liver, Infantile Cirrhosis of, 576
Loeper, M., Leçons de Pathologie Digestive, 131
Loring, E. I., La Ureteropielografía y su Importancia Clínica, 351
Lovett, R. W., Lateral Curvature of Spine and Round Shoulders, 649
Lovett, R. W., Orthopedic Surgery, 1719
Ludewig, P., Die Physikalischen Grundlagen des Betriebes von Röntgenröhren mit dem Induktorium, 1719
McKay, W. J. S., Lawson Tait: His Life and Work, 501
McKenzie, R. T., Exercise in Education and Medicine, 1794
Maclean, H., Modern Methods in Diagnosis and Treatment of Renal Disease, 1094
MacMichael, W., The Gold-Headed Cane, 949
Magnire, F. A., Anatomy of Female Pelvis, Descriptive and Applied, 1265
Mann, L., Handbuch der Gesamten Medizinischen Anwendungen der Elektrizität Inschliesslich der Röntgenlehre, 57
Marañón, G., Problemas Actuales de la Doctrina de las Secreciones Internas, 793
Marle, W., Lexikon der Gesamten Therapie des Praktischen Arztes mit Einschluss der Therapeutischen Technik, 1869
Marriage, History of Human Marriage, 501
Marshall, F. H. A., The Physiology of Reproduction, 918
Martius, H., Das Röntgentherapeutische Instrumentarium, 57
Materia Medica and Therapeutics, Treatise on, 351
Medical Axioms, Aphorisms and Clinical Memoranda, 792
Medical Sciences, Reference Handbook of; Embracing the Entire Range of Scientific and Practical Medicine and Allied Science, 1265
Medicine, Clinical Medicine: Tuesday Clinics at the Johns Hopkins Hospital, 57
Medicine, Lehrbuch der Grenzgebiete der Medizin und Zahnheilkunde für Studierende, Zahnärzte und Aerzte, 501
Medicine, Lições de Clínica Médica, 794

- Mental Deficiency (Amentia), 1265
 Metzger, J. A., Principles and Practice of X-Ray Technique for Diagnosis, 274
 Meulengracht, E., Der Chronische Hereditäre Hämolytische Ikterus, 871
 Military Medicine, Outline of the Medical Service of the Theater of Operations, 576
 Misch, J., Lehrbuch der Grenzgebiete der Medizin und Zahnheilkunde für Studierende, Zahnärzte und Aerzte, 501
 Morgan, G., Public Relief of Sickness, 1869
 Mosquito Eradication, 131
 Mukherji, S. K., Infantile Cirrhosis of Liver, 576
 von Mural, L., Der Künstliche Pneumothorax, 1794
 Nerve Exhaustion, 1869
 Nerves, Treatment of Injuries of Peripheral Spinal Nerves, 204
 Nervous Disorders, Functional: Their Classification and Treatment, 502
 Nervous System, Sympathetic, and Endocrine Glands, 204
 Neuburger, M., Leopold Auenbrugger's Inventum Novum, 576
 Neurologiques Études, 274
 Neurology, Questions Neurologiques d'Actualité, 204
 Nichols, H. J., Carriers in Infectious Diseases, 1093
 Nose, Diseases of the Ear, Nose and Throat, Medical and Surgical, 1403
 Nose, Manual of Diseases of Nose and Throat, 1480
 Nursing and Nursing Education in United States, 1538
 Nursing in Diseases of Eye, Ear, Nose and Throat, 794
 Nursing, Text-Book of Obstetrical Nursing, 1794
 Nutritional Physiology, 424
 Obstetrics for Nurses, 1718
 Ophthalmology, Text-Book of, 1869
 Orbit, Anatomy of Human Eye and Orbit, 1719
 Orthopedic Surgery, 1719
 Orthopedics, Catalogo dell'Officina Ortopedica dell'Istituto Rizzoli in Bologna, 1025
 Ortnier, N., Clinical Symptomatology of Internal Diseases: Generalized Pain, 1869
 Osmotherapie, Grundlagen der, 350
 Osterhout, W. J. V., Injury, Recovery and Death in Relation to Conductivity and Permeability, 1093
 Oto-Rhino-Laryngology for Student and Practitioner, 793
 Oxidations and Reductions in Animal Body, 1480
 Pacheco e Silva, A. C., Da Pathogenia do Sommo, Particularmente na Encefalite Letargica, 204
 Pain, Clinical Symptomatology of Internal Diseases: Generalized Pain, 1869
 Palmer, L. S., Carotinoids and Related Pigments, the Chromolipoids, 1403
 Parasites, Animal, and Human Disease, 423
 Parasitology, Précis de Parasitologie, 1639
 Pathology: General and Special for Students of Medicine, 1025
 Pediatrics, Text-Book of, 1404
 Pelvis, Anatomy of Female Pelvis, Descriptive and Applied, 1265
 Peripheral Spinal Nerves, Treatment of Injuries of, 204
 Pharmacology and Its Applications to Therapeutics and Toxicology, Manual of, 502
 Pharmacy, Year-Book of, 719
 Phillips, W. C., Diseases of the Ear, Nose and Throat, Medical and Surgical, 1403
 Physiology, Experimental, 794
 Physiology for Dental Students, 1336
 Physiology, Kirk's Handbook of, 1336
 Plass, E. D., Obstetrics for Nurses, 1718
 Pneumococci, Review of Recent Work on, 424
 Pneumocoques et Affections Pneumococciques, 950
 Pneumothorax, der Künstliche Pneumothorax, 1794
 Poliomyélite, Ectodermoses Neurotropes, Poliomyélite, Encéphalite, Herpès, Étude Clinique, Épidémiologique, Histo-Pathologique et Expérimentale, 1170
 Posture, Body Mechanics and Health, 794
 Pousson, A., Encyclopédie Française d'Urologie, 650
 Pregnancy, Getting Ready to Be a Mother, 1337
 Prognosis, Index of, and End-Results of Treatment, 1480
 Prognostik, Allgemeine Prognostik, oder die Lehre von der ärztlichen Beurteilung des gesunden und Kranken Menschen, 1718
 Prostatohypertrophie, Studien zur Anatomie und Klinik der Prostatohypertrophie, 649
 Protists and Disease, 1539
 Psychology, Abnormal Behavior; Pitfalls of Our Minds, 949
 Psychology, Algunos Aspectos de la Psicología del Niño, 793
 Psychology, University of Iowa Studies in; Psychological Monographs, Vol. VIII, 712
 Public Relief of Sickness, 1869
 Pyelography, Ureteropelografía y su Importancia Clínica, 351
 Rachicentesis et il Liquido Cefalo-Rachidiano, 1025
 Radiography, Principles of, 350
 Raphael, A., Pneumocoques et Affections Pneumococciques, 950
 Reflexes, Untersuchungen über die Eigenreflexe (Sehnenreflexe) menschlicher Muskeln, 502
 Reproduction, Physiology of, 948
 Rickets, 950
 Robinson, A., Cunningham's Text-Book of Anatomy, 1794
 Röntgendiagnostik der Magen- und Darmkrankheiten, 649
 Röntgenologie, Leitfaden der, 274
 Röntgenologie, Taschenbuch der Röntgenologie für Aerzte, 57
 Roentgenotherapy, Handbuch der Gesamten medizinischen Anwendungen der Elektrizität Inschliesslich der Röntgenlehre, 57
 Röntgenotherapy, Dosierungstabelle für die Röntgen-Therapie, 793
 Roentgenotherapy, X-Ray Technique, Principles and Practice of, for Diagnosis, 274
 Röntgenröhren, die Physikalischen Grundlagen des Betriebes von Röntgenröhren dem Induktorium, 1719
 Rose, W. D., Physical Diagnosis, 948
 Roussy, G., Lessons in Pathological Histology, 872
 Ryerson, E. S., Process of Diagnosis, Including the Method of History-Taking and Physical Examination of Surgical Cases, 502
 Sainsbury, H., Heart as a Power-Chamber, 204
 Sands, I. J., Abnormal Behavior; Pitfalls of Our Minds, 949
 Schlesinger, E., Die Röntgendiagnostik der Magen- und Darmkrankheiten, 649
 Schmidt, H., Zur Biologie der Lipide mit besonderer Berücksichtigung ihrer Antigenwirkung, 351
 Sclerosis, Multiple Sclerosis (Disseminated Sclerosis), 1403
 Scott, W. M., Bacteriologic Studies; Distribution and Serological Characters of Influenza Bacilli, 424
 Scudder, C. L., Treatment of Fractures with Notes upon a Few Common Dislocations, 871
 Seashore, C. E., University of Iowa Studies in Psychology; Psychological Monographs, Vol. VIII, 719
 Schreus, H. T., Grundlagen der Dosimetrie der Röntgenstrahlen, 57
 Sergeant, E., Traité de Pathologie Médicale et de Thérapeutique Appliquée; Tome X. Sang, Organes Hématopoïétiques Rate, Os, 649
 Serologie, Technik und Methodik der Bakteriologie und, 1403
 Sharpey-Schafer, E., Experimental Physiology, 794
 Shockley, M. A. W., Outline of the Medical Service of the Theatre of Operations, 576
 Short, A. R., Index of Prognosis and End-Results of Treatment, 1480
 Singer, C., Greek Biology and Greek Medicine, 719
 Sleep, da Pathogenia do Sommo, Particularmente na Encefalite Letargica, 204
 Smith, H., Nursing in Diseases of Eye, Ear, Nose and Throat, 794
 Sollmann, T., Manual of Pharmacology and Its Applications to Therapeutics and Toxicology, 502
 Solomon, H. C., Syphilis of the Innocent, 1170
 Solomon, M. H., Syphilis of the Innocent, 1170
 Southard, E. E., The Kingdom of Evils, 575
 Spine, Lateral Curvature of, and Round Shoulders, 649
 Stedman, T. L., Reference Handbook of the Medical Sciences Embracing the Entire Range of Scientific and Practical Medicine and Allied Science, 1265
 Stejskal, K., Grundlagen der Osmotherapie, 350
 Stern, F., Epidemische Encephalitis, 502
 Stiles, H. J., Treatment of Injuries of Peripheral Spinal Nerves, 204
 Stiles, P. G., Nutritional Physiology, 424
 Stomach, Diseases of, and Upper Alimentary Tract, 131
 Strauss, H., Vorlesungen über Diätbehandlung innerer Krankheiten, 1869
 "Suggestion" and Common Sense, 1337
 Surgery, Text-Book on Minor Surgery, 1094
 Symptomatology, Clinical, of Internal Diseases: Generalized Pain, 1869
 Syphilis Des Zentralnervensystems, Ihre Ursachen und Behandlung, 1480
 Syphilis of the Innocent, 1170
 Tait, Lawson: His Life and Work, 501
 Tallant, A. W., Text-Book of Obstetrical Nursing, 1794
 Tandler, J., Studien zur Anatomie und Klinik der Prostatohypertrophie, 649
 Taylor, H. O., Greek Biology and Medicine, 719
 Therapeutics, Lexikon der Gesamten Therapie des Praktischen Arztes mit Einschluss der Therapeutischen Technik, 1869
 Thomas, L. C., Body Mechanics and Health, 794
 Thorax, Topographical Anatomy of Thorax and Abdomen of Horse, 794
 Throat, Diseases of the Ear, Nose and Throat, Medical and Surgical, 1403
 Throat, Manual of Diseases of Nose and Throat, 1480
 Thyroid and Thymus, 1265
 Thyroid Gland, Diseases of, 794
 Traité de Pathologie Médicale et de Thérapeutique Appliquée; Tome X. Sang, Organes Hématopoïétiques Rate, Os, 649
 Tredgold, A. F., Mental Deficiency (Amentia), 1265
 Truche, C., Pneumocoques et Affections Pneumococciques, 950
 Tuberculosis, die Friedmann-Methode, 1169
 Tuberculosis, Infection Bacillaire et la Tuberculose chez l'Homme et chez les Animaux, 1265
 Urine, el Método Operatorio de la Derrivación Urinaria y sus Aplicaciones Terapéuticas, 350
 Urology, Encyclopédie Française d'Urologie, Vol. IV, Maladies de la Vessie, 650
 Urology, Propédeutique et Technique Urologiques, 794
 Van Blaroom, C. C., Getting Ready to Be a Mother, 1337
 Vaughan, J. C., Text-Book on Minor Surgery, 1094
 Vogel, K., Aloha Around the World, 871
 Westermarck, E., History of Human Marriage, 501
 Wiener, G., Propédeutique et Technique Urologiques, 794
 Williams, J. F., Personal Hygiene Applied, 793
 Wilson, W., Handbook of Aural Surgery for Students and Practitioners, 1169
 Wolfenstein, R., Die Pflanzenalkaloide, 1094
 Wuth, O., Untersuchungen über die Körperlichen Störungen bei Geisteskranken, 57
 Zuckerkindl, O., Studien zur Anatomie und Klinik der Prostatohypertrophie, 649

C

- C. J. C. LINIMENT, 53—P
 CACHEXIA and roentgen-ray sickness, [Hirsch] 439
 CADMIUM, pharmacology of, [Schwartz & Alsberg] 1175
 CAFFEIN intravenously, the best of stimulants, [Duke] *998
 caffeinism, [Guillermi] 1106
 relation between blood viscosity and blood corpuscles and action of caffeine on it, [Drossbach] 1885
 CAISSON DISEASE, compressed air in, [Perry] *1455
 CALCANEUM, exostoses on, [Tilanus] 1424
 fracture of, [Becker] 1110
 fractures, operation for relief of disability in, [Magnuson] *1511
 secondary os calcis, [Krida] *752
 CALCIUM, alimentary absorption of, [Mayer & Wells] 1483
 action of, in experimental cocaine poisoning, [Frank & others] *1908
 chlorid, cardiotonic and diuretic action of, [Loewenberg] 1545
 chlorid diuresis, physicochemical studies of, [Atchley & others] 1643—ab
 chlorid for conservation of catheters, [Bonnet] 1653
 chlorid intravenously in visceral hemorrhages, [Carnot & Blamoutier] 360
 effects of excess of, on skeleton, [Korenchewsky] 1958
 in Blood: See Blood, Calcium in
 in vomiting and diarrhea in tuberculous, [Monteleone] 964
 lactate, preservation of life of completely parathyroidectomized dogs by oral administration of, [Luckhardt & Goldberg] *79
 retention, calcification of vessels, and function of kidneys, [Rabl] 1276
 treatment in tuberculosis, [Hartwich-Borrmann] 810, 1619—E
 CALCULI: See under names of organs
 CALCUTTA school of tropical medicine, 1085
 CALIFORNIA diagnostic clinics, 481, 1563
 state board June and July examination, 1168
 CALLUS formation in foot without fracture, [Müller] 69
 CALORIES, cost of work in, 187—E
 CALORIMETRY, clinical, progress of, in United States, 184—E
 CAMPHOR, action of camphor, menthol and thymol on circulation, [Heathcote] 1648
 action of phenol and, in joints, [Hedrl] 732
 treatment of, pulmonary tuberculosis, [Alexander] 287
 CAMPHORATED OIL injections; danger of liquid petrolatum in parenteral injections, [Weidman] *1761
 CANCER: See also Tumor and under organs and regions
 CANCER, age at death of parents of patients with, [Pearl] 579
 and cosmetics, 1159
 and gray hair, [Schridde] 217
 and self-protection of organism, [Bayer] 734
 and the hair, 1163
 arsenic, experimental, [Leitch & Kennaway] 141
 at Jena, [Bilz] 1349
 blood changes in, [Dietrich] 217
 blood serum reaction in early diagnosis of, [Fischer] 963

- CANCER, campaign against, in Italy, 1784
campaign against, new, 1860
carcinoma dose of roentgen rays, so-called, [Opitz] 1805
catalase in blood in, [Zerner] 218
cellular immunity in cure of, [Theilhaber] 1740
colloid, [Parham] 654
diet in treatment of, [Semken] 1867—C
etiology of, [Magrou] 1546
experimental, [Fibiger] 592
experimental, produced by irritation, [Murray] 141
ferment of, [Robin] 963
fight against, 863
fight against, results in, [Hoffman] 956
hydrogen ion concentration of blood in, [Chambers] 1175
hydrogen ion concentration of blood in cancer from carbon dioxide-bicarbonate ratio, [Chambers & Kleinschmidt] 1175
immunity, new attempts to procure immunity, [Russ] 208
increase of, 264
inheritability of, [Slye] 657
league against cancer, 1706
local causes of cancer, [Menetrier] 1737
modifications in body fluids in, [Loeper & others] 1737
mortality in Baltimore, [Howard] *71
multiplex pathology and cancer problem, [Bainbridge] 1417
need for public education on cancer, 1392
of female sex organs in relation to pregnancy, [Peller] 1348
of skin following exposure to radium, [MacNeal & Willis] *466
paraffin, experimental, [Leitch] 141
parathyroid hyperplasia and bone destruction in generalized carcinomatosis, [Klemperer] 583
pathogenesis of, [Stefani] 1417, [Bard] 1545
polychrome methylene blue used to help locate malignancy in tissues to be examined microscopically, [Terry] *1774
postoperative irradiation of, [Winter] 883
pre-cancer conditions, [Cougerot] 880
predisposition and, [Nather] 1033
prize for research on cancer, [Sofie A. Nordhoff-Jung] 487
protozoan debris as cause of, [Flynn] 208
recurrence, method of recognizing beginnings of, [Franke] 664
refractometer findings in cancer and in pre-disposed, [Nather & Orator] 809
refractometric tests of serum of patients with, [Knipfer] 660
relation of clinical to necropsy diagnosis in cancer and value of existing cancer statistics, [Wells] *737
relations between development of cancer and nerve tissue, [Engel] 218
research, congress on, 1393
research in Japan, 1390
roentgen-ray treatment of, [Webster] 962
secondary infection from standpoint of radiotherapy, [Regaud & Mutermilch] 1417
sedimentation of blood corpuscles in, [Gragert] 1741
soot, experimental, [Passey] 141
spontaneous, in wild rats, [Beatti] 1349
spontaneous cures of, [Roncali] 144, [Trinkler] 362
stalagmons in, [Breuer] 517
statistics for Japan, [Hoffman] 944—C
statistics of Algiers, [Hoffman] 1332—C
surgical or radium treatment for, [Brewer] 960
tar, [Roussy & others] 512, [Deelman] 1744
tar, effect of cessation of irritant on, [Leitch] 141
trauma and cancer, [Pistocchi] 1482
trauma and cancer (cancer in throat attributed to injury of hand), 1172—M
trauma and cancer (insufficient evidence that accident caused cancer) 1481—M
treatment of, [Strauss] 218
treatment of, early, [Saltzstein] *448
ward in Havana, 193
- CANNED foods and health, [Savage] 1345
potential dangers in chemical preservation, 1073—E
- CAPILLARIES, circulation in, [Linzenmeier & Hagge] 1741
function of skin capillaries, [Spek] 1655
in cardiovascular-renal disease, [Brown] 1729
in health and in disease, 1144—E
tension, clinical determination of, [Kylin] 1888
- CARBOHYDRATES, influence of, on blood sugar, [Eliassow] 516
- CARBON ARC LAMP, [Hill & Campbell] 1544
- CARBON dioxide tension of alveolar air and blood chlorides, [Essen & others] 1495
dioxide tension of alveolar air and gastric secretion, [Kauders & Borges] 1494
monoxide asphyxiation, 1408—ab
monoxide poisoning, [Jaksch-Wartenhorst] 968
monoxide poisoning, color of blood after, [Benassi] 730
- CARBON monoxide poisoning, dangers of, from gas heaters, 1870
tetrachlorid, dosage of, 1023
tetrachlorid in hookworm disease: See under Unclariasis
Tetrachloride C. P.-P. W. R., 1143
Tetrachloride Medicinal—M. C. W., 1143
- CARBOPHOSPHATURIA, [Martinet] 360
- CARBUNCLE, treatment of, [Kieder] 1741
- CARCINOMA: See Cancer
- CARD library, [Stekhoven] 1112
- CARDIORENAL DISEASE: See under Heart and Kidney
- CARDIOSPASM, simple treatment of, [Oehler] 69
- CARDIOVASCULAR SYSTEM, disease of, [Zee-man] 1112
- CARIES, dental, and tuberculosis, [Siffre] 588
- CARNEGIE CORPORATION, 412
- CAROTID GLAND, tumors of, [Fedell] 436
- CARRIERS: See also under names of diseases, as Typhoid Carriers, etc.
- CARRIERS, bacilli, in tropical pathology, [Nattan-Larrier] 881
- CARRION, memorial to, 859
- CARTILAGES, costal, operative treatment of caries of, [Wolno] 1421
experimental grafts of, [Poletini] 360
semilunar, diagnosis of injury of, [Bircher] 363
- CASEIN, dietetic treatment with, [Asai-Falk] 440
- CASTOR BEAN, occupational sensitization to, [Bernton] 1027
- CATARACT in glass blowers, 1163
in parathyreoprival tetany treated by transplantation of parathyroids, [Greppin] 730
senile, method of choice in treatment of, [Lagrange] 1183
spontaneous cure of, [Santa Cecilia] 731
- CATATONIA, schizophrenic, [Raphael & others] 1541
- CATHARSIS of nursing mothers, 789
- CATHETER, calcium chlorid for conservation of catheters, [Bonnet] 1653
mushroom, simple method of introducing, [Ockerblad] *250
- CATHETERIZATION of trachea in new-born, technic of, [Kritzler] 883
of ureter, aseptic, [Klika] 1549
- CATS, influenza-like bacilli isolated from, [Rivers & Bayne-Jones] 1100
- CECUM, sliding hernias of appendix and, in children, [David] 134—ab
- CELIAC and hypogastric neuroses, [Arce & Castano] 661
disease, [Taylor] 873
disease, nondiarrhetic type of, [Miller & Perkins] 728
plexus, blocking of, [Carrillo] 1033
- CELL degeneration, pigmented fatty change in, [Emrys-Roberts & Haig] 1031
effects of radiations on cells, 924—E
metabolism, change of, as basis of pathologic reactions, [Gottschalk] 1034
- CELLULOID capsule: a means of determining motility of gastro-intestinal tract, [Buckstein] *621
capsule, intragastric determination of acidity by means of, [Buckstein] *551
injection material, blue, method for preparing, [Marshall] *181
- CEREAL decoctions and vitamins, [Springer] 878
- CEREBELLOPONTINE ANGLE, tumor in, [Los-sius] 812
- CEREBELLUM, [Ingvar] 592
otitic abscess of, [Yerger] *244
- CEREBROSPINAL FLUID, absorption of, into venous system, [Weed] 954
benzoin reaction in children, [Squarti] 214
chemistry of, [Depisch & Quittner] 1494
circulation of, [Strecker] 591
colloidal gold reaction in, in acute poliomyelitis, [Regan & others] 873
continuous lumbar drainage, [Schuuren] 1112
copper sulphate reaction in, [Medi] 284
cutaneous reactions in tuberculous children with fluid from tuberculous and nontuberculous meningitis, [Usbeck] 1818
evolution of, in case of tuberculous meningitis, [Bickel] 1106
fractionated examination of, [Esknehen] 148
in disease of fundus, [Ferguson] 432
in herpes zoster, [Targowla] 283
of syphilitic, monosymptomatic hyperalbuminosis in, [Bloch] 1815
reaction of, with paregoric in general paresis, [Targowla] 435
sugar in blood and, [Polonovski & Duhot] 964, [Mestrezat] 1654
sugar in, in epilepsy, [Humes] 1269
urea content of, diagnostic value of, [Anderson] 142
- CEREBRUM: See Brain
- CESAREAN SECTION, administration of hypophysis solution after cesarean section in previous labor, 202
asphyxia of infants delivered by, [Küstner] 1422
autocesean section in a mouse, [Baldwin] 128—C
ether to combat atonic hemorrhages in, [Sigwart] 443
for delivery of pregnant right uterus at term, [Shoemaker] *103
- CESAREAN SECTION in double pneumonia, [Seelye] 355
low, [Gaifami] 805
Pirro's operation, [Proubasta] 437
suture of uterus and uterine drainage in, [von Reding] 1111
test of labor in relation to, [Holmes & Burdick] 353
- CHAMBRELENT, Jules, death of, 197
- CHANCER, mycotic, simulating syphilitic, [Monradian] 1105
syphilitic, early diagnosis of, [Hudelo] 435
treatment of syphilis before appearance of, [Spillmann] 436
- CHARCOT-MARIE atrophy, [Potts & Wilson] 1541
- CHARCOT'S DISEASE, alcohol treatment of trismus from, [Vincent & Bernard] 1736
- CHARITY, statistics on public assistance, 1628
- CHAUFFEURS, medical examination of, report on, 878
- CHIAULMOOGRA OIL in leprosy, [Harper] 658, [van Gaasbeek] 802, [Wilson] 1636—C
injections; danger of liquid petrolatum in parenteral injections, [Wiedman] *1761
- CHEEK, carcinoma of jaws, tongue, lips and, [Crile] 959
endothelioma of, [Babler] 133—ab
- CHEESE poisoning traced, 193
value of, in diet, 1336
- CHEMICAL PRESERVATIVES, potential dangers in, 1073—E
trade commissioner, appointment of Breithut as, 1528
- CHEMISTRY, Italian fund for medal in, 859
physical, in relation to surgery, [Schade] 1421
- CHEMOTHERAPY, future problems of, 490
of bacterial infections, 110—E, [Kolmer] 655
- CHEST: See Thorax
- CHICHA, the corn liquor of Peru, [Cavassa] 1419
- CHICKENPOX, convalescent serum as prophylaxis in, [Blackfan & others] 958
following herpes, [Gismondi] 284
relation between herpes zoster and, [Barabas] 1349
- CHILD LABOR, Children's Bureau question on, 333
in beet fields of Michigan, 947
in Japan, 933
- CHILD-BEARING: See Labor; Obstetrics
- CHILDREN: See also under Infants
- CHILDREN, anesthesia in, local and spinal, [Rocher] 434
anesthesia in, with ethyl chlorid, [Lumbard] *321
classification of, into different groups for purpose of physical training, 1326
differentiation of school curriculum for boys and girls, 414
does school work impair health? 112—E
dysthymic children, [de Sanctis] 1345, 1814
epituberculous infiltration in, [Mourek] 443
fever in, [Dajceva] 287
food requirement of, [Chou] 442
growth, (temporary drawfs) [Rosenstern] 1036
health record books for school pupils in Saxony, 1864
health test by American Child Health Association to be in South, 932
high mortality among wards of the state, 416
influence of mother's age and repeated pregnancies on development of child, [Relter & Hiefeldt] 733
mental and physical health of school children, [Brown] *1351
motor underdevelopment of intellectually normal children, [Heller] 1036
nutrition and growth in, [Emerson] 355
nutrition of children in orphanages, [Rost & others] 362
physical capacity of, 628—E
physical culture in affections of, [Cadenaule] 587
physical standards for working children, 1529
predisposition of the age in, [Peiper] 147
problem child, [Leahy] 508
protection of young children in Alsace and Lorraine, 1393
relation of health to psychic and physical characters in school children, 1861
request for services for injured child, 426—M
syphilitic, problem of, [Rorke] 878
tuberculous, help for, 642
types seen by pediatricians, [Moro] 883
war and predisposition to disease in school children, [Lewandowski] 1276
weight and size of children of working classes in Vienna, 938
weight and size of school children, comparative statistics of, 1863
weight of, 480—E
welfare in Belgian Congo, 124
welfare, practical instruction in, 1018
welfare, report of public health service, [Ferreira] 514
- CHIN, reconstruction of jaw and, [Eiselsberg & Pichler] 732
- CHINA, community health survey in, 334
consolidation of medical schools in, 936
medical news from, 119, 263, 706

- CHINESE**, metabolism of, [Read & Wang] 1178
students in Japan, 1322
- CHIROPRACTIC** colleges, practically no education qualifications necessary for matriculation in, 715—P
Canadian chiropractic legislation: paradox, 1697—E
chiropractor liable for care, skill and knowledge in diagnosis, 1170—ME
chiropractors and pediculosis, 1524—E
Veterans' Bureau issues announcement on training of chiropractors, 1323, 1702
- CHLORIDS**, action of, on gastric secretion, [Frouin] 660
- CHLORIN**, distribution of, in blood and tissues after injection of sodium chlorid, [Iverson & Hansborg] 664
- CHLOROFORM**, action of ether, chloroform, etc., on respiration, [Schmidt & Harer] 725
- CHOKED DISK** in syphilis, its prognosis, and treatment with arsphenamin, [Baruch] 1656
high grade, in encephalitis, [Spiller] *1843
- CHOLANGITIS**, slow, [Loewenhardt] 1276
- CHOLECYSTECTOMY**: See Gallbladder, Removal
- CHOLECYSTENTEROSTOMY**, plastic, [Tagliavacche] 145
- CHOLECYSTITIS**: See Gallbladder, Inflammation
- CHOLECYSTOGASTROSTOMY** for chronic obstructive jaundice, [Downes] 205—ab, *377
- CHOLELITHIASIS**: See Gallbladder Calculus
- CHOLERA** acidosis, therapy of, [Tsurumi & Toyoda] 207
rapid diagnosis of, [Iacono] 1033
- CHOLESTERIN**, gallbladder absorbs, [Boyd] 877
- CHOLESTERINEMIA**, prognostic value of, in diabetes, [Remond & Rouzaud] 878
- CHOLESTEROL** content of pharyngeal and palatal tonsils, [Maffeo] 1654
crystals in anterior chamber of eye, [Adrogué] 1817
metabolism, [Thannhauser] 1655
new test for, [Read & Meleney] 1880
- CHONDRORHABDOMYOSARCOMA**, transplantable, of rat, [Bullock & Curtis] 875
- CHOREA**, [Nordgren] 592
experimental, and athetosis, [Lafora] 361
gravidarium, [Maclean] 1344
pathologic anatomy of, [Wilson & Winkelman] 874
with particular references to cardiac complications, [Strong] 1029
- CHOROID** cancer, metastatic, [Usher] 877
tubercle of, [Janki] 1279
- CHOROID PLEXUS**, resection of, [Hinrichsmeyer] 1108
- CHROMOCYSTOSCOPY**, [Janke] 1887
- CICATRICES**, neuroma developing in, [Leriche] 1182
cicatricial contractures, [van Neck] 1813
- CINCHONA**, antagonism between epinephrin and alkaloids of, [Clerc & Pezzi] 1180
- CINCHOPHEN**, dosage of, 129
M. C. W., 1775
- CIRRHOSIS** of Liver: See Liver, Cirrhosis
- CITIZENS'** Military Training Camps: See under Military Training Camps
- CLAUDICATION**, intermittent, provocation of angiospasm in, [Thomas] 436
- CLEVELAND** hospital and health survey, 2 years after, 40—E
- CLIMATOLOGY**, course in, 937
- CLINICS**, report of Cornell Pay Clinic, 349—ME
- CLITORIS**, fusiform bacilli and spirochetes about, [Pilot & Kanter] 1412
- CLUB FOOT**: See Talipes
- COCAIN**, abolition of, 1254
cocainism, 864
cocainism in Vienna, 710
coloration of, to prevent error and misuse, 417
photogenic properties of, 640
poisoning, experimental, study of action of calcium in, [Frank & others] *1908
poisoning, treatment of, [Nielsen & Higgins] 1808
substitutes committee, 1629
substitutes for, 1529
- COCHRANE** typhoid epidemic, 1083, 1464
- COCKROACHES**, rôle of, in disease, [Macfie] 509
- COCOA**, arsenic in, 195
- COD LIVER OIL**, action of, on tubercle bacillus, [Campbell & Kieffer] 428
in tuberculosis, 1778—E
- CODEIN**, dosage of, in children, [Salomon] 287
sulphate, prescribing, 945
- COFFEE** (cafeinism), [Guillermi] 1106
- COLDS**, catharsis in treatment of, [Macdonald] *1375
- COLITIS**, anaphylactic, chronic, [Richet & Fossey] 1490
chronic, ulcerative, [Caldwell] 206—ab
dysentery bacilli of Sonne type in, [Patterson & Williams] 358
influenzal, in infants, [Botto] 1419
membranous, [Mimenez Diaz] 1654
ulcerative, surgical treatment of, [Stone] 1484
- COLLOIDAL GOLD TEST**: See under Cerebrospinal Fluid
- COLLOIDAL SILVER** chlorid, value of, as germicide, [Ballenger & Elder] 876
- COLLOIDOCCLASIS** which follows ligation of limb, [Le Calvé] 1737
- COLLOIDS**, experiments on therapeutic correction of swelling of colloids, [Schade & others] 147
instability of colloids in infants' serum as modified by age, [Duzár] 1109
of blood plasma, liability of, [Darányi] 148
of human plasma, influence of light on stability of, [Starlinger] 148
preparation of colloidal gold solution, [Friedländer] 591
properties of certain "colloidal" preparations of metals, [Clark] 961
shock in relation to malaria, [Monteverde] 1033
treatment and active mesenchymatous tissue, [Siegmund] 883
- COLON**, cancer of, [Kuttner] 733
bursting of, following injection of pituitary extract, 1786
cancer of, diagnosis of, [Thaysen] 1496
cancer of, treatment of, [Crile] 357
chronic invagination in adult, [Pinardi] 966
cleavage between omentum and, [Gutiérrez] 215
dilatation (megacolon), [Bensaude & Hillemand] 511, [Rogers] 1177
disease, [van Lier] 811
gangrene of hepatic flexure in amoebic dysentery, [Lenoble & Jegat] 359
surgical injury of arteries of, [Macaggi] 284
- COLOR**, discrimination of colors, [Hess] 440
vision, modern theories of, 1088
- COLORADO** state board January examination, 1718
state board October examination, 871
- COLORIMETER**, new, for bicolorimetric work, [Myers] 429
- COLOSTOMY** with Witzel fistula for ileocecal invagination, [Gottesleben] 1743
- COMMUNICABLE DISEASES**: See Contagious Diseases
- COMPOUND TANSY**, Pennyroyal and Cotton Root Pills, 645—P
- CONCEPTION**, prevention of, [Holmes & others] 573—C
- CONGO**, reorganization of public health service on, 1706
- CONGRESS**, American congress on Internal medicine, 782
at Strasbourg this summer, 1465
child welfare, 268
conference on hygiene, microbiology and pathology, 1019
eighth congress of legal medicine, 1019
foreign, 194, 706, 783, 933
fourth international neurologic congress, 1468
French ophthalmologic, 783
German gynecologic congress, 661
German, on dermatology, 563
German, on internal medicine, 193, 1629
German surgical congress, 662, 1708, 1788
International Congress of Refrigeration, 1704
International health conference, 1157
international, of librarians, 1326
international, on comparative pathology, 638
Italian surgical and Internal medicine congresses, 563
medical, in Venezuela, 1465
of International Surgical Association, 1465
on cancer research, 1393
on hospital administration in Chile, 1390
on "Logopädie," 487
on surgery to meet in London, 192
Orthopedics Congress in Netherlands, 1784
second international medico-military congress, 1529
Shanghai medical, 936
sixth Latin American medical, 193
- CONJUNCTIVA**, dermoid of, [Miller] 509
pemphigus of, [Trumpy] 812
treatment of diseases of, [Peters] 441
- CONJUNCTIVITIS**, anaphylactic, [Lagrange] 1491
habronemic, [Bull] 142
- CONNECTICUT** homeopathic November report, 1264
natureopathic complex in Connecticut, 1855—E
state board July examination, 1264
state board November examination, 1402
state board March examination, 1793
- CONNECTIVE TISSUE**, changes produced by roentgen rays in, [Maximow] 1411
intestinal digestion of, [Buckstein] 207
- CONSTIPATION**: See also Intestine, Stasis
- CONSTIPATION**, [Lanski] 646—C
thyrogenous, [Deusch] 1422
treatment of, [Clarke] 801, [Rosenfeld] 1279
- CONSTITUTION** and conviability, [Bondi] 1818
- CONSTRUCTION** of an extremity, blood crisis after, [Calvé] 435
- CONSUMPTION**: See Tuberculosis, Pulmonary
- CONTAGIOUS DISEASES** and travel, 1312—ab
famine and incidence of, 1457—E
- CONTRACT**, validity of, 652—MI
- CONTRACTURE**, Dupuytren's, heredity in, [Löwy] 1279
cicatricial contractures, [van Neck] 1813
in legs, intraspinal treatment of, [Lippmann] 1741
ischemic, [Schubert] 439
ischemic, responsibility of physician for, [Schubert] 1885
ischemic, of muscles, [Göbell] 1276
muscle sliding operation to relieve flexion-contracture, [Page] 1646
of finger, [Ciaccia] 513
of fingers from inherited syphilis, [Zinny & Vivaldo] 1739
- CONVALESCENCE**, management of, a public health problem, [Bryant] 580
convalescent homes listed, 486
occupational therapy for convalescents, [Brush] 1806
- CONVULSIONS**, experimental, [Pollock] 1878
experimental, produced by shutting off blood supply to brain, [Elsberg & Stookey] 1878
- COPPER** as constituent of woman's and cow's milk: its absorption and excretion by infant, [Hess & Supplee] 1728—ab
- CORN** liquor of Peru, [Cavassa] 1419
- CORNEA**, ulcer of, cured by tonsillectomy, [Williams] *917
- CORPUS CALLOSUM**, control of puncture of, by ventriculography, [Gabriel] 811
puncture of, [Kästner] 662
- CORPUS LUTEUM**, does ovum or corpus luteum control ovarian and uterine cycle, [Schiller] 353
extract in toxic vomiting of early pregnancy, [Taylor & Taylor] 582
lipoids in, [Wiczynski] 735
ruptured, causing hemoperitoneum, [Strauss] *1287
- CORYZA**: See Colds
- COSMETICS** and cancer, 1159
- COSTA RICA**, new public health law in, 1465
- COUÉ**, visit of, 479—E, 500
- COUGH** of rhinopharyngeal origin, [Bloch] 1183
- COXA PLANA**, [Waldenström] 1888
- CRAMER'S** operation for arthrodesis, [Lasker] 1349
- CRANIOTABES**, cervical myotonia with plagiocephaly and, in nurslings, [Varlot] 359
- CRANIUM** defects, treatment of, [Drevermann] 438
fracture of, [Gutiérrez] 145
fracture of, pneumoventriculi cerebri following, [Teachenor] 133—ab
hyperostoses of, overlying endothelloma of meninges, nature of, [Phemister] 1267
osteoma of, [Rand] 1267
syphilitic necrosis of, [di Lorenzo] 1185
- CREATININ**, causes of error in Folin test for, [Pittarelli] 966
use of, as a test of renal function, [Major] *384
- CREMATORIUM**, opening of, in Vienna, 339
- CRESYLECHT VIOLET**, [Dye] 581
- CRETINISM**, value of basal metabolism in diagnosis and treatment of, [Talbot & Moriarty] 1097
- CRICODYNIA**, external: its control through nasal (sphenopalatine or Meckel's) ganglion, [Sluder] *690
- CRIME** and insanity, 50, 1253, 1324
killing child to save suffering, 1266—MI
real question when defense is insanity, 1266—MI
suggestion in, [Belbey] 1492
- CRIMINAL** responsibility, 50, 1253, 1324
- CRIPPLES**, care of, in Prussia, 1089
crippled children of London, 708
- CROSS-EXAMINATION**, "hearsay" in, of experts, 426—MI
- CROUP**, influenzal, in children, [Zschocke & Siegmund] 440
- CULTURE-LAC** omitted from N.N.R., 127—P
- CUSHING**, Harvey, to receive medal, 1158
- CYANIDS**, detoxification of, [Bodansky & Levy] 1410
- CYLINDROMAS**, [Angleslo] 360
- CYST** of external semilunar cartilage of knee, [Phemister] *593
spermatic or seminal cysts, 568
traumatic epithelial, [Blond] 515
- CYSTADENOMA**, multilocular, of retroperitoneal origin, [Edey] 434
- CYSTIN** calculi, multiple, [Tennant] *305
- CYSTINURIA**, [Tennant] *305
- CYSTITIS**: See Bladder Inflammation
- CYSTOCELE**: See Bladder Prolapse
- CYSTOSCOPY**, chromocystoscopy, [Janke] 1887
- CZECHOSLOVAKIA**, public health arrangements in frontier districts of, 938

DAMAGES for conscious pain deadened by opiates, 1722—MI
for death of child falling from bed in hospital after an operation, 796—MI
for mental suffering, 504—MI
insufficient evidence of damages from amputation, 1337—MI

- DARANYI'S REACTION**, colloidal lability of serum proteins in syphilis with regard to, [Kromeke] 1657
- DAVID HARRIS**: monument to a physician, 478—E
- DEAFMUTES**, census of deaf and dumb, 203—ab
- DEAFNESS**, catarrhal, prevention of, [Yearsley] 64
in school children, [Blinnerts] 1037
labyrinth, due to arteriosclerosis, [Escat] 1183
syphilitic central deafness, [Roorda Smit] 812
through mumps, [Kurosu] 1489
treatment by small doses of roentgen rays, [McCoy] 1645, [Jarvis] 1645
- DEATH** penalty, infliction of, by use of lethal gas, 1026—M
certificate, not evidence as to injury causing death, 1952—M
certificate, privileged communication and declaration of death, 1787
rate: See Vital Statistics
- DECEREBRATION**, mammalian, new method for, [Schmidt] 725
- DEFECTIVES**: See Feeble-Minded
- DEFICIENCY DISEASES**, from qualitatively deficient food, prevention and cure of, [Weill & Mouriquand] 283
- DEFORMITY**, congenital asymmetry of pelvis and leg, [Peremans] 1646
deformities of long standing, correction of, [Whitman] *18
- DEHYDRATION** in new-born, [Bakwin] 59
- DELAWARE** state board December examination, 1403
- DELINQUENCY**, juvenile, prevention of, 933
juvenile, reforms in dealing with, 938
- DELIVERY**: See Labor
- DEMENTIA PRAECOX**, catatonic, [Main] 873
conditions of sex organs in, [Mott] 1814
sex studies in male patients, [Gibbs] 580
- DENGUE FEVER**, epidemic in Savannah in 1922, [Myers] 1541—ab
epidemic in Galveston, [Rice] 1409
in Louisiana, [Scott] *387
- DEODORANT** for privy and cesspool, 1400
- DEPERSONALIZATION** following meat poisoning, [Pilcz] 148
- DERMATITIS**, exfoliative, [Wieland] 660
baker's, salt is cause of, [de Jong] 1812
from dyed furs, 1085
geranium, [Anderson] 1485
of pregnancy, autohemotherapy in, [Lévy-Solal] 435
venenata, value of toxin (antigen) of rhus toxicodendron and rhus venenata in treatment and desensitization, [Strickler] *1588
- DERMATOMYCOSES**, [Carrion] 211
in Brazil, [Aroeira Neves] 1739
- DERMATOSES**, nervous, so-called, [Marcus] 147
- DERMOID CYST**, spontaneous separation of, from ovary, [Fioravanti] 285
of conjunctiva, [Miller] 509
of ovary, [Bolt] 1956
- DE SCHWEINITZ**, George E., honored by British ophthalmologists, 1389
- DEWAR**, James, 1159
- DEXTROCARDIA**: See Heart, transposition
- DIABETES INSIPIDUS**, [Lortat-Jacob & Turpin] 511, [Meyer-Bisch] 1742
and pituitary tumor, [Domagk] 1035
membranous bone defects and exophthalmus, [Grosh & Stifel] 655
- DIABETES MELLITUS**, [Hoogslag] 69
acidosis of, and action of levulose, [Deszres & others] 805
acidosis in, lumbar puncture in, [Bordoni Posse] 1107
acidosis of, essential difference between acidosis of fasting and, [Labbé] 1882
action of phlorizin on sugar in blood and urine in, [Rosenberg] 1657
and syphilis, [Pinard] 436, [Labbé] 878, [Smith] 1102, [Meinerl] 1816
antiketogenesis, and problems in, 256—E
cases of, [Moore] 803
cause of, [Winter & Smith] 510
changes in islands of Langerhans in, [Conroy] 1270
cholesterinemia in, prognostic value of, [Remond & Rouzaud] 878
controlling diabetics in outpatient department of Lakeside Hospital, [Christie] 1543
diastase in blood and urine in, [Harrison & Lawrence] 1031
dietetic treatment of, [Desgrez & others] 212, [Peters] 444
diminished glycolysis in blood in, and a tentative theory of disease, [Thalhimer & Perry] *1614
drugs in, [Cambridge & others] 282
edema in, [Falta] 1495
effects of glucose ingestion on respiratory exchange in, [McCann & Hannon] 1269
excretion of organic acids in urine in, [Fitz & others] 1642—ab
gangrene in, treatment of, [Root] 137
high fat diet in, [Leclercq] 139, 1243—E
- DIABETES MELLITUS** in children, [Nohécourt & others] 514, [Paynton] 961
in children, treatment of, [Johannsen] 592
in infant aged 5 months, [Ashby] 586
influence of pancreas extracts on depancreatized animal, [Murlin & others] 139
insulin in, 36—E, [Wallis] 64, 118, 129, [MacLeod] 278, [Banting & others] 510, [Krogh] 592, 861, [Blum] 963, [Special article] *1238, [Bliss] 1270, [Grevstuck] 1280, 1466, [Joslin] *1581, [Strouse & Schultz] *1592, [Major] *1597, 1617, 1618—E, 1626, [Cowie & Parsons] 1641—ab, [Campbell & Fletcher] 1641—ab, [Wiider & Kitchen] 1642—ab, [Joslin] 1726—ab, [Woodyatt] 1726—ab, [McPhedran & Banting] 1726—ab, [Eadie & MacLeod] 1729, [Murlin & others] 1729, [Williams] 1799—ab, [Allen] 1801—ab, [Geyelin] 1801—ab, [Foster] 1801—ab, [Fraser] 1808, [Telfer] 1810, [Kallaway & Hughes] 1810, [Forrest & others] 1811, [McCormick & others] 1811, [Special article] *1847, [Olmsted & Kalin] *1903
insulin in, fund for insulin treatment, 1859
insulin in, [Offenbacher & Eliassow] 147
ketogenic-antiketogenic balance in diabetes and therapeutic use of glycerol, [McCann & Hannon] 1642—ab
levulose and diabetic metabolism, [Joslin & Root] 1727—ab
levulose in, [Labbé] 434
lipemia in, [Allen] 279, [Wishart] 279, 697—E
lipemia of, and ingested fat, [March & Walker] 655
physical measurements of diabetics, [Root & Miles] 278
psychologic tests for, [Miles & Root] 207, 556—E
refraction changes in, [Elschnig] 968
relation between fatty acid glucose ration and excretion of acetone bodies in diabetes, [Mason & others] 1642—ab
relation of gallbladder disease to, [Eustis] 957
renal, [Johnsson] 70
research in, 264
so-called renal diabetes and glycosuria of pregnancy, [Motzfeldt] 149
sugar in blood and tissues in, [Barat & Hetenyi] 1655
treatment of, [von Noorden] 661, 969, [Heyton] 1810
yeast extract in, [Winter & Smith] 1810
- DIAGNOSIS**, diagnostic biopsy, [Mazza & Balado] 590
by smelling, [Niedermeyer] 1884
improved technic for localization of tenderness, [Del Valle] 215
may be established by acts and conduct, 1096—M
nerve blocking in differential diagnosis, [Läwen] 1743
of disease of organs from their ferments in blood serum, [Rona & others] 217
- DIAPER** eruption of Jacquet, [Crawford] 280
- DIAPHRAGM**, blocking phrenic nerve in injury of, [Báron] 1743
eventration of: See under Hernia
importance of phrenic shoulder pain in disease involving diaphragm, [Orr] *1434
paresis of, and typhoid spleen, [de Lavergne] 964
pulsatory motions of, [Hitzenberger] 1495
- DIARRHEA** and disturbances of digestive functions, [Silverman] 1487
caused by spirocheta eurygyrata, [Hogue] 355
intestinal flora in, [Hines] 1647
mortality from, great reduction in, 415
paralysis of intestines with, [Szenes] 1548
- DIATHERMY**, endo-urethral and endovaginal, [Roucaurol] 588
in affections of gallbladder, [Rouzaud & Aimard] 1184
in tumors of lower urinary tract, [Corbus] 1486
in lupus, [Milner] 281
in treatment of sterility, [Castaño & Gómez] 1817
mechanism of, [Cirera Salse] 286
roentgen-ray epithelioma cured by, [Bordier] 142, 283, 588
- DIAZO REACTION** and leukocyte figure, [Svartz] 150
- DIET**: See also Food; Nutrition and under names of diseases
- DIET**, and development of dental caries, [Bliss] 356
deficiencies and immunity, 848—E
effect of restricted diet on sexual life of rat, [Slonaker & Card] 1409
- DIGESTION**, roentgen study of, in snakes, [Rodolph] 966
treatment of functional disorders of, [Blackburn] 1104
- DIGESTIVE TRACT**: See Gastro-Intestinal Tract
- DIGITALIS**, a rapidly eliminated digitalis body, 1072—E
dosage (size of drops), [Lattin] 1537—C
potency of common preparations, [Strong & Wilmaers] *1308
Tincture No. 111 Digitalis-P. D. & Co., 1003
toxemia, clinical study of, [Brooks & Donaldson] 1955—ab
- DIGITAN**, 106
- DIPHTHERIA**, anaphylactic shock after second immunizing dose of antitoxin, avoidance, 1092
anaphylaxis and heart failure in, [Scholz] 663
and typhoid, [Urioste] 361
antitoxin, action of, on new-born, [Gröer & Progulski] 442
antitoxin and animal experimentation, [Place] 505
antitoxin, efficacy of monovalent diphtheria antitoxin, [Hartley] 586
antitoxin, sudden death from anaphylactic shock following, [Summer] 1272
bacilli, agglutination test for presence of, in field (mixed) cultures, [Fitzgerald & Doyle] *1675
bacilli, biologic study of, [Powell] 1483
bacilli, changes in bacilli in gases, [Lorentz] 1277
bacilli, medium for isolation of, [Douglas] 357
bacilli, testing virulence of, [Buli & McKee] 1483
campaign against, 1020
carriers, milkman carrier, 1779—E
carriers, epidemiologic survey in citizens' military training camp, diphtheria carriers and susceptibility; carriers of intestinal diseases, [McGuire & Illichens] *665
heart disturbances in, rôle of nervous system in, [Blacher] 1742
Immunity Test (Schick Test), 475
immunization against, [Zingher] 508, [de Lange & Schippers] 812, [Kramer] 1744
in newly born and other infants, [Chevalley] 1183
intracutaneous guinea-pig test (Kellogg) for human susceptibility and immunity to, [Kellogg] *748, [Zingher] 1023—C, 1867—C, [Kellogg] 1399—C
laryngeal, suction in, [Litchfield & Hardman] *524
menace of diagnostic throat culture in, [Bulowa & others] *240
myocarditis in, [Warthin] 1723—ab
nasal, [lams] 1730
paralysis, Doll's eye sign in, [Cantelli] 1816
paralytic ileus after, [de Rudder] 809
pharyngeal, probably due to autoinfection from a diphtheric lesion of thumb, [Baldwin & others] *1375, [Weaver] 1537—C
prevention of, [Whitsitt] 509, [Schick] 1029
prevention among children of preschool age, [Zingher] *456
protective action of normal serum against, [Mackie] 875
Schick test and toxin-antitoxin injections in prevention of, [Park] 507
Schick test in diphtheria, 124, 553, [Geissmar] 1655
Toxin-Antitoxin Mixture—Lilly, 553
toxin-antitoxin mixtures, antigenic value of, [Glenny & others] 1030
toxin-antitoxin, results of active immunization with, [Zingher] 508
toxin, mechanism of formation of diphtheria toxin, [Dernby] 1744
urea in blood in, and its changes in specific treatment, [Glesinger-Reischer & Glesinger] 1819
vaccination, [Rohmer] 1181
wound, [Uhlhorn] 1421
wounds, intravenous injection of diphtheria antitoxin in, [Iversen] 1489
- DIPHTHEROIDS**, new poison producing diphtheroids, [Parker] 278
- DIPLOPIA**, muscle indicator for plotting out field of diplopia and visualizing position of muscle involved with face turning and head tilting, [Miller] *1453
- DISABILITY**, permanent loss of member and total disability, 58—M
- DISASTERS**, geographic distribution of world disasters, 1787
- DISEASES**, congenital, general causes of, and constitutional abnormalities, [Greil] 146
contracted in employment not an injury, 427—M
human, animal and vegetable pathology in relation to, 324—E
national system of registration of, 566
seasonal variability of, 476—E
- DISH TOWEL** as source of infection with tubercle bacillus, [Floyd & Skorsky] 1877
- DISHES**, disinfection of, in public establishments, 48
- DISTEMPER**, investigation of, 566
- DISTRICT OF COLUMBIA** October examination, 647

- DIURESIS**, intensity of metabolism and, [Vollmer] 1034
physicochemical studies of calcium chlorid diuresis, [Atchley & others] 1643—ab
unilateral, [Fullerton] 583
- DIVERTICULUM**, Meckel's: See under Intestine
- DIVORCE** and marriage, new Danish law on, 335
- DIZZINESS**, induced motor action, [Gertz] 149
nervous, diagnosis and treatment of, [Kollarits] 1547
- DOCIMASIA**, pulmonary, [Fernández Dávila] 1034
- DOLD REACTION** and Sachs-Georgi reaction in internal medicine, [Hollander] 1656
comparison of Dold and Meinicke reaction with Wassermann reaction, [Fortig] 1636
- DOLL'S EYE** sign in diphtheric paralysis, [Cantelli] 1816
- DRAINAGE** of abdominal abscesses, prevention of peritoneal contamination in, [Eastman] *833
paralum paper for drains, [Madlener] 1111
tube, physician held liable for leaving drainage tube in wound, 951—M1
tubes, erosion of blood vessels by, [Schönbauer & Gold] 1420
- DRILL**, nasal, for removal of septal spur, [Young] *1216
- DROPS**, size of drops, [Lattin] 1537—C, [Aitkens] 1713—C
- DROPSY** and eclampsia, [Zondek] 1422
of epidemic type, [Megaw & Banerji] 1179
puncture of skin in, [Carr] 64
- DRUG**: See also Narcotics; and under names of individual drugs
- DRUG** addiction, inside story of dope, [Dutton] 1475—C
addicts, hemoclastic crisis in, [Sollier & Morat] 880
addicts, treatment of, with alcohol, 870
and animal experimentation, [Loevenhart] *151
coloration of cocaine and other toxic alkaloids to prevent error and misuse, 417
dangerous drugs act, 335, 566, 1085
dangerous drugs, regulations in Victoria, 489
drugs required by Merchant Shipping acts, 335
exanthems, 185—E
fight, Canada asks United States to help in, 637
foreign, importation of, into Roumania regulated, 638
habit-forming, control of, 1019
narcotic drug problem, 1095
narcotic control in state of Washington, 1335—ME
new center for testing of, 939
perilous administration of, [Mendel] 287
- DRUG**, physician not liable for death of child from eating tablets left for adult, 503—M1
- DUCTLESS GLANDS**: See Secretions, Internal
- DUHAMEL**, Georges, a French surgeon turns litterateur, 1006—E
- DUODENAL TUBE** and tip, new, [Norman] *400
employment of two duodenal tubes in gastroenterology, [Heller] *31
knotting of, in situ, [Billings] *1774
new tip for gastroduodenal tubes, [Hollander] *1217
research on use of, [Weilbauer] 733
with stopper, [Baer] 1651
- DUODENUM**, abnormalities of, [Anderson] 877
chronic arterioenteric obstruction, [Tlekham] 1174
diverticulum, [Penhallow] *1372
influence of duodenal contents on gastric secretion, [Kanders & Porges] 69
lower, chronic stenosis of, [Widerøe] 220
motility, radiographic observations following direct injection of barium into human duodenum, [Wheelon] *615
movable, primary, [Miyake] 363
perforation of, tardy, after contusion, [Furtwaengler] 439
ptosis, tender points with, [Ramond & Parturier] 1883
roentgen rays in duodenal diagnosis, [Sanpe] 809
secretion, psychic influence on, [Langheinrich] 148
sounding of, 218
surgery of duodenal membranes, [Cromarty] 208
toxic nephritis in pyloric and duodenal obstruction: renal insufficiency complicating gastric tetany, [Rowntree & Brown] 1728—ab
- Ulcer**: See also Stomach ulcer
ulcer, chronic, pathogenesis of, [Rohde] 363
ulcer in relation to inflammation and icterus, [Zoepffel] 1279
ulcer, partial obstruction at duodeno-jejunal junction as cause of, [Sloan] *977
ulcer, pathology, prophylaxis and treatment, [Hurst] 433
ulcer, resection of, [Tagliavacche] 215
ulcer, roentgen-ray diagnosis of, [Haudek] 735
ulcer, treatment of, [Moynihan] 1415
- DURA**, treatment of defects of, [Drevermann] 438
- DURANTE**, honor for Rome surgeon, 1859
- DWARFS**, "temporary dwarfs," [Rosenstern] 1036
- DYES**, acridine, chemotherapy of, in experimental tuberculosis, [Smith] 637
bacteriostatic action of dyes on streptococcus viridans, [Norton & Davis] 1413
excretion of, through pancreas, [Glichiro] 1275
excretion of, through stomach, [Finkelstein] 1275
method for preparing blue celluloid injection material, [Marshall] *181
- DYING DECLARATION** in prosecution for attempting to cause miscarriage, 1171—M1
- DYSENTERY**, Amebic: See also Amebiasis
amebic, [Hansen] 286
amebic, effect of stasis on experimental development of, [Sellards & Leiva] 958
amebic, emetin treatment of, [Holten] 1549
amebic, gangrene of hepatic flexure in, [Lenoble & Jegat] 359
amebic: its prevalence, diagnosis and treatment, 650
amebic, treatment of, [Sellards & Leiva] 958
bacillary, report of case with study of intestinal bacteriophage, [Cutter] *1674
bacillary, at Rio, [Gomes de Faria & Genesio Pacheco] 1816
bacillary, serum therapy of, [Flexner] 1953—ab
baeilli, agglutination of, in children, [Widowitz] 1886
baeilli, nonacid dysentery bacillus, [Tanaka] 1881
baeilli of Sonne type in colitis, [Patterson & Williams] 358
embadomonas intestinalis in, [Faust] 1880
flagellate, [Whittingham] 1958
treatment with sodium sulphate, [Hausmann] 1495
- DYSMENORRHEA**, functional treatment of, [Ludwig] 729
treatment of, [Gänssbauer] 442, [Ludwig] 729
- DYSPEPSIA**, investigations of, [Ryle] 510
of infants, [Bloch] 592, [Adam] 1493
psychogenous, [Boas] 67
- DYSYPNEA** and pneumothorax, 568
pathogenesis and treatment of cardiac asthma, [Peller] 1820
- DYSTHYMIC** children, [De Sanctis] 1345, 1814
- DYSTOCIA**, functional, in normal pelves, [Harrar] 1542
repeated, from fetal anomaly, [McDonald] 800
- DYSTROPHY**, chemistry of brain in, [Ederer] 1110
dystrophic syndrome, [Papastratigakis] 283
general, and scurvy, [Rosenbund] 1036
muscular, [Funsten] 1645
of fibro-elastic tissue, [Maceria] 881
progressive muscular changes in heart muscle in, [Globus] 580

DEATHS

- A**
- Aarons, Sol Jervois, 1530
Abbott, Scott Harrison, 495
Abrahams, Isaac, 1164
Abrams, Daniel Orville, 867
Acuff, Harley Leland, 1534
Adams, Douglas P., 866
Addy, Frank Kurtz, 1090
Adler, William, 866
Albert, John V., 420
Alexander, David C., 1015
Alford, William D., 1635
Algorta, David Enrique, 940
Allen, Charles Austin, 1258
Allen, Levi D., 714
Allen, Samuel Lanham, 1472
Allen, Samuel William, 714
Allen, Thomas Grant, 1471
Alt, K., 268
Amos, Omar E., 342
Amsel, Joseph, 1258
Ancker, Arthur B., 1710
Andrade, Nuno de, 335
Annale, Edwin Guilford, 269
Applebee, James, 270
Arcularius, Philip Edward, 52
Armes, J. Ambrose, 788
Arnd, K., 1084
Arnold, W. E., 941
Arnold, William W., 1164
Arrington, Burrell Lue, 1164
Arrowood, Silas W., 1635
Arthur, Asa Adgate, 420
Arthur, Daniel Hutson, 51
Asbury, Francis Emory, 1397
Atchley, William Pinkney, 419
Attmore, George S., 1950
Atwood, George Manley, 126
Aus, Joseph Leonard Norman, 1397
Axtell, Eugene E., 1090
Ayers, James Nelson, 571
Ayling, Charles H., 1790
- B**
- Babington, John, 342
Bachmann, Carl Frederick, 644
Bagshaw, Jabez John, 1790
Balardi, D., 783
Bailey, Harry Van, 1164
Bailey, Mandren M., 1258
Bailey, William M., 1330
Bailiff, Henry Carroll, 1865
Bair, Edward, 941
Baker, Willis Mather, 1472
Balcar, Joseph Oliver, 644
Baldwin, Arthur Hanford, 866
Baldwin, Lemuel Grant, 199
Baldwin, William Prendergast, 1865
Balfour, Isaac, 119
Baillanthyne, J. W., 639
Banerjee, Amarendra N., 1530
Banning, Edmund P., 1710
Bardet, G., 710
Barger, William Thomas, 1790
Barker, Harry Asahel, 200
Barker, James Franklin, 1472
Barnes, Ethan A., 941
Barnes, Henry E. W., 1951
Barnett, Clifford Nathan Thomas, 1258
Barrett, Robert Cofer, 52
Barringer, John Edwin, 270
Barritt, Wesley, 783
Barstow, J. Whitney, 52
Bartilson, Benjamin Matthias, 419
Bartlett, Edward Pinchon, 1471
Barton, Louis E., 1021
Bass, John Silas, 941
Bassett, George Chandler, 269
Batte, William Howell, 200
Battle, Henry E., 941
Baudet, 46
Baughman, John Nathan, 1330
Baum, Orion, 342
Beach, Timothy D., 269
Bean, Charles Pierce, 419
Beard, Frank Major, 126
Beattie, Andrew B., 1021
Beatty, William Earl, 1865
Becker, Frederick, 1165
Bellstein, Frederick W., 269
Belanger, Joseph A., 419
Belknap, Jules G., 867
Bell, Howard, 787
Bennett, Richard Franklin, 940
Berryhill, A. D., 941
Best, George Bethune, 571
Bickel, H., 860
Biddle, Cornelius, 564
Bider, M., 1466
Biles, John A., 342
Billingsley, Wiley Hugh, 1950
Bing, A., 46
Bippus, Christopher C., 269
Birch, Sylvanus Jutkins, 1330
Bivins, Franklin Pierce, 1472
Black, James Robert, 1258
Blair, Alonzo O., 1022
Blair, E. James, 420
Blair, William H., 420
Blake, Charles Wesley, 1472
Blake, Clarence Resegule, 941
Blanc, Joseph Ellwood, 419
Bliss, George Danforth, 1951
Bloch, Iwan, 51
Bloss, Frederick Selden, 1790
Blouin, Joseph Benjamin, 1635
Blount, Rufus F., 52
Blunt, William Suvard, 1790
Boas, Edmund A., 270
Bodenbender, Nelson W., 1790
Bogan, William L., 1535
Bohannon, Richard Lee, 941
Bonome, A., 263
Bostater, Andrew Jackson, 1634
Bostock, F. H., 1164
Boswell, Andrew Jackson, 1397
Boudousquie, Gabriel C., 867
Bovet, Victor, 488
Bower, Albert S., 1268
Bowles, Richard Curd, 1950
Bowser, Matthias Stevens, 200
Bowyer, H. L., 941
Boyes, Ernest B., 270
Brackett, Wallace M., 419
Bradbrook, James Alvin, 1950
Bradley, Harry Edward, 1330
Bradley, Peter C., 342
Bradshaw, Henry G., 1535
Brady, Elizabeth Neil, 1535
Brandt, L., 1530
Braquehay, J., 335
Breeden, Henry T., 1535
Breglia, John Eugene, 1021
Brick, Joseph Coles, 570
Bridges, Ashbel A., 940
Briggs, Mary Lavinia, 866
Brightwell, Charles P., 495
Brodbeck, Walter T., 1597
Broers, C. W., 46
Brooke, Sarah, 342
Broonan, Daniel Seward, 1950
Brown, Ban S., 419
Brown, Benjamin Green, 941
Brown, Collin B., 200
Brown, Harry Hilton, 866
Brown, John A., 1022
Brown, John Andrew, 270
Brown, Rolph, 1021
Brown, Samuel A., 1951
Broyles, Thomas T., 419
Bruce, Thomas Edward, 1634
Bruce, William Wallace, 1865
Brückner, E. L., 1323
Brumback, Newton N., 1164
Brummett, Randolph Breese, 1534
Bruner, Emory W., 788
Bryan, Frederick, 119
Bryan, Tony L., 867
Buchan, David Monroe, 1397
Bucke, Robert W., 420
Buckman, Phoebe N., 941
Bulmer, G., 1084
Bulmer, George W., 941
Burch, William Thompson, 1397
Burdick, Jesse Raymond, 52
Burge, William P., 714
Burke, Robert Orrin, 571
Burnham, Elias La Fontaine, 1022
Burtless, William Earley, 1021
Burton, Stephen Casper, 1865
Burt, Albert Sanders, 941
Buschmann, Henry, 1472
Bush, Pine Elijah, 1535
Bush, Robert P., 269
Buskirk, Noah P., 571
Butte, Harley Jones, 342
Butts, Hubert Perry, 1258
Byers, R. S., 1635
- C**
- Cairnes, George Henry, 1790
Caldicott, George Francis, 714
Caldwell, Frank, 867
Caldwell, John Williamson, 341
Calkins, Marshall, 51
Calleja, Carlos, 1158
Callen, Thomas Leo, 714

Campbell, Albert A., 52
Campbell, Alexander N., 1951
Campbell, Donald, 494
Campbell, Frank, 1022
Campbell, Samuel A., 866
Campbell, William Richard, 1090
Canfield, Charles A., 1472
Canfield, Enos, 787
Canizares, Edward, 1790
Carpenter, Helen B., 269
Carreras Delgado, Geronimo, 419
Carroll, Eugene S., 1397
Carruccio, A., 413
Carter, John Saunders, 269
Cartmell, Robert Henry, 1164
Cartwright, Robert N., 714
Caruthers, Samuel S., 1164
Caselano, P., 46
Case, Calvin Suverill, 1258
Case, Levi Welts, 940
Casey, Levi B., 1021
Casey, William M., 867
Caspari, William, Jr., 865
Cassady, John Bradner, 341
Cassel, Elizabeth H., 420
Cassel, Rufus Joshua, 570
Cavanagh, Peter, 867
Cavazzani, E., 413
Cavender, Andrew J., 269
Chadwick, Harvey Jenner, 342
Chaffee, David J., 419
Chambliss, Charles Mallory, 1164
Chambrelet, Jules, 194, 197
Chandler, G. C., 494
Chase, Ransom J., 713
Chatin, Alfred, 1158
Cheatham, Archibald, 51
Chevrette, Wilfrid Henry, 644
Chiles, John Storer, 1635
Chinn, David Joseph, 1090
Chipman, Edwin Clifford, 940
Chirivino, V., 639
Chism, John Newton, 270
Chittick, Charles, 1258
Christopher, Absalom Jerome, 940
Clark, Horace, 1865
Clark, James L., 1790
Clark, James Lamb, 788
Clark, Lyman A., 714
Clark, William Viney, 52
Clarke, George Russell, 1710
Clarke, Margaret Elizabeth, 269
Clerke, Harvey Shaw, 1022
Clippinger, Henry Gilbert, 1330
Cobb, Butler W., 200
Coblentz, Horace Benjamin, 420
Coburn, Irving Smith, 495
Coelho, Eric, 263
Coldwell, Thomas P., 866
Cole, James Fey, 1472
Cole, Theodore, 495
Coleman, William Henry, 1709
Collard, Felix R., 52
Collins, James Sylvester, 1634
Combs, Robert Lee, 1634
Conant, Thomas, 1163
Conaway, Charles Busby, 52
Condict, Arthur Windes, 788
Connell, Charles Walter, 714
Connell, Michael Edward, 269
Conner, Philip A., 571
Conover, John Hamilton Potter, 940
Conrad, James M., 1090
Conrad, Strickey Alvin, 1330
Converse, Albert L., 52
Cook, Charles P., 269
Cook, William Harris, 1709
Cooke, Sidney P., 1021
Cookingham, Dorwin A., 1397
Coons, Alva B., 126
Cooper, Aaron W., 269
Cooper, Charles McHenry, 200
Cooper, Prince, 342
Cope, Charles S., 1635
Coreoran, Katherine W., 270
Corman, John Wesley, 714
Cornellus, La Willa Mott, 1790
Cornwell, Francis Othyle, 866
Costello, John Henry, Jr., 1790
Couch, George Davis, 1950
Couch, John R., 941
Cowan, D. W., 52
Cowles, Edgar Clarence, 269
Cowles, Horace Hill, 1472
Cowley, Oscar George, 494
Cox, H. M., 940
Cox, J. J., 783
Cox, Shirley E., 1163
Cox, Stephen W., 52
Coy, Louis Milton, 1471
Craig, Thornton, 126
Craig, William M., 419
Craighill, Edward Addison, 199
Crane, Harold Hayes, 1865
Crater, Ellis Wolcott, 867
Crean, Thomas J., 1391
Crocker, William D., 788
Crockett, George Langtry, 1635
Crofford, James Wesley, 1865
Crooks, James, 342
Cross, Edwin H., 1951
Crow, William H., 571
Crowell, Godfrey M., 420
Crump, Edward S., 571
Cuthbertson, Walter Leon, 571
Cullings, Mary Helen, 126

Culverson, Frank P., 1172
Cunkle, Israel W., 1635
Cunningham, Albert Stevens, 1865
Cunningham, Leota S., 644
Cuthbertson, William, 1865
Cutter, Harriet Phebe, 1534
Czarra, Conrad Howard, 1865

D

Dake, Walter Marshall, 52
Dalton, Norman, 1015
Daly, Joseph Daniel, 788
Dampier, Charles Edward, 788
Dangel, Mary Agnes, 788
Daniels, Asa Wilder, 787
Dansereau, Charles, 1865
Darby, John Isaac, 941
Darrach, James, 342
Daum, Eugene Francis, 713
Davenport, Isaac B., 194
Davies, David L., 413
Davis, Isaac L., 495
Davis, Miles Lewis, 940
Davis, Nelson Clifton, 941
Davis, Robert A., 866
Deal, Edwin Elvin, 494
Dean, John M., 270
Deane, Andrew, 335
Deas, Andrew Jackson, 269
Death, Hugh J., 270
Dedet, L., 263
de Diego, Isidro Giol, 639
Deeley, Stanton Emmett, 1258
DeGroff, Ephraim, 866
DeLap, Robert H., 269
del Valle, Giol, 1158
Demund, Cornelius Abram, 714
De Puy, Richard Gay, 571
Derfler, Morris Edwin, 269
D'Errieo, Gennaro, 488
Desroches, Israel J., 644
De Stefano, Joseph, 1710
Devillers, Paul, 1084
Devoll, Sarah W., 270
Dewar, James, 1159
D'Herlinville, Balard, 194
Diaz y Perez, Eduardo, 1865
Dibert, Calvin Charles, 1164
Dick, William Laurens, 1950
Dickinson, James John, 713
Diehl, Howard Luther, 571
Diers, Harry Edward, 867
Dillon, Albert C., 1951
Dingman, Wilson Charles, 788
Diniz, Goncalves, 1530
Dinsmore, William Madison, 1472
Disbrow, William Stephen, 125
Dizon y Natividad, Antonio, 1158
Doar, Stephen D., 866
Dodson, R. B., 1710
Dolan, Thomas Edward, 1534
Domenech y Lorda, G., 263
Dornblüth, O., 413
Dorri's, Joseph L., 1258
Dottin, Martin Luther, 867
Dougherty, John T., 941
Douglas, Gustave Henry, 1790
Douglas, James, 1330
Douthett, David K., 126
Downtown, L. C., 571
Drake, Thomas Anderson, 1634
Drayton, Henry Shipman, 1164
Drew, Columbus, 52
Drobinski, Frank Ignatius, 571
Dubois, Edouard Julien, 341
Dudley, Frederick A., 494
Duffy, Edward Francis, 1330
Dumoulin, 1704
Dumur, A., 860
Duncan, William E., 420
Duncan, William Thomas, 342
Dunlavy, James, 1022
Dunlavy, John C., 126
Dunn, Benton Brengleman, 52
Dunnell, Henry Newcomb, 1535
DuPrec, Daniel Hughes, 713
Du Rant, Joseph B., 52
Durr, Joseph E., 1397
Dutton, Julia Maltby, 200
Dwelle, Elmer Hinman, 867

E

Eagle, Daniel Eugene, 419
Early, L. W., 714
Eastman, Arthur M., 714
Eastman, Oscar Frederick, 200
Eberhardt, Luther Pope, 1163
Eccles, H. N., 1158
Eddy, A. A., 1710
Edes, Robert Thaxter, 418
Edgar, Thomas Oscar, 865
Edmister, Frederick, 1634
Edson, David Orr, 866
Edwards, Edward, 420
Egan, John Joseph, 270
Egbert, Joseph C., 420
Eichelberger, Agnes, 866
Elder, Frank H., 1535
Eldred, Charles C., 571
Eldridge, Henry E., 1790
Elliott, Washington Franklin, 342
Ellis, Leroy A., 52
Embree, Melville Hamilton, 1472
Embry, Barnett Linton, 1172
Emerson, Herbert Clark, 269

Emerson, Justin Edwards, 1258
Emig, Charles H., 269
Emmons, W. H., 714
Emons, Howard Charles, 1397
Endleott, George W., 1790
Enloe, James Henry, 1951
Epting, Rufus Berley, 867
Erich, Louise, 1022
Erving, William Gage, 1790
Erwin, Charles L., 200
Eskeu, Dewitt F., 1022
Estabrook, Curtis Rudolph, 200
Evans, George Clinton, 571
Everett, James Lassiter, 1090
Everett, Willard Shepard, 494

F

Fackler, George A., 1090
Falcon, William Franklin, 787
Faller, George Washington, 713
Fariss, Samuel W., 1022
Farnsworth, David W., 52
Farrell, John Seth, 200
Farris, Harry Roswell, 1163
Fasold, Alice Margaret, 1790
Fassitt, Theodore, 1021
Fein, J., 1704
Fenollosa, Sydney Kinsman, 125
Ferguson, M. Hubbard, 1635
Fernando y Arriola, Antonio, 1164
Ferrán Funallada, Alfredo, 706
Ferrante, Aquiles, 1391
Fessenden, Edmund S., 270
Fessenden, George Russell, 1090
Few, Benjamin F., 419
Fiealbi, E., 335
Finch, George Hardy, 200
Finny, John M., 194
Fisher, Charles Victor, 494
Fisher, Oliver H., 714
Fisher, Reuben C., 571
Fitzbutler, Sarah Helen, 420
Fleming, Harry Gilbert, 1258
Fleming, Thomas Milton, 1258
Flood, Henry H., 341
Fogg, Irving Sylvester, 419
Fonger, James H., 788
Fontana, E. A., 46
Ford, Alexander Blake, 1258
Ford, George Washington, 1163
Forest, J. H., 495
Forner, J. Grinda, 335
Forrest, Robert Wilson, 1258
Fortier, George Snow, 644
Fowler, T. W., 488
Fox, Luke, 867
Fox, Philip Angus, 420
Francq-Celso, 706
Frankhauser, Fremont W., 1865
Franks, Otho Pierce, 270
Franzoni, Charles William, 713
Freehet, Eugene Alphonse, 1865
Frederick, Charles Henry, 419
Freeman, Charles Manning, 941
Freeman, Joseph, 866
Freire, Oscar, 639
Frenzel, Otto, 342
Fretz, Milton Bliem, 200
Fuentes, Julián, 860
Fuller, George Thomas, Jr., 1472
Funkhouser, Robert M., 1021
Furth, J., 1704

G

Gabert, Hugo A., 342
Gable, Isaac C., 1330
Gage, Shirley Calhoun, 125
Gallaspy, Jesse Beale, 52
Galli, Pablo, 46
Galvin, William John, 1164
Gambini, 1326
García, Felix, 119
Gardner, James Anderson, 1090
Gardner, Joseph N., 941
Garey, Henry, 126
Garinger, George F., 52
Garner, Howard L., 788
Gates, Versile Mornington, 269
Gault, John Adam, 1710
Gayde, Earle Appleton, 1471
Geissinger, Henry Wilson, 867
George, William T., 1258
Gerard, Royal Hart, 1634
Gerster, Arpad Geyza, 940
Gibbs, Isalah B., 1090
Giffin, Luman Moody, 494
Gilbert, Jesse Robert, 941
Gillis, Frank P., 1021
Gilmore, John E., 867
Ginther, David, 941
Glpsou, Thomas J., 941
Girvin, Mercer R., 1472
Githens, William H. H., 1163
Glittens, Oscar FitzMerton, 1090
Givens, Lamme Steele, 1634
Glebow, Nota A., 941
Glenn, William Walter, 1634
Godinho, V., 263
González Castro, José, 1084
González Hidalgo, Joaquín, 860
Goodale, George Lincoln, 1330
Goodspeed, Isaac Roscoe, 125

Goodyear, Robert Beardsley, 713
Gould, Cassius W., 644
Grady, John William, 1865
Graham, George Alexander, 714
Graham, George W., 1635
Graham, Samuel Albert, 940
Graham, William Ezra, 269
Granbery, Roy, 788
Grant, Marlette, 941
Gray, Emmett E., 52
Gray, Frank P., 342
Grayhill, Jacob D., 495
Green, Joshua Royston, 866
Green, Robert Warren Colquite, 1710
Greenfield, Robert Newton, 1022
Greenwood, William T., 1258
Greeon, William R., 1164
Gregory, Thirza La Vence, 788
Grier, Edgar B., 1163
Griest, Theodore Carroll, 644
Grimmet, Matthew Hill, 52
Griswold, Homer E., 51
Grover, John Butler, 941
Gruenewald, Julius, 200
Grumbine, Ezra, 714
Guillot, Eliseo Font Y., 1471
Gullick, Leroy, 714
Gunsaulius, Pyrl, 200
Gwaltney, Boulanger, 1472
Gwaltney, Sylvester, 342

H

Hadley, James William, 1865
Hague, Albert Smilie, 941
Hahn, E., 1323
Haile, Homer Brown, 200
Haines, Walter Stanley, 341
Hall, Charles Everett, 52
Hall, Herbert James, 731
Hall, Phillip Louis, 866
Hall, Thomas Hartley, 714
Hall, W. E., 866
Halliday, Francis A., 1950
Hallock, Luther Reeve, 1022
Halter, Michael Valentine, 1163
Hammer, Thomas B., 269
Hammond, Samuel, 119
Hancock, Charles J. S., 1704
Hand, David B., 1090
Haney, James Parton, 865
Hannafor, Eli Snow, 1710
Hanrahan, Daniel Aloysius, 866
Hanson, William Green, 200
Hardaway, William Augustus, 570
Hardesty, Joseph Robert Lee, 571
Harding, Benjamin F., 1090
Hardman, J., 263
Harley, Elmer, 404
Harrell, James C., 866
Harris, Alexander Everett, 940
Harris, Alfred E., 706
Harris, Burton Seymour, 865
Harris, David Wesley, 866
Harris, Isaac Arthur, 570
Harris, Larkin L., 1090
Harrison, Life, 1472
Hart, Charles Nelson, 1790
Hartigan, Timothy, 1397
Hartmann, H., 488
Harvey, Frederick D. Grant, 1865
Harwell, John R., 571
Harwood, George, 1090
Haslam, George James, 1472
Hauser, W., 413
Hausser, Gustav, 1472
Hawkins, William Henry, 1397
Hay, Eugene Stanley, 1022
Haycraft, J. B., 413, 488
Hayden, Delmer Neil, 269
Hayes, Edwin H., 495
Hayes, George C., 200
Hayes, H. W. McCaully, 1253
Haynes, A. Fletcher, 1790
Haynes, Charles Frederick, 1472
Haynes, Willard A., 200
Hays, William Campbell, 1021
Hazelton, William F., 420
Hazelwood, Arthur, 1710
Heazlit, Ledra, 1790
Heider, Maurice Isaac, 867
Heizer, William J., 270
Heller, Samuel Hess, 418
Helmick, George W., 714
Hemingway, George Isaac, 126
Henry, Nelson Herrick, 865
Henry, Samuel M., 342
Herbert, Eugene Myron, 866
Herman, John D., 1022
Heron, William Holland, 1634
Herr, Ambrose J., 1951
Herrick, William Post, 940
Herring, Needham Bryan, 1951
Hess, Calvin F., 495
Hess, Frank W., 270
Higgins, Thomas, 639
Hill, James W., 418
Hill, L. Theophilus, 200
Hill, Richard J., 570
Hill, Walter de La Montanye, 788
Hill, Winfield Scott, 940
Hillis, James D., 269
Hinckley, James William, 570

- Hitchcock, William Wesley Reed, 126
Hoag, Edward J., 1635
Hoey, William F., 571
Hoffman, John R., 570
Hofmann, K. B., 335
Holecomb, Leroy S., 1090
Holderread, John, 1021
Holland, Edward Alexander, 270
Hollenback, David S., 1021
Hollis, John Claude, 126
Hollister, Charles M., 1790
Holloway, William J., 200
Hon, Ulrich H., 1022
Hoover, Franklin Pierce, 1865
Hope, William H., 1950
Hope, William Theodore, 1090
Hopkins, Erasmus Guy, 125
Hopkins, Howard R., 495
Hopkinson, Benjamin Merrill, 866
Hopkinson, Daniel, 494
Hormell, Lewis Cass, 1790
Horn, John Andrew, 1164
Hornby, Walter Melvin, 126
Horton, Ernest T., 1022
Hösel, O., 46
Hostetter, John Irvine, 714
Howard, Erving Melville, 1258
Howard, Eugene Henry, 495
Howard, Herbert Burr, 940
Howard, Tyron Y., 270
Howden, Ian D. C., 933
Howell, J. R., 495
Hoxsie, Edward Hazard, 1534
Huekin, William, 866
Hudson, Benjamin F., 1790
Huff, Samuel Gaston, 126
Huffaker, John W., 1710
Huffman, John William, 495
Hughes, Enos J., 713
Hughes, Joseph C., 495
Hull, Charles J., 127
Hull, Joseph Henry, 52
Hume, George H., 1704
Hume, Waverly McGee, 420
Humfreville, Daniel Louis, 644
Humphreys, Thomas Hazen, 1022
Hunter, Charles A., 1090
Hunter, John A., 866
Hunter, Stephen Alexander, 713
Hunter, William Wylie, 270
Huntsinger, Harrison Pettit, 495
Hursen, Isabella, 571
Hurst, Lloyd L., 342
Hutcheson, George N., 1258
Hutcheson, Henry Albert, 713
Hutchison, D. Edgar, 1022
Hutson, Ulysses, 1710
- I**
- Ijams, Howard Aiken, 1021
Immelmann, M., 1391
Inches, Charles, 419
Ipanema Langgaard, E. de, 1391
Ireland, Andrew B., 200
Ireland, John Louis, 1330
Ireland, William Eben, 641
Irving, John, 1158
- J**
- Jacob, Louis Henry, 644
Jacobs, Thomas Jefferson, 941
Jacobson, Clarence Augustus, 940
Jayne, Calvin K., 714
Jeannotte, Joseph Adkema, 571
Jenison, Charles O., 52
Jenkins, Daniel Henry, 1258
Jenkins, Ezeckiel Walter, 200
Jernigan, William Frederick, 1164
Jeter, Frank, 1710
Jewett, Frederic Albert, 341
Johnson, Elton Myrant, 419
Johnson, Joseph Palmer, 495
Johnston, George Woodruff, 713
Johnston, Richard Hall, 1709
Johnston, Robert, 1530
Johnstone, Robert Bruce, 1790
Johnstone, William Joseph, 867
Jones, Edward Frank, 1330
Jones, Edward W., 420
Jones, Harry H., 1865
Jones, J. Brummel, 1330
Jones, James Massey, 714
Jones, Paul Tudor, 713
Judy, Charles Summer, 644
Judy, William Blaine, 714
- K**
- Karagiozian, John, 52
Karash, Morris Nathan, 1472
Kay, William Eli, 1535
Kean, Ayman E., 342
Kearney, Elizabeth Frances, 1397
Keating, James Edward, 1021
Keefer, William Napier, 570
Kellam, Claude Dalby, 126
Kelley, Clinton Wayne, 494
Kelley, George Draper, 342
Kellock, Thomas H., 194
Kellogg, Elias Wells, 1635
Kelsey, Jasper, 1535
Kelsey, Joseph Benson, 1397
Kendlg, Elias V. B., 788
Kendrick, Carroll, 787
Kendrick, James Fotheringham, 713
Kennedy, Charles T., 1022
Kennedy, Thomas J., 644
Kerr, Edgar D., 1635
Kerrick, Henry Clay, 1631
Ketcham, George Franklin, 837
Kidd, John W., 571
Kimmell, William Wallace, 1090
King, Edward S., 571
King, Herbert Henry, 941
King, John Edward, 494
King, Mitchell M., 1164
Kirby, Henry Hodgen, 51
Kirstein, A., 413
Kitterman, Frederick Raymond, 112
Kittredge, Thomas, 941
Klue, Effenger, R., 1790
Kline, Minerva, 714
Knabb, Enoch, 788
Knapp, Henry T., 1022
Knight, Elijah Haynie, 1951
Knittle, Edgar Henry, 1634
Koch, Edward Philip, 342
Kocinski, Valentine, 495
Koehler, George Frederick, 1090
Koenig, Augustus, 1258
Koepfel, George W., 788
Korndorfer, Augustus, 1950
Kosby, Augustus Emil, 1164
Krause, Jacob Traverse, 1164
Kuder, Emil, 342
Kunst, Albert H., 418
- L**
- LaBelle, James Samuel, 1021
Laberge, Louis, 1397
Lacerda, Edmundo, 488
Lafuerza, V., 1466
Laidley, John Barclay, 52
Lake, Albert D., 1021
Lake, Milton Emerson, 571
Lambert, Curtis Allen, 52
Lamont, Walter A., 571
Landes, Albert C., 1090
Lane, Myron Edwin, 494
Langieri, L., 860
Large, Charles Peters, 866
Larkin, John Henry, 341
Larson, Carl John, 644
Latham, Arthur, 1530
Latham, John Benjamin, 51
Latimer, James O., 941
La Torre, F., 639
Latta, Samuel Whitehill, 940
Law, Walter Guy, 494
Lawbaugh, Albert L., 644
Lawrence, William Scott, 865
Lawton, Shailer Emery, 866
Leake, Endell N., 1790
Leathers, Charles Adam, 1634
Lebangood, Frank J., 126
Le Blond, Hitzel C., 571
Lee, Washington L., 1635
Leech, Daniel Olin, 51
Lefever, Enos K., 1330
Légenne, 1466
Legrand, Herman, 263
Lehman, Jacob R., 1634
Leibrock, Philip H., 1710
Leidy, Ralph Ellis, 1021
Leipziger, Henry Alfred, 1534
Lejeune, E., 933
Leo, Simeon Newton, 866
Leonard, Frederick Eugene, 52
Le Saulnier, Edward Baumhoff, 941
Leslie, Benjamin F., 1535
Leszynsky, William M., 787
Levers, Ernest Eugene, 1021
Levin, Carl Ernst Wilhelm, 1021
Levy, David Helne, 1790
Lewis, William Ellwood, 1472
Lightfoot, Charles Ross, 1634
Lile, Samuel, 1397
Lindley, Laban, 1710
Lindsay, Charles S., 1397
Lindsay, Kate, 1164
Linebaugh, John Andrew, 1330
Linegar, John M., 1022
Lingenfelter, James A., 1164
Linn, Hugh James, 867
Livingston, Alfred T., 1022
Livingston, Hugh, 941
Lloyd, W. H., 1391
Loffredo, Ernesto Conte, 1397
Long, Constance, 783
Long, John Henry, 342
Longworth, Milton Jennea, 1330
Loose, Arthur, 1784
Lopes, Henrique Souza, 860
Lopez, Charles Joseph, 1472
Loring, Francis B., 419
Loudet, E., 1391
Loughlin, James Eneu, 495
Lowe, Clement Belton, 570
Lowry, Ernest Everett, 420
Lucas, David, 1164
Luce, H., 1704
Luckey, George Miller, 1164
Lucy, Robert, 1472
Luks, Emil Charles, 1258
Lunn, Edwin De Moss, 494
Lurier, Israel, 570
Luscher, Louis Willard, 126
Lydick, Frank D., 1164
Lyford, William Haines, 1090
Lyle, A. A., 413
Lyne, Thomas Jefferson, 1472
Lyons, Daniel Stanley, 1472
Lyons, James A., 495
- M**
- Maats, J. J., 119
MacCreary, John H., 341
MacDonald, Peter, 1472
MacKay, Alexander, 1397
MacKenzie, William Robert, 1172
Mackey, Charles Andrew, 1634
Mackey, James Spencer, 200
MacLachlan, Norman Lamont, 1330
MacLeod, Kenneth, 263
MacNaughton, Joseph B., 1258
Madinaveitia, José, 420, 641
Madrado, V. D., 1391
Magee, Ira Joseph, 1865
Maguire, Edward, 342
Mahaux, 119
Mahon, George Dixon, 1535
Maintz, R. W., 1164
Malloy, Martin Luther, 200
Maloney, John Martin, 51
Manchester, Burton Edgar, 911
Mann, Henry L., 714
Manring, Nathaniel H., 1472
Margulls, Jacob, 1258
Marion, Alfred Victor, 1951
Marone, G. R., 119
Marsh, Florence L., 940
Marsh, Robert Joseph, 126
Marshall, Andrew, 270
Martin, Francis Marion, 1171
Martin, James Wayne, 571
Martin, John Miles, 570
Martin, William Henry, 495
Martin, William S., 571
Massey, Alfred Yale, 199
Mast, John Dickinson, 126
Mathiesen, John B., 342
Maurer, Edmund Lawrence, 269
May, Albert, 200
May, Ferdinand, 1530
May, John Lawrence, 1790
McBride, John M., 1865
McBride, Milton C., 714
McCafferty, John A., 200
McCall, Sanford H., 1472
McCallum, James M., 494
McCarthy, Patrick Henry, 940
McCarty, Eugene Daniel, 940
McClanahan, James William, 1534
McClellan, James Samuel, 1710
McCluney, Thomas P., 1472
McConnell, Benjamin J., 1258
McConnell, Guthrie, 199
McCormick, Florence Ellen De L'horbe, 342
McCormick, George Allen, 342
McCue, Massie L., 52
McCulloch, George Albert, 866
McCune, Samuel Renwick Wills, 52
McCurtain, Addison, 941
McCusker, Andrew Joseph, 788
McDougall, Peter Alexander, 270
McDowell, Vardiman, M. O., 126
McGarvan, Mary T., 564
McGee, John Bernard, 713
McGinty, John, 1951
McGown, Mann W., 1258
McHarrie, William, 1164
McIntire, Harvey Edwin, 1397
McKee, Harry Wright, 419
McKelvy, William L. B., 1635
McKenna, Charles, 495
McKinney, Thomas C., 1865
McKown, George W., 420
McLain, Liberty Crawford, 1865
McLay, Archibald, 1021
McMahon, Joseph Frank, 941
McMeans, Andrew A., 713
McMillen, Robert N., 1397
McMullan, John Henry, 494
McMurry, Tillman E., 1258
McNabb, Oscar F., 1397
McNamara, George William, 1472
McNew, Nelson H., 571
McNorrill, W. H., 1472
McNulty, James J., 52
McNutt, Hiram Eugene, 1790
McPherson, David William, 494
McQuaid, E. W., 1158
McWilliam, John Forsythe, 866
Mehard, George H., 270
Mellus, Edward Lindon, 126
Melton, James Merit, 342
Menéndez Tejo, E., 1466
Meng, Edwin Ruthven, 1163
Merchant, Francis Daniel, 419
Meriwether, Charles Nicholas, 866
Mershon, Homer Lafayette, 342
Merson, Uberto H., 867
Metcalf, Dorsey Dean, 200
Metcalf, Harold, 941
Metzerott, John H., 342
Metzger, William E., 1534
Meuer, Samuel Herman, 866
Mewes, 1704
Meyers, Sidney Johnston, 1709
Michael, May, 865
Milam, Benjamin J., 867
Milem, Jacob Allen, 1951
Miles, William Thomas, 1535
Milholland, Edward F., 126
Millen, William Penick, 1472
Miller, Amanda Helen, 1634
Miller, Mary Thomas, 570
Miller, Theodore Clarke, 418
Milligan, Arthur A., 866
Minner, James Wesley, 1090
Minossi, E., 1530
Minter, Nathaniel Joseph, 269
Mitchell, Albert P., 1710
Mitchell, Henry Arthur, 1330
Mitchell, Oldron Aloysius, 418
Mitchell, Samuel, 1164
Mitchell, Thomas T. K., 1330
Moffat, Henry L., 52
Molina de St. Remy, Antonio, 706
Monge, Alexander Joseph, 1471
Monnier, H., 860
Monroe, George Joseph, 1535
Montezuma, Carlos, 418
Moore, Eugene Aloysius, 52
Moore, Norman, 49
Moorehouse, Henry H., 571
Morales Arjona, B., 1158
Morelli, P., 1084
Morey, Otis Talbert, 1021
Morgan, Anna Mary, 342
Morgan, Charles McRae, 419
Morgan, Frank B., 644
Morgan, James B. F., 941
Morgan, Wilbur Phelps, 342
Morrill, Charles M., 419
Morris, Elmor E., 644
Morris, Lewis Coleman, 1021
Morrison, Joseph B., 714
Morrison, William, 714
Morrison, William H., 200
Morrisset, Thomas Bernard, 1472
Morrow, Charles Samuel, 1090
Morrow, J. H., 714
Morse, Frederick Lee, 1472
Moss, Richard Hazlewood, 1631
Mott, Neva Grosch, 1710
Moulder, J. McLean, 866
Moxley, John O., 714
Moyer, Frank Edwin, 494
Moyer, Jacob Donelson, 1535
Moyer, Samuel Rufus, 341
Muelenbach, Robert P., 419
Muir, Daniel Henry, 866
Muldoon, Patrick, 860
Muldrow, W. S., 1535
Müller, P., 488
Muma, Lydia A., 1951
Muñoz, Urra, 706
Murga, 1466
Murphy, Lea Marion, 1397
Murphy, Samuel W., 941
Murphy, Shirley F., 1701
Musser, John Henry, 419
- N**
- Nalle, Orville, 1022
Nash, George William, 1472
Nellis, A. S. Byrne, 571
Nesbit, Andrew David, 341
Neumeyer, William Henry, 1021
Neville, Lemuel Hart, 126
Newark, Wallace E., 1634
Newman, Alfred M., 1951
Newsham, Stanley P., 495
Newth, Charles Henry, 200
Newton, McGuire, 1534
Nichols, Arthur Howard, 342
Nichols, Fenton Mercer, 866
Nichols, Frank Lane, 1865
Nichols, William Robson, 1021
Nisbet, Frederick L., 420
Nishawitz, Louis, 644
Niven, Charles, 1704
Nix, Marcus U., 1258
Nixon, John Howard, 342
Nixon, Samuel E., 714
Noblitt, Tilmon Leroy, 342
Nolan, Charles N., 419
Nordan, Max, 263
North, John Edward, 1021
Norton, Aretus Kent, 52
Norvell, J. K. L., 1397
Nunn, Patrick Clabon, 52
Nunneley, F. P., 488
Nusbaum, William Henry, 644
Nutter, Mary Elizabeth, 126
- O**
- Oatman, Carl Layfield, 1258
O'Brien, Clarence Wilbert, 1330
O'Brien, Patrick W., 1330
O'Connor, Thomas Griffin, 941
Oeconomakis, M., 1323
Oestreich, R., 125
Ogden, Charles B., 1534
Ogden, Edwin Grant, 1790
Ogle, William S., 1634
Olander, K. O., 1158
Olds, William Burton, 126
Oley, Simon Willard, 420

Olliver, Edward Blake, 200
Olsen, Axtel Kristinus, 1635
Olsen, Charles L., 940
Olson, Herbert Rudolph, 1330
Orr, Edwin Dearth, 866
Orr, James Lawrence, Jr., 1535
Orth, Johannes, 413, 493
Orto, Zaphney, 419
Osgood, Fred Luther, 126
Osmond, Anna R., 494
Osterheld, Frederick Schaufli, 787
Ottaway, John Edward, 1327
Ours, Lester, 713
Owen, W. R., 419

P

Pache, Henri Louis, 269
Pactz, A., 413
Page, Albert Kidder, 1164
Page, Isham Randolph, 200
Palmer, Cora B. Murdock, 644
Pardon, Norton Hills, 714
Parker, Allen, 1790
Parker, Leon Vasco, 52
Parker, Spotswood Hayes, 342
Parshall, James Worthington, 1897
Parsons, George E., 1471
Parsons, W. Buchanan, 1330
Pasley, Birkner H., 1258
Patch, Clair Clayton, 865
Patterson, Richard Langford, 866
Payne, George Frederick, 1350
Peck, Ferdinand Edward, 200
Peck, Nelson, 788
Pedroso, Alexandrino, 46
Pegram, J. Epps, 495
Peltier, James Edward, 788
Pepper, Robert Hall, 126
Pereira, Pacifico, 46
Perkins, Charles Williamson, 787
Perrin, Charles A., 200
Perrochaud, Georges, 860
Perry, Arthur Pedro, 1164
Pettit, Joseph, 269
Peyton, David C., 570
Phelps, George Benjamin, 714
Phillippe, Clément, 488
Phillips, Edwin D. F., 714
Phillips, John Mason, 714
Pickard, William B., 1090
Pickering, Bernard, 488
Pierce, Albert G., 1330
Pierce, Albert Sperry, 941
Pigall, Joseph Smith, 1709
Pigg, William Buford, 940
Pimentel de Ulhoa, T., 263
Pinckney, Herbert, 941
Pinzanni, E., 1084
Pitha, Vaciac, 488
Pitts, Edward Parker, 1950
Plantz, Laura M. Fairchild, 1635
Plasencia, Leonel, 488
Plumlee, Munroe, 1865
Poignee, Frank P., 1090
Poirier, Alfred, 1710
Poland, Benjamin I., 1634
Pollto, E. F., 1704
Pool, Daniel, 342
Pool, Stewart Newell, 711
Poore, James E., 1164
Porter, Edwin Albert, 1865
Porter, Frederick D., 494
Potter, George Edward, 495
Pourtal, 1530
Powell, Clinton Edward, 1397
Powell, J. W., 571
Powers, Charles Andrew, 125
Pratt, Albert A., 714
Pratt, Albert Harlow, 51
Preston, Charles E., 1021
Preston, James Harvey, 200
Prichard, John Milton, 1535
Prince, Arthur Bernheim, 341
Pringle, John J., 488
Probst, Moritz, 1466
Pruyn, Charles Putnam, 1790
Puebla, Adolfo, 1084
Purcell, Thomas, 269
Purkitt, Theodora Tiffce, 714
Purnell, Caroline M., 491
Purvis, G. C., 1158
Purvis, W. P., 860
Pyle, Benjamin, 1164
Pyle, Charles W., 1535
Pyle, Henry Gerkey, 494

Q

Quick, Tunis C., 713
Quille, Maurice J., Jr., 1330

R

Raby, James M., 1021
Rademaker, C. A. L., 119
Raffray, 564
Rainy, H., 335
Raleigh, Roswell Barnum, 1397
Ramsdell, Charles Marchant, 714
Ranck, John Wesley, 866
Rand, John Prentice, 1330
Randall, Charles Lovett, 1258

Rangleey, Walter W., 941
Rankin, Thomas B., 1397
Ransom, Julius B., 1021
Raubenheimer, J. A., 783
Rawley, James Alfred, 1709
Rawling, Charles, 342
Ray, William Wade, 495
Raymond, Anson Levi, 1865
Rayneri, Francisco, 119
Ready, Michael Joseph, 1710
Reece, James Montgomery, 1951
Reed, Elmer Ellsworth, 788
Reed, Herbert L., 1164
Rees, J. Llewellyn, 1253
Reid, John Joseph, 1471
Relg, Rafael Pastor, 783
Reinemund, Charles Adam, 1535
Reiss, E., 1323
Remedl, V., 1704
Remington, John Alfred, 714
Rennoe, Callie A., 714
Repelin, 1704
de Reynier, E., 1084
Reynolds, Robert Donald, 941
Reynolds, Samuel E., 495
Rhoads, Anna E., 342
Rhodes, Joseph, 940
Rice, Albert Raymond, 1534
Rice, David Hume, 571
Rice, Edward N., 1535
Rice, John H., 571
Rice, Rufus S., 1709
Rich, Edward Yarnall, 1635
Richards, Herbert G., 941
Richardson, Briton Havelock, 1472
Richardson, Ulysses Grant, 867
Richardson, William, 1472
Richings, Henry, 51
Ridley, Robert Berrien, 419
Rietz, Paul Charles, 1634
Rigg, Charles H., 1164
Riggs, Isaac W., 1330
Riggs, Samuel M., 1951
Ritchie, James, 639
Roach, James Joseph, 940
Roane, James, 1710
Roberts, Otto Morton, 1472
Roberts, Thomas Sargent, 1634
Robertson, Lawrence Bruce, 1163
Robinson, Andrew Jackson, 1634
Robinson, Joseph Benjamin, 1472
Robinson, Louis Sydney Bassford, 126
Robison, Leonard A., 1535
Roddick, Thomas George, 713
Roentgen, Wilhelm Konrad, 487
Rofe, William Scott, 341
Rogers, Benjamin H., 1634
Rogers, Harrison Ross, 1865
Rogers, Orville Forrest, 1090
Roller, Alvin J., 1090
Romaine, Hannah M. Brown, 200
Romine, Marla M., 126
Rose, Walter Alexander, 494
Rosello y Basa, Bonifacio, 1090
Roskam, A., 639
Ross, Frank Ward, 1397
Ross, George C., 199
Ross, William A., 571
Roth, Jules Frederick, 1397
Roulet, Charles F., 1951
Rover, Henry William, 1951
Roy, James Philip, 571
Roy, Thomas A., 419
Rubira, P. J., 1323
Rudolph, Henry Latimer, 644
Rueda, Francisco, 488
Ruhl, Frank H., 269
Rukenbrod, William L., 1865
Rulinson, Harry, 126
Rumph, William Vann, 126
Runge, William, 1535
Rupp, Benjamin Dobson, 1710
Russell, A. Minnie, 644
Russell, Logan Dillon Hooper, 910
Rust, Hiram Herbert, 126
Ryle, R. J., 194

S

Sadler, H. F., 335
Salazar, Samuel M., 564
Salkowski, E., 1084
Salva, Ernesto B., 639
Sanguinetti, Manuel L., 488
Santamaria, Jorge Martinez, 564
Santoire, Romuald Samuel, 1163
Saphro, Victor Oscar, 571
Sargent, George Amory, 1535
Sartain, Harriett Judd, 571
Satterlee, Dwight, 1258
Saugman, Christian, 783
Saunders, Samuel, Jr., 1865
Seace, Lee Arbor, 51
Schade, Louis C. F., 1535
Schanz, F., 488
Scheube, B., 1084
Scheube, Geheimer Medizinal-Rat, 1257
Schirmer, Alfred, 1635
Schley, Jinkens L., 52
Schmidt, Daniel, Jr., 126
Scholl, Albert J., 51
Schopper, K. J., 1084
Schorr, Ernest, 1790
Schrader, Charles Adolph, 1951
Schroeder, Walter Haus, 1330
Schug, Frederick J., 419
Schwachtgen, George Banker, 419
Schwarz, Emil, 1090
Scott, James R., 644
Scott, John G., 200
Scott, John W. B., 270
Scott, Robert H., 1022
Scott, William G., 941
Sedgwick, Julius Parker, 644
Seeger, Ferdinand F., 866
Selden, Jose Martin, 866
Selders, Eda Berquest, 1164
Sellman, William Alfred Belt, 1534
Sempill, Robert Arnot, 51
Seymour, Frank E., 419
Shanahan, Thomas P., 1164
Shannon, George Allen, 1865
Shannon, William, 713
Shannon, William Lloyd, 126
Sharp, Walter Nevin, 940
Shattuck, George Burne, 940
Shaw, Frank T., 866
Shelley, Albert, 269
Shelton, Elijah J., 714
Shemwell, Frank Allen, 1164
Shepard, Henry, 342
Sherwood, A. P., 564
Shields, William Dayton, 1471
Shields, William L., 1950
Shoninger, Lee Simon, 1330
Shower, George T., 494
Shuell, Thomas J., 644
Shute, Fred A., 1635
Sidler-Huguenin, E., 46
Silljacks, George S., 1790
Simard, Emile E., 200
Simmins, A. G., 1391
Simmons, Charles Columbus, 787
Simmons, Frank Green, 491
Simpson, Frank C., 788
Simpson, George Thomas, 1090
Simpson, Louis Bush, 419
Skeel, Franklin Deuel, 341
Skidmore, Melville, 52
Skinner, Fritz E., 1535
Skinner, William Oliver, 494
Slack, Clarence M., 570
Sleeper, Frank Eugene, 1790
Sloan, Thomas Wisner, 1090
Smiley, Hiram, 1790
Smith, Charles Pliny, 1164
Smith, Domer Gheen, 713
Smith, Edgar Thomas, 941
Smith, Espy L., 867
Smith, Frederick William, 1709
Smith, George Albert Hayes, 644
Smith, Harrie Eugene, 1330
Smith, Henry Marcellus, 52
Smith, John L., 342
Smith, Marshall Ney, 1635
Smith, Peter C., 933
Smith, Richard O., 1865
Smith, Samuel Finley, 495
Smith, Samuel Joseph, 342
Smith, St. Clair, 1471
Smith, Thomas Burke, 1865
Smith, Willis R., 1534
Smolt, Alfred Ernest, 1951
Smoot, Marvin Le Roy, 571
Snarr, Samuel Stewart, 270
Snead, William Winston, 1258
Snell, Charles R., 1635
Snoddy, Lot, 1397
Snodgrass, Sevier E., 342
Snow, Emerson E., 1164
Sohn, Charles, 1865
Somers, Frank W., 1163
Somers, Leonard J., 1090
Sowards, John L., 420
Speer, Henry Newton, 1397
Spencer, Elfrida, 1391
Spengler, Lucius, 933
Spicker, Mark, 1472
Splnzig, Felix, 1472
Spriggs, Lem Walter, 713
Spung, Lemuel B., 713
Stall, John George A., 1472
Stammell, Charles A., 495
Stanbery, John Freeman, 52
Stanley, Horace M., 1397
Starkey, William Dynes, 52
Staufft, Orson T., 126
Steadman, Willard George, 342
Stedman, William E., 866
Steele, Joseph Turner, 1865
Stephens, Henry John, 1950
Stevens, Cyrus Lee, 713
Stevens, William Whitfield, 1472
Stevenson, George W., 714
Steward, C. A., 1094
Stewart, John Hardin, Sr., 571
Stewart, Robert S., 418
Stickney, Clifford Webster, 1330
Stirling, Marion Fairweather, 941
Stockard, James Kivette, 1163
Stone, Albert Butler, 571
Story, Alvin Francis, 1635
Story, Helen Louise, 1397
Stout, Harry A., 419
Strahan, David Humboldt, 1951
Strain, William Peter, 199
Street, Harold Wilbert, 1865
Strickler, Frank P., Sr., 1090
Strohm, James Monroe, 1535

Strouse, Alfred N., 614
Strout, Alfred O., 611
St. Sure, William O., 714
Stuart, Mario, 263
Sturges, Abram Baldwin, 1472
Stutsman, Nicholas, 1690
Style, Mark, 1784
Suggett, William Le Grand, 1635
Sullivan, John Thomas, 1790
Sullivan, Michael Francis, 126
Summers, Henry S., 1330
Summy, David R., 1258
Sumner, Guilford Herman, 1534
Sunday, Jerome, 1865
Surbek, 933
Sutphen, Carlyle Edgar, 865
Sweeney, Michael, 1531
Sweet, John Byron, 420
Swem, Jesse Augustine, 941
Symonds, Horatio P., 488

T

Talbott, Thomas J., Jr., 200
Tamburini, C., 1466
Tate, Robert A., 419
Tate, William H. H., 714
Tatum, Robert Harry, 270
Taulbee, James H., 1634
Taylor, Archibald Bryant, 1472
Taylor, Armistead Green, 270
Taylor, Arthur Wilson, 1022
Taylor, C. W., 1164
Taylor, Edgar Clarence, 341
Taylor, Henry Ling, 1950
Taylor, Herbert S., 1015
Taylor, William Grimsley, 200
Taylor, William Jordan, 341
Teague, Albert E., 1790
Terrell, Charles E., 126
Testaz, A., 639
Thayer, Edward J., 714
Thomas, Frank H., 270
Thomas, Jacob A., 1397
Thompson, Benjamin, 1397
Thompson, Charles Walden, 1258
Thompson, Edgar S., 1634
Thompson, John Franklin, 125
Thompson, Sidney, 571
Thompson, Victor Veranus, 571
Thomson, Adam, 1865
Thomson, D. G., 335
Thorburn, William, 1158
Thornley, Fred Clinton, 495
Thornton, John Henry, 269
Thorp, Frank Jesse, 420
Thurston, Joseph M., 1790
Tichenor, George Humphrey, Sr., 420
Tigh, Frederick, 941
Titterington, Miles Bronson, 1163
Tod, Hunter F., 564
Tolleson, Robert E., 1397
Tonkin, William, 52
Tope, Jasper, 941
Tonbin, 1256
Town, Francis Laban, 1163
Toy, James Duffield, 1635
Traver, Edward Clarence, 419
Travis, Alexander Horton, 494
Tretton, John Kelliper, 1397
Trow, Milton A., 1090
Truman, Alexander Smith, 1258
Tucker, Elijah J., 571
Tucker, Joseph Eugene, 1951
Tucker, William Barnaboo, 1164
Turin, J., 1466
Turnbow, William Bennett, 420
Turner, George S., 52
Tyler, Franklin Pierce, 644
Tyson, Thomas Parry, 867

U

Uren, John Franklin, 1258

V

Valassopoulos, 1466
Valdes Anciano, J. A., 1466
Vanderpool, William D., 571
Vandolah, John Walter, 1865
Van Dusen, James Wallace, 1634
Van Kirk, William Kirnan, 1635
Vann, Thomas Pack, 52
Van Vechten, John Sunderlin, 1990
Van Velzer, Charles A., 1090
Vargas, Diogenes, 933
Varnier, George W., 1397
Vaughan, Jonas Hobart, 1164
Vento, Rafael Pérez, 488
Vlehe, Richard Frederick, 1951
Vitrac, J., 860
Voelbel, Benjamin Henry, 867
Vogt, William Jules Augustine, 1330
Von Barandy, Oscar, 644
Voorhees, George Vincent, 1709

W

Wachsman, Max, 418
Wald, Henry, 1951
Walker, Callie S., 52
Walker, Granville M., 1258

- Walker, William Phllander, 52
Wallace, Clyde C., 419
Wallace, William Walne, 200
Walter, Lewis S., 1022
Walters, Hamlin Joseph, 714
Wannamaker, Theodore Elliott, Jr., 1090
Ward, Edgar Alonzo, 941
Ward, Griffy Benjamin, 494
Warloe, Thomas, 1258
Warren, Daniel B., 571
Washburn, C. L., 1790
Wassam, A. Marion, 126
Waterman, James A., 787
Watson, Franklin, 126
Watson, Thomas Matthews, 1021
Way, James P., 1258
Weaver, Leland S., 342
Webb, Clarence W., 866
Webster, David, 1634
Wegeforth, Paul, 1090
Weindrug, Altero Lipa B., 714
Weinstein, Joseph, 713
Weinstock, Louis, 1710
Wekesser, Henry Peter, 200
Weldon, John, 644
Weldon, Luther Jackson, 269
Wellings, Samuel Hyatt, 866
Wells, J. C., 1022
Wells, Levi C., 1330
- West, Stephen, 200
West, Theophilus, 1534
Westermeler, George Washington, 787
Westfall, Arthur Beaver, 200
Whaley, Lewis, 1021
Wheless, John R., 126
Whery, William P., 1710
Whitacre, Oscar W., 714
White, Cummins E., 1021
White, Douglas Adair, 644
White, Mary Bridges, 1021
White, Samuel George, 1164
Whitehall, Samuel, 1330
Whitelegge, William A., 564
Whitley, Evans R., 1164
Whitley, Langley St. A., 341
Whitney, Charles Rufus, 867
Whitney, Walter Everett, 52
Wickersham, Lewis Llewellyn, 1472
Wiggs, Henry B., 571
Wilcox, Charles A., 126
Wilenceck, Louis Lawrence, 714
Wilhoit, James Claude, 571
Wilcox, Wellington H., 420
Willeford, George A., 1951
Willey, Wade B., 1164
Williams, Arthur U., 1790
Williams, Edward Mercur, 269
Williams, Frank Hall, 1330
Williams, James R., 342
- Williams, Jesse Marvin, 571
Williams, John Milton, 1164
Williams, Salathiel Watts, 1634
Williamson, Alfred M., 335
Willis, George Harcourt, 713
Willson, Charles Glendenning, 866
Willson, Charles H., 787
Wilson, Elmer Ellsworth, 270
Wilson, Embry Pryor, 419
Wilson, Milton C., 341
Wilson, Richard J., 1258
Wilson, Robert S., 867
Wilson, Samuel Howard, 126
Wilson, William H., 1635
Windett, Robert Alfred, 941
Winfield, James Macfarlane, 1397
Wingard, James J., 420
Wishart, Charles Ammon, 940
Wisner, William E., 714
Witkowski, G. J., 783
Woegerer, Carl V., 1530
Wolfe, Albertus C., 1090
Wolfe, Benjamin F., 866
Womack, Owen Kent, 1330
Womer, Henry Frain, 1535
Wood, A. Neal, 714
Wood, Frank Wolf, 419
Wood, J. C., 1635
Wood, Thomas, 639
- Woodman, Isaac N., 126
Woodward, Charles E., 419
Woodward, Thaddeus H., 1635
Wooley, Elijah, 1022
Worden, Hiram K., 1790
Wright, Enos Walter Dickson, 341
Wright, Frank Walden, 1163
Wright, Thomas R., 1790
Wright, Ulysses Alvora, 1164
Wuchter, George H., 644
Wyllie, Walker Ghl, 865
Wysong, James H., 419
- Y**
- Yarbrough, James Edgar, 419
Yntema, Hessel S., 1534
Yoe, W. B., 1472
Yost, Peter, 1090
Young, Alben, 1090
Young, Annie M., 1397
Young, Charles Bellamy, 714
Young, Ernest Boyen, 418
Yourtee, George Willmer, 1164
- Z**
- Zaymis, Theodore, 783
Zuccaro, E., 46
- E**
- EAR, endocrine factor in disease of, [de la Cruz Correa & Becco] 807
itching of, in pyrosis, [Engel] 147
pathology of, address by Neumann, 863
syphilis of, [Ramadier] 213
syringe, [Mason] *1616
tick disease, [Curtis] *1053
- ECHINOCOCCOSIS, 67
biologic reactions in, [Fernández Ithurrat & Calcagno] 286, [Cottin & Saloz] 1180
hydatid fremitus in a distended urinary bladder, [Maselli] 144
Lozano's lecture in Paris on, 1533
of brain of children, [Morquio] 514
of liver, [Castex] 286, [Arizabalaga] 1817
of lung, [Balboni] 137, [Portu Pereyra] 1184
of lungs and pleura, [Halahan] 1342
of right kidney, [Kretschmer] 960
of spleen, [Cignozzi] 436
primary multiple tuberculoma of liver with degenerated hydatid cyst, [de Crespigny & Cleland] 1104
surgical treatment of, [Deniker] 1346
- ECKMAN'S ALTERATIVE, 1711—P
- ECLAMPSIA and hydrops, [Zondek] 1422
capillary circulation in, [Hinselmann & others] 1108
clinical aspect of, [Heynemann] 216
pathology of, [Fahr] 216
prophylactic treatment of, [Stroganoff] 1810
treatment of, [Stroganoff] 591, [Davidson] 960
typing of blood of eclamptic mother and child, [Gruhlitz] 1877
- ECTODERM, pathology of tissues of ectodermal origin, [Heinrichs & Henricksen] 812
neurotropic ectodermoses, [Levaditi & Nicolau] 1489
- ECZEMA, calcium chlorid in, [Lampronti] 1739
eczema death and myocarditis, [Bernheim-Karrer] 1886
infantile, [Marfan & Turquety] 1183
infantile, dietary considerations in, [Gerstley] *1141
infantile, treatment of, [White] 505
nature and treatment of, [Bloch] 1882
treatment of, [Sauphar] 1882
- EDEMA associated with bicarbonate administration in pneumonia, [Binger & others] 655
diabetic, [Falta] 1495
histology of, [Hülse] 968
in infants, [Slawik] 1655
in Laennec's cirrhosis, [Lemierre & Lévesque] 284
law of hydration of tissues, and its significance for water exchange in tissues, lymph formation and genesis of edema, [Schade & Menschel] 1742
mechanical treatment of, [Destéfano] 807
Pulmonary: See Lung, Edema of
- EDUCATION, MEDICAL: See also University EDUCATION, MEDICAL, 1094
centenary of agrégés in medicine, 785
conference on New York State medical problems, 648—ME
coordination of courses of instruction to increase efficiency of medical curriculum, 778
danger of stereotyped curriculum, [Emerson] 1009—ab
for negro students, 1856—E
four years in medicine: the hospital medical school, [Ordway] 952—ab
in Jugoslavia, 933
medical school curriculum recommended by American Therapeutic Society, [Osborne] 1487
- EDUCATION, MEDICAL, medical profession and the laity from the standpoint of the educator, [Owen] 1151—ab
medical school at Batavia, Java, 933
modern, analysis of methods of, [Clarke] *1195
need for changes in medical teaching, 1630
North Carolina extension plan, an experiment in postgraduate medical teaching, [Adams] 1714—ME
of negro physician, 1244—E
past and present, [Witherspoon] *1191, [Alvarez] 1637—C
place of anatomy in medical curriculum, [Keiller] 953—ab
Postgraduate: See under Graduate Work
problems of the 2 year medical schools, [French] 951—ab
proposed reforms in, in Berlin, 642
recent medical advances in England, 1705
reforms in French medical curriculum, 1787
revision of medical curriculum, [Bevan] *1187, 1394
shall a fifth or intern year be required for the M.D. degree and for admission to the licensing examination? [Cutter] 952—ab
the dean's problems, [Cutter] 954—ab
- EFFICIENCY TESTS, correlation of, second report, [Williams] *16
- EGG Yolk Globulin Allergen—Squibb, 251
- EGGS as a source of vitamin B, [Osborne & others] *302
- EGYPT, medicine in, [Zeitoun] 881
- ELIKMAN, John Scott medal awarded to, 1784
- ELBOW, fractures of lower end of humerus and, [Gilcreest] 206—ab
transolecranon operations, [Vulliet] 512
- ELECTRIC plants, incidence of accidents among workmen in, 1162
shock from house current, death from, 496
shock, cause of death in, [Jellinek] 1810, [Spilsbury] 1810
shock, hypertension after, [Pfalz] 439
- ELECTROCARDIOGRAPHY: See under Heart
- ELECTRONARCOSIS, [Neergaard] 362
- ELECTROTHERAPY, faradism in urinary incontinence, [Hallowes] 64
in hypertension, 646
- EMBOLISM, air, during urethroscopy, 1017
arterial embolectomy, [Michaëlsson] 592, [Buerger] 1733
embolectomy in circulatory disturbances in extremities, [Key] 1342
fat, [Wegelin] 1547
of right brachial artery as complication of lobar pneumonia, [Smith] 658
pulmonary, after injection of bismuth paste, [Leb] 1349
- EMBRYO, tumor in cow embryo, [Widakowich] 1420
- EMBRYOMA, acornous, [Shattock] 877
or sarcoma of kidney in infants, [Robins] 1484
- EMOTIONS, constitutional irritability and respiratory spasm, [de Massary & Walser] 805
jaundice from emotional stress, [Rosenburg] 1184
- EMPHYSEMA, physiotherapeutic syndrome of, [Rosenthal] 66
pulmonary, and chronic bronchitis, [Sergeant] 142
traumatic subcutaneous, complicating labor, [Davidson] 1881
- EMPLOYEE, previous condition of, unimportant, 352—MI
right of injured employee to choose own physician, 1481—MI
- EMPLOYER, medical services for which employer is not liable, 503—MI
no award when employer authorizes services, 578—MI
- EMPYEMA, [Peck & Cave] 1342
cavities, chronic, closure of, by surgical solution of chlorinated soda and gentian violet, [Gatch] 132—ab
drainage of 568, [O'Connor] 1880
failure to make diagnosis of, 1721—MI
fatal case of, [Leckie] 1103
old, treatment of, [Esau] 1276
opening peritoneum in operations for, report of 4 cases, [Beye] *1117
operative treatment of, [Cignozzi] 284
paravertebral anesthesia in, [Seff] *1612
- ENCEPHALITIS, EPIDEMIC, [Kling] 518, [Gonzalez Olacocha] 807, [Naville] 1274, 1390, [Crookshank] 1473—C, [Hall] 1544, 1630
abdominal reflex in, [Price] 944—C
acute, hemorrhagic, report of case following scarlet fever, [Toomey & others] 797
and influenza, [Volpino & Racchiusa] 1491
bacteria in lesions of, [Rosenow & Jackson] 957
disturbance of respiratory rhythm following, [Parker] 137
disturbances of liver function in, [Meyer-Bisch & Stern] 1742
etiology of, [Schnabel] 1817
following interference with dead teeth, report of 2 cases, [Burns] *1591
hemorrhagic syndrome in, [Tinel & Dupouy] 1736
high grade choked disks in, [Spiller] *1843
history of influenza and, [Kaiser-Petersen] 288
immobilization of extremities following, [Petren & Brahme] 1413
in Winnipeg, 637
inoculability of herpes in, [Teissler & others] 1545
intravenous injections of spinal fluid in Parkinsonian postencephalitic syndromes, [Souques] 728
inversion phenomena in, [Sabatini] 730
necropsy in, [Vegni] 1883
neuropsychiatric sequelae of, [Ebaugh] 797
Parkinsonian syndromes after, atropin in treatment of, [Szyzka] 1035
Parkinson's disease as sequel to, [Drysedale] 140
pathogenesis of, [Flexner] 1874—ab
pathology of, complicated by psychosis, [Hassin & Rotman] 579
postencephalitic neuroses, [Hagelstam] 1496
postencephalitic psychic disturbances, [Winther] 1038
residual symptoms in, [Kerlin] 1487
rigidity in a torsion spasm after, [Mourgue] 806
sequelae after, [Palitzsch] 216, [Borgherini] 1883
serum therapy of, [Flexner] 1953—ab
sodium salicylate in, [Carnot & Blamoutier] 1737
spasmodic forced respiration as sequel of, [Pardee] *178
specific serum treatment of, [Rosenow] *1583
status of, as an independent disease, 696—E
syphilitic encephalitis of base, [Roxo] 1347
therapeutic influence of musical rhythm on Parkinsonian motor sequelae of, [Meyer] 1493
treatment of meningeal form with antimeni-gococcal serum, [Herrick] *528

- ENCEPHALITIS, EPIDEMIC**, treatment of post-encephalitic Parkinsonian syndromes with sodium cacodylate, [Henner] 736
- ENCEPHALOGRAPHY**, [Schott & Eitel] 882. [Alwens & Hirsch] 1035
dangers of lumbar encephalography in presence of cerebral tumors, [Denk] 1743
entrance of air into vascular system: its removal from right ventricle by heart puncture, [Bingel] 1743
- ENDOCARDITIS**, characterization of various forms of, [Libman] *813
infrequency of association of fibrillation of auricles and subacute bacterial endocarditis, [Libman & Rothschild] 1727—ab
is endocarditis a complication or the primary localization of febrile rheumatism? [Kroglus] 1496, 1819
lenta, [Hassencamp] 438, [Lampe] 1109
lenta, nervous manifestations in, [Claude & Oury] 513
malignant, in childhood, [Poynton] 802
secondary, aneurysm of ascending aorta with, [Laubry & Bordet] 1546
slow, [Castellano & Garzón] 144
streptococcus, experimental production of, [Kinsella & Sherburne] 1643—ab
ulcerative, arsenical treatment of, [Capps] 798
ulcerative, spontaneous rupture of heart in, [Clayton] *1371
verrucous, atypical form of, [Libman & Sacks] 1724—ab
- ENDOCRINE GLANDS**: See Secretions, Internal
- ENDOLIPASE**, [Row] 1179
- ENDOTHELIOMAS**, malignant, [Busman] 136
of cheek, [Babler] 133—ab
of male breast following injury, [Griffith] 586
of meninges, nature of cranial hyperostoses overlying, [Phemister] 1267
- ENERGY**, potential, quest of, 111—E
- ENGLAND**, rural, supply of physicians in, 1456—E
- ENTERITIS**, great reduction in mortality from, 415
phlegmonous, [Bohmansson] 1888
- ENTEROCOLITIS**, anaphylactic dyspepsia and, [Noir & others] 1490
- ENTROPION**, surgical treatment of, [Cange] 1183
- ENURESIS**: See Urine, Incontinence of
- EOSINOPHILIA**, experiments on, [Liebreich] 1276
in children, [Hahn] 442
in stomach content, [Bonorino Udaoudo] 145
with abnormal prostates, [Legueu & Astraldi] 214
- EPIDEMIOLOGY**, new light on, 1324
epidemic diseases in Hungary, 197
epidemiologic survey in citizen's military training camp, diphtheria carriers and susceptibility; carriers of intestinal diseases, [McGuire & Hitchens] *665
- EPIDIDYMISS**, changes in, after resection of spermatic veins, [Nicastro] 144
- EPIDIDYMITIS**, gonorrheal, treatment of, [Radnai] 218
tuberculous, [Söderlund] 1888
tuberculous, with fistula, conservative treatment of, [Astraldi] 514
- EPIGASTRIC** tug, [Emerson] 1807
- EPIGLOTTIS**, cyst of, presenting unusual features, [Taylor] 1487
- EPILEPSY** and general paralysis, [Marchand] 1105
associated with schizophrenia, [Endtz] 1186
dysthyroidism, anaphylaxis and epilepsy, [Buscanto] 806
epileptic attacks due to cerebral inhibition, [Hartenberg] 660
focal symptoms in, [van Valkenburg] 1744
hematologic pictures in endocrine syndromes associated with, [Patterson] 873
killing child to save suffering—motives—petit mal defense—mental age theory, 1266—M
myoclonic reflexes and, [Muskens] 1280
osteomalacia with, [Brenner] 808
pathogenesis of, [Osnato] 1541
phenobarbital in, [Darling] 1541
polynucleosis of spinal fluid in, [Baylac & others] 1545
protein hypersensitivity tests, value of, [Wallis & Nicol] 1544
research in, 1939—E
roentgen ray treatment, [Steiger] 143, [Fraenkel] 1111
status epilepticus after ovariectomy, [Marchand & Adam] 1546
studies on; convulsions experimentally produced in animals compared with convulsive states in man, preliminary report, [Eisberg & Stookey] 1878
sugar in spinal fluid in, [Humes] 1269
suprarenal operations in, negative effect of, [Küttner & Wollenberg] 1743
toxic substances in blood in, [van Leeuwen & Zeydner] 357
treatment of, [Stuurman] 1037
treatment by potassium bromide and borax, [McCartney] 511
- EPILEPSY**, treatment by various methods, [Ashmore] 277
treatment of spastic conditions by removal of one suprarenal, [Kersten] 440
with megacolon and polymastia, [Block] 508
- EPINEPHRIN**, action of, [Guglielmetti] 145
action of, in blood diseases, [Hittmair] 516
action of, on formation of antibodies, [Hirma] 736
and hypertension, [Houssay] 145
and pituitary extract, 1400—
and revival of heart, 1853—E
and white corpuscles, [Hess] 1109
antagonism between alkaloids of cinchona and, [Clere & Pezzi] 1180
Chloride Solution—Abbott, 1910
determination of epinephrin sensibility in diseases of thyroid, [Csépai & others] 1884
in burns, [Plaza] 438
in Stokes-Adams syndrome, [Feil] *26
intracardiac injection of, 1314—E, [Bodon] 1415, [Exalto] 1424, [Bridges] 1476—C, [Newton] 1637—C, [Baumann] 1738
intracardiac injection, subsidence of heart weight after, [Secher] 970
intraventricular injection of, in cardiac failure, [Crile] 63
share of epinephrin in hypertension induced by irritation of splanchnic nerve, [Houssay & Marconi] 1740
unexpected epinephrin reaction following infiltration with procain-epinephrin solution as a local anesthetic, [Dowman] *1069
- EPIPHYSIS**, mechanical strain on, [Müller] 1035
- EPISPADIAS**, treatment of, [Sánchez-Covisa] 285
- EPITHELIOMAS** of lower lip, [Miliani] 360
roentgen-ray, cured by diathermy, [Bordier] 142, 283, 588
- EPITHELIUM** implants, [Reschke] 438
- ERGOT**, action of, on uterus, [Haskell & Rucker] 353
- ERUPTION**: See Exanthem
- ERYSIPELAS** in 2 sisters, [de los Terros] 589
- ERYTHEMA** nodosum, [Wiborg] 1038
nodosum, after delivery, [Gueissaz] 360
nodosum, blood picture in, and etiology, [Hoyer] 1888
nodosum, ocular complications of, [Satanowsky] 967
- ERYTHROCYTES**: See Blood Cells, Red
- ERYTHRODERMIA**, desquamating, [Berro] 1817
macular, chronic resistant, 129
- ESMARCH'S** centennial, 334
- ESOPHAGUS**, antethoracic, [Kovsing] 664
atresia of, congenital, with esophagotracheal fistula, report of 3 cases, [Weiss] *16
cancer, metastases of, [Helsley] 1484
cancer, radium treatment of, [Guisez] 1491
diverticulum, treatment of, [Mayo] 276—ab
foreign bodies in, [Killian] 732
perforation of, symptomless, [Brown] 212
reconstruction of, [Hirschmann] 732
stenoses, dilatation of, [Kurtzahn] 1423
stenosis, caused by commercial lye preparations, [Clarf] *1600
stricture, congenital, [Vinson] *1754
strictures, treatment of, [Heule] 517
surgical treatment of, [Fischer] 722, [Miller & Andrus] 1807
- ESPUNDIA** in Columbia, [Peña Chabarría] 1107
- ETHER**, action of chloroform, ether, etc., on respiration, [Schmidt & Harer] 725
action of, on circulation in traumatic shock, [Cattell] 722
Anesthesia: See under Anesthesia
experimental intraperitoneal injection of ether, [Naujoks] 1278
intramuscularly for relief of hiccup, [Gibson] *399
to combat atonic hemorrhages in cesarean section, [Sigwart] 442
- ETHICS**, status of clinical pathologist, [Hill-kowitz] 943—C
- ETHMOID**, relation of optic nerve to, [Young] 432
- ETHYLENE**, a new anesthetic, 1003, 1383—E. [Luckhardt & Carter] *1440, 1476—C, [Jordan] 1712—C
physiologic effects of, [Luckhardt & Carter] *765
preliminary report of Council on Pharmacy and Chemistry, 773
- EUGENICS**, [Govaerts] 805
Belgian bureau of, 937
- EVOLUTION**, 1316—ab
no signs of race of supermen, 1629
teaching of, 1720
- EXANTHEM**, new eruptive fever, [Stevens & Johnson] 59
eruptions, rôle of anaphylaxis in angioneurotic eruptions, [Ravogli] 140
occurring in infants with unusual symptomatology, [Conrad] 1178
- EXERCISE**, blood destruction during, [Broun] 1100
circulatory adaptations to, 920—E
cost of work in calories, 187—E
effect of, on circulation, [Bergman] 1740
- EXERCISE**, effect of heavy exercise, [Lundsgaard & Möller] 1543
gymnastic exercises for infants, 199, [Czap-ski] 1493
immediate effect of stair running on circulation and respiration in normal persons, [Lundsgaard & Möller] 1175
keeping blood "fit" by, 775—E
muscular exercise changes acid-base equilibrium [Barr & others] 1543
physiologic adjustments attending muscular work, 1315—E
physiology of, in childhood, 628—E, [Scham & Egerer-Scham] 873
stimulates hematopoietic tissue, [Broun] 1109
- EXOPHTHALMOS**, membranous bone defects, and diabetes insipidus, [Grosh & Stifel] 655
pulsating, [Cecilia] 1347
pulsating, from aneurysm, [Santa Cecilia] 1739
- EXOSTOSES**, osteogenous, hereditary and familial, [Lenoble & Jégat] 587
- EXPERTS**: See under Testimony
- EXTREMITIES**: See also Arm; Leg
- EXTREMITIES**, vessel-blood shock from ligation of, [Le Calvé] 1737
- EYE**: See also Special Structures of Eye
- EYE** accidents in spinal anesthesia, [Monthus] 1183
accommodation in ametropic eyes after correction with glasses, [Hegner] 1033
anomalies, heredity of, [Vogt] 1738
arcus juvenilis, [Adrogué] 514
asthenopic reflex manifestations between teeth and, [Kahn] *1134
cholesterol crystals in anterior chamber of, [Adrogué] 1817
diseases, autoserotherapy in, [Bretagne] 1183
diseases, etiologic study of series of optic neuropathies, [Woods & Dunn] *1113
diseases, spinal fluid in disease of fundus, [Ferguson] 432
disturbances in affections of respiratory apparatus, [Terrien] 1653
enucleation in panophthalmia, [Rollet & Bussy] 1183
foreign body removed with improvised ophthalmologic magnet, [Lund] 1549
in Little's disease, [Posey] *80
intraocular tension, difference in, of the 2 eyes, [Marx] 1424
Klieg, or cinema, eye, 1792
optical service in industry, 1870
roentgen-ray treatment of certain inflammatory affections of, [Japiot & Bussy] 1418
senile changes in, [Terrien] 588
tuberculosis, radiotherapy of, [Krull] 1279
- EYE SIGHT** Conservation Council of America, 637
- EYELIDS**, alopecia and poliosis of, [Posey] *1204
gumma of inner canthus simulating malignant disease, [Marin Amat] 1655
ptosis of, operative treatment of, [Campos] 514
- F**
- FACE**, deep sensibility of, [Davis] 1340
- FACTORY** regulations in Japan, 1390
relation of factory physicians to management, 1532
- FAISCEAU DE TURCK**, study of, [Rhein] 137
- FALLOPIAN TUBES**, infections of, [Curtis] *161
malformations of, [Jayle & Halpérine] 143
patency of, ascertained by transuterine injection of fluids, [Stone] 206—ab
Rubin tubal insufflation test in primary sterility, [Brandt] *398, [Dittel] 735
- FALLS**, deaths from, 101—ab
death of child falling from bed in hospital after an operation, 796—M
- FARADISM**: See under Electrotherapy
- FAT** embolism: See under Embolism
metabolism of fats, [Roger] 66
pigmented fatty change in cell degeneration, [Emrys-Roberts & Haig] 1031
tissue in new-born, [Becker] 1036
- FATIGUE** intoxication, chronic, treatment of, [Ochsner] 874
proposed tests for, E—1005
results of proposed tests for, [Lee & Van Buskirk] 653
test for, in neurasthenia, [Monrad-Krohn] 1038
- FECES**, bacteria in, of infants, [Zeissler & Käckell] 287
distinction between fresh and digested blood in stomach and, [Meunier] 1180
formation of urobilin in intestines, [Kammerer & Miller] 1655
impacted, acute intestinal obstruction caused by, in Meckel's diverticulum, [Bettman & Blum] *230
occult blood in detection of, [Reimann] 581
occult blood in, of infants, [Rainoff] 1036
tubercle bacilli in, [Nussel] 1886, [Fried] 1956
- FEDERAL** Narcotic Board: See under Harrison Law

- FEEBLEMINDED**, compensation of injured mentally defective workman, 1539—MI
endocrine therapy in mental deficiency, [Potter] 1268
hereditary and nonhereditary mental defect, [Potter & Viers] 1340
in Japan, special classes for, 1703
law on social adaptation of mentally backward, [Roubnovitch & Debray] 435
psychic energy and mental insufficiency, [Sjöbring] 1038
- FEEDING**: See Diet; Nutrition
- FEES**, allowance of expert witness fees for physician, 1722—MI
compensation for services requested by employer, 1539—MI
failure of action against automobilist for, 352—MI
manager of farm not liable for medical services, 1405—MI
medical, and state treasury, 863
medical, increase in Portugal, 859
medical services for which employer is not liable, 503—MI
obligation to pay physician's bill implied, 1482—MI
two questions for jury in action on account, 578—MI
- FEET**: See Foot
- FELLOWSHIPS** for Netherlands announced, 638
- FEMUR**, fracture of head with dislocation on dorsum of ilium, [Hinsdale] *469
fracture of neck of, [Jancke] 364
fractures of shaft of, treatment of, [Singleton] 206—ab
traction fracture of lesser trochanter of femur, [Langdon] 1733
- FETUS**, causes of death of, [De Wilde] 443
lab-ferment in, [De Toni & Montavani] 1183
papyraceous, case of, [Mills] *1775
strangulation of, by umbilical cord, [Nijhoff] 812
urinary tract of infants and, [Brown & Corbelle] 1877
- FEVER**, a type of postoperative fever, probably malarial relapse, [Horsley] *1065
blood sugar curve after heat puncture, [Jacobowsky] 1038
eruptive, research on 3 cases of, [Filippella] 1816
Escanaba hyperpyrexia, report of a special investigation, [Woodyatt & Fishbein] *771
from occult tuberculosis, [Arcangeli] 1883
glandular, [Longcope] 135
in children, [Dajceva] 287
oxidizing ferments in mechanism of, [Marinesco] 1654
pathogenesis of, [Greving] 662
protracted slight fever, [Baccarani] 966
what to do for a high temperature, helpful suggestions sent to malingering maid of Michigan, 788—P
- "FIBROFORM,"** 1535—P
- FIBROID**: See under names of organs, as Uterus, Fibroid of
- FIBROLIPOMA** of left labium majus, [Love-lace] *375
- FIBROMA, FIBROMYOMA**: See under names of organs as, Uterus, Fibroma of; Uterus, Fibromyoma of
- FIBROSARCOMA** of tongue, [Brancati] 731
- FIBROSIS**, pulmonary, report of case, [Pontalne] *1129
- FIBULA**, excision of, in amputations below knee joint, [Noon] 1103
fracture, inexpensive and efficient extension apparatus for, [Stanton] *915
- FILTERS**, 1537
simple apparatus for testing and washing filter candles, [Krock & Holman] *1142
simple apparatus for fractional filtration by gravity or suction, [Farr] *1775
slow working sand filter, [Flu] 149
- FINGERS**, contracture of, [Ciaccia] 513
- FIRST AID** manual for postal employees, 858
- FISTULAS**, bronchial, [Gast] 439
bronchobiliary, [Yates] 141
colostomy with Witzel fistula for ileocecal invagination, [Gottesleben] 1743
esophagotracheal, with congenital atresia of esophagus, [Weiss] *16
implantation of biliary fistula in duodenum, a new method of treatment, [Lahey] *893
salivary, roentgen irradiation in, [Kaess] 811
treatment of cicatricial strictures and fistulas in urethra, [Petroff] 362
urinary, [Schroeder] 1278
- FLEA** bites, clinical aspect of, [Hescheles] 442
- FLEISCHMANN'S YEAST** not admitted to N. R., 1398—P
- FLORIDA** state board October examination, 574
- FLÜGGE** foundation, 334
- FLUMERIN**, experimental studies with, [Hill & Young] *1365
- FLY-TRAPS**, 1537
- FOOD** adulterations, 1161
borax as preservative, 1317—E
ordinance requiring health certificates of persons working in food establishments upheld, 1313—ab
- FOOD** poisoning caused by bacillus aertrycke, [Wiseman] 726
poisoning, potential dangers in chemical preservatives, 1073—E
requirement of children, [Chou] 442
soft, containing little fluid, [Alkan] 734
use of preservatives in, 48, 1392
valid ordinance to protect food from flies and dust, 504—MI
validity of food ordinance requiring "medical examination," 1798—MI
- FOOT**, callus formation in, without fracture, [Müller] 69
ligation of plantar arch, [Macaggi] 1274
perforating ulcer of, cause and treatment of, [Kappis] 734
- FORAMEN OVALE**, patent, [Joyce] 212
- FOREIGN BODY**, glass retained in hand and foot, [Risser] 1645
inhalation of piece of bone, sudden late death after, [Muggia] 1547
oat-seeds as a cause of foreign body of tubercles, 1458—E
physician held liable for leaving drainage tube in wound, 951—MI
- FRACTURE**: See also under names of bones, as Femur, fracture, etc.
- FRACTURE**, congenital, of leg, [Bull] 220
correctness of instructions to jury in fracture case, 1405—MI
fixation of, [Young] 281
inexpensive and efficient extension apparatus, [Stanton] *915
interval before osteosynthesis for recent fractures, [Lambotte] 1180
of long bones, operative treatment of, [Edington] 281, [Moorhead] *1207
physician sued for negligence in setting a fracture, 934
proper time for osteosynthesis, 568
total disability from fracture-injury to old man, 1482—MI
united, of long bones, treatment with special reference to osteoperiosteal graft, [Thomas] *309
- FRAMBESIA**, effect of treatment on Wassermann reaction in, [Goodpasture & de Leon] 1732
histology of, [Goodpasture] 1732
immunity in, [Sellards & Goodpasture] 1732
yaws in tropics, 1854—E
- FRAMINGHAM** tuberculosis experiment, results of, [Armstrong] 1267
- FRANCE**, intellectual relations with the United States, 416
inadequacy of sanitary passport in, 935
opportunities for study at French clinics, 1014
protection of young children in Alsace and Lorraine, 1393
vital statistics for first 6 months in 1922, 123
- FRIENDS** of Hygiene, Bulletin of, 338
- FRONTAL BONE**, progressive osteomyelitis of, report of case, [Lemere] *596
- FRUITS**, antiscorbutic vitamin in oriental vegetables and, [Embry] 958
- FUCHSIN**, acid, selective bactericidal power of, [Churchman] 724
- FUMIGATION** with hydrocyanic acid, 699—E
- FURS**, dyed, dermatitis from, 1085—G
- FURUNCLES** of face, [Hofmann] 1420
of face and orbital thrombophlebitis, [Gallemarts] 1183
- G**
- GALLBLADDER** absorbs cholesterol, [Boyd] 877
calculi (German surgical congress), 1708
calculi, agglutination for typhoid in, [Jungeblut] 730
calculi, etiology of, [Olicer] 581
calculi, formation of, 699—E
calculi, operations for, [Bengolea] 514
calculi, pathogenesis of, [Blanco Soler] 1347
calculi, peripancratic fat necrosis due to, [Schottmüller] 1492
calculi, tarry stools in, [Vysin] 970
calculi, treatment of, [Morison] 63
diathermy in affections of, [Rouzaud & Aimard] 1184
disease, [Relifuss] 959
disease as cause of stomach symptoms, [Schringer] 1956
disease, acute, surgery of, [Judd & Herbst] 210
disease of, and secretory function of stomach and pancreas, [Griffiths] 961
disease of intestinal origin, [Brule & Garban] 1491
disease, relation of, to diabetes, [Eustis] 957
disease, roentgen-ray study of, [Kirklin] 59
diseases, clinical significance of bilirubin determination in serum with regard to, [Strauss & Sandherr] 1884
diverticulitis of, [Abbott] 1733
drainage, animal experiments with Lyon-Meltzer method, [Friedenwald & others] 1270
drainage, diagnostic value of, [Shaffer] 128—C
- GALLBLADDER** drainage, value of Meltzer-Lyon test, [Hollander] 1804, [Piersol & Blockus] 1804
incision for operations in region of, [Simon] 1350
inflammation, acute purulent, treatment of, [da Silva] 731
inflammation, surgical treatment of, [Ribas] 1274
motor mechanism of, [Winkelstein] *1748
papilloma and adenoma of, [Abell] 206—ab, 1484
perforation of, [Hilgenberg] 363
polyposis of, [Klose & Wachsmuth] 1420
removal (cholecystectomy), [Clark] 1342
removal, remote sequelae of, [Hartmann & Petit-Dutaillis] 359
removal without drainage, [Coventry] 133—ab
results of injection of bacillus typhosus into [Beckwith] 431
sarcoma of, [Lewis & Reuter] 62
surgery of, [Jorge del Toro] 959, [Walzel-Wiesentreu] 1658
surgery, drainage following, [Macrae] 63
surgery, new method of dissection, [McWhorter] 960
surgery of acutely inflamed gallbladder, [Caldwell] 206—ab
surgery, results of, [Graham] 138
- GALL-DUCTS**: See Bile Ducts
- GALLSTONES**: See Gallbladder Calculi
- GAMBINI**, death of, 1326
- GANGLIOMA**, intraligamentous, [Stoeckel] 884
- GANGRENE**, Diabetic: See under Diabetes
from attempted criminal abortion, [de Rouville] 1418
ischio-rectal abscess followed by gas gangrene; and gas gangrene following trauma, report of two cases, [Berkow & Tolk] *1639
of hepatic flexure in amebic dysentery, [Lenoble & Legat] 359
of Lung: See Lung, Gangrene of
of scrotum and penis, [Stirling] *622
- GAS**, alimentary gases, 697—E
Gangrene: See under Gangrene
infection of death penalty by use of lethal gas, 1026—MI
- GAS HEATERS**, danger from natural gas heaters, 1870
- GASSERIAN GANGLION**, otitis media complicating operations on, [Lyons] *176
resection for trigeminal neuralgia, [Troch] 1744
- GASTRECTOMY**, improved technique for, [Freeman] 1028
- GASTRIC JUICE**: See Stomach Secretion
- GASTRODUODENAL TUBES**, new tip for, [Hollander] *1217
- GASTRO-ENTEROLOGY**, employment of two duodenal tubes in, [Heller] *31
- GASTRO-ENTEROSTOMY**, cause of certain acute symptoms following, [Haden & Orr] 723
constriction with strip of fascia of afferent leg between gastro-enterostomy and entero-anastomosis, [Ehrlich] 286
damper, [O'Day] 584
technic for, [Villegas] 960, [Freeman] 1028
- GASTRO-INTESTINAL TRACT**, actinomycosis of, [Brogden] 209
celluloid capsule: a means of determining motility of intestinal tract, [Buckstein] *621
mechanism of movement of mucous membrane of, [Forssell] 1028
roentgen examination of, in children, [Buchheim] 362
roentgen-ray examinations of, review of 1,000, [Coley] 1407—ab
surgery, asepsis in, [Cinquemani] 1106
- GASTROPEXY** by shortening gastrohepatic omentum, with anatomic and physiologic considerations, [Gilbride] *1745
- GASTROPTOSIS**: See Splanchnoptosis; Stomach, Ptosis
- GASTROSCOPY**, [Schindler] 286
physiologic identity of difficulty and danger in mechanism of introducing gastroscopic tube, [Sternberg] 1887
progress in, [Sternberg] 1888
- GELATIN**, action of, on bacteriophages, [Nakamura] 1495
- GENERATION**, spontaneous, of microbes, new alleged proof of, [Andrjevski & Vanicek] 1279
- GENITALS**, abnormality of, and exstrophy of bladder, [Yates] 1542
cerebral irritation in endocrine lesions of, [Kammerer & Lorber] 1658
coexistent tuberculosis and syphilis in, [Magee] *179
genital flora, origin of, [Solomon] 516, 1422
genital prolapse, vaginal operation for, [Dittrich] 591
tuberculosis, [Bachrach] 663, [Rydgaard] 1421
tuberculosis in women, roentgen-ray treatment of, [Weibel] 218
- GENITO-URINARY TRACT** diseases, protein therapy in, [d'Hooghe] 805
surgery of, [Riese] 1887

- GENU-VALGUM**, surgical correction of, [Cadenat] 1652
- GEORGIA**, state board October examination, 55
- GERANIUM** dermatitis, [Anderson] 1485
- GERMANY**, bad health conditions in, 939
- German hygienic expedition to Brazil, 1471
- German physicians in New Danish Provinces, 1703
- German-Austrian scientists, fund to aid, 1783
- plight of German children, [Pfaundler] 1819
- German professors relinquish honorary titles, 710
- vital statistics of large cities for third quarter of 1922, 198
- wretched living conditions among German people, 268
- GERMICIDE**, value of colloidal silver chlorid as, [Ballenger & Elder] 876
- GIEMSA'S** blood stain, simple method of using, [Lyon] *473
- GINSENG**, 328—E
- influence of, on metabolism, [Inada & Takamizu] 585
- GLANDULAR** fever, [Longcope] 135
- GLASS** retained in hand and foot, [Risser] 1645
- GLASSBLOWERS**, cataract in, 1163
- GLASSWARE**, disinfection of, in public establishments, 48
- GLAUCOMA**, transient, [de Almeida] 966
- treatment of, [Uthoff] 882
- GLIOMA**, recovery after removal of tumor in parietal lobe, [Fracassi] 1883
- GLOSSITIS** of one half of tongue, [Worms & Bercher] 66
- GLUCOSE**, administration of soda and glucose solutions, 129
- blood sugar after ingestion of, [Foster] 1175
- effect of insulin on glucose hyperglycemia, [Eadie & Macleod] 1729
- infusion in heart disease, [Niemeyer] 516
- ingestion, effects of, on respiratory exchange of diabetic subjects, [McCann & Hannon] 1269
- injections of, in infiltrates, 218
- intravenous injections of, [Jørgensen & Plum] 220
- isotonic infusion of salt and, [Zagari] 589
- strong solutions of, as preventive of operative and anesthesia mishaps, [Tenckhoff] 149
- tolerance in arthritis, [Pringle & Miller] 659
- tolerance tests, results of, [Major] 723
- GLYCEMIA**: See Blood Sugar
- GLYCEROL**, ketogenic-antiketogenic balance in diabetes and therapeutic use of glycerol, [McCann & Hannon] 1642—ab
- GLYCO-PEPTO MILK** not admitted to N. N. R., 1165—P
- GLYCOSURIA**, acidosis without, [Claveaux] 361
- alimentary, [Holst] 516
- alimentary, in pregnancy, [Gottschalk & Strecker] 515, [Leskinen] 736
- and alimentary hyperglycemia, [Traugott] 217
- artificial, in pregnancy, [Bauer] 149
- experimental, [Savolin] 70
- of pregnancy and so-called renal diabetes, [Motzfeldt] 149
- renal, [Allan] *471, [Schneiderman] *825
- slight, [Holst] 664
- GLYCURONURIA**, spontaneous and induced, in pregnancy as an index of liver function, [Volpe] 513
- GNATS** in human pathology, [Neveu-Lemaire] 880
- GOATS** and Malta fever in United States, 325—E
- goat's milk, *473
- goat's milk and Malta fever, [Secor] 645—C
- goat's milk in infant feeding, [Secor] 273—C
- GOERSS**, Franz C. A., 867—P
- GOETSCH** test and radiography of thyroid, [Tarnaceanu] 588
- GOITER**: See also Hyperthyroidism; Thyroid
- GOITER**, [Czernak] 1109
- action of goiter on blood, [De Quervain] 881
- as preventable disease, 1694—E
- conditions leading to death in, [Lang] 515
- endemic, in Tasmania, 1158
- etiology of, [Schwenkenbecher] 515
- exophthalmic, [Breitner] 809, [Troell] 1108
- exophthalmic, and involuntary nervous system; autonomic imbalance, [Kessel & Hyman] 1804
- exophthalmic, atypical, [Bram] 1731
- exophthalmic, auricular fibrillation in, [Schwensen] 518
- exophthalmic, basal metabolic rate in untreated cases, [Kessel] 1727—ab
- exophthalmic, cardiac disorders accompanying, and their pathogenesis, [Boas] *1683
- exophthalmic, effect of ligation of thyroid vessels in, [Giordano & Caylor] 584
- exophthalmic, expenditure of energy in, 776—E
- exophthalmic, partial thyroidectomy better than medical treatment of, [Grant] 511
- exophthalmic, enzymes in duodenal fluid in, [Gyotoku] 585
- exophthalmic, hypoglycemia in, [Holman] 1099
- exophthalmic, mortality in surgery of, [Pemberton] 1733
- exophthalmic, pernicious anemia in, [Hansen] 226
- GOITER**, exophthalmic, pulse pressure in, [Harris] 1734
- exophthalmic, results of administering iodine in, [Plummer] 1955—ab
- exophthalmic, roentgen treatment of, [Fried] 967
- exophthalmic, surgical treatment by subcapsular thyroidectomy, [Asteriades] 805
- exophthalmic, therapy of, 1071—E, [Pajzs] 1743
- gastric ulcer with, [Haberer] 1109
- Graves' syndrome and nervous system, [Kessel & others] 1339
- heart in exophthalmic goiter and in adenomatous goiter with hyperthyroidism, [Wilson & others] 1725—ab
- incidence of, in college students, [Guilder] 1097
- indications for surgical treatment and prevention of, [Breitner] 1886
- lingual, [Lahey] 1343
- operations, drainage after, [Ujhelji] 732
- recurrence of, [Enderlen & Hitzler] 438
- regional inquiry on, 1788
- respiratory stridor in, [Wiltshcke] 1655
- sclerodermic syndrome with, [Laignel-Lavastine] 143
- simple, as result of iodine deficiency, [McClen-don & Williams] *600
- simple, with metastasis, [Delannoy & Dhal-luin] *804
- statistics of, [Stoss] 1186
- structure of, [Troell] 70
- surgery, 22 years of, [Urban] 696
- surgical management of, [Haines] *984
- toxic, roentgen-ray treatment of, [Means & Holmes] 1410
- treatment and prophylaxis of, [Wagner-Jauregg] 1819
- treatment with ultraviolet rays, [Langemak] 1741
- GOLD HEADED CANE** received by William II, Welch, 1157
- GOLD MEDAL** Brand Sexual Pills, 645—P
- GOMBAULT'S** Caustic Balsam, 1711—P
- GONOCOCCUS** abscess, treatment of, [Léri & Luton] 963
- cultivation of, [Kinsella & others] 875
- infection of anus and rectum, [Weissmann] 1182
- infection of kidney, diagnosis of, [Shivers] *1359
- infection of kidney with spontaneous recovery, report of case, [Dourmashkin & Cohen] *1052
- medium for, [Lorentz] 441
- ophthalmia, with metastases in joints, [Di Bella] 1418
- types, attempt at differentiation of, [Thomsen & Vollmond] 149
- vaccine, dry, [Buschke & Langer] 734
- GONORRHEA**, action of strouger solutions of mercurochrome in, [Rupel] *530
- and spondylitis, [Ramel] 1813
- biologic treatment of, [Grimberg & Uzan] 587
- chronic, cupping glass in treatment of, [Matzenauer & Weitgasser] 218
- complicated, treatment of, [Legueu] 143
- in women, complement fixation test in, [Wilson & others] 1486
- in women, treatment of, [Arneth & Fabritius] 883
- provocative procedures in, [Müller & Richter] 1278
- recognition of gonorrheal disease of seminal vesicles and its importance in course of gonorrhea, [Junker] 1742
- treatment of, [Janet] 283, 588, 1882
- treatment with milk injections and vaccine therapy, [Tansard] 880
- GOUT** and the kidneys, [Loewenhardt] 440
- atypical forms of, [Benzangon & others] 1738
- excretion of uric acid in, [Thannhauser & Hemke] 968
- in etiology of neuralgia and myalgia, [Alexander] 1885
- GOVERNMENT DEPARTMENTS**, reorganization of, 564
- GRADUATE** medical education in United States in 1922-1923, [Wilson] 790—ME
- graduate instruction in tuberculosis, with particular reference to University of Minnesota, [Myers] 344—ME
- graduate work for practitioners in Vienna, 711
- opportunities for study at French clinics, 1014
- postgraduate courses, 1395
- postgraduate medical courses in Hungary, 1469
- postgraduate study abroad, [Brans] 130—ME
- GRAFTS**, osteoperiosteal, [Delagenière] 434
- Reverdin-Halstead, in wounds, [Schlaepfer] 1807
- GRAIN** bags, sterilization of, [Carbonell] 1107
- GRANULOMA** inguinale, [Gage] 1098
- inguinal, articles on, 422
- GRAVES' DISEASE**: See Goiter, Exophthalmic
- GROUP CLINIC**, 1785
- GROWTH**, effect on, of radiation with mercury vapor quartz lamp, [Goldblatt & Soames] 282
- GROWTH**, influence of, on basal metabolism of children, [Fleming] 797
- pathology of, in childhood, [Aron] 1657
- GUANIDIN** poisoning, influence of, on calcium and phosphates of blood, [Nelken] 1493
- GUARANTY** of results, consideration required for, 1722—M1
- GUMMA** of inner canthus simulating malignant disease, [Martin Amat] 1655
- sporotrichoid tuberculous "gumma" without adenopathy, [Nicholas & others] 1882
- GYMNASTICS**: See Exercise
- GYNECOLOGY**, constitution in, [Mayer] 591
- [Mathes] 1656
- extract of testes in, [Zénope] 1883
- German gynecologic congress, 661
- gynecologic operations in relation to life insurance, [Giles] 1812
- operative, local anesthesia in, [Zimmermann] 1422
- radiotherapy in, [Jayle] 436
- rate of sedimentation of erythrocytes as a diagnostic aid in, [Pewny] 518
- roentgen rays and pneumoperitoneum in gynecologic diagnosis, [Polano & Dietl] 364
- teaching of, 1530
- usual and paradoxical localization of certain pains in, [Muret] 1546
- H**
- HABWEN**, difficulties of, 349—ME
- on antivivisection, 1148—E
- HAFNIUM**, a new element isolated in London, 708
- HAIR** disease, roentgen irradiation in, [Theoder-ing] 68
- effect of cancer on appearance of, 1163
- gray, and cancer patients, [Schridde] 217
- growth of, 628—E
- hirsutism in 12 year old boy, [Apert & others] 728
- premature grayness of, and alopecia of eyelids, [Posey] *1204
- removal by roentgen rays, permanency of result of, [Meyer] 1547
- HALLUX** valgus, operation for, [Roberts] *540, [Sandelin] 736, [Silver] 1646
- HAND**, tendon sheath inflammation as occupational affection in hand or foot, [Sattler] 1420
- HARRISON LAW**, proposed legislation reducing narcotic tax, 477—E
- appeals for increased appropriation to enforce, 336
- registration expires June 30, 1926
- right to registration under, 205—M1
- HAWAII** January examination, 1718
- October examination, 423
- HAY-FEVER**, milk transmission of, [Herrmann] 1413
- modern treatment of, [Jacod] 1183
- protest against circularization of scientific article on, [Bernton] 1951—C
- seasonal, treatment of, and some possible causes of failure, [Bernton] *1301
- specific treatment of, during attack, [Vaughan] *245
- HAY'S** sulphur test as liver function test, [Simon] 1818
- HEAD** injuries, clinical study of 100 old cases, [Michael] *1047
- HEADACHE** as single symptom of malaria, 1469
- nervous, calcium treatment of, [Baastrup] 1038, [Tofte] 1038
- syphilitic, [Sutton] 801
- HEALING** Spring Water, 343—P
- HEALTH** activities, a cheerful prospect in field of, E—1005
- activities, federal, reorganization of, 258, 262
- campaign finances, 1633
- century of progress in public health matters, [Alfranio Peixoto] 285
- certificates, ordinance requiring, of persons working in food establishments upheld, 1313—ab, 1798—M1
- collection of public health statistics in France, 566
- conference, 1019
- conference, international, 1157
- control, New York governor adopts rational plan for, 1244—E
- course, international, 706
- demonstration in Kladno, 1633
- education, 267
- insurance societies and physicians, struggle between, 568
- international cooperation on health matters, 707
- medical profession and the laity from standpoint of board of trustees of American Medical Association, [Billings] 1152—ab
- medical profession and the laity from the standpoint of the health officer, [Rankin] 1151—ab
- national clean-up and paint-up campaigns, 933
- officer, recruiting of, [Winslow] 1246—ab
- officers, county, directory of, 1702
- officers, education of partially trained sanitarian now employed, [Sears] 1477—ME
- officers, examinations for, in Prague, 643
- problems in New York state, 1094

- HEALTH**, public health arrangements in frontier districts of Austria and Czechoslovakia, 938
 public, in India, 1324
 public, in United States, [Bernard] 434
 public, report of conference on "education of sanitarians and future of public health in United States," [Cumming] 1246—ab
 record books for public school pupils in Saxony, 1864
 report of work done by municipal board of health of Vienna, 339
 statistics for 1922, 1327
 steps already taken in standardization of public health training, [McLaughlin] 1247—ab
 survey in China, 334
- HEARING**, investigations on limitations of, 1533
 mechanism of, [Ribón] 145
- HEARST'S** International on inside story of dope, [Dutton] 1475—C
- HEART**, action of snake venom on, [Magenta] 1420
 and vomiting, 849—E
 aneurysm of, with mediastinal pericarditis, [Smith] 62
 anomaly, congenital, [Moorhead & Smith] 1179
 asystolia, functional value of external secretion of pancreas in, [Garofeano] 660
 atrioventricular automatism, [Mobitz] 1655
 atropin test and orthostatic tachycardia in examination of nervous system of heart, [Daniélopou & Carniol] 1813
 auricular fibrillation and heart block, [Neuhof] 798
 auricular fibrillation as observed over period of 17 years, [Fulton] 1728—ab
 auricular fibrillation: death after administration of quinidin sulphate, [de Crespigny] 1104
 auricular fibrillation in exophthalmic goiter, [Schwensen] 518
 auricular fibrillation, pathogenesis and treatment of, [Clere] 1814
 auricular fibrillation returned to normal rhythm, [Bishop] 798
 auricular flutter in mitral stenosis, [Wilson] 1805
 block and auricular fibrillation, [Neuhof] 798
 block, congenital, and malformation of heart with situs inversus, [Meyer] 1181
 block, epinephrin in, [Feil] *26
 block, partial bundle block, [Petersen] 884
 cardiodynamic and electrocardiographic studies during various stages of heart failure, [Hamburger & d'Irsay] 1728—ab
 changes in shape and size of hearts during progress of compensation, [Friedman & Strauss] 1727—ab
 chronic cardiac patient, [Babcock] 1030
 congenitally defective heart, [Stewart] 1808
 determining relation of heart and its valves, [LeWald] 722
 diastolic murmur in hypertension of nephritis, [Bergé & Basch] 587
 dilatation of, [Weiser] 1495
 dilatation of left auricle, extreme, [Emanuel] 1415
 dilatation, physiologic dilatation of heart, [Bordet] 1652
 disease and polyarthritis, [Ehrstrom & Wahlberg] 1496
 disease and pregnancy, [Pardee] 135, 656, [Hermet] 729
 disease, capillaries in cardiovascular-renal disease, [Brown] 1729
 disease, congenital, and very high blood pressure, [Bishop] *547
 disease, congenital, prognosis of, [Smith] 64
 disease, determination and interpretation of changes in lung volumes in certain heart lesions, [Lundsgaard] *163
 disease, early diagnosis of, [Eyster] 1731
 disease, early recognition and economic aspects of, [Halsey] *971
 disease, enlarged spleen in, [Creyx & Piéchaud] 1737
 disease, hemiplegia in, [Roger] 964
 disease, infusion of glucose in, 516
 disease, recent advances in treatment of, [Lewison] *828
 disease, relation of hypertension to cardiovascular disease, [Foster] 135
 disease, uremic symptoms in, [Alvarez] 1883
 disease, use of roentgen ray in diagnosis of chronic valvular heart disease, [Eyster] 1724—ab
 disease, vital capacity in, [Pratt] 135
 disorders in exophthalmic goiter and their pathogenesis, [Boas] *1683
 disturbances following arteriovenous aneurysm, [Nanu & others] 804
 electrocardiogram and interpretations of initial phases, [Lewis] 807
 electrocardiogram in uremia and severe chronic nephritis with nitrogen retention, [White & Wood] 1728—ab
 electrocardiograms and heart muscle disease, [Pardee & Master] *98
 electrocardiograms in cases of cantering rhythm, [Bordet & others] 1814
 electrocardiographic changes following occlusion of left coronary artery, [Smith] 1644—ab
- HEART**, electrocardiographic evidence of myocardial involvement in rheumatic fever, [Swift & Cohn] 1644—ab
 electrocardiographic film examining illuminating box, [Kahn] *320
 experimental compression of, [van Rijnberk] 443
 extrasystoles, research on, [Kisch] 216
 failure, unusual causes for, after abdominal operations, [Brack] 439
 failure, thyroidism complicated by; report of group of cases, [Hamilton] *1771
 function, pulse changes as test of, [Holzer & Schilling] 969
 graphic records of, life insurance value of, [Smith] *973
 in children, [Thomas] 1274
 in exophthalmic goiter and in adenomatous goiter with hyperthyroidism, [Wilson & others] 1725—ab
 in pernicious anemia, [Reid] *534
 in thyroid disease, [Willius] 1098
 infantilism, [Oddo & Girbal] 587
 influence of infectious diseases on, [Kulper] 1112, [Lebedev] 1349
 infrequency of association of fibrillation of auricles and subacute bacterial endocarditis, [Libman & Rothschild] 1727—ab
 inorganic murmurs in infants, [Blechmann] 359
 insufficiency, gastric secretion in, [Garofeano] 1106
 Injection of epinephrin into: See under Epinephrin
 malformation, 2 atypical cases of Roger's disease, [Varlot & Cailliau] 1491
 "mitral form" of healthy hearts, [Nemet] 1657
 mitral stenosis and life expectancy, [Willius] 1806
 murmurs, nature of, [Reid] 1339
 murmurs, pathogenesis of musical murmurs, [Hanns] 1815
 muscle disease and electrocardiograms, [Pardee & Master] *98
 muscle in progressive muscular dystrophy, [Globus] 580
 myocardial lesions, [Martin] 1723—ab
 paravertebral dullness from enlarged auricle, [Leindörfer] 1277
 pathology of heart and materia medica, (miscellaneous topics) 1632
 postoperative insufficiency of, [Blanco-Acevedo] 589
 quinidin in certain cardiac irregularities, [Levy] 1872—ab
 quinidin in auricular disease, [Parkinson & Nicholl] 212, [Fraser] 1344
 quinidin sulphate in nonparoxysmal auricular fibrillation, [Viko & others] 1410
 quinidin sulphate in ambulatory cases of auricular fibrillation, [Farnum] 508
 roentgen ray in cardiac diagnosis, [Wilson & Merrill] 1339
 rupture, spontaneous, in ulcerative endocarditis, [Clayton] *1371
 ruptured, [Stephens] 433
 sarcoma of, primary, [Pinault] 1029
 size of heart after cessation of active physical training, [Secher] 970
 sounds, amplified, audibility of, 493
 structural and functional involvement of heart following acute respiratory and other acute infections, [Hamburger & Priest] 1724—ab
 surviving heart of warm-blooded animals, [Klewitz] 809
 transposition (dextrocardia and normal abdominal reflex), [Summers] 1649
 valvular disease, chronic, [Coleman] 1723—ab
 valvular disease of heart, causes of death in, [Cowan & Rennie] 803
- HEAT**, external, response to therapeutic application of, [Pemberton & Crouter] *289
 heating of tissues by heat and light rays, [Hill & Campbell] 1544
 studies on sweat and response of body to external heat, [Pemberton & others] 1727—ab
- HEIGHT**, influence of environment on, 416
- HELIO THERAPY**, artificial, 1162
- HELMINTHIASIS**, intestinal, anaphylaxis in, [Morenas] 588
- HEMANGIOMA**, [Da Costa] 1112
 of spinal cord, [Blahd] *1452
- HEMATEMESIS** in nephritis, [Shattuck] 1027
- HEMATOMA**, encysted, of spleen, [Lombard & Duboucher] 512
 ovarian, of endometrial type, life history of, [Sampson] 136
 spontaneous, occurring in a case of spindle-cell sarcoma of kidney, [Boland] 275—ab
- HEMATOPOIETIC SYSTEM**, hyperplastic disease in the blood-producing organs, [Harbitz] 1350
 exercise stimulates hematopoietic tissue, [Broun] 1100
- HEMATURIA** and appendicitis, [Tormey & Tormey] *472
- HEMATURIA** and nephritis in appendicitis, [Anschütz] 68
 determination of phenolsulphonephthalein excretion in presence of, [Waters] *1216
 due to renal papillary varix, [MacGowan] 1809
 from strongly lidosols, [Fornara] 965
 menstrual and hypertonic, [Strauss] 1886
 value of cystoscopic examination in, [Crance] 1177
- HEMERALLOPIA** of pregnancy, [Klaften] 1422
- HEMIHYPERTROPHY**: See under Hypertrophy
- HEMIPLEGIA** and urticaria, [Lermoyez & Alajouanine] 1737
 in heart disease, [Roger] 964
 syphilitic, treatment of, [Millan] 1815
- HEMOCLASTIC CRISIS**, [Eisenstadt] 517
 alimentary leukocytosis in 80 normal men with reference to, [Feinblatt] *613
 and quinin, [Grossmann] 217
 as test of liver function, [Nussbaum] 441, [Brown] 1729
 in drug addicts, [Sollier & Morat] 880
 in parturients, [Mazza & Iraeta] 1740
 in pregnant, [Mazza & Iraeta] 145, [Kabothe] 219
- HEMOGLOBIN** and corpuscle volume percentage in young infants, [Drucker] 70
 and iron in blood, [Wong] 1543
 determination of [Haden] 1341
 ratio between corpuscles, and, [Norgaard & Garm] 444
- HEMOGLOBINURIA**, paroxysmal, [Deltell & others] 213
 paroxysmal, provoked by cold, [Roch & Liengme] 728
- HEMOLYMPH NODES**, hypertrophy of, in Texas fever immunes, [Warthin] 1879
- HEMOLYTOPOIETIC SYSTEM**, [Krumbhaar] 1802—ab
- HEMOPERITONEUM** from ruptured corpus luteum, [Strauss] *1287
- HEMOPHILIA** and pituitary extracts, [Neumann] 1277
 inheritance and constitution in, [Bauer] 808
 pseudohemophilia, [van der Zande] 1186, [Weil & Wall] 1546
- HEMOPHYTOSIS**, menstrual, [Destefano] 807
 treatment of, [Horalek] 1493
- HEMORRHAGE**, arrest of, in surgery, [Stegemann] 438
 effect of, on pulmonary ventilation, [Gesell & others] 354
 fatal, from eroded arteria cystica of gall-bladder, [Jaffe] *1364
 gynecologic, irradiation of spleen in, [Nürnberg] 884
 gynecologic, roentgen-ray treatment of pituitary in, [Hirsch] 518
 influence of, on mortality in gunshot wounds and other injuries of abdomen, [Mason] 205—ab
 intra-abdominal, reflex clinical picture with, [Stajano] 214
 intracranial, in apparently healthy adolescents, [Hawthorne] 358
 meningeal, of newly born, [Cameron & Osman] 1103
 of new-born, [Cruickshank] 1735
 of new-born, blood transfusion by citrate method in, [Falls] *678
 retroplacental, pulse in, [Levant & Portes] 1274
 transfusion in, [Stegemann] 1108
 utero-placental, [Portes] 1274
 visceral, intravenous injections of calcium chloride in, [Carnot & Blamoutier] 360
- HEMORRHAGIC DIATHESIS**, [Morawitz] 1277
- HEMORRHOIDS**, large, prolapsed, conservative treatment of, [Bonheim] 147
- HEPATITIS**: See under Liver
- HEREDITY** and education, 121, 1470
- HERMAPHRODISM**, alternating sex glands, [Sand] 1882
- HERNIA**, "darning" a hernia, [Souttar] 63
 decisions regarding operations for, 1640—M1
 diaphragmatic, [Jaffin & Honeij] 1730
 diaphragmatic, gangrenous perforation of stomach as complication of, [Moppert] 512
 diaphragmatic, treatment of, [Mann] 1957
 epigastric tug, [Emerson] 1807
 exhibition of umbilical hernia to jury, 58—M1
 femoral, gangrenous, treatment of, [Becker] 967
 femoral, operation for, [Andrews] 1731
 inguinal, 3 severe cases, [Polák] 1279
 large irreducible, [Denk] 1186
 ovary in hernia, [Schönmeier] 1348
 plastic closure of hernial opening by means of uterus, [Hilgenreiner] 1111
 points of importance in operation for, [Wanless] 433
 scrotal, strangulated, [Ramiro Arroyo] 882
 sliding, of cecum and appendix in children, [David] 134—ab
 strangulated, in infant, [McNell] 1416
- HEROIN**, bill to prohibit interstate commerce in, 637
- HERPES ZOSTER**, [Marinesco] 512
 bilateral, 1256
 cure of, by pituitary treatment, [Vendel] 1549
 etiology of, [Rivalier] 1882

- HERPES ZOSTER**, inoculability of, in epidemic encephalitis, [Teissier & others] 1545
postinfluenzal, [Hollander] *470
relation between varicella and herpes zoster, [Barabás] 1349
spinal fluid in, [Targowla] 283
varicella following, [Gismondi] 284
- HERRADORA** specialties not accepted for N. N. R., 1259—P
- HETEROCHROMIA**, intermittent, of irides of nervous origin, [Curschmann] 68
- HEXAMETHYLENAMINE**, disappointments of, 37—E
- HICCUP**, epidemic, streptococcus in, [Rosenow] 875
ether intramuscularly for, [Gibson] *399
streptococcus filtrates cause, [Rosenow] 876
- HIP** dislocation, congenital, treatment of, [Deutschländer] 146
dislocation of, congenital, with intracapsular exostosis, [Storey] *914
dislocation in adults, [Fränkel] 808
dislocation in childhood; report of case, [Murphy] *549
dislocation, treatment of, [Wassertrüdingen] 364
extra-articular measures to induce ankylosis of, [Haas] 148
insufficient hip joints, [Gourdon] 1184
juvenile deforming osteochondritis of, [Vignard] 804
palpation of hip joint through rectum, [Cottalorda] 804
severe destructive injury to, [Mebane] 724
tuberculous disease, abortive type, report of 2 cases, [Nelson] *1442
- HIRSUTISM**: See under Hair
- HISTAMINE** action, nature of, [McDowall] 1811
effect of, on human gastric secretion, [Matheson & Ammon] 1273
- HISTOLOGY**, method for preparing blue celluloid injection material, [Marshall] *181
rapid technique for preparing histologic sections by paraffin method, [Kaiser] *690
- HODGKIN'S DISEASE**, Beuce Jones protein in, [Galloway] 281
and osteosclerosis, [Pastore] 213
how should Hodgkin's disease be classified? [Gastinel, Reilly & Potez] 805
Pel-Ebstein type of, [Cautley] 432
- HOOKWORM DISEASE**: See Uncinariasis
- HOOVER'S SIGN**, [Throekmorton] *1058
- HOROWITZ PROTEIN** No. 10, 54
- HORSE Serum**, Allergen-Squibb, 251
- HORSLEY**, Victor, memorial lecture, 707
- HOSPITAL**, a lawful business but may become a nuisance, 1337—M
additional hospitals approved for Intern training, 1538—ME
associations, French, 1393
census taken by Census Bureau, 1529
city, power inherent in cities to erect, 578—M
claims of physicians and hospitals under contracts, 1539—M
cooperation between hospitals and general practitioners, [Bluestone] 1166—C
day, 412, 1464
effect of economic conditions on, 712
evacuation started, 46
federal hospitalization plan, 263
field hospital in Potomac Park, 1860
for American Indians, 1529
for war veterans, report of consultants on, 1084
Interns: See under Intern
liability of, for acts of its servants, [Lapp] 1078—ab
may erect at hospital buildings for physician, 1722—M
mental, reforms in, 784
new American hospital in France, 1859
relation of state university hospital to medical profession, [Howard] 1401—ME
risks incurred by interns and externs, 1017
role of nonmedical clinical assistants in hospitals without interns, [Goldwater & Bluestone] 1075—ab
rules as affecting medical directors of, 340
service, program on, [Billings] 1075—ab
ships in time of peace and in time of war, 567
southern baptists hospital convention, 1783
staffs, dismissal of medical officers of, in Vienna, 339
- "HOSPITAL LIBRARY"** issued by American Library Association, 412
- HOUSING** conditions in Antwerp, 124
problem, 1468
- HOWARD**, SIDNEY, on "Inside Story of dope," [Dutton] 1475—C
- HUMAN TYPES** and growth reactions, [Stockard] 954
- HUMERUS**, fractures of elbow joint and of lower end of, [Gilcreest] 206—ab
fracture of upper end of humerus, report of end-results, [Sever] *1603
fracture of upper end of, treatment of, [Austin] 1731
fracture, supracondylar, [Kälin] 439, [Sattal] 513
fracture, tardy paralysis of ulnar nerve after fracture of external condyle, [Guibal] 1813
- HUNGARY**, epidemic diseases in, 197
no reciprocity between Roumania and, 639
- HUNGER**, assimilation in, [Collazo] 1492
- HUNTERIAN** oration, 861
- HYDATID CYSTS**: See Echinococcosis
- HYDRATION** of tissues, law of, and its significance for water exchange in tissues, lymph formation and genesis of edema, [Schade & Menschel] 1742
- HYDROA** vacuiforme seu aestivale, [Senear & Fink] 873
- HYDROCEPHALUS**, acquired, chronic, [Navarro & others] 434
experiments on, [Chiasserini] 144
internal, ventriculoseopy and intraventricular photography in, [Fay & Grant] *461
lateral, internal, inducing focal symptoms in rolandic region, [Obarrio] 1420
treatment, [Lenormant] 880
- HYDROLOGY**, course in, 937, 1703
- HYDRONEPHROSIS**, [Blatt] 663
experimental, [Human] *315
false, [Razzaboni] 806
infected vs., chronic pyelitis, [Bloch] 1887
new pyelo-ureteral operations for, [Schwyzer] 133—ab
- HYDROPHOBIA**, diagnosis of, 1333, 1477
from bite of lion, 1941—E
in Portugal, [da Silva & Figueira] 1419
- HYDROSTATIC TEST**, 128, [Fernández Davila] 1034
- HYDROTHERAPY**, action of heat and, on blood, [Stückgold] 147
- HYDROTHERAX**, [Lanski] 646—C
- HYGEIA**: Are you for it? 402—E
group subscriptions to, 777
lay editor speaks of Hygeia, 1720
- HYGIENE** and Mohammedan prayers, [Dingizli] 963
hygienic reforms among Mohammedans in Tunis, [Dingizli] 1490
rural, 643
school of, in London, 1785
- HYGIOGENESIS**, [Gröer] 440
- HYPERGLYCEMIA**: See under Blood Sugar
- HYPERHIDROSIS**: See Perspiration
- HYPERNEPHROMA**, [Muscholl] 808
- HYPERSENSITIBILITY**: See Anaphylaxis
- HYPERTENSION**: See Blood Pressure, High
- HYPERTHYROIDISM**: See also Goiter
HYPERTHYROIDISM, heart in exophthalmic goiter and in adenomatous goiter with, [Wilson & others] 1725—ab
acidosis in, [Major] *83
Goetsch test and radiography of thyroid, [Tarnaceanu] 588
red spot on thyroid as sign of, [Maranon] 359
test of, 848—E
treatment, relative value of surgery and roentgen ray in, [Richardson] *820
- HYPERTROPHY**, congenital total hemihypertrophy, report of case, [Stanton & Tuft] *1432
- HYPNOSIS**, psychic influence on heart and breathing during, [Astruck] 591
research on, [Koster] 443
- HYPOGASTRIC PLEXUS**, [Latarjet & Rochet] 282
- HYPOGLYCEMIA** after rectal infusions of sugar, [Rubino & Varela] 217
in exophthalmic goiter, [Holman] 1099
- HYPOPHYSIS**: See Pituitary
- HYPOSPADIAS**, balance, correction of, [Marion] 1032
treatment of, [Sánchez-Covisa] 285, [Camera] 436
- HYPOTHYROIDISM**, recognition and treatment of, [Millet & Bowen] 1177
- HYPOXEMIA**, determination of, [Kanders & Porges] 1493
- HYSTERECTOMY**, partial, [Hartmann] 1105
vaginal, supporting bladder and vagina after, [Heineberg] 353
- HYSTERIA**, [Kahn] 1652
and psychanalyses, 492
visual disturbances in, [Stibbe] 1112
- I
- ICHTHYOSIS**, treatment of, 574
- ICTERUS**: See Jaundice
- IDALHO** osteopaths may not practice surgery, 1170—ME
state board January and April report, 1793
- IDIOCY**: See also under Feeble-Minded
IDIOCY, clinical and medicolegal aspects of imbecility, 492
mongoloid, [Bolk] 812
- IDIOSYNCRASY** and anaphylaxis, [Sterling] 1712—C
- ILEOCECAL** invagination, colostomy with Witzel fistula for, [Gottesleben] 1743
- ILETIN** (Insulin-Lilly), 1851
- ILEUM**, ulcers of, [Mériel] 512
- ILEUS**: See also Intestine Obstruction
ILEUS during pregnancy, [Dietrich] 735
paralytic, after diphtheria, [de Rudder] 809
paralytic, following abdominal operations, [McKenna] *1666
postoperative, value of roentgen-ray examination in early diagnosis of, [Case] 134—ab
spastic, [Jacobsen] 150
spastic, in influenza, [Colmers] 735
spastic, subsides, under intraspinal anesthesia, [Mayer] 663
- ILIUM**, osteomyelitis of, in children, [Bearse] *991
- ILLEGITIMATE** children, maintenance of, 489
- ILLUMINATING** box for electrocardiographic films, [Kahn] *320
- ILLUMINATION**, dangers of use of water gas for, 414
hygienic, 939
- IMBECILITY**: See Idiocy
- IMMELMANN**, death of, 1533
- IMMIGRATION** and public health, 194
- IMMUNITY**, action on tubercle bacilli of leukocytes from immunized horses, [Howard] 1740
acquired racial immunity to infectious diseases, 1941—E
action of sodium salicylate on formation of immune bodies, [Swift] 356
and diet deficiencies, 848—E
local versus general, 832—E
reactions and biogenetic law, [Kritchevsky] 1412
to malignant disease, [Russ] 208
- IMMUNOLOGY**, immunologic significance of vitamins, [Werkman] 1647
immunologic experiments with human blood platelets, [Menne] 430
immunologic studies of intestinal fluids, [Umemura & Yamanouchi] 727
insusceptibility to sensitization, [Longcope] 356
lyophil and lyophobic proteins as antigen and antibody, [Ruppel] 1034
nonspecific desensitization, [Kellaway & Cowell] 357
test for power of immunizing response to therapeutic inoculation: vaccine response test, [Wright & others] 1490
therapeutic inoculation, [Colebrook & others] 1273
- INCOME TAX**, physician's 499—ME, 1158
traveling expenses held not deductible, 700—E
- INDELIBLE PENCIL**, injury from, [Bull] 1350
- INDIA**, American medical diplomas in, 1389
Indianization of Indian medical service, 121
public health in, 1324
veterinary work in, 1391
- INDIANS**, campaign to improve health of, 858
hospital for American Indians, 1529
public health among, 411
tuberculosis among North American Indians, 1404
- INDICANEMIA** in insufficiency of kidneys, [Baar] 1494
- INDIGESTION**: See Dyspepsia
- INDUSTRIAL** diseases, 1162, 1706
diseases, tendon sheath inflammation as occupational affection in hand or foot, [Sattler] 1420
medicine, optical service in industry, 1870
the factory physician, 123
- INFANTILISM**, cardiac, [Oddo & Girbal] 587
of renal origin, [Acuña & Garrahan] 590
psychic, [Jamin] 663
- INFANTS**, care and feeding of infants, *33, *106, *181, *251, [Herrman] 273—C, *321, *400, [Fishberg] 421—C, *473, [Leiser] 496—C, *551, *623, *694, *772, *845, *917, *1001
care of, teaching schoolgirls to care for infants, 1158
determination as to previous viability of infant found drowned, 128, 1034
diagnostic cutaneous reactions in, [Grosse & Kleinmann] 440
feeding, boiled butter in, [Lowenburg] 1101
feeding, boiled human milk in, [Martin] 1656
feeding, breast feeding at Lima, [Eyzaguirre] 1033
feeding, butter-flour mixture in, [Gismondi] 361
feeding, butter flour pap for, [Ernberg] 592
feeding, digestive disturbances in artificially fed, [Morquio] 285
feeding, dilution of milk for, [Levy] 216
feeding, duration of breast milk feedings, 113—E
feeding, fat-soluble vitamin A in indirect infant feeding, [Poulsen] 812
feeding, milk-free diet in nutritional disturbances of infants, [Moll & Stransky] 440
feeding, simple method for, [Cowle] 356
gymnastics for, 199
inorganic murmurs in, [Blechmanu] 359
intestinal intoxication in, acute, etiology of, [Boyd] 1029
mortality and employed mothers, 948
mortality, births and miscarriages, [Waldstein] 1658
mortality in Manchuria, [Suzuki] 1104
mortality in previous centuries as compared with the present, 1396
mortality in relation to infant feeding, 38—E
mortality in rural districts, 569
new-born, birth injuries to brain and their consequences, [Siegmund] 1493
new-born, blood transfusion by citrate method in hemorrhages of, [Falls] *678
new-born, dehydration in, [Bakwin] 59
new-born, diphtheria in, [Chevalley] 1183
new-born, fat tissue in, [Becker] 1036
new-born, hemorrhages of new-born, [Crnick-shank] 1735

- INFANTS**, new-born, influence of Vitamin A on weight of, [Schlossman] 1656
new-born, intracranial birth trauma, [Capon] 1344
new-born, maxillary sinusitis in, [Collet] 659
new-born, meningeal hemorrhage of [Cameron & Osman] 1103
new-born, origin of genital flora of, [Solomon] 1422
new-born, prevention of tuberculous in, [Debré] 1814
new-born, reflexes in, [De Angelis] 284
new-born, value of determination of bleeding and coagulation time on, [Warwick] 210
new-born, weight of newly born and seasons, [Hellmuth & Wnorowski] 968
nutritional disturbances of anatomic findings in, [Stephani] 1884
premature births, and congenital syphilis, [Kehrer] 1111
premature, heated bed for transportation of, [Hess] *1313
premature, survival of, under artificial feeding, [O'Farrell] 659
premature, with anoxemia, oxygen therapy in, [Bakwin] 797
urinary tract of fetuses and, [Brown & Corbelle] 1877
vomiting in, habitual, [Acuna] 514
welfare, (puericulture), [Rueda] 437
welfare, home for nursing mothers, [Com-mandeur] 1417
welfare, institute for, planned at Montevideo, 1783
- INFECTION**, bacterial, and lack of vitamins, [Werkman] 1647
bacterial, chemotherapy of, [Kolmer] 655
bacterial, relation of vitamin C to, [Findlay] 1031
Focal: See also under Teeth; Tonsils, etc.
focal, and protein sensitization, [Coons] 357
focal, and the seminal vesicles, [Cooper] 1791—C
focal, cervix a focal point of infection, [Dickinson] 1173
focal, is stomach a focus of infection? [Kopeloff] 799
mixed, and vaccine therapy, [Grimberg] 283
significance of lymphatic involvement in, [Mayo] *221
surgical, general, [Lexer] 662
therapeutic effect on sepsis of local inflammation and abscess formation, [Rolly] 1494
- INFECTIOUS DISEASES**, absorption experiment in diagnosis of, [Fragomele] 1654
control of, in New South Wales, 1628
heart function of children after, [Lebedev] 1349
influence of, on heart and vessels, [Kuiper] 1112
intercurrent, improvement after, in case of chronic melancholia of confusional type, [Usse] 1346
racial immunity to, 1941—E
silicic acid in, [Thoma] 1109
structural and functional involvement of heart following acute respiratory and other acute infections, [Hamburger & Priest] 1724—ab
treatment by shock, fixation abscess and vaccine therapy, [Dufour] 729
- INFLAMMATION**, experimental, chemical, [Wolf] 1647
roentgen-ray treatment of subacute inflammatory processes, [Kemp] 967
- INFLUENZA**, abscesses of larynx and trachea following, [Theisen] 956
and epidemic encephalitis, [Volpino & Rachiusa] 1491
and mortality from pulmonary tuberculosis, 1087
and surgery, [Czermak] 1109
bacilli, blood component necessary for growth of, [Terada] 1345
bacilli, influenza-like bacilli isolated from cats, [Rivers & Bayne-Jones] 1100
bacillus, para-influenza, [Rivers] 209
bacteriologic study of, [Lister] 358
bacteriologic study of nasopharyngeal secretions in influenza, [Olitsky & Gates] 1411
biologic products for prevention of, 129
croup in children, [Zschocke & Siegmund] 440
deaths from, in large cities, 486
differential diagnosis of neuritis and conditions simulating it, with special reference to postinfluenzal multiple neuritis and ataxia, [Wilson] *1443
diseases of abdomen in and after, [Esau] 1657
effect of injection of bacterium pneumosintes vaccines, [Olitsky & Gates] 1646
epidemic, 486
epidemic, cause of, 403—E
grippe and "flu," 789
history of encephalitis and, [Kaiser-Petersen] 288
pathologic lesions in various organs in, [Wolbach & Frothingham] 1803—ab
pneumococcal, [East] 141
postinfluenzal chronic pneumonitis, condition commonly mistaken for pulmonary tuberculosis and frequently for heart disease, [McCracken] *609
- INFLUENZA**, postinfluenzal herpes zoster, [Hollander] *470
prevalence of, 261
primary acute meningitis with influenza bacillus in infants, [Lisbonne & Leenhardt] 964
prohibition commissioner issues statement on prescriptions in, 336
proteolytic ferment in sputum and urine in influenzal pneumonia, [Abraham] 969
relations of pneumonia to, [Elkeles] 364
spastic ileus in, [Colmers] 735
- INFROIT**, Charles, memorial to, 1788
- INITIALS**, use of, to indicate membership in an organization, 717
- INJECTIONS**, intracardiac, of Epinephrin: See under Epinephrin
intramuscular, of iodized oil, radiography after, [Boulant] 66
intraperitoneal, in children, [Hill] 1408—ab
intraperitoneal transfusion, 275—E, [Crola] 514
intrasplenic, Holmgren's technique for, [Holmgren] 1744
intratracheal, of iodized oil, X-ray study of, [Forestier & Leroux] 1736
intravenous, [Thirolloix] 359, 1331—P
intravenous, abuse of, 935
intravenous, accumulation of intravenously injected gases in peritoneal cavity, [Tor-raca] 661
intravenous, of oily substances, [Lenzmann] 734
paravertebral, of procaine in differential diagnosis of intra-abdominal affections, [Läwen] 68
skin preparation in hypodermic needle punctures; gas bacillus infection within 12 hours at site of hypodermic puncture, [Tennant] *1066
superiority of sugar over salt solutions for, [Düttmann] 1185
- INJURY**, disease contracted in employment not an "injury," 427—M
request for services of injured child, 426—M
- INSANE**, competence of insane persons to be witnesses, 1338—M
domiciliary treatment in mental cases, 568
no one pronounced insane for religious belief, 652—M
physiologic tests in, [Sierra] 967
reform in after-treatment of mental cases, 1254
"semi-insane," [Owensby] 1540—ab
- INSANITY**: See also Psychiatry
- INSANITY** and crime, 50
arsphenamin therapy for mental disorders, [Mills & Vaux] 1541
histology of lacrimal gland in, [Canavan] 278
in Holland, 1703
in relation to war, 123
malicious prosecution of insanity proceeding, 795—M
medicinal, [Wimmer] 1345
real question when defense is insanity, 1266—M
the mental treatment bill, 1704
- INSECTS**, bites of, 870
effect of spider bites, [Baerg] 1808
- INSTITUTE** of Animal Pathology at Cambridge, 565
of Hygiene in Prague, 266
- INSTRUCTIONS**, correctness of instructions to jury in fracture case, 1105—M
- INSTRUMENT**: See also Apparatus
- INSTRUMENT** (drill) to facilitate correction of certain types of external deformities of nose, [Israel] *690
thoracic abdominal gate, [Rectenwald] 507
- INSULIN**: See under Diabetes
- INSULIN-LILLY**, [Lilley] 1851
- INSURANCE**, health, in Berlin, 642
injustice of socialistic legislation, 1861
insurance medical service, 784
life, gynecologic operations in relation to, [Giles] 1812
merger of social insurance and public welfare bureaus in Germany, 939
panel system, 1254
physicians remove telephones, 337
service, crisis in, 1785
untrue answer by physician applying for, 1871—M
- INTELLIGENCE** tests for diabetes, [Mills & Root] 207
- INTERN**, additional hospitals approved for intern training, 1538
internships in Army hospitals, 860
year, as an essential for license, [Macalister] 927—ab
- INTERNATIONAL** Congress: See under Congress
Health Board director appointed, 1389
health course and League of Nations, 488
intellectual cooperation and the League of Nations, 196
- INTERVERTEBRAL FORAMINA**, pathology of, [Forestier] 1653
- INTESTINE**, anaphylaxis and intestinal lesions, [Manwaring & others] *1437
anastomosis, aseptic method of, [Burket & McClure] 63
- INTESTINE** anastomosis, constriction with strip of fascia of afferent leg between gastro-enterostomy and entero-anastomosis, [Ehrlich] 286
anastomosis, end-to-side, [Bloch] 1652
anastomosis, new method of, [Trueblood] 876
anastomosis, spontaneous, [Berczeller & Szilárd] 735
antisepsis, [Dragstedt & others] 210, 556—E
bacteria and thyroid gland, [Harries] 1414
bacteria from intestinal tract, invasion of body by, [Moody & Irons] 1413
blood supply to sutured portion of, [Des-marest] 964
cancer in small intestine, [Freudenthal] 219
cancer of sigmoid flexure, [Schütze] 1278
cancer, ring carcinoma of small intestine, [Dawson] 1104
carriers of intestinal diseases, [McGuire & Hitchens] *665
digestion of connective tissue in, [Buckstein] 207
diseases, loss in weight in, [Kuttner] 438
diverticulum, Meckel's, [Kirchmayr] 441
diverticulum, Meckel's acute intestinal obstruction caused by fecal impaction in, [Bettman & Blum] *230
endogenous infection of small intestine, [Scheer] 1036
flora in diarrhea, [Hines] 1647
flora of rats on diet deficient in vitamin A, [Creekmur] 431
flora, transformation of, by lactose, [Bass] 508
fluids, immunologic studies of, [Umemura & Yamanouchi] 727
gangrene of, as complication of typhus, [Gregory] 1887
incarceration of, in slit in mesentery, [Borbe] 439
intoxication in infants, etiology of, [Boyd] 1029
invagination, chronic, [Delannoy] 1882
lesions precede pernicious anemia, [Coates] 1735
lipoma of, [Vaccari] 1274
liver and gallbladder disease of intestinal origin, [Brulé & Garban] 1491
malformation of, [Braeunig] 967
malformation of, congenital, ileus as consequence of, [Dahl-Iversen] 1182
micro-organisms of, [Bogendorfer] 216
obstruction: See also ileus
obstruction, acute, caused by fecal impaction in Meckel's diverticulum, [Bettman & Blum] *230
obstruction, acute, fatal case of, [Slater & Mackenzie] 1273
obstruction, acute intestinal obstruction, with special reference to paralytic ileus following abdominal operations, [McKenna] *1666
obstruction by mass of twigs, [Simpson] 1656
obstruction, chemical changes in blood after [Haden & Orr] 1412
obstruction due to ascaris, [Baugh] *181
obstruction following unrecognized cases of appendicitis, [Dickinson] 1102
obstruction, laparotomy on board ship for [Moxey] 64
obstruction, value of vomiting in, [Symonds] 1489
paralysis of, with diarrhea, [Szenes] 1548
protozoa, effect of diet on, [Hegner] 278
putrefaction and bacillus acidophilus, 186—E
putrefaction and tuberculosis, [Cassini] 881
resection of, aseptic, [Collins] 354, [Horine] 354
stasis, [Maitland] 1810
stenosis in, and pernicious anemia, [Mcullen-gracht] 150
tuberculosis, diagnosis of, [Lemon] 1957
tuberculosis in recurring ileocecal intussusception, [Thorner] *1063
tuberculosis of ulcerative form, [Stewart] 580
worms and appendicitis, 256—E, [Ravenel] 343—C, [Garlough] 422—C
- INTOXICATING BEVERAGE**, bill proposed in Senate to define, 118
- INTRAVENOUS** Therapy: See under Injection, Intravenous
- INTUBATION**, false passage in, [Ujj] 287
limits of, [Hohlfeld] 440
- INTUSSUSCEPTION**, chronic, due to carcinoma of sigmoid, [Ewart] 1734
extreme case of, [Twyman] 1177
in children, [Van der Ven] 69
in infants, [Moreno] 590
recurring ileocecal, report of a case complicated by tuberculosis of intestine, [Thorner] *1063
- INULIN** in diabetes, [Offenbacher & Eliassow] 117
- IODIDS**, action of, on nonprotein nitrogen of blood, [Grabfield & Alpers] 1643—ab
action of, on blood viscosity, [Deutsch & Fro-wein] 216
- IODIN** in urine, estimation of, [Marsh] 581
results of administering, to patients having exophthalmic goiter, [Plummer] 1955—ab

IODIZED OIL in diagnosis and therapeutics, [Sicard & Forestier] 1736
radiographic study of intratracheal injections of, [Forestier & Leroux] 1736
IOWA state board January report, 1638
state board November examination, 946
IRIDOCYCLITIS, grave, [Gowland & Gallino] 1420
IRIS, intermittent heterochromia of, of nervous origin, [Curschmann] 68
neurogenous heterochromia of, [Heine] 1657
IRITIS, some less frequently considered portals of infection in arthritis and, [Irons] *1899
IRRITATION, experimental, chronic, [Stajano] 589
ISLANDS OF LANGERHANS, changes in, in diabetes mellitus, [Conroy] 1270
ISO-AGGLUTINATION in new-born infants and their mothers, [McQuarrie] 1099
ISO-AGGLUTININS before and after ether anesthesia, [Huck & Peyton] *670
existence of more than 4 iso-agglutinin groups in human blood, [Guthrie & Huck] 1099
ISRAEL'S works, list of, 1887
ITALIAN Interuniversity Institute, 1322
ITCHING, cause of, in wound healing, 496
IVY, Poison: See Rhus Poisoning

J

JACQUET, napkin eruption of, [Crawford] 280
JAPAN, cancer statistics for, [Hoffman] 944—C
JARISCH-HERXHEIMER reaction, [Oppenheim] 884
JAUNDICE, bilirubinemia in, [Brulé & others] 143
bile acids in urine, blood, duodenal and cerebrospinal fluid in icterus, [Borchardt] 1885
catarrhal, [Lindstedt] 1548
catarrhal, caused by pancreas inflammation, [Barling] 1810
(catarrhal), infectious, [Minot & Jones] 1728—ab
chronic splenomegalic hemolytic, with isolation of streptococcus from spleen, [Meyer & Pilot] *1766
cirrhosis of liver with splenomegaly and, [Bauer] 147
dissociated, [Chabrol & Benard] 1490
due to arphenamin derivative, fatal case, [Golay] 1105
due to reticulo-endothelial system, [Rosenthal & Flischer] 68
duodenal intubation in cirrhosis and, [Chabrol & others] 587
duodenal ulcer in relation to inflammation and, [Zoepffel] 1279
epidemic, in New York state, 1921-1922, [Williams] *532
from emotional stress, [Rosenburg] 1184
in myocardial insufficiency, [Fishberg] *1516
infectious, in United States, [Blumer] 1873—ab
menstrual, 1256
obstructive, chronic (noncalculous), 9 cases treated by cholecystogastrostomy, [Downes] 205—ab, *377
obstructive, possible application of phenoltetrachlorophthalein test to, [Ottenberg & Rosen] *1519
obstructive, preoperative preparation in, [Walters] 582
persistent, in infant, [Myers] 1735
spirochetal, in Sweden, [Lapidus & Flaum] 1424
JAW, acquired atrophy of, [Juaristi & Arraiza] 1106
carcinoma of jaws, tongue, cheek and lips, [Crile] 959
reconstruction of, [Eiselsberg & Pichler] 732
JEJUNUM, partial obstruction at duodeno-jejunal junction as cause of duodenal ulcer, [Sloan] *977
JENNER, Edward, centenary of, 334, 337, 416, 425, 488, 489, 566, 880, 963
JEWISH method of humane slaughtering, 1705
JOHNSON, Burges, on the country doctor, 923—E
JOINTS, action of camphor and phenol in, [Hedri] 732
loose bodies in, [Sommer] 1884
syphilis, manifestations of syphilis in bones and joints, [Gastou] 1815
tuberculosis in, [Simon] 1421
JONES, Llewellyn, lay editor speaks of Hygeia, 1720
JOURNALS, American Journal of Roentgenology changes title, 411
Atlantic Medical Monthly, 262
Hygeia, 402—E, 777, 1720
new Argentine journal, Revista de la Asociación de Tisiología del Hospital Tornú, 193
new British medical periodicals, 1627
new Cuban journal, Camagüey Médico, 487
new French, review of endocrinology, 1468
new medical museum journal, 866
new pediatric journal, Revista Brasileira de Pediatria, 1083

JOURNALS, new Polish periodical, Journal of Experimental Medicine, [Funk] 1792—C
new Spanish, Clínica y Laboratorio, 859
of Clinical Research Association, 412
on health for Czechoslovakia, 643
scientific, plan for a world list of, 565
Tropical Diseases, Review (Medicosurgical Egypt), [Reynaud] 880
JUGULAR VEIN, injury to carotid artery and, with ligation and recovery, [Lawrence] *1068

K

KAHN test, comparison of Wassermann with, in 1,000 cases, [Litterer] 1406—ab
KALA-AZAR: See Leishmaniasis
KANSAS state board February examination, 1403
KEHR'S drainage, of hepatic duct, a substitute method for, [Ahrens] 1036
KELOIDS, radium treatment of, [Daland] 584
KENTUCKY state board December examination, 647
KERATITIS, anaphylactic, report of case, [Walker] *160
neuroparalytic, [Lagrange] 213
reticular, report of a case, [Osborne] *548
ulcerative pneumococcus, treatment of, [Pecallin] 213
KERATODERMIA blenorrhagica, [Kretschmer] *993
KETOGENESIS, problems in, 256—E
KIDNEY, aches and pains of renal origin, [Fullerton] 1030
arteriosclerotic, and chronic interstitial nephritis, [Dunn] 211
calculi, [Rovsing] 1887
calculi in ureter and, indications for treatment of, [Israel] 733
calculi, renal crepitation in, [Casariego] 1653
calculi, nephrolithotomy and pyelolithotomy, [Pousson] 588
calculi, pyelolithotomy for [Finochietto] 437
calculus, bone suppuration as cause of, [Paul] 1809
cancer in young pregnant woman, [Roubier] 283
changes of blood pressure in affections of kidneys, and their causes, [Arrak] 1742
colic, septicemia following passage of calculus through urethra, [Nelken] *1846
condition of glomerulus during renal secretion, [Woodland] 653
contracted, cause of delay in excretion of hippuric acid with, [Snapper & Grunbaum] 1112
contracted, genuine contracted kidney in children, [Wallgren] 592
cysts, congenital, [Kampmeier] 960
decapsulation in case of uremic anuria, [Niedermeyer] 1657
disease, capillaries in cardiovascular-renal disease, [Brown] 1729
disease, diet in, [Strauss] 286
disease, functional tests in prognosis of, [Rilsing] 1820
disease, internal, present methods of recognizing anatomic nature of, [Schlayer] 1547
disease, fatal case of prerenal toxemia, [Goldschmidt] 1273
disease in pregnancy, [Hinselmann & others] 1108
disease, relation of hypertension to, [Foster] 135
disease, retinitis associated with high blood pressure and, [Ellis & Marrack] 1812
double, and double ureter, [Braasch & Scholl] 279
duplication of renal pelvis and ureter, complications with, [Braasch & Scholl] 279
echinococcus disease in, [Kretschmer] 960
elasticity of bladder and kidney pelvis, [Katzenstein & Rosen] 1887
excretion of hemoglobin by, [Fukuda & Oliver] 725
exploratory exposure of, before removing its mate, [Ekehorn] 1887
factor in high blood pressure, [Braun] 882
floating, operative fixation of, [Kostlivy] 1110
function, calcium retention, calcification of vessels, and function of kidneys, [Rabl] 1276
function, determination of phenolsulphonephthalein excretion, in presence of hematuria, [Waters] *1216
function, elimination of phenolsulphonephthalein by, [Marshall & Vickers] 723
function, hippuric acid synthesis as test of, [Pratt & Jahr] 655
function, phenolsulphonephthalein test, [Merklen] 1815
function, phenolsulphonephthalein test in chronic pulmonary tuberculosis, [Merklen & Minvielle] 65
function, results of blood diastase tests, [Harrison & Lawrence] 659
function, standard technique for phenolsulphonephthalein test, [Young] 1543
function tests, [Rehn & Günzburg] 808, [Schlayer] 1492
function tests in children, [Mendel] 1109

KIDNEY function tests in relation to surgery, [Peters] 1348
function, tests of, with hypertrophied prostate, [Düttmann] 1185
function test with thiosulphate, [Nyiri] 127^e
function, ureosecretory constant, [Rolando] 1653
function, use of creatinin as test of, [Major] *384
functional tests of, influence of salt in diet on, [Negro & Colombet] 1032
gonococcal infections of, diagnosis of, [Shivers] *1359
gonococcal infection of, with spontaneous recovery, [Dourmashkin & Cohen] *1052
hematuria due to renal papillary varix, [MacGowan] 1809
infantilism of renal origin, [Acuña & Garrahan] 590
insufficiency, indicanemia in, [Baar] 1494
malformation of uterus and, [Eismayer] 810
milking calices of kidney, [Westenhofer] 1350
movable kidney, [Potel & Cordier] 1882
mycosis of kidney pelvis, [Tannenber] 1549
pneumoradiography of bed of, [Mosenenthal] 1887
polycystic, [Palacio] 214, [Crawford] 960, [Smith] 1407—ab, [Payr] 1887
pregnancy kidney, [Fink] 1278
ptosis, Riedel's lobe simulating nephroptosis, [Wilhelmi] *1755
pyelotomy, ureterolysis and extirpation of kidney, special technic, [Kolischer & Katz] *1757
renal disuse atrophy, significance of, [Hinman] 1809
roentgenography, perirenal insufflation of oxygen, [Quinby] 876
sarcoma, congenital, in a child of 29 days, [Deming] *902
sarcoma or embryoma of, in infants, [Robins] 276—ab, 1484
sarcoma, spontaneous hematoma in, [Boland] 275—ab, 1484
selective action of, as regards excretion of inorganic salts, [Denis] 1175
silent kidney, [Barney] 1731
suppuration in, conservative operation for, [Lehmann] 1887
surgery, conservative, associated with ureteral stricture, [Hunner] 1176
surgery, Serés' support for, [Serés] 215
surgery, technic for nephrotomy, [Heymann] 810, [Hagenbach] 1279
toxic nephritis in pyloric and duodenal obstruction: renal insufficiency complicating gastric tetany, [Rowntree & Brown] 1728—ab
tuberculosis, fibrotic type of, [Potts] 434
tuberculosis, surgery of, 1788
tuberculosis, pregnancy and nephrectomy in, [Favreau & Querrieux] 1653
tumors, huge kidney tumor, [Bull] 1350
tumors, perirenal tumors, report of case, [Day] *840
with 2 ureters, [Guyot & Jeanneney] 1652
xanthidrol reaction in microchemical tests for urea in, [Walter] 1276
KINESIA, paradoxical (some associated phenomena in extrapyramidal rigidity), [Blug] 1654
postencephalitic paradoxical, [Salmon] 1033
KNEE, cysts of external semilunar cartilage, [Phemister] *593
excision of fibula in amputations below, [Noon] 1103
injury of semi-lunar cartilage, [Bircher] 363
loose bodies in, extraction of, [Rodríguez Villegas] 145
KNOT, technic of, [Sullivan] *180
KOLMER complement fixation test for syphilis, clinical experience with, [Schamberg & Greenbaum] *836
modification of Wassermann test, [Kilduffe] 136, [Palmer & Gibb] 136
KURLOFF BODIES, [Senez] 1107

L

LAB-FERMENT in fetus, [De Toni & Montavani] 1183
LABIUM majus, fibrolipoma of, [Lovelace] *375
LABOR: See also Obstetrics
LABOR, acute gastric dilatation after, [van der Perk] 1037
benzin and iodine versus soap and water in preparation of patient, [Irving] 1173
bladder during delivery, [Vogt] 516, [Sachs] 1278
erythema nodosum after, [Gueissaz] 360
ether-oil, rectal administration of, [Thaler & Hübel] 1423
examination through rectum, [van Blommestein] 812, [Furst] 1422
fever at childbirth, practical import of, [Henkel] 1278
lipoids of maternal and fetal blood at conclusion of, [Stemons & Standar] 723
maternal mortality, [Hendry] 1957

- LABOR, nitrous oxid analgesia in, [Pasman] 967
obstetric shock, [Muret] 881
pituitary extract in induction of, [Watson] 353
pituitary extract in, rupture of uterus after, [Pouillot & Truchard] 1418
premature, and abortion, 717
prolonged, when to interfere in, [Beck] 353
test of, in relation to cesarean section, [Holmes & Burdick] 353
traumatic subcutaneous emphysema complicating, [Davidson] 1881
unusual malpresentation, [Rowland] 803
uterine inversion in, [Dantin] 425
version, [Tucker] 1407—ab
with fibroma, [Balard & Dehan] 1418
with flat pelvis, [Henkel] 883
- LABORATORIES, Austrian and German, fund for, 333
commercial, necessity of supervision of, 785
status of clinical pathologist and laboratory specialists, [Hilkowitz] 943—C
training of laboratory technician, [King] 1648
- LACRIMAL GLAND, histology of, in mental diseases, [Canavan] 278
roentgen irradiation of, 218
- LACTATION, effect of, on ovulation, [Johnson & Hower] 1811
food consumption of rats during and after, [John & Schiek] 1036
rate of decline of milk secretion during, [Brody & others] 1269
- LACTOSE, transformation of intestinal flora by, [Bass] 508
- LAENNEC, centenary of election of, to Academy of Medicine, 1468
- LANCET, centenary of, 336
- LANDOUZY museum, 1160
- LAPAROTOMY: See Abdomen, Surgery
- LARREY, Hippolyte, portrait of, 1160
- LARVEX, (danger of arsenic in clothing), 1072—E
- LARYNGECTOMY, total (miscellaneous topics), 1631
- LARYNGOSCOPY in tuberculous cases, [Minor] 428
- LARYNX, abscesses of larynx and trachea following influenza, [Theisen] 956
apparatus to demonstrate movements in, [Taivi] 1496
cancer, precancerous stage of cancer, [Jackson] 654
diphtheria, suction in, [Litchfield & Hardman] 524
in disease of thyroid, [New] 1098
paralysis of dilators of, [Lermoyez & Ramadier] 880
paralysis of inferior laryngeal nerve, [Trivas] 1883
roentgen-ray injuries of, fatal, [Hofmeister] 441, [Perthes] 441
scleroma of, [Forni] 284
tuberculosis, [Verploegh] 1744
tuberculosis, roentgenotherapy in, [Rickmann] 218
tumors, technic of thyrotomy for, [Hertzler] 956
- LEAD poisoning, blood as guide to early diagnosis in, [Craik] 658
poisoning, errors in early diagnosis of, [Schwarz & Hefke] 1656
poisoning in infancy, [Holt] 1097
poisoning, therapeutic efficiency of various agents in, [Hanzlik & Preshe] 1341
prohibition of lead in paints, 1391
retention and elimination of, [Aub & Minot] 1643—ab
toxicity of inorganic lead compounds and metallic lead, [Hanzlik & Preshe] 1341
white, dangers of, 1018, 1708
- LEAGUE OF NATIONS and international health course, 488
and international intellectual cooperation, 196
and regulation of traffic in narcotics, 1786
health committee of League meets, 1627
health conference of, 415
university group in favor of, 1467
- LEDERLE LABORATORIES, protest against circularization of scientific article by, [Bern-ton] 1951—C
- LEFT-HANDEDNESS as an educational problem, [Caille] 1729
- LEG: See also Extremities
- LEG, artificial limbs for ex-service men in Roumania, 706
callous ulcers of, treatment of, [Hütten] 441
congenital asymmetry of pelvis and, [Pere-mans] 1646
congenital fracture of, [Bull] 220
- LEIOMYOMA of stomach, [Hunt] 1098
- LEISHMAN, William, appointed director general of the Army Medical Service, 934
- LEISHMANIASIS, antimony resistance of parasites and intolerance of patients in treatment of, [Nasso & Mairaldi] 1184
associated mycosis and, [Terra & others] 731
cholesterin content in, [Castorina] 144
cutaneous, (oriental sore) in United States, [Lambert] 986, [Darling] 1260—C
in France, [Renault & others] 359, [Labbé] 963
in Messina, [Castorina] 589
- LEISHMANIASIS in United States, report of third American case of kala azar and of a case of oriental sore, [Faber & Schussier] 93
infantile, Brahmachari's reaction in, [Nasso] 1883
of nose, pathology of, [Klotz & Lindenberg] 1409
- LENTICULAR nucleus, treatment of affections of, [Paulian & others] 66
- LEPERS, appropriation for leper's home, 563
released in Venezuela, 1465
supplies for leper stations, [Wilson] 201—C
- LEPROSY, antimony in, [Versari] 1033
chaunmoogra oil in, [Harper] 658, [van Gaasbeek] 802, [Wilson] 1636—C
in Argentina, [Aberastury] 514
in Dutch art, [van Rijnberk] 811
in Spain, 491
in Uruguay, [Brito Foresti] 732
necropsy findings after clinical cure of, 942—ab
nodular, unusual type of, in Sudan, [Archibald] 509
- LEPTOMENINGITIS of otitic origin, purulent, treatment of, [Gradenigo] 66
- LETTERS, use of initials to indicate membership in an organization, 717
- LEUKEMIA, acute, simulating tuberculous caries of spine, [Melchior] 219
chronic, volume of blood and plasma in, [Keith] 1027
lymphatic, acute in children, [Cooke] 962
lymphoid, chronic, [Tapie] 587
myelogenous cases of, [Moore] 803, [Cohen] 1802—ab
myelogenous, radium in, [Henriques & Menville] 61
myeloid, of skin, [Ketrin & Gay] 873
pregnancy in, [Hausmann] 364
problem of leukemias, [Ordway] 1800—ab
- LEUKOCYTES: See Blood Cells, White
- LEUKOCYTOSIS, alimentary, in 80 normal men, study in reference to crise hemoclasique of Vidal, [Feinblatt] 613
digestion, and digestion leukopenia, [Schip-pers & de Lange] 1423, 1886
- LEUKODERMA, quartz light in, [Toomey] 139
- LEUKOPENIA as reflex of autonomic system, [Müller] 734
digestion leukocytosis and digestion leuko-penia, [Schipers & de Lange] 1423, 1886
vagotonic, in functional neuroses, [Glaser & Buschmann] 1741
- LEUKORRHEA, etiology of, [Jaschke] 517
etiology and treatment of, [Bigler] 729
- LEVULOSE and diabetic metabolism, [Joslin & Root] 1727—ab
diabetic acidosis: action of levulose, [Desgrez & others] 805
in diabetes, [Labbé] 434
- LIABILITY for injury extended to death from second operation, 795—MI
for malpractice, 1095—MI
manager of farm not liable for medical services, 1405—MI
notice required in actions for malpractice—
not liable for failure to treat eyes, 651—MI
obligation to pay physician's bill implied, 1482—MI
of hospital for acts of its servants, [Lapp] 1078—ab
of roentgenologists and surgeons, 577—MI
physician held liable for leaving drainage tube in wound, 951—MI
physician not liable for death of child from eating tablets left for adult, 503—MI
- LIBRARIANS, International Congress of, 1326
- LIBRARY, medical, for American hospital in Japan, 563
- LICENSE, invalid ordinance and revocation of, 503—MI
revocation of, (use of name other than own—
board and agent), 1640—MI
- LICENSURE, medical, in Missouri, 923—E
American physicians must pass examination in Mexico, 1859
medical, some needed revisions in, in accord-
ance with present day medical education, [Babcock] 926, 1262—ME
power to prescribe qualifications for exam-
inations, 1798—MI
- LICHEN planus, blood pressure in, [Roussel] 61
- LIFE saving, boats or rafts for, 1531
- LIGAMENTS, malpractice not shown in tearing of, 1871—MI
- LIGATION, vessel-blood shock from ligation of limb, [Le Calvé] 1737
- LIGHT, heating of tissues by heat and light rays, [Hill & Campbell] 1544
Therapy: See Phototherapy
urticaria caused by, preliminary report, [Duke] 1835
waves, study of, in relation to rickets, [Hess & Weinstock] 687
- LIGHTING of post offices, 1171—ME
- LIMBS: See Extremities; Leg
- LION, bite of mad mountain lion causing hydro-phobia, 1941—E
- LIP, cancer of jaws, tongue, cheek and, [Crie] 959
cancer, results of operations for, [Simmons & Daifand] 63
epitheliomas of, [Miliani] 360
- LIPEMIA, diabetic experimental, [Allen] 279
- LIPEMIA in diabetes, [Wishart] 279, 697—E
retinalis, [Gray & Root] 995
- LIPODYSTROPHY, progressive, [Babonneix] 963
- LIPODEMIA and xanthoma, [Yamakawa & Kashiwabara] 1495
- LIPOIDS in human ovaries, [v. Mikulicz-Radecki] 590
- LIPOMA, multiple nodular lipomatosis and adiposis dolorosa, [Gaglia] 730
myxedema in lipomatosis, [Klsch] 439
of intestine, [Vaccari] 1274
of mammary region, [Torraca] 285
subpleural, in child, [Beyers] 962
symmetrical lipomatosis of neck, [Bufalini] 284
- LIQUOR prescriptions, United States district court holds limitations on liquor prescrip-tions unconstitutional, 1464
- LISBON'S Institute for Scientific Research, 413
- LISTER, in honor of Pasteur and, 1862
- LITERATURE, writing medical articles, [Van Rijnberk] 1280
- LITTLE'S DISEASE, ocular phases of, [Posey] 80
- LIVER abscess, [Ludlow] 1342
access to, [Williams] 65
amebic hepatitis, [Eschbach] 65
and gallbladder disease of intestinal origin, [Brule & Garban] 1491
anomaly of left lobe of, [Groover & others] 59
ascarids in liver and bile ducts, [Hartmann-Keppel] 1346
cancer, primary, [Helvestine] 875, [Clawson & Cabot] 909
cells and protein metabolism, [Noel] 1654
chronic functional disease of, (hepatism), [Glenard] 1491
cirrhosis, diversion of portal blood in, [Flori] 66
cirrhosis, duodenal intubation in, [Chabrol & others] 587
cirrhosis, Laennec's, edema in, [Lemierre & Lévesque] 284
cirrhosis, pathogenesis of, [Fiessinger & Wolf] 1546
cirrhosis with acute pancreatitis in children, report of case, [Anderson] 1139
cirrhosis with icterus and splenomegaly, [Bauer] 147
disturbance as probable cause of extreme re-current drowsiness in child, [Thomson] 1650
echinococcosis of, [Castex] 286, [Arrizaba-laga] 1817
floating, operation for, [Kaiser] 439
function, clinical use of Hay's sulphur test of, [Simon] 1818
function, disturbances of, encephalitis, [Meyer-Bisch & Stern] 1742
function, hemoclastic shock as test of, [Brown] 1729
function, improved phenoltetrachlorphthalein test for, in pregnancy and its toxemia, [Rosenfield & Schneiders] 743
function, phenoltetrachlorphthalein test of, [Rosenthal] 209
function, simultaneous determination of bil-irubin in serum and bile efficiency test for, [Hetényi] 517
function, spontaneous and induced glycu-ruria in pregnancy as an index of, [Volpe] 513
function test, chromocholiscopy as, [Hamid] 440
function, test of, in pregnancy by hemoclastic crisis, [Kaboth] 219
function test with methylene blue, [Cohn] 733
function tests, 187—E, [Deakin & Graham] 1342
function tests, comparative, [Hesse & Have-mann] 734
function tests in children, [Hecht & Nobel] 442
function, Vidal's test of, [Nussbaum] 441, [Ribeyrolles] 590, [Andreen-Svedberg] 1744
in children, [Lereboullet] 587
in chronic infections of children, especially in syphilis and tuberculosis, [Lereboullet] 284
in pregnancy, [Rafael Mestre] 967
insufficiency, [Chautard] 512
metastatic infarcts of, [Robichaux] 1157
nonparasitic cyst in, [Margarucci] 513, 965
polycystic disease of, [Costantini & Du-boucher] 1181
pyloric syndrome from traumatic stretching of round ligament of, [Delfor del Valle] 1739
removal of, and avitaminosis in their rela-tion to sugar metabolism, [Bickel] 1547
retention of inorganic iron in perfused liver, [Matsuoka] 1818
sagging, [Fasano] 965
significance of, in circulation, [Hess] 364
tuberculoma, primary, multiple, with degen-erated hydatid cyst, [de Crespiigny & Cleland] 1104
yellow atrophy, subacute and acute, surgery in, [Braun] 733
- LOANS, honor, for students, 862
- LOCOCK'S Cough Elixir, 645—P
- LOCOMOTOR ATAXIA: See Tabes Dorsalis
- LOCUSTS, seventeenth year, 1792
- "LOGOPEDY" congress u, proposed, 710

LONDON, census of, 1085
LOVETT'S PILLS, 645—P
LOZANO'S lecture in Paris, 1533
LUTETIN REACTION, meaning of serum globulin in, [Taoka] 1345
LUTOSINE, 1710—P
LUMBAR PUNCTURE: See Rachicentesis
LUMBAR REGION, treatment of pains in, [Burekhard] 1037
lumbosacral pain and sacralization, [Gordon] 1486
LUMINAL: See Phenobarbital
LUNG abscess, [LeWald & Green] 723, [Lockwood] 723, [Miller & Lambert] 1803—ab
abscess, chronic, [Heuer & MacCready] 723
abscess, prevention of, in nasopharyngeal surgery, [Richardson] 955
abscess, treatment of nontuberculous abscess, [Whittemore] 1411
adenoma of sheep's lung due to parasites, [Hofman] 1279
cancer, experimental, [Kimura] 1545
cancer, primary, [Gibson & Findlay] 586
determination of borders of lung, and exudates by inspection, [Weisz] 663
diagnostic use of passive movements of, [Ladeck] 1549
echinococcosis of, [Balboni] 137, [Portu Pereyra] 1184, [Halahan] 1342
edema after thoracocentesis, [Lindblom] 1424
edema, posture used in reviving cases of, [Rautenberg] 882
effect of anesthetics on, [McDowall] 585
epituberculous infiltration of lungs in children, [Langer] 442, [Mourek] 443
examinations, common sources of error in, [Duncan] *1213
fibrosis, report of case, [Fontaine] *1129
gangrene, [Bergman] 215
gangrene, artificial pneumothorax in, [Emile-Weil] 213
gangrene in child, [Rodriguez Gómez] 285
massive collapse of lung, [Gwyn] 1803—ab
parasitic pulmonary diseases in Peru, [Corvetto] 807
percussion of hilus, [Haus] 1494
postoperative pulmonary complications, [Cooke & Pickles] 959
suppuration and its treatment, [Meyer] 723
syphilis of, [Egdahl] 429, [Munro] 433, [Bryce & Patterson] 1812
Tuberculosis: See Tuberculosis, Pulmonary
Vital Capacity: See under Vital Capacity
LUPUS erythematosus as a systematic disease, [Goeckerman] *542
erythematous, blood pressure in, [Roussel] 61
treatment of, 202
treatment by diathermy, [Milner] 281
LUST, Eugène, celebration in honor of, 197
LYE, cicatricial stenosis of esophagus caused by commercial preparations, [Clarf] *1600
LYMPH, traumatic extravasation of, [Bonn] 808
LYMPH NODES, lowering of blood pressure by extracts of, [Searpa] 67
hypertrophy of hemolymph nodes in Texas fever immunes, [Warthin] 1879
lymphatic involvement in infections, [Mayo] *221
multiple blastoma of, [Ferrero] 1274
research on origins of lymphatics, [Magnus] 439
tuberculosis of lymphatic system, [Philip] 1544
tuberculous, bronchial, diagnosis of, in children, [Brinckmann] 220
tuberculous broncho-adenopathy, clinical and roentgen-ray study of, [Frazer & MacRae] *1292
LYMPHADENITIS, mesenteric, surgical significance of, [Freeman] 132—ab
LYMPHOCYTE index in tuberculosis, [Webb & others] 1173
LYMPHOCYTOSIS (lymphatic reaction), [Baar] 591
LYMPHOGRANULOMATOSIS, subacute inguinal, [Destéfano & Vaccarezza] 1547
LYMPHOMA, gummatous, [Clark] 731
LYMPHOSARCOMA of pharynx, [Ferreri] 731
of scrotum, [Oudard] 1182
LYON-MELTZER method of drainage: See under Gallbladder
LYSOZYM, Fleming's [Bail] 1548

M

McCRAE, Colonel, memorial to, in France, 118
McGRAW'S Oil of Life, 1711—P
MACULA, syphilitic atrophy of, [Castello] 1485
MADINAVEITIA, death of, 641
MADURA FOOT, 496
MAGNESIUM in human blood, new method for determination of, [Mirkin & Druskin] 1100
influence of yeast and butter fat on, assimilation of, [Bogert & Trail] 429
sulphate as sedative, [Weston & Howard] 1339
MAGNET, ophthalmologic, improvised, [Lund] 1549
MALLS, to what extent the sending of pamphlets may constitute illegal practice of medicine, 640
MAINE state board November examination, 273
MALAGA against international sanitation, 1786

MALARIA, [Godoy & Pinto] 966
a type of postoperative fever, probably malarial relapse, [Horsley] *1065
abuse of quinin in, in children, [Rosamond] 1649
and mosquitoes in Baden, [Eckstein] 1494
and sunlight, 558—E
ascertaining splenic index and mosquito focus from schoolchildren, [Darling] *740
colloidal shock in relation to, [Monteverde] 1033
congenital, [Forbes] 797
eradication of, in Latin America, [Lebrede] 661
estivoautumnal, positive Wassermann test in fatal case of, [McConnell] *1123
evolution of, [Rieux] 729
fellowships for research on, 860, 1322
infant, [Bortagaray] 285
mclaniferous leukocytes in diagnosis of, [Clemens] 716—C
parasite, new (plasmodium ovale), [Stephens] 509
parasites, activation of, by different methods, [Di Pace] 660
roentgen-ray treatment of, 965
silver arsphenamin, neosilverarsphenamin and sulphoxylarsphenamin in, in Dutch East Indies, [Surbek] 1656
spleen rate for determining malaria prevalence, [Maxcy & Coogole] 1650
treatment with alkali combined with quinin, [Sinton] 1179
tropical, in Berlin, [Schiff] 1277
with headache as only symptom, 1469
MALLEOLUS, internal, separate center of ossification for tip of, [Fairbank] 877
MALNUTRITION: See under Nutrition
MALPRACTICE, liability for, 1095—M1
not shown in tearing of ligaments, 1871—M1
notice required in actions for, 651—M1
or maltreatment, insufficient evidence of, 872—M1
physician sued for negligence in setting a fracture, 934
statute of limitations and expert testimony in malpractice case, 652—M1
MALTA FEVER, [Salvat] 215
and fixation abscess, [Rozičs] 588
and goat's milk, [Seeor] 645—C
and goats in United States, 325—E
mixed infection with typhoid and, [Auricchio] 589
unusual case of undulant fever, [Archibald] 1032
vaccine treatment of, [de Finis] 806
MANDAMUS case of physician expelled from society, 351—M1
MANDIBLE: See Jaw
MAPS of earthquakes, tornadoes, etc., 1787
MARRIAGE and syphilis, [Routh] 1416
new Danish law on, 335, 592
MASSEURS, granting of diplomas to, 1018
MASTITIS, diffuse, syphilitic, [Taylor] 60
MASTOIDITIS, atypical surgical: report of case, [Johnson] *399
chronic, frequency of intraaural complications of, [Vila de Abadal] 1275
latent, [Reverchon] 1183
MATERNITY Bill: See Sheppard-Towner Act
hospitals, rôle of, [Peralta Ramos & Garahan] 361
house, [Thierry] 360
MAUDSLEY hospital opened, 565
MEASLES, acetone in urine in, [Nagahara] 1104
as modified by preventive injections of convalescent's serum, 709
convalescent serum as prophylaxis in, [Ribeyrolles] 286, [Schilling] 515, [Blackfan & others] 958, [Mery and others] 1417
diagnostic value of primary signs of, [Piédelièvre] 729
experimental, [Nevin & Bittman] 875
pneumonia following, [Mixsell & Giddings] 959
prognosis of, [Olarans Chans] 285
urticaria stopping during, [Apert & Broca] 1545
MEAT poisoning, case of depersonalization following, [Pilez] 148
poisoning, outbreak of, 787
MEDIASINUM, subpleural lipoma in child, [Beyers] 962
posterior mediastinotomy, [Lilienthal] 723
MEDICAL Research Council, 414
MEDICINE, art of, [Cutter] 1010—ab
crowded profession, 577
efficiency in, 255—E
history, course in, 1381—ab
human welfare and modern medicine, [Wilbur] *1889
humanity's debt to medical science, 1522—E
illegal practice of medicine and sending of pamphlets through mail, 640
illegal practice of, definition of, 1160
in Egypt, [Zeitoun] 881
International Society of History of Medicine, 1464
modern, some criticisms on, 566
Practice Act: See under Practice Acts
preventive, and general practitioner, [Dodson] *1

MEDICINE, preventive, problem of, in practice and in medical education, [Haythorn] *885
relation of organized women to medical profession, [Means] 1152—ab
resourceful general practitioner of modern medicine, [Billings] *519
social, 1395
MEDICOLEGAL INSTITUTE, formal opening of, 1861
MEGACOLON: See Colon
MEINICKE REACTION, comparison of Dold and Meinicke reaction with Wassermann reaction, [Fortig] 1656
and Wassermann's reaction in cancer of uterus, [Niedermayr] 884
in diagnosis of syphilis, [Meinicke & Grün] 1034
MELANCHOLIA, chronic, improvement after intercurrent infectious disease in case of, [Usse] 1346
depressive, with asthenia and melanoderma, [Damaye] 1814
in children, [de Sanctis] 1345
MELANODERMA, depressive melancholia with asthenia and, [Damaye] 1814
sympathicotonia in, [Gilbert & Coury] 359
MENINGES, hemorrhage of, in newly born, [Cameron & Osman] 1103
hemorrhage, bilateral, middle, [Watkins] 1416
hemorrhage, spontaneous, [Fraeassi] 732
nature of cranial hyperostoses overlying endothelioma of, [Phemister] 1267
permeability of, [de Toni] 1106
regeneration of, [Sayad & Harvey] 1028
MENINGITIS, curable, with lymphocytosis, [Apert & Broca] 660
cutaneous reactions in tuberculous children with spinal fluid from tuberculous and nontuberculous meningitis, [Usbeck] 1818
cystic, compression of spinal cord by, [Chiappori & Lavalle] 145
due to pseudomeningococcus, [Chevre] 728
of otitic origin, [Aboulker] 1815
pathogenesis of, [Pollak] 1495
pneumococcus, complicated by syphilis, auto-serum treatment of, [Horn] *1124
primary, acute, with influenza bacillus in infants, [Lisbonne & Leenhardt] 964
serum therapy of meningitides, [Ayer] 1953—ab
tuberculous, acute, [George] 803
tuberculous, apparently cured for 5 months to date, [Pissavy & Terris] 1736
tuberculous, evolution of spinal fluid in a case of, [Bickel] 1106
tuberculous, oxygen insufflation in, [Reiche] 1742
tuberculous, Wildbolz's reaction in, 218
MENINGOCOCCEMIA, treatment by proteins and specific serum in, [Blum] 1490
MENINGOCOCCUS septic fever, protracted, intermittent, [Netter] 964
septicemia without meningitis, [Gandy & Boulanger-Pilet] 65
MENINGO-ENCEPHALITIS, experimental tuberculous, endothelial response in, [Foot] 355
MENOPAUSE, [Halban] 1422
effect of restricted diet on, [Slonaker & Card] 1409
preclimacteric corpulence, [Willemse] 1037
treatment of hot flushes of, 1400
MENORRHAGIA in young girls, [Gray] 212
radium treatment of, [Blacker] 1103
thrombopenic splenectomy in, [Halban] 1740
MENSTRUATION, actual menstruation period, [Mühsam] 1742
does menstruation influence blood concentration? [Tyler & Underhill] 1173
etiology of, [Kross] 1542
jaundice preceding, 1256
menstrual and hypertonic hematuria, [Strauss] 1886
menstrual hemoptysis, [Destéfano] 807
relation of onset of, to environment, [Lintz & Markow] 1268
vicarious, [Dalehé] 589
MENTAL Defectives: See Feeble-Minded
hygiene, league for, founded in Brazil, 1390
suffering, damages for, 504—M1
MENTHOL, action of camphor, menthol and thymol on circulation, [Heathcote] 1648
MERCUPRESSEN, 344
MERCURIC CYANIDE—M. C. W., 1775
MERCUROCHROME, action of stronger solutions of mercurochrome in early gonorrheal infections, [Rupel] *530
caution in use of mercurochrome—220 soluble, [Stolz] 1023—C, [White] 1261—C
in puerperal sepsis, [Piper] 136
incompatibility of mercurochrome—220 soluble with local anesthetics and alkaloids, [Warren] 1091—P
MERCUROSAL, 844
MERCURY, diuretic action of mercurials, [Blum & Schwab] 588
inhalation, effect of, on animal organism, [Gutman] 955
inhalation therapy of syphilis, [Gutman] 955
mercurial stomatitis, [Bessesen] 1098, 1245—E, 1385—E
mercurials in experimental syphilis, [Hill & Young] 1474—C

- MERCURY**, mercuric chlorid douche, complete anuria following, recovery after bilateral renal decapsulation, [Outerbridge] *102
mercuric dermatitis, [Jordan] 357
MESENTERY, contraction, diagnosis of, [Schill] 1656
incarceration of intestine in slit in, [Borbe] 439
primary tuberculosis of mesenteric glands, [Moreau & van Bogaert] 65
retractile mesenteritis, [Falcone] 361
METABOLISM apparatus, detecting leaks in, [Pierce] 202—C
basal, apparatus, student form of, [Benedict & Benedict] 1730
basal, clinical significance of, [Marañon & Carrasco] 1545
basal, comparison of DuBois, Harris and Benedict standards for estimation of, [Boothby & Sandiford] 430
basal, effects of glucose indigestion on, in diabetic subjects, [McCann & Hannon] 1269
basal, effect of splenectomy on, [Mariue & Baumann] 1270
basal, in disease of pituitary, [Plaut] 67
basal, in pregnancy, [Cornell] 583
basal, in psychoses, [Gibbs & Lemcke] 655, [Bowman & Grabfield] 1340
basal, in thyroid disease, [Rowe] 1807
basal, in tuberculous women, variations in, [Pierson] 721
basal, influence of endocrines on, [Marine & Baumann] 318, [Marine & others] 1270
basal, influence of growth on, [Fleming] 797
basal, pathology of, [Liebesny & Schwartz] 148
basal, rate in untreated exophthalmic goiter, [Kessel] 1727—ab
basal, standards of, [Boothby & Sandiford] 430
basal, value of, in cretinism, [Talbot & Moriarty] 1097
blackwater fever a disease of, [Hall] 1881
change of cell metabolism as basis of pathologic reactions, [Gottschalk] 1034
congenital occlusion of common bile duct, [Paul] 442
errors in, and functional nervous disturbances, 698—E
gaseous metabolism and blood flow in brain under narcosis and hypnotics, [Yamakita] 1495
influence of ginseng on, [Inada & Takamizu] 585
intensity of, and diuresis, [Vollmer] 1034
nitrogenous, influence of benzyl benzoate on, [Pack & Underhill] 139
of Chinese, [Read & Wang] 1178
of reducing substance of submaxillary, [Anrep] 727
sugar consumption by active glands, 1385—E
water, [Oehme] 808
METABOLITES, distribution of, in body, 476—E
METASYPHILIS, [Redlich] 1819
METHYLENE BLUE, polychrome, to help locate malignancy in tissues to be examined microscopically, [Terry] *1774
METORRHAGIA: See Uterus, Hemorrhage
MEXICAN Medical Association, 268
restrictions on foreign physicians, 262, 1859
tax on samples, [Stadelman] 1537—C
MICHIGAN state board reciprocity report, 718, 1638
MICROGRAPHY, (some associated phenomena in extrapyramidal rigidity, [Bing] 1654
MICROSCOPY, rapid technic for preparing histologic sections by paraffin method, [Keiser] *690
MIDWIVES, training of, [Jeannin] 588
MIGRAINE, [Schlesinger] 1184
and anaphylaxis, [Vallery-Radot] 1346
blindness after, [Löhlein] 67
following nonsuppurative affections of sinus, [Dutheil de Lamotte] 1183
in children, [Curschmann] 734
ophthalmic, with unusual symptoms, [Moodie] 432
toxic substances in blood in, [Van Leeuwen & Zeydner] 357
treatment with peptone, and evidence of its anaphylactic origin, [Miller & Raulston] 1728—ab, *1894, 1910
MILITARY service as affecting medical students, 1326
training and health, 231—ab
training camp, citizens', *1438, 1704
training camp, citizen's, epidemiologic survey in, [McGuire & Hitchens] *665
training, rôle of civilian physician in training of citizen soldiers, [Ireland] *1438
MILK, antiscorbutic power of different milks, [Lesné & Vaglianos] 359
bacillus acidophilus, is action of, a strictly bacteriologic phenomenon? [Kopeloff] *602
bacillus acidophilus, studies on therapeutic application of, [Cheplin & others] *1896
bacteriologic and clinical experience with bacillus acidophilus, [Gompertz & Vorhaus] *90
boiled human milk, [Martin] 1656
condensed, regulations with regard to, 785, 1705
consumed in Paris, 1255
MILK, copper as constituent of woman's and cow's milk: its absorption and excretion by infant, [Hess & Supplee] 1728—ab
dilution of, for infants, [Levy] 218
diphtheria epidemic traced to milkman, 1779—E
Goat's: See under Goats
human, conditions temporarily affecting quantity and quality of, 106
human, excretion of foreign protein in, [Stuart] 797
idiosyncrasy against cow's milk in infants, [Holstein] 1658
mixture, *772
organotherapeutic action of, [Cassoute] 512
preservation of, by hydrogen peroxid, [Kahrhel] 1495
rate of decline of secretion, during lactation, [Brody & others] 1269
regulations, 264
relation of vitamin content of milk to rachitis, [Pollitzer] 589
scarcity in Berlin, 1532
sore throat epidemic in Portland due to, [Benson & Sears] *1608
supply of Prague, 643
supply, purity and quality of supply of cities of 3,000 or more, [Spengler] 1541—ab
transmission of pollen hay-fever, [Herrmann] 1413
Voigt-filled milk bill favorably reported, 118
MILKMAN carrier, 1779—E
MILLIGRAM ampules, German warning against, 563
MINISTRY of Pensions, medical work of, 861
MINNESOTA state board October examination, 498
MISCARRIAGES and births, [Waldstein] 1658
and decrease of population, 1328
MODIFIED Pneumococcus Vaccine, 1143
MOHAMMEDANS, hygienic reforms among, in Tunis, [Dinguizli] 1490
Mohammedan prayers and hygiene, [Dinguizli] 963
von Moltke, how von Moltke died, 1524—E
MONOCYTES, [Wollenberg] 516
MONONUCLEOSIS, infectious, [Longcope] 135
MONSTERS, fetal monstrosities and placenta praevia, [Greenhill] 960
fetal monstrosity, [Clark] 1734
MONTANA state board April examination, 55
state board October examination, 203
MOONSHINE, commissioner Haynes warns against, 1626
MOORE, Sir Norman, 49
MORBIDITY, disease in other countries, 1083
MOROCCO, prevention of diseases in, [Martial] 142
MORPHIN, abuse of, in chronic affections, 862
action of morphin series on respiration, [Schmidt & Harer] 725
habit, Quayle's "Bob-White Habit Sinkers" an alleged cure for, 270—P
MORTALITY STATISTICS: See Vital Statistics
MOSQUITOES, anopheline mosquitoes of Siam, [Barnes] 1483
MOTOR action, induced, [Gertz] 149
underdevelopment of intellectually normal children, [Heller] 1036
MOUNTAIN SICKNESS, relation of pulmonary gas diffusion constant to, [Harrop] 1644—ab
MOUTH affections in pregnancy, [Poletti] 730
accessory, [de Castro] 1958
cancer in mucosa of mouth and throat, [Heidrich] 1348
disinfection of, [Leo] 1034
request for reprints of articles on oral hygiene, [Hyatt] 1951—C
tumors, radium in relation to, 124
MOVEMENTS, intentional, "spinal" deviation of, [Ingvar] 736
rôle of antagonists in voluntary movements of man, [Wachholder] 364
MOVING PICTURES, Klieg, or cinema, eye, 1792
medical, 1709
MUMPS: See Parotitis
MURDER, is murder a misdemeanor? 425
MURMURS, extracardiac, especially from lung vessels, [Arnstein] 1277
MUSCLE indicator for plotting out field of diplopia and visualizing position of muscle involved with face turning and head tilting, [Miller] *1453
mechanism and innervation of tonus of striated muscles, [Spiegel] 1657
nourishment of, 1024
progressive myopathies due to hereditary syphilis, [Jeanselme] 435
rupture of long head of biceps flexor cubiti muscle, [Ludington] 1484
sensory phenomena associated with defective blood supply to working muscles, [MacWilliam & Webster] 585
teres minor, importance and function of, [Greig] 878
tonus and creatin content of striated muscle, [Sulger] 810
tonus and potassium ions, [Neuschlosz] 809
transplantation of tensor fasciae femoris in cases of weakened gluteus medius, [Legg] *242
trapezius, hypotrophy of, as early sign of pulmonary tuberculosis, [Iafolla] 965
MUSHROOMS, poisonous, 568
poisoning, new classification of, [Ford] 1875—ab
MUSIC, hereditary transmission of talent for, 1632
Neumann discusses tone and rhythm, 641
therapeutic influence of musical rhythm on Parkinsonian motor sequelae of encephalitis, [Meyer] 1493
MYALGIA, gout in etiology of neuralgia and, [Alexander] 1885
MYASTHENIA gravis, pseudoparalytic, and sthenic function, [Calligaris] 284
MYCETISMUS or mushroom poisoning, new classification of, [Ford] 1875—ab
MYCETOMA: See Madura Foot
MYCOSIS associated leishmaniasis and, [Terra & others] 731
epidermal, due to yeast fungus, [Petges] 1882
internal, [Sée] 729
of kidney pelvis, [Tannenber] 1549
MYDYL Antiseptic Wafers, 1711—P
MYELOMA, multiple; report of case, [Rawls] 1178
of vertebrae, [Osgood] 1174
MYIASIS, treatment with ethyl chlorid, [Pedro] 1816
MYOCARDITIS, diphtheria myocarditis, [Warthin] 1723—ab
eczema death and, [Bernheim-Karrer] 1886
hypertension heart, the most common form of so-called chronic myocarditis, [Fahr] *981
myocardial lesions, [Martin] 1723—ab
MYOCARDIUM insufficiency, jaundice in, [Fishberg] *1516
state of myocardium is index of age, [Yates & others] 1734
MYOCLONUS, sporadic, [Bergman] 215
MYOGRAPH, [Tedeschi] 67
MYOMA, cervical, [Solomons] 1179
treatment of, [Nassauer] 1494
MYOSITIS ossificans, [Lewis] *1281—ossificans, (focus of myositis with necrobiosis), [Chaton & Caillods] 1491
ossificans traumatica, [Bull] 444, [Carleton] 1174
progressive ossifying, [Löhner] 439
purulent tropica, [McConnell] 1032
MYOTONIA, cervical, with plagiocephaly and craniotabes in nurslings, [Variot] 359
MYXEDEMA and pituitary, [Roggen] 1349
blood in, [Emery] 1805
congenital, [Ugön] 144
in lipomatosis, [Kisch] 439
myxedematous dyspituitarism, [Hastings] 212

N

- NAILS**, lilac arch on in syphilis, [Milian] 435
ingrowing, [Ney] *374
NAME, use of name other than own, 1640—MI
NAPKIN eruption of Jacquet, [Crawford] 280
NARCOTICS: See also under Harrison Law
NARCOTICS, amendment to narcotic act, 1464
committee on narcotics completes report, 858
embargo on narcotics modified, 1014
encouraging report on, 47
hearing on narcotics before house committee, 488
importation of, temporarily suspended by Control Board, 412
international cooperation on illicit use of, 118
League of Nations and regulation of traffic in, 1786
narcotic control in state of Washington, 1335—ME
narcotic drug problem, 1095
narcotic drug problem (conference on New York State medical problems), 648—ME
narcotic regulations modified, 262
national antinarcotic conference, 1390
proposed bill for narcotic control, 262
proposed legislation reducing federal narcotic tax, 477—E
punishment for narcotic drug violators, 486
resolutions on narcotics favorably reported, 638
revenue law regulation of prescribing narcotics, 950—MI
traffic in narcotics in 1922, 416
NASOPHARYNX, bacteriologic study of nasopharyngeal secretions in influenza, [Olitsky & Gates] 1411
cancer, radium therapy of, [Crowe] 1267
NATIONAL BOARD OF MEDICAL EXAMINERS, 1236
certificate of, 870
recognition of, 782
report of examination in part III, during 1922, 946
report of 14th examination of, 497—ME
NATIONAL Health Council bulletin, 412
Industrial Conference Board, 412
Research Council, medical fellowships of, 1465
NATUREOPATHIC COMPLEX in Connecticut, 1855—E
NAVY Department reorganizing base hospitals, 336
medical corps, 47
medical corps, vacancies in, 707
medical officers, shortage of, 413, 1627

- NEBRASKA state board November examination, 574
- NECK, regional anesthesia for operations on, [Brunin & Vandeput] 804
- symmetrical lipomatosis of, [Bufalini] 284
- NECROPSIES, need for postmortem examinations and methods of securing them, [Krumbhaar] *1682
- NEEDLE, intravenous, with vacuum cup, [Abelmann] *399
- NEGRO physician, education of, 1244—E, 1856—E
- tuberculosis in, [Landis] 584, [Carter] 721
- NEISSER-SAN-KAHN not accepted for N.N.R., 204—P
- NEO-SILVOL, 1218
- NEPHRITIN, 1167
- NEPHRITIS, action of phlorizin on sugar in blood and urine in, [Rosenberg] 1657
- and hematuria in appendicitis, [Anschütz] 68
- chronic, anemia of, [Brown & Roth] 207, 554—E
- chronic, diet in, [McLester] 1271
- chronic interstitial, and arteriosclerotic kidney, [Dunn] 211
- chronic, without albuminuria, [Rathery] 1815
- classification of, [Wolf] 360, 588
- electrocardiogram in uremia and severe chronic nephritis with nitrogen retention, [White & Wood] 1728—ab
- experimental, relation of acidosis to nitrogen retention in, [VanderHoof & Haskell] 1271
- glomerulonephritis and nephrosis, [Bergstrand] 1820
- glomerulonephritis, diffuse, [Elwyn] 1339
- hematemesis in, [Shattuck] 1027
- hypertension of, diastolic murmur in, [Bergé & Basch] 587
- in children, bacteriology of urine in, [Hill & others] 1097
- in children, outlook of, [Ashby] 1272
- inorganic constituents of blood serum in, [Denis & Hobson] 1175
- pituitary extract diuresis in, [Klein] 1495
- surgical treatment of, [Krabbel] 1348, [Wehner] 1820
- toxic, in pyloric and duodenal obstruction, [Rowntree & Brown] 1728—ab
- uremia and nitrogen retention, [Lax] 1035
- uric acid in blood in diagnosis and prognosis of, [Czonczer] 216
- NEPHROTOMY: See Kidney Surgery
- NERVE, auditory, early affection of, in syphilis, [Bab] 1656
- Blocking: See under Anesthesia
- facial, deep sensibility of face, [Davis] 1340
- grafting, double, [Manasse] 515
- optic, etiologic study of series of optic neuropathies, [Woods & Dunn] *1113
- optic, relation of, to sphenoidal and posterior ethmoidal sinuses, [Young] 432
- phrenic, importance of phrenic shoulder pain in disease involving diaphragm, [Orr] *1434
- spinal, pathology of intervertebral foramina, [Forestier] 1653
- splanchnic, share of epinephrin in hypertension induced by irritation of splanchnic nerve, [Houssay] 589, [Houssay & Marconi] 1740
- surgery of peripheral nerves, Lozano on, 1533
- suture of, ultimate outcome of, [Dieterich] 1742
- sympathetic, trophic function of, [Brüning] 968
- transplanted, fate of, [Policard & Leriche] 1182
- trauma of, tardy consequences of, [Christiansen] 150
- trigeminal, afferent impulses of, [Gerard] 1340
- trigeminal, lesions of paratrigeminal area, [Davis] *380
- ulnar, shifting of, [Jáuregui] 145
- ulnar, tardy paralysis after fracture of external condyle of humerus, [Guibal] 1813
- NERVOUS SYSTEM, action of pilocarpin on, [Escudero] 1807
- autonomic imbalance, [Kessel & Hyman] 1801
- functional disturbances of, therapy of, 698—E
- organs without local nervous apparatus, [Van Rijnberk] 1112
- sympathetic, [Tallqvist] 736
- sympathetic, and individuality, [Kraus] 217
- sympathetic, and sensibility, [Tournay] 1346
- sympathetic, pharmacology of, [Hoffmann] 1495
- syphilis, familial neurosyphilis from various extra-familial sources: clinical contribution to question of neurotropism, [Moore & Keidel] *818
- syphilis, in Chinese, [Lennox] 579
- syphilis, increasing prevalence of, [Alurralde] 145
- syphilis of sympathetic system, [Levy-Franckel & Juster] 1105
- syphilis, prophylaxis and treatment of meningal syphilis with new endolumbar technique, [Gernerich] 69
- syphilis, spinal fluid in, [Bonorino Udaondo & Catalano] 590
- NERVOUS SYSTEM, syphilis, therapeutic use of trypanosamid in, [Lorenz & others] *1497
- vagus-sympathetic balance, [Garrelon & others] 1738
- NETHERLANDS Council on Pharmacy and Chemistry, 335
- NEUMANN discusses tone and rhythm, 641
- NEURALGIA, glossopharyngeal, [Doyle] 580
- gout in etiology of myalgia and, [Alexander] 1885
- trigeminal, resection of gasserian ganglion for, [Troch] 1744
- NEURASTHENIA, [Dauwe] 804
- arsphenamin in treatment of, [Ortega Belgrano] 215
- arteriosclerotic, 492
- test for fatigue in, [Monrad-Krohn] 1038
- NEURITIS, differential diagnosis of neuritis and conditions simulating it, with special reference to postinfluenzal multiple neuritis and ataxia, [Wilson] *1443
- optic, etiologic study of, [Woods & Dunn] *1113
- retrobulbar, optic, in sinusitis, [Demaria & Laya] 1420
- NEUROLOGY, scholarships in neurologic research, 45
- NEUROMAS, cicatricial, [Leriche] 1182
- NEUROPSYCHIATRY, school of, in Veterans' Bureau, 263
- NEUROTINITIS, albuminuric, [Unger & Rosenberg] 1886
- NEUROSES, functional, vagotonic leukopenia in, [Glaser & Buschmann] 1741
- general, [Sahl] 881
- hypogastrie and celiac, [Arce & Castano] 661
- neuropathic types seen by pediatricians, [Moro] 883
- organotherapy in, [Wagner-Jauregg] 883
- postencephalitic, [Hagelstam] 1496
- structural basis of, [Alford] 431
- surgery of angioneuroses, [Kreibich] 1657
- traumatic, [Wimmer] 220
- traumatic, not a clinical entity, [Hadley] 138
- NEUROSYPHILIS: See Nervous System, Syphilis
- NEUROTROPISM, [Tello] 1347
- clinical contribution to question of, [Moore & Keidel] *818
- NEUROVACCINE, research on, [Levaditi & Nicolau] 1489
- NEUTRAL Acriflavine, 1455
- Acriflavine—Abbott, 1455
- NEUTROPHILS, basophilic inclusions in, [Sabra] 434
- NEVADA state board November examination, 423
- NEW and Nonofficial Remedies, 1167, 1635—P
- NEW HAMPSHIRE state board September examination, 273
- NEW JERSEY state board June examination, 1093
- state board October examination, 647
- NEW MEXICO state board January report, 1638
- NEW YORK, governor of, adopts rational plan for health control, 1244—E
- state board January and February examination, 1717
- state medical problems, conference on, 648—ME
- NEW ZEALAND, books on prevention of venereal disease banned in, 337
- NIPPLES, atresia of, [Sheets] *551
- Paget's disease of, [Gargano] 144
- NOCARDIA, pseudotuberculosis due to, [Iacono] 589
- NOLAN INHALER, 1535—P
- NORTH CAROLINA extension plan, an experiment in postgraduate medical teaching, [Adams] 1714—ME
- state board December meeting, 575
- state board January and April report, 1868
- NORTH DAKOTA state board January examination, 1403
- NOSÉ, abscess of nasal septum, [Canuyt] 1183
- accessory sinus, migraine following nonpurpurative affections of, [Dutheil de Lamotte] 1183
- accessory sinus, retrobulbar optic neuritis in sinusitis, [Demaria & Laya] 1420
- accessory sinuses, rôle of transillumination in diseases of, [Pratt] *1121
- deformities, instrument (drill) to facilitate correction of, [Israel] *690
- diphtheria, [Jams] 1730
- endocrine factor in disease of, [de la Cruz Cruz Correa & Becco] 807
- leishmaniosis of, pathology of, [Klotz & Lindenberg] 1409
- polyps of nasal fossa and latent sinusitis, [Caboche] 1183
- septal spur, nasal drill for removal of, [Young] *1216
- syringe, [Mason] *1616
- NOSTRUM: See also Patent Medicines
- NOSTRUM guzzling a century ago, [Bevler] 789—C
- more misbranded nostrums, 53—P
- NUISANCE, hospital a lawful business but may become a nuisance, 1337—M1
- NURSING, trained, minority report of committee on, [Beard] 852
- trained, preliminary report of committee on, [Lovett] 851
- visiting nurses in home, 124
- NUTRITION and growth in children, [Emerson] 355
- and intelligence quotient slide rule, [Kelley] *397
- and standard of living, [Kestner] 1276
- blood circulation and nutrition of tissues, [Bier] 1421
- disturbances, classification and treatment of, [Langstein] 1547
- disturbances of infants, milk-free diet in, [Moll & Stransky] 440
- in acute diseases, [Labbé] 729
- investigation in animals on vitamin and mineral deficiencies, 935
- malnutrition and incidence of communicable disease, 1457—E
- of children in orphanages, [Rost & others] 362
- some basic problems of, [Bier] 1658
- undernutrition and endocrine disturbances, [Curschmann] 664
- O
- OAT-SEEDS as a cause of foreign body tubercles, 1458—E
- OBESITY, 492
- and hypertension, [Aubertin] 1815
- blood volume studies in, [Keith & Brown] 1728—ab
- endocrine, [Loewy & Zondek] 516
- endogenous and exogenous origin, [Faber] 1496
- etiology of obesity, [Preble] 1731
- pituitary, [Knipping] 882
- preliminary corpulence, [Willemse] 1037
- pseudo-obesity, [Kisch] 147
- with arrhythmia, [Faber] 518
- OBSESSIONS and their treatment, [Bjerre] 664
- OBSTETRICS: See also Labor; Midwives
- OBSTETRICS, constitution in, [Mayer] 591
- in Dutch East Indies, 1322
- in the home, [Mixon] 1540—ab
- teaching of, 1530
- OCCIPITAL BONE, fusion of atlas with, [Lupo] 513
- OCCUPATIONAL DISEASES: See Industrial Diseases
- OCCUPATIONAL THERAPY for convalescents, [Brush] 1806
- psychic direction of chronic and incurable patients, [Kollarits] 1033
- OHIO state board December examination, 792
- state board January report, 1638
- OINTMENTS, nongreasy base for, [Pijper] 659
- OKLAHOMA state board January examination, 1638
- University of Oklahoma and politics, 1697—E
- OLD AGE, blood sugar and alimentary glycaemia in, [Punschel] 969
- well-documented Methuselah, 566
- OLECRANON, fracture fixation of, [Hannecart] 1813
- OLIGODYNAMIA, research on, [Wernicke & Sordelli] 1107
- OLIGURIA, influence of, on nitrogen retention in blood, [Pepper] 798
- OLIVE OIL, effect of, on gastric function, [Lockwood & Chamberlin] 655
- OMENTUM, cleavage between colon and, [Gutiérrez] 215
- grafts, experimental study of, [Brocq & others] 359
- sarcoma of, [Segers] 285
- torsion of, [McIver] 506
- OPERATION, consent of patient for, 351—M1
- consideration required for guaranty of results, 1722—M1
- determination of necessity for operation by results, 795—M1
- major, definition of, 203, 422
- refusal to submit to, [Prat] 589
- surgeon sued for operating without patient's consent, 195
- OPHTHALMIA, enucleation in panophthalmia, [Rollet & Bussy] 1183
- gonococcus, with metastases in joints, [Di Bella] 1418
- neonatorum, [Waldeck] 139
- of dietetic origin, [Mori & others] 1483
- OPHTHALMOLOGY in Norway, [Hagen] 1350
- optical service in industry, 1870
- palpation in, [Frenkel] 1183
- OPHTHALMOPLEGIA in pneumonia, [Thirololx & Harmelin] 1736
- OPIMUM, American proposals on opium win, 1783
- control of drug traffic, 489
- International Opium Commission delegates disagree, 1626, 1702
- International Opium Commission to meet again, 1014

- OPTIC DISK, tubercle of, [Janku] 1279
OPTOLACTIN not accepted for N. N. R., 127—P
ORBIT, abscess of, and maxillary sinusitis, [De Salterain & Munyo] 1184
mixed tumor of, [Fasiani] 806
orbital thrombophlebitis and furuncle of face, [Gallemaerts] 1183
OREGON state board July examination, 1025
ORGANOTHERAPY in baldness, 945
in mental deficiency, [Potter] 1268
in neuroses and psychoses, [Wagner-Jauregg] 883
in treatment of tumors, [Engel] 1349
ORGANS without local nervous apparatus, [Van Rijnberk] 1112
ORIENTAL SORE: See Leishmaniasis, Cutaneous
ORTH, Johannes, death of, 493
ORTHOPEDIC surgery, corrections of deformities of long standing, [Whitman] *18
ORTHOPNEA, [Christie & Beams] 655
OS CALCIS: See Calcaneum
OSLER, memorial to, 1158, 1159
OSTEITIS deformans, a stage in deficiency disease, [White] 207
fibrous blood count in, [Roseno] 809
fibrous, localized, [Konzetny] 662
hereditary, [Camurati] 513
OSTEO-ARTHROPATHY, pseudohypertrophic, pulmonary, [Schirmer] 1494
endemic of, [Higier] 517
OSTEOCHONDRITIS deformans juvenilis, [Perthes & Welsch] 438, [Vignard] 804
dissecting, of knee, [Moreau] 1345
OSTEOMA of skull, [Rand] 1267
OSTEOMALACIA in imbecile with psychosis, [Dayton] 355
with epilepsy, [Brenner] 808
OSTEOMYELITIS of crest of right pubic bone, [Keyes] *1451
hemorrhagic, report of case, [Strunsky] *1833
of ilium in children, [Hearse] *991
of ribs, primary, infectious, [Michelson] 732
progressive, of frontal bone, [Lemere] *596
suppurative, caused by colon bacillus, [Winslow] 354
typhoidal, [Winslow] 1484
OSTEOPATHS held to be "regular practicing physicians" and as such exempt from podiatry law, 1797
of Idaho may not practice surgery, 1170—ME
OSTEOSCLEROSIS and pseudoleukemia, [Pastore] 213
OSTEOSYNTHESIS, proper time for, 568
OTIOBIOSIS, the ear tick disease, [Curtis] *1053
OTITIS MEDIA complicating operations on gasserian ganglion, [Lyons] *176
in new-born, [Mahu & Chromé] 435
latent, frequency and severity of, in nurslings, [Chatin] 283
OTOLARYNGOLOGY, report of committee on graduate training in, [Shambaugh] 1333—ME
OTORHINOLARYNGOLOGY, paresthesia in, [Aubriot] 213
OTOSCLEROSIS, [da Silva] 966
relations of changes in temporal bones in experimental rickets to, [Kauffman & others] *681
OVARY, blood cyst in, [Nyström] 70
calcification of, [Bost] *912
cancer, [Lessing] 1108
cancer, permanent cure of, [Schäfer] 1423
cancer of, solid, [Hoon] 354
cysts and pregnancy, [Centanaro] 1514, [Szymanowicz] 1105
dermoid cyst of, [Bolt] 1956
dermoid cyst of, spontaneous separation of, [Fioravanti] 285
effects of radium on rabbit ovaries, [Weis] 1343
fibroma and sarcoma of, [Meigs] 277
hematoma, of endometrial type, life history of, [Sampson] 136
in hernia, [Schonmeier] 1348
influence of irradiation of, on subsequent fecundation and pregnancies, [Lacassagne & Coutard] 1274
lipoids in, [v. Mikulicz-Radecki] 590
ovariotomy in women over seventy, [Spencer] 1488
removal, status epilepticus after, [Marchand & Adam] 1546
roentgen injury of, experimental, [Unterberger] 1278
tumor, gravity of, of all types, [Waring] 1540—ab
tumor, operability of, [Pribram] 590
OVULATION, effect of lactation on, [Johnson & Hewer] 1811
ovogenesis during sexual maturity, [Allen] 1956
OVUM, does ovum or corpus luteum control ovarian and uterine cycle? [Schiller] 353
OWL Enamel Toilet Cream, 1022—P
OXIDASES in mechanism of fever, [Marinesco] 1654
OXYGEN, anoxemia and effect of oxygen administration, [Yamakita & Kato] 1496
breathing, blood changes in, [Full & Friedrich] 968
OXYURIASIS, treatment of, with arsphenamin, [Hajos] 734
elimination of oxyuris vermicularis, 717
OYSTERS, hygiene in breeding of, [Gloseff] 660
OZENA, bacteriology of, [Sakagami] 586

P
PACHYMENINGITIS, internal hemorrhagic, in infancy, 5 cases, [Burhans & Gerstenberger] *604
PAGET'S DISEASE of nipple, [Gargano] 144
PAIN, damages for conscious pain deadened by opiates, 1722—MI
pleural and peritoneal pains, [Capps & Coleman] 207, 403—E
PALATE, cleft, operation for, [Stahl] 1421
cleft, use of delayed flap in secondary operations for, [New] 1648
congenital perforate soft palate and double uvula with repair of perforation, [Trinder] *914
retractor, self-retaining, [Wolf] *101
PAMPHLETS, to what extent the sending of pamphlets may constitute illegal practice of medicine, 640
PANCREAS, calculi, diagnosis of, [Pentz] 1655
edema of, [Zoepffel] 439
excretion of dyes through, [Giichiro] 1275
Extract: See under Diabetes
function, diagnosis of, from duodenal contents, [Grote] 288
function, studies in, [McClure & Jones] 137
functional value of external secretion of, in asystolia, [Garofano] 660
inflammation, catarrhal jaundice caused by, [Barling] 1810
peripancratic fat necrosis due to gallstone, [Schottmuller] 1492
relation of disease of gallbladder to secretory function of stomach and, [Griffiths] 961
secretion in man, 1145—E
PANCREATITIS, acute, early diagnosis of, [Glass] 1276
acute, in children, report of case with cirrhosis of liver, [Anderson] *1139
and bile, 326—E, [Mann & Giordano] 721
hemorrhagic pathogenesis of, [Brocq & Binet] 1491
PAN-SECRETIN, 717
PAPILLOMA and adenoma of gallbladder, [Abell] 206—ab, 1484
congenital, of buttock, [Ludlow] 1178
PARABIOSIS as means of experimental research in sex pathology, [Nissen] 884
PARAFFIN in bladder, nonsurgical removal of, [Melen] *685
injections, danger of liquid petrolatum in parenteral injections, [Weidman] *1761
PARALYSIS agitata as sequel to lethargic encephalitis, [Drysdale] 140
agitans, parathyroid treatment of, [Bergmann] 1819
general, and epilepsy, [Marchand] 1105
general, humoral reactions in, [Klippel] 1346
general, lumbar puncture in, [Rueda] 1347
general, reaction of spinal fluid with paregoric in, [Targowla] 435
general, treatment of, 435
general, Wagner's treatment of, [Pilecz] 586
in infants due to pain, [Comby] 1181
laryngeal bilateral, substernal thyroid with, [Hubert] *842
musculospinal splint for, [Stevenson] 1881
of inferior laryngeal nerve, [Trivas] 1883
scapular girdle, [Smeesters] 65
simple method for demonstrating motor paralysis of lower extremities, with special reference to Hoover's sign, [Throckmorton] *1058
spastic, congenital, in children, [Duarte Saicedo] 1106
tardy, of ulnar nerve after fracture of external condyle of humerus, [Gulbal] 1813
tick, [Garin & Bujadoux] 588
toxic, of leg, [Jorge & Gamboa] 1816
PARANEPHritis, bilateral, pneumococcus, [Hammer] 517
PARANOIACS, near-paranoiaks, [Genll-Perrin] 1346
PARAPLEGIA, new kind of, [Vincent & Bernard] 213
PARASITOLOGY, human, in Roumania, [Leon] 588
PARATHYROID, 1792
hyperplasia and bone destruction in generalized carcinomatosis, [Klemperer] 583
protection of, [De Quervain] 1186
tetany, effect of blood of, on motor nerves, [Jacobson] 1027
PARATHYROIDECTOMY, effects of, [Hammett] 653
PARATHYROIDECTOMY, effect of thyroparathyroidectomy on reproduction, [Hammett] 1879
preservation of life of completely parathyroidectomized dogs by oral administration of calcium lactate, [Luckhardt & Goldberg] *79
tetany due to, 774—E
PARATRIGEMINAL AREA, lesions of, [Davis] *380
PARATYPHOID, value of Widal test in inoculated subject, [Shera] 64
PARESIS: See Paralysis, General
PARKINSONIAN SYNDROMES: See under Encephalitis
PARKINSON'S DISEASE: See Paralysis Agitans
PAROTID tumor, preservation of facial nerve during complete removal of, [Adson & Ott] 133—ab
PAROTITIS, deafness following, [Kurosu] 1489
PARROTT MIXTURE, 53—P
PARROTT SEXUAL PILLS, 54—P
PARTHENOGENESIS, thymus in parthenogenetic tadpoles, [Voss] 1656
PARTNERSHIP, agreement creating a, 720—MI
PARTURITION, nonprotein nitrogen in parturients, [Hellmuth] 1348
PAST POINTING, [Ingvar] 736
PASTEUR and the children, 1779—E
as an artist, 196
bust of, for League of Nations, 783
celebration at Strasbourg, 416, 1784, 1787
centenary of, 265, 443, 491, 587, 643
centenary of, and American Societies of Paris, 1861
centenary in London, 709
centenary of, in schools of Paris, 1862
centennial in Berlin, 334
centennial in Norway, 334
ceremonies in honor of, 1020
commemoration of, in Uruguay, 1161
commemoration of Pasteur's anthrax discovery, 1862
glory of, [Richey] 967
home purchased by Rockefeller, 190
in honor of Lister and, 1862
museum, 266
Netherlands' contribution to Pasteur monument, 782
Pasteur postage stamp, 1862
publication of Pasteur's works, 266
reminiscence connected with, 786
respects paid by Japanese scholars to, 1706
tag day, 1160, 1532
PATELLA, fractured, new splint for, [Masland] *319
PATENT MEDICINES: See also Nostrums
PATENT MEDICINES restricted in Peru, 1529
voice of opposition against secret remedies, 640
PATENT OFFICE—a federal Rip Van Winkle, 405—E
again demonstrates its ignorance of modern medicine, 420—P
government would buy brains, 1779—E
PATERNITY, biologic demonstration of, [Lattes] 1816
PATHOLOGIST, clinical status of, [Hillkowitz] 943—C
PATHOLOGY, chair of animal pathology at Cambridge, 862
vegetable and animal, in relation to human diseases, 324—E
PATIENTS, psychic need of sick in hospitals, [Chelmonski] 1888
not alleged to have been human beings in violation of Medical Practice Act, 1952—MI
PEANUT FLOUR, supplementary protein value of, [Eddy & Eckman] 1175
PEARLS, artificial, intoxications resulting from manufacture of, 709
PEARSON, William, 1254
PEDICULOSIS chiropractically speaking, 1524—E
PELLAGRA, [Lustig] 216
acute case of, not a chronic disease, 1096—MI
and protein, [Hindhede] *1685, [Goldberger] 1866—C
etiology of, [Jobling & Arnold] *365
in Massachusetts, [Shattuck] 580
PELVIS, congenital asymmetry of leg and, [Peremans] 1646
contracted, new measurement as aid in diagnosis of, [Welz & Alles] 1542
flat, labor with, [Henkel] 883
infections of, [Tigert] 1408—ab
inflammation in women, clinical study of, [Wilcox] 1540—ab
PEMPHIGUS of conjunctiva, [Trumpy] 812
PENIS, gangrene of scrotum and, [Stirling] *622
PENNSYLVANIA state board January and February examination, 1479
PENSIONS for war disabled, 863
ministry of, medical work of, 861
PENTOSURIA, essential, in brother and sister, [Rosenbloom] *250
PEPSIN, quantitative determination of, [Northrop & Hussey] 581
PERALGA, a new German synthetic, 942—P
PERCUSSION in diagnosis of ascites, [Chavannaz] 435
modified method of, [Pappenheimer] 440

- PERCUSSION** of hilus, [Haus] 1494
PERIARTHRITIS, tubercular treatment of, [Peco] 590
PERICARDIOTOMY for diagnostic purposes, [Roberts] 722
for purulent pericarditis, [Gamberini] 1274
PERICARDITIS, acute, rotation of heart in, [Totani & others] 1104
calculosa, report of a new case discovered roentgenologically, [Case] *236
fibrous, [Volhard & Schmieden] 808
mediastinal, aneurysm of heart with, [Smith] 62
pneumococcus, [McDonald] 1544
purulent, pericardiotomy for, [Gamberini] 1274
suppurative, [Hilse] 808
with effusion, physical findings in, [Morris & Little] 1725—ab
PERICARDIUM, bullet in, [Barcia & Montes Pareja] 1185
death from hemorrhage into, [Townsend] 803
PERIENTERITIS, chronic, [Lehrnbecher] 364
PERINEUM, immediate repair of, torn during delivery, [Leynen] 659
traumatic laceration of, in child, [Phaneuf] 1029
PERITONEUM, accumulation of intravenously injected gases in peritoneal cavity, [Tor-raca] 661
drainage, [Powell] 134—ab
intraperitoneal injection of citrated blood, [Siperstein & Sansby] 797, [Siperstein] 1399—C
localization of pain sense in, [Capps & Coleman] 207, 403—E
resistance to tuberculosis following oil injections, experimental, [Petersen & Levinson] 721
tuberculosis, roentgen-ray treatment of, [Weibel] 218
PERITONITIS, acute, of genital origin, [Bloch & Soupault] 1737
bile, [Burekhardt] 1186
chronic, subphrenic, [Chiari] 1109
diffuse, in gynecologic and obstetric cases, [Benthin] 1278
diffuse septic, septic absorption in, [Costain] 138
ether treatment of, [Stieda] 733, [Naujoks] 1278
gas, [Stegemann] 1421
lymphaticostomy in, [Costain] 1343
obstetric and gynecologic improvements in treatment of, [Benthin] 147
traumatic, from nonpenetrating violence, [Baird] 1408—ab
with bladder disease, [Bitschaj] 1350
PERSPIRATION, excessive, of hands and feet, 202
so-called abscesses of sweat glands in axilla, [Rost] 68
studies on sweat and response of body to external heat, [Pemberton & others] 1727—ab
sweating from standpoint of loss of energy, [Bircher] 730
PERTUSSIS: See Whooping Cough
PERU, practice of medicine in, 1783
PES CAVUS, tendon transplantation procedure in, 1394
PESSARY, vaginal, its indications and limitations, [Novak] *1294
PETERSON'S OINTMENT, 1712—P
PETROLATUM, liquid, [Russell & Brett] 1415
liquid, danger of, in parenteral injections, [Weidman] *1761
PEYOTE, traffic in, prohibited, 1014
PHAGOCYTOSIS of pus cells, [Umamura] 219
physical chemistry of, [Höber & Kanai] 1277
PHARMACEUTIC specialties, abuse of, 417
PHARMACOLOGY and balneology, [Markwalder] 733
PHARMACOPEIA, Nicaragua wants a national pharmacopeia, 859
pharmacopoeial trustees entertained in Cincinnati, 1389
PHARYNX, apparatus to demonstrate movements in, [Talvi] 1496
lymphosarcoma of, [Ferrer] 731
PHENOBARBITAL in epilepsy: See under Epilepsy
lethal dose of, 1261
PHENOL, action of camphor and, in joints, [Hedri] 732
fatal absorption of, through skin, [Dolan] 212
variations of blood pressure caused by phenolic compounds, [Pomaret] 142
PHENOLTETRACHLORPHTHALEIN—H. W. & D., 1218
test of liver function, [Rosenthal] 209
PHENYLENEDIAMINES, pharmacology of, [Hanzlik] 956
PHLEBITIS in incipient pulmonary tuberculosis, [Laforgue] 879
treatment of tardy results of, [Leriche] 1738
typhoid, [Pozzo] 514
PHLORIZIN, action of, on sugar in blood and urine in diabetes and nephritis, [Rosenberg] 1657
PHOSPHATES, influence of, on excretion of chlorids, [Rockemann] 1655
PHOSPHATURIA, [Martinet] 360
PHOSPHORUS influence of yeast and butter fat on assimilation of, [Bogert & Trall] 429
PHOTOTHERAPY, bacterial action of ultraviolet light, 849—E
PHTHISIS: See Tuberculosis, Pulmonary
PHYSICAL culture in affections of children, [Cadenaule] 587
education, establishment of Prussian sub-department of, 642
education in France, progress of, 1706
examination, duty as to reporting result of, 504—MI
examination, "have a health examination on your birthday," 1702
examinations, annual, of medical officers, in January, 46
examinations for training camps, 783
examinations, periodic, of apparently healthy persons, [Emerson] *1376
therapeutics, information desired from teachers of, [Taylor] 1332—C
therapy, first class in, 639
training, classification of children into different groups for purpose of, 1326
training, place of, in schools, 196
PHYSICIANS: See also under Liability; Malpractice; Medicine; Testimony; Workmen's Compensation Act
PHYSICIANS, advertising by, 49, [Harris] 56—ME
bookkeeper without power to employ, 275—MI
claims of physicians and hospitals under contracts, 1539—MI
country doctor—a lay opinion, 923—E
death rate of, [Emerson] 343—C
deaths of physicians in 1922, 36—E
expelled from society, mandamus case of, 351—MI
factory, 123
financial advice for physicians and medical advice for laymen, 53—P
further data on alleged lack of physicians and distribution of irregular practitioners, [Lyon] 718—ME
good causes of action against, 351—MI
idea of physician contracting his services for specified sum coming to be generally accepted, 1532
judgment against one of two physicians not justified, 1171—MI
may prescribe for themselves, 1392
memorials to, 45
nonmedical productions of, 1707
position of, under dangerous drugs act, 566
prison and fines for fake doctors, 563
privileges of, with respect to choice of treatment, 1160
proportion of, to population, 1237
protection of professional reputation of, 640
resourceful general practitioner of modern medicine, [Billings] *519
rural medical service in America, 1522—E
second annual clinical tour, 1014
superintendent employing physician for plantation, 652—MI
supply of physicians in rural England, 1456—E
wanted for Indian Service, 1015
PHYSIOGNOMY, racial, 267
PHYSIOLOGY, surgical, [Lefebvre] 1813
physiologic adjustments attending muscular work, 1315—E
PHYSOSTIGMIN, therapeutic use of, [De Meyer] 434
PIGMENTATION, pigmented fatty change in cell degeneration, [Emrys-Roberts & Haig] 1031
PILLOW at foot of bed after abdominal operations, [Cullen] *1521
PILOCARPIN, action of, on nervous system, [Escudero] 1807
PITUITARY and myxedema, [Roggen] 1349
and some of its disorders, [Graves] 1408—ab
apituitarism and anencephalic syndrome, [Barlow] 511
disease of interbrain and, [Waldorp] 67
diseases, respiratory metabolism in, [Plaut] 67
diseases, syphilis as factor in, [Lennmalm] 592
extract, action of, on blood coagulation, [Feissly] 66
extract, action of, on uterus, [Haskell & Rucker] 353
extract, active principles of pituitary gland, [Dudley] 1341
extract, administration of, after cesarean section in previous labor, 202
extract, and epinephrin, 1400
extract, biologic assay of, [Nelson] 1100
extract, bursting of colon following injection of pituitary extract, 1786
extract, danger of, [Haskell & Rucker] 1791—C
extract diuresis in nephritis, [Klein] 1495
extract in herpes zoster, [Vendel] 1549
extract in induction of labor, [Watson] 353
extract, rupture of uterus after, [Pouliot & Truchard] 1418
extract, standardization of, 1473—P
extracts, [Choay] 1105
extracts and hemophilia, [Neumann] 1277
in cerebral lesions [Desogus] 806
myxedematous dyspituitarism, [Hastings] 212
obesity, [Knipping] 882
powerful oxytocic and pressor substance obtained from posterior lobe of pituitary gland, [Abel & Rouiller] 1875—ab
secretion, 1525—E, [Dixon] 1811
syndromes, minor, [Lévi] 1346
PITUITARY tumor and diabetes insipidus, [Domagk] 1035
tumor, case of hypophyseal duct tumor, [Lanman & Smith] 1343
tumor of 14 years' standing, [Sainton & Schulmann] 435
PITYRIASIS rubra pilaris, familial, [Zelsler] 874
PLACENTA, cervical implantation of, [Zange-meister & Schilling] 1278
extracts, experimental research with, [Puppel] 1108
function of, 630—E
grafts, [Spirito] 513
prævia, [Hofmeier] 1278
prævia and fetal monstrosities, [Greenhill] 960
prævia, treatment of, [Ganssle] 1348
pulse in retroplacental hemorrhage, [Levant & Portes] 1274
regulation of circulation in, [Schmidt] 217
utero-placental hemorrhage, [Portes] 1274
PLAGUE, 1395
epidemic resembling plague among recruits in Siam, [Thavara] 1414
eradication of, in Latin America, [Lebrede] 661
in East Indies, 1020
in India, 1252
objection to poisoning of rats as a measure against plague, 1392
pneumonic, in Harbin, [Chun] 878
thermoprecipitation in, [Pergola] 213
PLANKTON, factors affecting, 1042—ab
PLANTAR ARCH, ligation of, [Macaggi] 1274
PLAYGROUNDS, 1161
PLEURA, adhesions, artificial pneumothorax with, [Ameuille & Jullien] 728
adhesions, hemorrhage after cauterization of, [Dahlstedt] 1888
adhesions, respiratory movement of pieces in initial infiltration and adhesions of, [Kelemen & Kornfeld] 68
adhesions, thoracoscopy for, [Piguet & Giraud] 1546
cavity, pressure in, and its influence on site and shape of exudates, [Ganter] 882
hydatid cysts of lungs and, [Halahan] 1342
pleural and peritoneal pains, [Capps & Coleman] 207, 403—E
PLEURISY, cytology and chemistry of irradiated carcinomatous pleurisy, [Loeper & others] 1546
diaphragmatic, [Weiss] *1664
nontuberculous interlobar, in tuberculous, [Sergeant & Durand] 879
Purulent: See Empyema
scallops in children following pleurisy, [Key] 1548
with effusion, calcium chlorid in, [Krummenacher] 1813
PNEUMOCOCCUS Antibody Solution Types I, II and III Combined, 844
elective localization of streptococcus-pneumococcus group as disease factor, [Rosenow] 1097
Immunity, rôle of allergy in, [Mackenzie] 1643—ab
in surroundings of healthy and sick persons, [Seltz] 217
Infection in young children, [Casaubon] 881
paraneuritis, bilateral, [Hammer] 517
production of toxic substances by, [Chesney & Hodges] 209
types in Dublin, [Moore] 1651
Vaccine, Modified, 1143
PNEUMOLITH or broncholith, [Fox] *175
PNEUMONIA, blood changes in, 577
deaths from, in large cities, 486
double, caesarean section in case of, [Seelye] 355
drugs in treatment of, [Brooks] 876
edema associated with bicarbonate administration in, [Binger & others] 655
experimental, erythrocytes in, [Leake & Brown] 356
following measles, [Mixsell & Gliddings] 959
from inhalation of zinc stearate talcum powder, [Edmonds] *105
influence of alcohol on prognosis of, in Cook County Hospital, [Capps & Coleman] *750
influenzal, proteolytic ferment in sputum and urine in, [Abraham] 969
lobar, embolism of right brachial artery as complication of, [Smith] 658
ophthalmoplegia in, [Thiroloux & Harmelin] 1736
postinfluenzal chronic, condition commonly mistaken for pulmonary tuberculosis, and frequently for heart disease, [McCrudden] *609
posture used in reviving cases of, [Rautenberg] 882
prevention of, biologic products for, 129
pyopneumothorax secondary to, [Rajam] 1958
radioscopy of frank pneumonia, [Paisseau & Iser-Solomon] 1736
reaction and gas content of blood in lobar pneumonia, [Binger & others] 1727—ab
relations of, to influenza, [Elkeles] 364
serum therapy of, [Wadsworth] 1953—ab

- PNEUMONIA**, transfusion of chicken blood in, in children, [Berger & Montgomery] 1176
treatment of, [Stoll] *844
treatment by serum free solution of pneumococcus antibodies, [Conner] 135
treatment of lobar pneumonia with Kyes' chicken serum, [Capps] 1643—ab
treatment of type 1 pneumococcus lobar pneumonia with specific serum, [Locke] *1507
- PNEUMOPERITONEUM**, [Alessandrini] 590
as an aid in diagnosis of subdiaphragmatic conditions, [Sante] *464
diagnostic value of, [Carelli] 1805
- PNEUMOTHORAX**, 1095
acute and chronic, effect of [Yates] 798
Artificial: See also Tuberculosis, Pulmonary
artificial, and Dyspnea, 568
artificial, apparatus for thoracentesis followed by, [Rossi] 284
artificial, composition of gases in, [Hill & Campbell] 1880
artificial, for nontuberculosis cases, [Perkins & Burrell] 1273
artificial, in pulmonary gangrene, [Emile-Weil] 213
artificial, with adhesion of layers of pleura, [Amieville & Jullien] 728
artificial, use of paraffin oil, [Archibald] 427
diagnostic, [Vallardi] 214
idiopathic spontaneous pneumothorax, apparently nontuberculous, [Kahn] *1060
oxygen to start, [Capuani] 144
parallel striae after right pneumothorax, [Rist & Jacob] 587
spontaneous double, case of, [Emerson & Beeler] 1028
spontaneous, in children, [Schönfeldt] 1110
spontaneous, in tuberculosis, [Barth] 1548
traumatic, caused by toy balloon, [Child] *1452
treatment of suffocating pneumothorax [Weil & Wall] 1490
- POISONS**, coloring of, 1392
- POLIOYELITIS**, acute, anterior, arrest of epidemic of, [Aróstegui] 661
acute, colloidal gold reaction in, [Regan & others] 873
after-care of cases of 1916 epidemic in Brooklyn, [Dunham & Riley] *224
Babinski's sign in, [Léri & Basch] 1346
direct test for prognosis in paralysis of muscles in, [Erlacher] 364
in Madrid Province, 641
in Marburg, [Müller] 216
serum therapy of, [Flexner] 1953—ab
surgery in, [Henderson] 210
transplantation of tensor fasciae femoris in cases of weakened gluteus medius, [Legg] *242
- POLLOCK** liver oil, vitamin potency of, [Holmes] 1270
- POLYCYTHEMIA** rubra, [Curschmann] 664, [Gutzeit] 882
certain aspects of, [Minot & Buckman] 1954—ab
rubra, treatment of, [Gutzeit] 218
vera, case of, [Isaacs] 1029
- POLYDACTYLISM**, rare, of foot, [Edington & Primrose] 726
- POLYPS**, solitary, of nasal fossa and latent sinusitis, [Caboche] 1183
- PONS**, bilateral posterior pontine syndrome, [Dide & Peyrou] 435
- PORTAL SYSTEM**, collateral circulation in, [Waleker] 515
- PORTAL VEIN**, hemangiomatous obliteration of, [Hulk] 811
- PORTO RICO** October examination, 647
- POST OFFICES**, lighting of, 1171—ME
- POSTAL** employees, first aid manual for, 858
- POSTGRADUATE** Courses: See under Graduate
- POSTURE**, carriage of human body, 1328
its evolution and disorders, [Kelth] 1343
- POTASSIUM** in human blood, new method for determination of, [Mirklu & Druskin] 1100
lous and muscle tonus, [Neuschlosz] 809
- PRACTICE ACT**, 1095
amendment to, in Canada, 563
enforcement of, [Platter] 925—ab
patients not alleged to have been human beings in violation of, 1952—MI
- PRECIPITIN REACTION** for syphilis, [Moody] *383
reaction of thyroglobulin, [Hekten & Schulhof] *386
- PREGNANCY**, action of roentgen rays on, [Archangelsky] 1348
albuminuria of, [Fuchs & Fekete] 1658
and heart disease, [Pardee] 135, 656, [Hermet] 729
and nephrectomy in tuberculosis of kidneys, [Favreau & Querrioux] 1653
and ovarian cysts, [Szymauowicz] 1105
and syphilis, [Moore] 1269
and syphilis complement fixation reaction, [Smith] 60
and syphilis: recognition of syphilis in beginning of pregnancy, [Pinard] 1815
- PREGNANCY** and tuberculosis, [Bar] 142, [Pinard] 212, [Norris & Murphy] 253, [Sergent] 511, [Bernard & others] 512, [Wallich] 512, [Schumacher] 591, [Etcheverry Boneo] 967, [Müller] 970, [Winter & Opperman] 1492, [Cleisz] 1814
basal metabolism in, [Cornell] 583
biologic reactions in blood during, [Oettingen] 516
blood in normal pregnancy, [Krebs & Briggs] 800
blood sugar during, [Rowley] 799
blood volume in, [Guelssaz & Wanner] 729, [Koch & Jakobovits] 733, [Kaboth] 1887
cancer of female sex organs in relation to, [Peller] 1348
dermatitis of, autohemotherapy in, [Lévy & Solal] 435
diagnosis of, error in, 1628
double uterus: cesarean section for delivery of pregnant right uterus at term, [Shoemaker] *103
extra-uterine, [Hall] 428
extra-uterine, abdominal, with living child, [Rader] 1809
extra-uterine, at term, [Zarate, Rojas & Widakovich] 805
extra-uterine, at term with living child, [O'Neill & Crawford] *913
extra-uterine, clinical study of, 1698—E
extra-uterine, diagnosis of tubal and angular pregnancy, [Douay & Rochat] 1814
extra-uterine, erosion of rectum by ectopic placenta, [Forsyth] 1651
extra-uterine, etiology and treatment of, [Manthner] 518
extra-uterine, interstitial, [Gilbert] 1271
extra-uterine, ovarian, [Bierring] 518
extra-uterine, ruptured, cerebral thrombosis as complication of, [Lavezzi] 965
extra-uterine, statistics for, [Ilawks] 960
extra-uterine, subcutaneous implantation of human ovum, [Streeter] *989
extra-uterine, sudden acute pain in shoulders associated with acute pelvic pain in women, a symptom of ruptured ectopic pregnancy indicating subphrenic blood extravasation, [Rubin] *1050
food consumption of rats in, and during and after lactation, [John & Schick] 1036
glycemia in, [Deluca] 967
glycosuria in, [Bauer] 149, [Gottschalk & Strecker] 515, [Leskinen] 736, [Welz & Van Nest] 799, [Burger] 1111, [Koster] 1656, [Lewin] 1492
glycosuria of, and so-called renal diabetes, [Motzfeldt] 149
hemeralopia, [Klaften] 1422
hygiene, [Feldman] 432
ileus during, [Dietrich] 735
in leukemia, [Hausmann] 364
induced bilateral pneumothorax with normal intercurrent pregnancy, [Gendron] 587
injury to pregnant woman, damages for mental suffering, 504—MI
internal secretions during and after, [Knipping] 1108
kidney cancer in, [Roubier] 283
kidney disease in, [Hinselmann & others] 1108, [Pink] 1278, [Rosinski] 1278
liver function in, improved phenoltetrachlorophthalin test for, [Rosenfield & Schneiders] *743
liver function in, spontaneous and induced glycosuria as an index of, [Volpe] 513
liver function in, tested by hemoclastic crisis, [Mazza & Iraeta] 145, [Kaboth] 219
liver in, [Rafael Mestre] 967
management of female urinary bladder after operation and during pregnancy, further study of residual urine in its bearing on urinary tract disturbances, [Curtis] *1126
nonprotein nitrogen and toxicoes of, [Hellmuth] 516
obstetric future after incision of cervix during childbirth, [Balard] 143
oral affections in, [Polettl] 730
ovarian tumors in, [Centanaro] 514
pituitary extract in, [Anderes & Wächter] 1741
proof of, 1092
prophylactic immunization of pregnant against streptococci, [Lourois] 1885
purpura with, [Mosher] 1733
refractometer index of serum of, [Mazza & Iraeta] 145
rupture of body of uterus during, [Kane] 1173
sedimentation of blood in, [Vignes & Hermet] 806
tetany in, [Niderle] 591
thirty-six pregnancies, [Laurentle] 805
toxemia in, and anti-anaphylaxis, [Charron] 879
toxemia, warning hypertension in, [Le Lorier] 879
tumors of adnexa in, [Richter] 1549
twin, diagnosis of, [Offermann] 1278
uterine fibromyomas complicating, [Mussey] 1648
volvulus in, [König] 362
vomiting of, [Sellers] 582, [Albrecht] 1035
vomiting of, corpus luteum extract in, [Taylor & Taylor] 582
- PREGNANCY**, vomiting of, phenobarbital sodium in, [Luikart] 1877
vomiting of, treatment of, [Schulze] 219, [Ingdis] 357
Wassermann reaction in, [Belding & Adams] 60, [Hinton] 955, [Lasseur & Vermelin] 1546
weight as a routine test in, [Davis] *249
- PRESCRIPTIONS**, counterfeited, 337
to be protected, 261
- PRISON** reform, 197
- PRIVILEGE**, waiver of privilege in personal injury case, 1172—MI
of physician with respect to choice of treatment, 1160
- PRIVILEGED COMMUNICATION** and criminal abortion, 1326
and declaration of death, 1787
construction of law as to, 1481—MI
privileged communications, 1096—MI
- PRIVY**, deodorant for, 1400
- PRIZE**, Alory-Gillois, 412
award for radium research, 782
cancer, at Vienna, 334
Carthage, 782
Dr. Forero offers another, 1083
for anthropologic research, 1703
for essays on depopulation in France, 1859
for medical historic-economic study, 1390
Gullstrand prize endowment, 1703
Heubner, in pediatrics, 488
John Scott medal awarded to Eijkman, 1781
of French Academy of Medicine, 335
prizes for research, 945
Sofie A. Nordhoff-Jung cancer research prize, 487
- PROHIBITION**: See also under Alcohol; Volstead Act
- PROHIBITION** commissioner issues statement on prescriptions in influenza, 336
in America, 490
in England, 1016, 1466
movement in Austria, 1862
two years of, 1859
United States district court holds limitations on liquor prescriptions unconstitutional, 1464
- PROPAGANDA FOR REFORM**, 1167
- PROPRIETARY PREPARATIONS**, names of, [Osborne] 127—C
- PROSTATE**, abnormal, eosinophilia with, [Legueu & Astraldi] 214
absence of, with endocrine disease, [Lisser] 1807
cancer, diagnosis of, [Negro] 1653
disease, roentgen-ray treatment from standpoint of an old urologist, [Nicolich] 1653
hypertrophied, infections of, [Astraldi] 1419
hypertrophied, tests of kidney function with, [Düttmann] 1185
hypertrophy of, [Kornitzer & Zanger] 810, [Voelcker] 1741
hypertrophy of, nature of, [Borza] 663
hypertrophy of, radium in, [Dennils] 582
hypertrophy, results of operations, 1327
hypertrophy, surgery of, 1789
hypertrophy, vasectomy in, [Landau] 1493
mutual relations between prostate and seminal vesicles, [Ohmori] 1279
sarcoma of, [Bettoni] 1549
secretions, method for concentration of cells and bacteria in, [Johns] *463
tuberculous, cancer of rectum involving, [D'Agata] 1274
- PROSTATECTOMY**, ejaculatory duct after, [Lichtenstern] 1279
transvesical, [Serres] 286
- PROSTITUTES**, syphilitic, power as to quarantining, 132—MI
- PROSTITUTION**, bill to repress, 488
- PROTEIN** and pellagra, [Hindhede] *1685, [Goldberger] 1866—C
and bacterial fermentation, [Rühle] 1884
feeding and high blood pressure, [Strouse & Kelman] 1028
fever and arthropathies due to, [Bezançon] 1417
fever, dynamic, [Rietschel] 809
lyophil and lyophobic proteins as antigen and antibody, [Ruppel] 1034
metabolism and liver cells, [Noel] 1654
origin of serum proteins in body, 1696—E
Sensitization: See Anaphylaxis
specific and nonspecific action of proteins, [Hayek & Wieser] 1819
therapy, action of, on intermediary metabolism and glycemia, [Vollmer] 1885
therapy in febrile abortion, [Shmon] 442
therapy, influence of, on coagulation of blood, [Salomon & Vey] 590
therapy, nonspecific, scientific basis for, [Clark] 1031
therapy, specific and nonspecific, [Hansen] 1038
therapy, treatment by nonspecific passive protection or inactivation of protoplasm, [Burmeister] 516
treatment in pediatrics, [Barabás & Torday] 362
- PROTEINURIA**, Bence-Jones, in Hodgkin's disease, [Galloway] 281
- PROTOZOON** debris as cause of malignancy, [Flynn] 208

- PRURITUS** anal, bacterial injections in treatment of, [Knowles & Corson] 1485
vulvar, treatment of, with special consideration of thrush and trichomonas, [Littauer] 884
- PRUSSIAN Academy of Sciences**, 712
- PSEUDARTHROSIS**, [Mitterstiller] 1109
- PSEUDOHERMAPHRODISM** as cause of sterility, [Wesselink] 443
- PSEUDOLEUKEMIA**: See Hodgkin's Disease
- PSORIASIS**, generalized, following injection of formic acid, [Maiten] 1819
- PSYCHANALYSIS** and hysteria, 492
"catharsis-hypnosis" form of psychoanalysis in treatment of certain psychoses, [Breukink] 1744
in organic affections of psychic origin, [Stoddart] 805
- PSYCHIATRY**, Abderhalden reaction in, 50
extramural, [Echols] 1540—ab
psychiatric social work, 858
training of physician in, 46, 1786
- PSYCHIC** centers, and extracortical regulating, [Campus] 1346
energy and mental insufficiency, [Sjåbring] 1038
infantile, [Jamin] 663
needs of sick in hospitals, [Chelmonski] 1888
origin of certain organic affections, [Stoddart] 805
- PSYCHOLOGY**, applied, experimental, [Abramson] 1814
- PSYCHOPHYSICAL** relations in internal medicine, [Mohr] 734
- PSYCHOSES**: See also Insanity; Neuroses
- PSYCHOSES**, akathisia and tasikinesia, [Sicard] 1546
aporrhagia reactions in, [Whitthorn] 873
basal metabolism in, [Gibbs & Lemcke] 655, [Bowman & Grubfield] 1340
blood chemistry in, [Bowman] 873
endocrinopsychopathies, [Fernandez-Victorio] 1654
extracortical regulating and psychic centers, [Camus] 1346
organotherapy in, [Wagner-Jauregg] 883
osteomalacia in imbecile with, [Dayton] 355
pathology of epidemic encephalitis complicated by, [Hassin & Rotman] 579
review of "service" patients in mental hospital, [Henderson & Gillespie] 726
senile, diagnostic significance of Redlich-Fisher millary plaques, [Uyematsu] 431
structural basis of, [Alford] 431
sympathetic and periodic, [Laignel-Lavastine] 66
traumatic, not a clinical entity, [Hadley] 138
treatment, "catharsis-hypnosis" form of psychoanalysis in treatment of certain psychoses, [Breukink] 1744
uremia in, [Uribe] 1347
- PUBERTY**, effect of restricted diet on sexual life of rat, [Slonaker & Card] 1409
precocious, [Harvey] 1179
- PUBIC BONE**, osteomyelitis of, [Keyes] *1451
- PUBIOTOMY**, [Bih] 1542
- PUBLIC HEALTH**: See under Health
- PUBLIC HEALTH SERVICE**, 47
examinations for, 564
extends radio activities, 1253
report of activities subsequent to March 1922 conference on education of sanitarians, [Draper] 1246—ab
- PUERICULTURE**, [Rueda] 437
- PUERPERAL INFECTION** and its treatment, [Sigwart] 1818
combined use of mercuric chlorid and neoarsphenamin in, [Kiehne] 1658
immunization against, [Lourois] 1108
mercurochrome in, [Piper] 136
permanent irrigation in, [Wagner] 216
pneumococcus, [Monckeborg] 282
prophylaxis of, [Kritzler] 733, [Ubaldo Fernandez] 881, [De Snoo] 1280
serotherapy and chemotherapy in, 124, [Bumlin] 968
treatment of, [Watson] 1344
washing out of uterus in treatment of, [Pierra] 806
- PUERPERIUM**, complete differential cell count (hemogram) in, [Fuss] 1742
Widal's hemoclastic crisis in, [Mazza & Iraeta] 1740
- PULMONARY Tuberculosis**: See Tuberculosis, Pulmonary
- PULSE** changes as heart function test, [Holzer & Schilling] 969
constitutional paradox, [Curschmann] 217
in retroplacental hemorrhage, [Levant & Portes] 1274
pressure in exophthalmic goiter, [Harris] 1734
wave velocity, measurements of, [Bazett & Dreyer] 354, 558—E
- PURGATIVES**, [Pedro] 361
- PURIN** metabolism and bile, [Harpuder] 1817
- PURPURA** and pernicious anemia, [Posse & Guerra] 732
chronic purpuric eruption without demonstrable blood changes, [Arnett & Weidman] *1132
- PURPURA** complicating gestation, [Mosher] 1733
hemorrhagic, peptone shock treatment in, [Paisseau & Alcheck] 1736
hemorrhagic, remedial efficacy of splenectomy in chronic thrombocytopenic purpura hemorrhagic, [Brill & Rosenthal] 1875—ab
hemorrhagic, transfusion in, [Larrabee] *838
primary, in children, [Poynton & others] 432
rheumatic, [Raugenberg] 1492
treated by injection of human blood, [Dixon] 511
with ventricular hemorrhage, [Portu Pereyra] 144
- PUS** cells, phagocytosis of, [Umamura] 219
- PYELITIS**, antogenous vaccines in, [Jervell] 1038
chronic, vs. infected hydronephrosis, [Bloch] 1887
high enemas in treatment of colon bacillus pyelitis and sepsis, [Sack] 1548
pregnancy, [Rosinski] 1278
treatment of, [Daniel] 438
- PYELOGRAPHY**, [Szabó] 1348
choice of mediums, [Graves & Davidoff] *168
in abdominal conditions, [O'Neil] 1731
study of chemicals used in, [Lowsley & Muller] 876
value of, in abdominal diagnosis, [Eisendrath] 131—ab
- PYELOTOMY**: See under Kidney Calculi
- PYELOTOMY**, [Zondek] 1887
ureterolysis and extirpation of kidney: special technic, [Kolischer & Katz] *1757
- PYLON**, plaster, use of, in leg amputations, [Van Gorder] 878
- PYLORUS** cancer, diagnosis of metastasis of, [Aperio] 1033
cancer in syphilitic, [Curtis & Sarmount] 1180
exclusion of, [Lutz] 1743
hypertrophy, congenital, [Still] 1488
obstruction, chemical changes in blood after, [Haden & Orr] 1412
stenosis caused by corrosive substances, [Elischer] 1036
stenosis, congenital hypertrophic, treatment of, [Findlay] 1650
stenosis, medical treatment of, [Hoag] 139
stenosis, results of medical and surgical treatment of, [Parsons & Barling] 727
- PYOCULTURE**, [Delbet & Beauvy] 213
- PYOPNEUMOTHORAX** secondary to pneumonia, [Rajam] 1958
- PYOSALPINX**, conservative treatment by abdominal incision, [Hönck] 1111
- PYREXIA**: See Fever
- PYROSIS**, itching of ears in, [Engel] 147
- PYURIA**, renal, aseptic, [Peters] 1186
- Q**
- QUACKS**, consequences of acquittal of a charlatan, 1628
law against quackery in Sweden, 1703
- QUARANTINE**, power as to quarantining syphilitic prostitutes, 132—M
station in Greece established by American women, 263
- QUARTZ LAMP**, effect on growth of radiation with, [Goldblatt & Soames] 282
effect of radiation with, [Humie] 281
histophysiology of irradiation with, [Eckstein & Mollendorff] 1655
in leukoderma, [Toomey] 139
- QUAYLE'S "P.S.-White Habit Sinkers,"** an alleged cure for morphinism and any other drug addiction, 270—P
- QUINIDIN**, death after administration of, [de Crespiigny] 1104
experimental study of, [Korns] 655
in auricular disease, [Parkinson & Nicholl] 212, [Farnum] 508, [Fraser] 1344
in certain cardiac irregularities, [Levy] 1872—ab
in nonparoxysmal auricular fibrillation, [Viko & others] 1410
therapy, depression of cardiac conductivity during, sudden attack of unconsciousness and auriculoventricular dissociation, [Wolferth] *1289
- QUININ**, action of, on sugar mobilization, [Tatum & Cutting] 139
and hemoclasia, [Grossmann] 217
derivatives, disinfecting action of, [Dernby] 884
in malaria: See under Malaria
- QUININ ETHYL CARBONATE**, 1617
- R**
- RABIES**: See Hydrophobia
- RACES**, no signs of race of supermen, 1629
- RACHICENTESIS**, technic of, 1637
routine lumbar puncture in syphilis, [Vaughan] 1957
- RACHITIS**, [Garrahan] 967
and growth, [Wengraf & Barchetti] 441, [Ambrozic & Wengraf] 442
and sun rays, [Armand-Delille] 1654
- RACHITIS**, causes of, recent American and English research on, [Plehon] 729
comparison between medicinal-dietetic treatment and light treatment in, [Jundeli] 592
effects of excess of calcium on skeleton, [Korenchevsky] 1958
experimental, changes in temporal bones in, and their relation to otosclerosis, [Kauffmann & others] *681
in infants, [Harlette & others] 442
incidence of, in large cities, 1396
late, endemic of, [Higier] 517
light waves in relation to, [Hess & Weinstock] *687
relation of vitamin content of milk to, [Politzer] 589
summary of our knowledge of, 1853—E
- RADIO**, wireless medical advice, 1322
- RADIOACTIVITY**, effects of radiation on cells, 924—E
radioactive substance in fluid form, [Lomholt] 518
some aspects of vitamins and radiant energy, 1695—E
- RADIUM**, action of, on uterus, [Kotzareff & Mollow] 282
award for radium research, 782
beta rays of, [Degrais] 1653
dosage of, [Opitz] 1492
effects of, on rabbit ovaries, [Weis] 1343
efficient method of applying radium within the mouth, [Ruggles] *1374
in Belgium, 45, 1707
in benign uterine affections, [Schaedel] 288
in relation to tumors of mouth, 124
increased supply of, 1394
skin cancer following exposure to, [MacNeal & Whitt] *466
sterility from use of, [Varzhabedian] 127—C
therapy: See also under Cancer; and under names of various diseases
therapy, indications for, [Turner] 1272
three years' experience with, [Tigert] 1406—ab
- RADIUS**, myeloid sarcoma of, [Stewart] 877
resection of distal end of ulna for shortening radius following fracture, [Hoag] 800
- RAFTS** or boats for life saving, 1531
- RANULA**, with comments on Thompson theory of origin, [Blair] 276—ab
- RATS**, objection to poisoning of rats as a measure against plague, 1392
physiologic research on, [Giusti & Hug] 145
- RAYNAUD'S DISEASE**, recovery from, [Klecan] 1268
- REACTIVITY**, changes of, during treatment, [Königer] 662
- RECONSTRUCTION**: See Rehabilitation
- RECTUM**, angiomas of, diffuse, cavernous, [Bensaude & Antoine] 1180
binder, [Furst] *105
cancer of, involvement of lymph nodes in, [McVay] 354
cancer of, involving tuberculous prostate, [d'Agata] 1274
cancer of, radium and roentgen-ray therapy of, [Gaarenstroom] 288
erosion of, by ectopic placenta, [Forsyth] 1651
gonococcus infection of, [Weissmann] 1182
hemorrhagic erosions of, [Päster] 441
prolapse, [Frank] 1884
prolapse, alcohol treatment in, [Findlay & Galbraith] 728
prolapse, treatment of, [Frank] 799
punctured wound of, [Selby] 1103
- RED CROSS**, American, 481
American, peace time health program of, 859
society of Belgium, 1707
- REDLICH-FISHER** millary plaques, diagnostic significance of, [Uyematsu] 431
- REED**, Frank S., on trial on 2 charges, 425
- REFLEXES** in new-born, [De Angelis] 284
frontal, in some cerebral affections, [Holmgren] 1888
myoclonic, [Muskens] 1037
retinal reflex in frogs, [Moorhouse] 653
- REHABILITATION**, national rehabilitation conference, 1529
- REPRODUCTION**, effect of thyroparathyroidectomy on, [Hammett] 1879
- REPUTATION**, protection of professional reputation of physician, 640
- RESEARCH, MEDICAL**, 1094
adaptation of, to new conditions, [Hils] 458
aid for, 196
creation of government institute for medical research in Berlin, 569
fund for, 859, 1157
in Austria in 1922, 711
progress of, 1458—E
protection for results of scientific research, 1467
- RESPIRATION**, action of drugs on, 700—E
action of ether, chloroform, etc., on, [Schmidt & Harer] 725
action of morphin series on, [Schmidt & Harer] 725
action of sodium citrate on, [Salant & Kleitman] 657
disturbance of respiratory rhythm, following encephalitis, [Parker] 137

- RESPIRATION, immediate effect of stair running on, [Lundsgaard & Möller] 1175
spasmodic forced, as sequel of encephalitis, [Pardee] *178
valvular control of, [Pfanner] 662
- RESPIRATORY TRACT, constitutional irritability and respiratory spasm, [de Massary & Walser] 805
disturbances, backward fall of root of tongue as cause of, [Robin] 805
infection, structural and functional involvement of heart following, [Hamburger & Priest] 1724—ab
ocular disturbances in affections of, [Terrien] 1653
upper, effect of antiseptics on bacterial flora of, [Bloomfield] 1099
- RETINA hemorrhage complicating blackwater fever, [Connell] 358
injury of, by sun in spite of protective glasses, [Strebel] 660
lipemia retinalis, [Gray & Root] *995
occlusion of central retinal artery, [Agnew] 1099
retinal reflex in frogs, [Moorhouse] 653
- RETINITIS associated with high blood pressure and renal disease, [Ellis & Marrack] 1812
- RHEUMATISM, acute, articular, [Libarona Brian] 67
acute, articular, active immunization against, [Brunthaler] 440
cardiac, of childhood, [Raven] 803
chronic, cause and cure of, [Freeland] 961
electrocardiographic evidence of myocardial involvement in rheumatic fever, [Swift & Cohn] 1644—ab
is endocarditis a complication or primary localization of febrile rheumatism? [Krogus] 1496, 1819
of dental origin, [Maranon] 1654
"rheumatic" infection, [Wiesel] 1657
salicylates in, 1941—E
treatment with casein, [Roch & Katzenbogen] 511
venous thrombosis during acute attack in a child, [Poynton] 1489
- RHINORRHEA, cerebrospinal, [Roqueta] 215, [Loftus] *841
- RHODE ISLAND state board April examination, 946
state board July examination, 1093
- RHUS, treatment of ivy poisoning with rhus toxicodendron and rhus venenata, 1637
value of toxin [antigen] of rhus toxicodendron and rhus venenata in treatment and desensitization of patients with dermatitis venenata, [Strickler] *1588
- RIB, primary infectious osteomyelitis of, [Michelson] 732
resection of, and puncture of thorax, [Neumann] 1034
- RIEDEL'S LOPE simulating nephroptosis, [Wilhelmi] *1755
- RINDERPEST, or cattle plague, 937
- ROCKEFELLER buildings at University College, 1467
Foundation aids German Scientific Research, 706
Foundation announcements, 638
Foundation, annual report of, 1702
Foundation, expenditures of, 1464
Foundation fellowships, 1464
gift to London, 1254
mission retires from tuberculosis work in France, 859
- ROCKING-SHOE, [Grosso] *1313
- ROCKY MOUNTAIN SPOTTED FEVER, 1146—E
immunity studies of, [Noguchi] 1412
transmitted by rabbit tick, [Parker] 800
Weil-Felix reaction in, [Kelly] 1413
- ROENTGEN, death of, 487, 563, 864
monument of, 1015
- ROENTGEN RAY, action of, on early pregnancy, [Archangelsky] 1348
changes produced by roentgen rays in inflamed connective tissue, [Maximow] 1411
dangers of work with, 573
epithelioma cured by diathermy, [Bordier] 142, 283, 588
experimental roentgen injury of ovaries, [Unterberger] 1278
healing of wounds after, [Vogt] 147
influence of irradiation of ovary on subsequent fecundation and pregnancies, [Lacassagne & Contard] 1274
injuries, fatal, of larynx, [Hofmeister] 441, [Perthes] 441
injuries, prophylaxis of, [Holzknecht] 287, 859
neighbors complain of roentgen-ray clinic, 1627
rooms, ventilation of, 129
sickness and cachexia, [Hirsch] 439
silhouettes: a method of case recording, [Moorhead] *1455
study of digestion in snakes, [Rodolphi] 966
ulcers, sympathectomy in treatment of, [Gundermann] 1884
victim, Charles Vaillant honored, 563
victim, fatal acute aplastic pernicious anemia in a roentgenologist, [Faber] 592
victims of, 49, 1256
- ROENTGENOGRAPHY, after intramuscular injections of iodized oil, [Boulan] 66
process in, 199
- ROENTGENOLOGIST'S report, scope of, [Enfield] *999
- ROENTGENOTHERAPY: See also under Cancer
- ROENTGENOTHERAPY, blood changes after, [Heim] 590
blood with deep roentgen-ray therapy; hydrogen ion concentration, alkali reserve sugar, and nonprotein nitrogen, [Hirsch & Petersen] *1505
changes and future of, [Strauss] 216
dosage of roentgen and radium rays, [Opitz] 1492
indirect, of gynecologic hemorrhage, [Hirsch] 518
intensive, indications for, [Freund] 218
of subacute inflammatory processes, [Kemp] 967
sarcoma (?) of thigh, with secondary sarcoma (?) of inguinal region, liver and lungs, recovery after intensive deep roentgen irradiation, [Schroeder] *23
so-called "carcinoma dose" of roentgen rays, [Opitz] 1805
- ROGER'S DISEASE, 2 atypical cases of, [Varlot & Cailliau] 1491
- ROUMANIA, no reciprocity between Hungary and, 639
reorganization of military medical service in, 1161
- ROUND LIGAMENTS, intraligamentous ganglioneuroma, [Stoeckel] 884
restoration of, [Nynlasy] 141
- RUBELLA, differential diagnosis of, [Brusa] 214
without rash, [Floystrup] 1650
- RUBEOLA: See Rubella
- RUBIN TEST: See under Fallopian Tube
- RUMPEL-LEEDER'S phenomenon in syphilis and others, [Hoffman] 441
- RURAL communities, supply of physicians in rural England, 1456—E
districts, infant mortality in, 569
health problem, 1094
hygiene, 643
medical problems (conference on New York state medical problems), 648—ME
medical service in America, 1522—E
- RUSSIAN biologic crisis, 639
physicians, aid for, [Eversole] 1475—C, [Thayer] 1476—C
- S
- SACCHAROMYCETIC interdigital erosion, [Mitchell] 136
- SACHS-GEORGI REACTION and Dold reaction in internal medicine, [Hollander] 1656
and Wassermann test, comparison of, [Feinblatt] 210
in congenital syphilis, [de Castro Freire & Antunes de Menzes] 1419
results of, [Rice] 430
titration with variable amounts of serum in Wassermann and, [Sparmann] 1884
- SACROCOCCYX, chordoma of, [Hirsch & Ingals] *1369
- SACRO-ILIAC JOINT, mechanics of, [Roberts] 1651
tuberculosis of, [Nuttall] 1735
- SAFETY First Council, 1085
- ST. BARTHOLOMEW'S HOSPITAL, octocentenary of, 1467, 1621—E
- SALICYLATES: See also Sodium Salicylate
in rheumatism, 1941—E
new facts about, 326—E
- SALIVA, influence of stimuli on, [McClelland] 354
urea content of, [Landsberg] 1657
- SALIVARY GLANDS, blood sugar metabolism of, [Anrep & Cannon] 727
calculi, multiple, in Stenson's duct, [Noehren] *25
fistula, roentgen irradiation in, [Kaess] 811
- SALOMON, Hugo, of Vienna practicing medicine without license in Buenos Aires, 1087
- SALT, administration of hypertonic salt solutions for relief of intracranial pressure, [Fay] *1445
and baker's dermatitis, [deJong] 1812
hypertonic salt solution, action of, 554—E
in diet, its influence on functional tests of kidney, [Negro & Colombet] 1032
Isotonic infusion of glucose and, [Zagari] 589
metabolism, [Jungmann] 809
- SALVADOR, health progress in, 1859
- SALYARSAN: See Arsphenamin
- SANATORIUMS, taxes imposed on, 567
- SANGVIN, 1711—P
- SANITARIANS, education of partially trained sanitarian now employed, [Sears] 1477—ME
recruiting of sanitarians for future service of state, [Winslow] 1246—ab
report of conference on "education of sanitarians and future of public health in United States," [Cumming] 1246—ab
- SANITARY PASSPORT, inadequacy of, 935
- SAPROPHYTES, pathogenicity of, [Kellert] 209
- SARCOMA and fibroma of ovary, [Meigs] 277
in infant, [Roello] 730
of bone, diagnosis of, [Eising] *1429
of kidney in a child of 29 days, [Deming] *902
- SARCOMA of kidney, spontaneous hematoma occurring in, [Boland] 275—ab, 1484
of omentum, [Segers] 285
of prostate, [Bettoni] 1549
of thigh, with secondary sarcoma (?) of inguinal region, liver and lungs, recovery after intensive deep roentgen irradiation, [Schroeder] *23
of uterus, [Reel & Charlton] 1806, [Masson] 1877
or embryoma of kidney in infants, [Robins] 276—ab, 1484
primary, retroperitoneal, [Andrews] 1733
- SAVANOL, 615—P
- SCABIES, treatment of, 422
- SCALP, diagnosis of scar-forming affections of, [Sabouraud] 436
aspergillus scalp lesions, treatment of, [Lynch] 1878
- SCAPHOID, isolated diseases of, [Moffat] *87
- SCAPULA, complications of fracture of, [Razaboni] 144
- SCAR: See Cicatrices
- SCARLET FEVER, [Di Cristina] 806
diagnostic value of primary signs of, [Piédrelièvre] 729
experimental, in man, [Heektoen] *84
following acute hemorrhagic encephalitis, [Toomey & others] 797
hemotherapy in, [Daniel] 1738
seroprophylaxis of, [Ribeyrolles] 286
sudden death in, report of 2 cases, [Krauss] *454
Wassermann reaction in, [Christensen] *1118
- SCHICK TEST: See under Diphtheria
- SCHISTOSOMIASIS, [Dew] 1031
in Philippines, [Mendoza-Guazon] 583
japonica, tartar emetic in, [Libby] 1178
- SCHIZOPHRENIA, epilepsy associated with, [Endtz] 1186
- SCHOOL curriculum for boys and girls, differentiation of, 414
does school work impair health? 112—E
medical, in China, consolidation of, 93
medical inspection of, 1086
open-air, [Tonina] 807
open air, as preventive measure, [Milligan] 209
physicians, findings of, in continuation schools for girls, 1089
place of physical training and athletics in, 196
protection and development of health in boarding schools, [Emerson] *1310
- SCIATICA, epidural injection of antipyrin in, [Högler] 591
from tardy inherited syphilis, [Brian] 1419
sciatic pain associated with abnormalities of lumbar vertebrae, [Moore] 1646
- SCLERA, blue, and brittle bones, [Straat] 812
- SCLERODERMA, acute, [Laignel-Lavastine & others] 359
and pituitary, [Bénard & Couland] 143
with goiter, [Laignel-Lavastine] 143
- SCLEROMA of larynx and trachea, [Forni] 284
rhinopharyngeal, [Boserup & Nyfeldt] 219
- SCLEROSIS, multiple, [Long] 1274
multiple, cerebellar syndrome resembling, [Howard] 1413
multiple, cerebrospinal fluid in, [Achard & Thiers] 1346
multiple, diagnosis of, [Cadwalader & McConnell] 1339
multiple, etiology of, [Long] 1491
multiple, experimental, [Jensen & Schröder] 1280
multiple, familial, [Lotmar] 143
multiple, in Switzerland, 638
multiple, spirochete stain in, [Stevenson] 580
spinal, etiologic relation of achylia gastrica to combined spinal sclerosis, [Vanderhoof] 1876—ab
- SCOLIOSIS, congenital, [Rocher & Nolrit] 283
congenital, versus Pott's disease, [Mouchet] 1181
postpleuritic scolioses in children, [Rey] 1548
roentgen ray in diagnosis of, [Lamb] 59
- SCORBUTUS: See Scurvy
- SCROTUM, gangrene of penils and, [Stirling] *622
lymphosarcoma of, [Oudard] 1182
- SCURVY and general dystrophy, [Rosenbund] 1036
and resistance to infection, [Hamburger & Goldschmidt] 1109
and undernutrition, 417
antiscorbutic vitamin in oriental fruits and vegetables, [Embry] 958
metabolism in, [Knipping & Kowitz] 1035
prescurvy stage, [Jose Estella y B. de Castro] 589
- SEASONS, seasonal variability of disease, 476—E
- SECRECY, professional, an attempt to quash, 1327
professional, insurance against penalties for refusing to violate, 337
- SECRETIN, [Djenab] 511
- SECRECTIONS, INTERNAL: See also under names of various organs, as Uterine secretion, etc.

- SECRETIONS, INTERNAL**, absence of prostate with endocrine disease, [Lisser] 1807
action of endocrines on serum calcium, [Leicher] 882
and blood, [Perrin & Hanns] 143
and disease of ear, nose and throat, [de la Cruz Correa & Becco] 807
and mental disease, [Fernandez-Victorio] 1654
and selective tuberculous involvement, [Coffen] 1268
and vitamins of growth (A and B), [Glanzmann] 1742
cerebral irritation in endocrine lesions of genitals, [Kammerer & Lorber] 1658
disturbances of, 1631
disturbances and nitritoid crises, [Levy & others] 1417
disturbances and undernutrition, [Curschmann] 664
during and after pregnancy, [Knipping] 1108
effects of operative interference with endocrines on growth and malignancy of a transplanted tumor of rabbit, [Brown & others] 1954—ab
general endocrine symptoms, [Sézary] 513
influence of, on spastic conditions and electric excitability, [Specht] 1185
influence of, on respiratory exchange, [Marline & Baumann] 138, [Marine & others] 1270
pituitary gland insufficiency, [Zondek] 1817
positive achievements of endocrinology, [Biumgarten] 656
- SEMILUNAR BONE**, traumatic nutritional disturbance in, [Saupe] 1185
- SEMILUNAR CARTILAGE**: See under Knee
- SEMINAL VESICLE** contents in cadaver, [Brack] 1820
and focal infection, [Cooper] 1791—C
mutual relations between prostate and, [Ohmori] 1279
recognition of gonorrheal disease of seminal vesicles and its importance in course of gonorrhea, [Junker] 1742
- SENSATION**, new conception of elements of, [Stopford] 1272
- SEPTICEMIA**, cryptogenous, [Clerc & Perrochaud] 143
following passage of calculus through urethra, [Nelken] ★1846
Puerperal: See Puerperal Infection
- SERES'** support for kidney operations, [Serès] 215
- SEROBACTERIN**, dosage of, 1637
- SERODIAGNOSIS**: See also under names of various diseases
- SERODIAGNOSIS**, quantitative relation between serum and antigen in, [Kahn & Johnson] 430
under vaccine therapy, [Codina Castellvi] 661
- SEROLOGY**, alcohol precipitate of serum as antigen, [Tsukasaki] 1496
bone marrow in course of immunization process, [Magarinos Torres] 371
complement fixation with old serums, [Pansini] 964
instability of colloids in infants' serum as modified by age, [Duzár] 1109
nonspecific desensitization, [Kellaway & Cowell] 357
refractometry of serum, [Becka] 1495
therapeutic inoculation, [Colebrook & others] 1273
- SEROSITIS**, polyserositis, [Peutz] 1744
- SEROTHERAPY**: See also under names of various diseases
- SEROTHERAPY** and hematotherapy, [Lyon] 1814
symposium on serum therapy, 1953—ab
- SERUM**, bile acids in, [Ignatowsky] 441
international conference on standardization of, 492
- SERUM SICKNESS**, arthritids of, [Boots & Swift] ★12
prevention of, by means of heterologous antigens, [Kraus] 218
- SEX** education in secondary schools, 1018
alternating sex glands, [Sand] 1882
education, report of National Birth Rate Commission, 1530
glands, nature of different cells in, [Scheunig] 1108
literature, opposition to, in New Zealand, 1530
pathology, parabioses as means of experimental research in, [Nissen] 884
perversions and hypergenitalism, [Claude & Borrel] 1346
predetermination of, 1382—E
ratio of sexes at birth, [Tauber] 1422
- SEX-CO Restorative Tablets**, 645—P
- SEXUAL** life, effect of restricted diet on sexual life of rat, [Sionaker & Card] 1409
sexuality in relation to constitution, 1469
- SHAW**, Bernard, and the profession, 1086
- SHEEP-POX**, ten years of vaccination against, [Bridré & Boquet] 1813
transmission of, to man, [Bevilacqua] 214
- SHEPPARD-TOWNER ACT**, administration of, 41
case against, 487
law suit opened, 1464
state of Washington yields to, 1336—ME
supreme court declines to pass judgment on, 1702
test suit launched against, 47
- SHIPS**, laparotomy on board ship for intestinal obstruction, [Moxey] 64
boat or rafts for life saving on ship board, 1531
physician may have liquor, 1859
- SHOCK**, traumatic, action of ether on circulation in, [Cattell] 722
traumatic, nature of, [Melver & Haggart] 1733
traumatic, prognosis of, [Jeanneney] 1737
- SHOE**, rocking-shoe, [Grosso] ★1313
- SHOULDER** dislocation, old, operative reduction of, [Bazy] 1346
double triangle towel shoulder-cap, [Cutler] ★471
importance of phrenic shoulder pain in disease involving diaphragm, [Orr] ★1434
sudden acute pain associated with acute pelvic pain in women, a symptom of ruptured ectopic pregnancy, indicating subphrenic blood extravasation, [Rubin] ★1050
tuberculosis of, operative method in, [Baron] 1744
- SIAMESE**, resistance of, to disease, [Mendeison] 1178
- SIGMOID**, cancer, chronic intussusception due to, [Ewart] 1734
- SILICOSIS**, early tuberculosis and, 113—E
- SILK**, hypersensitiveness to, [Clarke & Meyer] ★11
- SINGULTUS**: See Hiccup
- SINUS**, lateral, thrombophlebitis of, [Munyo] 1185
sphenoidal, relation of optic nerve to, [Young] 432
sphenoidal sinus disease, [Spless] 1055
- SKIABARYT**, 1381
- SKIN** cancer following exposure to radium, [MacNeal & Willis] ★466
cancer, prophylaxis of, [Gougerot] 880
diseases, sulphur in, [Sabouraud] 660
mixed affections of, [Brocq] 436
myeloid leukemia of, [Ketron & Gay] 873
preparation of, in hypodermic needle punctures, [Tennant] ★1066
reactions, diagnostic cutaneous reactions in infants, [Grosser & Kellmann] 440
reactions, protein sensitivity in children with negative cutaneous reactions, [O'Keeffe] ★1120
respiration of, [Gans] 882
sensitiveness of, to poisons in tuberculosis, [Zleler & Markert] 662
tuberculosis among Japanese, [Yanagihara] 1104
tuberculosis, Busacca's intracutaneous reaction in, [Palmieri] 1654
tuberculosis of, roentgen treatment of, [Volk] 1035
- SKULL**: See Cranium
- SLAUGHTERING**, humane slaughtering: Jewish method, 1705
- SLEEP**, blood pressure during, [Katsch & Pansdorf] 591
extreme recurrent drowsiness in child probably due to hepatic disturbance, [Thomson] 1650
influence of, on motility of stomach, [Daniélopou & Carnot] 1882
treatment of sleeplessness, 338
- SLEEPING SICKNESS**: See Trypanosomiasis
- SMALLPOX**, 1019
and vaccinia, [Bachmann & Biglieri] 1740
blindness in, [Hess] 883
bone lesions of, [Sheldon] 654
epidemic in Switzerland, [Sobernheim] 1492
immunity against vaccinia and, [Gins] 147
in 1923, 1525—E
insurance against, 122
London free from, 563
mild, 39—E
statistics in Marseilles, [Arnaud] 963
vaccination, compulsory, in Hungary, 1256
vaccination, efficacy of, in Philippines during 1921 and 1922, [Padua] ★1361
vaccination in Java, [Harvey & Christophers] 1179
vaccination law, difficulties in application, 1087
vaccination, need for, 1629
vaccine, importation of, 338
validity of ordinances requiring vaccination, 1026—MI
- SMEGMA**, bacteria in preputial secretions, [Brams & others] 957
fusiform bacilli and spirchetes about clitoris, [Pilot & Kanter] 1412
hemolytic streptococci in preputial secretions, [Pilot & Brams] 957
- SMELLING**, diagnosis by, [Niedermeyer] 1884
- SMOKING**: See Tobacco
- SNAKE** antitoxin, avidity test of, [Kraus & Botelho] 1347, 1886
bites, experimental research on, [Bolognesi] 434
- SNAKE** venom, action of, on heart, [Magenta] 1120
venom, hemolytic action of, [Houssay & Negrete] 590
venom, standardization of snake venom antiserums, [Kraus & Rocha Botelho] 1739
- SOCIAL** workers, opening of school for training of public welfare workers, 1396
- SOCIETY** of Biology of Paris, 75th anniversary of, 710
of Friends of Faculté de Médecine of Paris, 48
- SODIUM**, administration of soda and glucose solutions, 129
bicarbonate administration in pneumonia, edema associated with, [Binger & others] 655
bromid as a pyelographic medium, [Graves & Davdoff] ★168
chlorid, action of, [Engländer] 1035
chlorid, distribution of chlorin in blood and tissues after injection of, [Iversen & Hansborg] 664
citrate, influence of, on respiration and circulation, [Salant & Kietman] 657
hydroxid, treatment of streptococcus infections with cocci dissolved in, [Mauté] 360
in human blood, new method for determination of, [Mirkin & Druskin] 1100
iodid, roentgenography of urinary tract during excretion of, [Osborne & others] ★368
morphuate in pulmonary tuberculosis, [Fine] 428, [Tewksbury] 428
salicylate, action of, on formation of immune bodies, [Swift] 356
- SOLDIERS**, aid for tuberculous veterans, 782
aid for French war injured, 197
disabled, additional appropriation for, 639
proposed bill to aid disabled veterans, 194
review of "service" patients in mental hospital, [Henderson & Gillespie] 726
vocational training of war disabled, [Gourdon & others] 963
- SOUTH DAKOTA** state board January examination, 1868
- SPANISH** physicians visit France, 1628
increase of students and decrease of professors in Spanish schools, 641
universities go on strike, 641
- SPASMOPHILIA**, [Keyher] 1276
calcium in blood in, [Zahn] 287
- SPASMS**, influence of endocrine glands on spastic conditions and electric excitability, [Specht] 1185
nervous, on retiring, [Hanns] 660
treatment of spastic conditions by extirpation of one suprarenal, [Kersten] 440
- SPECIALIZATION** in medical practice, 1633
- SPECIMENS**, method for preparing blue celluloid injection material, [Marshall] ★181
rapid technique for preparing histologic sections by paraffin method, [Keiser] ★690
- SPEECH** development in orthopedic cases, [Stivers] 61
- SPERMATIC CORD**, to lengthen cord with undescended testicle, [Welti] 364
spermatic or seminal cysts, 568
- SPERMATIC VEINS**, changes in testicle and epididymis after resection of, [Nicastro] 144
- SPERMATOZOA**, have spermatozoa functions and effects other than fertilization? 630—E
influence of antiseptics and narcotics on movement of, [Ishikawa] 586
- SPHENOID SINUS**: See under Sinus
- SPICES**, 1459—E
- SPIDER** bite, effect of spider bite, [Baerg] 1808
- SPINA BIFIDA**, incontinence of urine due to, [Delbet & Lévi] 878, 1490
incontinence due to, [Cözzolino] 1418
occult, paralysis from, [Hoelen] 812
- SPINAL CORD**, compression of, by cystic meningitis, [Chiappori & Lavalley] 145
compression, sign revealing compression of spinal cord, [Sahlgren] 1424
differentiation of disease in or outside, [Kerpola] 70
hemangioma of, spinal cord, [Blahd] ★1452
injury of, as cause of fetal death, [Crothers] 799
injury of, subnormal temperature after, [de Jong] 964
section of anterolateral columns (chordotomy), [Frazier & Spiller] 579
surgery of, [Thorburn] 281
tumor, [Alksnis] 1742
tumors, roentgen findings with, [Sgaltzer & Jatrou] 809
- SPINAL PUNCTURES**: See Rachicentesis
- SPINE**, crush fractures of, [Wallace] 724
Curvature: See Scoliosis
dislocation, traumatic, [Dhalluin] 1345
fractured, practical care and treatment, [Kirchner] 205—ab
myeloma of vertebrae, [Osgood] 1174
pathology of intervertebral foramina, [Fors-tier] 1653
tuberculosis, [Roederer] 1181
tuberculosis, Albee inlay graft in, [König] 970
tuberculosis, conservative treatment of, [Wheeler] 64
tuberculosis, early diagnosis of, in adults, [Barré] 1181

- SPINE** tuberculosis in elderly, [Salaghi] 1184
tuberculosis, lesions simulating, [Bufnois] 1181
tuberculosis, orthopedic treatment of, [Nové-Jossier] 1181
tuberculosis, rib for Albee implant in, [Gutiérrez] 145
tuberculosis versus congenital scoliosis, [Mouchet] 1181
tuberculous caries of, acute leukemia simulating, [Melchior] 219
typhoid, unusual case of, with symptoms of spinal cord affection, [Turner] 658
- SPIRITUALISM**, a condemnation of, 931
- SPIROCHAETA**, cultivation of anaerobic treponemata on surface of blood agar plates, [Gates] 1411
cultures of spirochetes in media containing arsphenamin, [Krantz] 735
erythraemia, diarrhea caused by, [Hogue] 355
plurality of spirochetes of syphilis, [Fournier & Schwartz] 1490
recurs in brain, [Buschke & Kroó] 515
recurrent, presence of, during immune phase of experimental recurrent infection that had been vigorously treated with arsphenamin, [Buschke & Kroó] 440
- SPIROCHETES**, action of different strains of, on nervous system of rabbits, [Plaut & Mulzer] 735
and fusiform bacilli about clitoris, [Pilot & Kanter] 1412
spontaneous appearance of spirochetes resembling pallida in a nonsyphilitic rabbit, [Neumann] 1493
- SPIROCHETOSIS**, bronchial, [Engelsen] 444, [Pagniez & Ravina] 963
bronchopulmonary, clinical forms of, [Garin & Morenas] 588
- SPLANCHOPTOSIS**: See also Stomach, ptosis
SPLANCHOPTOSIS, cause of, [Victor] 656
- SPLEEN** and red blood corpuscles, 850—E
compensatory phenomena after loss of, [Seifert] 217
echinococcus disease of, [Cignozzi] 436
encysted hematoma of, [Lombard & Dubouché] 512
enlarged, in heart disease, [Creux & Picchand] 1737
function of, [Naswitis] 68, [Rautmann] 146
influence of, on erythrocytes, [Bolt & Heeres] 443
irradiation of, in gynecologic hemorrhage, [Nürnberg] 881
physiology and pathology of, [Lepehne] 286
rupture of, [Baccarini] 360
surgery of spleen, [Herfarth] 1348
surgical treatment of nontraumatic affections of, [Carslaw & others] 281
traumatic aneurism of, [Hartnett] 433
typhoid abscess of, [Paschke] 217
typhoid, and paresis of diaphragm, [de Lavergne] 964
- SPLENECTOMY**, [Torres Boonen] 1740
effect of, on antibody production, [Motomashi] 278
effect of, on respiratory exchange, [Marine & Baumann] 1270
in splenic anemia, [Horgan] 1102
in thrombopenic menorrhagia, [Halban] 1740
remedial efficacy of, in chronic thrombocytopenic purpura hemorrhagica, [Brill & Rosenthal] 1875—ab
- SPLENOMEGALY**, chronic, septile, [Ward] 1104
cirrhosis of liver with icterus and, [Bauer] 147
familial, [Kramer] 444
familial, hemolytic, [Cowan] 64
Gaucher's, [Lippmann] 734
malarial, [Cignozzi] 1492
- SPLINT** for fractured patella, [Masland] *319
for musculospinal paralysis, [Stevenson] 1881
- SPONDYLITIS** and gonorrhea, [Ramel] 1813
chronic, and its relation to tuberculosis, [Grip] 1548
tuberculous, treatment of, [Calvé & Galland] 512
- SPOROTRICHOSIS**, sporotrichoid tuberculous "gumma" without adenopathy, [Nicolas & others] 1882
- SPRUE**, tropical, clinical investigation of, [Ashford] 1027
personal experience with, [Lambert] *1910
- SPUTUM** examination, comparison of methods for, [Cassade & Cribier] 963
tubercle bacilli in, homogenization method for, [Rosenbluth] 1548
tuberculous, polymorphonuclear leukocytes in, [Escomel] 1419
tyrosin reaction in sputum, and leukocyte proteases, [Fiessinger & Blum] 1736
- STAINS**, biologic, standardization of, 858
cresylecht violet, [Dye] 581
Giemsa's blood stain, [Lyon] *473
staining of acid-fast organisms in tissue, [Hager & Dersch] *460
- STALAGMONS** in cancer, [Breuer] 517
- STAPHYLOCOCCUS** infection of urinary apparatus, [Picker] 663
relationship of staphylococcus pyogenes aureus and albus, [Kligler & Krause] 957
- STAPHYLOCOCCUS**, serologic classification of, [Hine] 433
- STAPHYLOCOCCUS CITREUS ALLERGEN-SQUIBB**, 251
- STATE BOARD** statistics for 1922, 1219, 1242—E
- STEINACH OPERATION**: See under Vas Deferens
- STENSON'S DUCT**, multiple calculi in, report of unusual case, [Noehren] *25
Steno's, Stensen's or Stenson's duct, 1951
- STERILITY**, defective diet as a cause of, [Macomber] *978
diagnosis and relief of, [Curtis] *393
diathermy in, [Castaño & Gómez] 1817
from use of radium, [Varzhabedian] 127—C
in women, [Nassauer] 1548
in women, treatment of, [Graff] 1278
pseudohermaphroditism as cause of, [Wesselink] 443
Rubin test for: See under Fallopian Tubes
- STERILIZATION**, calcium chlorid for conservation of catheters, [Bonnet] 1653
of grain bags, [Carbonell] 1107
sexual, mechanism of, of female by spermatoxin, [McCartney] 653
- STOMACH** acidity, action of alcohol on, [Frehse] 882
acidity, action of fats on, [Frank] 1495
acidity, estimation of, [Vos] 443, [Ege] 970
acidity, intragastric determination by means of celluloid capsule, [Buckstein] *551
acidity, some normal standards for detection of abnormal physiologic performances, 922—E
acidity, subjective disturbances from hyperacidity and parapyloric ulcer, [Boas] 1275
action of atropin on, [Lockwood & Chamberlin] 207, [Salomon] 287
action of muscularis mucosae in evacuation of stomach, [Sick] 1656
alimentary leukocyte influx into, [Loeper & Marchal] 880
anacidity of gastric contents, [Schütz] 1275
antipepsin in gastric juice, [Jarno] 286
atony of, acute, [Koennecke] 438
cancer, [Askanazy] 1034
cancer, age incidence with special reference to cancer in young, [Golob] *1299
cancer and ulcer, [Schali] 69
cancer, functioning of gastric mucous membrane in, [Loeper & Marchal] 66
cancer, pathogenesis of, [Askanazy] 882
cancer, report of case, and examination 18 years after operation, [Dunham] *550
cancer, stalagmons in, [Breuer] 517
cancer, two-stage resection of pylorus in advanced cases, [Ziegner] 1820
cancer with erosion, [Ramond & Hirschberg] 1736
chlorin contents of gastric juice as aid in differential diagnosis, [Wiener] 1275
content, eosinophilia in, [Bonorino Udaonda] 145
diagnosis of celiacgia, [Avierinos & Bourde] 880
dilatation of, acute, [Braun] 1185
dilatation of, acute, after childbirth, [van der Perk] 1037
distinction between fresh and digested blood in, [Meunier] 1180
estimation of peptic activity of gastric contents, [McClure & Schabacker] 277
examination, some clinical chemical methods, [Citron] 734
excretion of dyes through, [Finkelstein] 1275
fasting, immediate and late secretion of, [Galewski] 733
fibroma of, [Cooper] *549
fraction test meal in study of disorders of gastro-intestinal tract, [Hunter] 804
function in infants, action of amino-acids on, [Hoffman & Rosenbaum] 1349
function, effect of olive oil on, [Lockwood & Chamberlin] 655
function, modification of, by drugs, [Bennett] 1103
function of muscles of, [Barclay] 427
function tests in healthy infants, [Demuth & Edelstein] 442
gangrenous perforation of, as a complication of diaphragmatic hernia, [Moppert] 512
gases, [Dunn & Thompson] 651, 697—E
hemorrhage, surgical treatment of, [Finsterer] 218
hour-glass operations on, [Gamberini] 806
hypersthenic gastric diathesis; duodenal ulcer, [Hurst] 433
is stomach a focus of infection? [Kopeloff] 799
leiomyoma of, [Hunt] 1098
lesions of, [Judd] 1406—ab
motility of, induced from duodenum, [Bárony] 218
- STOMACH**, motility, influence of sleep on, [Daniélopou & Carniol] 1882
motility of, psychic factor in, [Daniélopou & Carniol] 1180
noises in, origin and treatment of, [Ganter] 1275
oats in tubercles in stomach wall, [Shenkin] 1031, 1458—E
pathologic physiology of, [Ascoli] 965
perforation, [Suter] 1738
peristalsis, [Alvarez] 654
ptosis, carcinoma of, [Dawson] 1104
ptosis, operative treatment of, [Gutierrez] 215, [Pust] 883, [Wehner & Böker] 1035, [Gilbride] *1745
relation of disease of gallbladder to secretory function of stomach and pancreas, [Griffiths] 961
resected, plastic substitute for, [Hoffmann] 149
resection of lesser curvature of, [Borchers] 362
roentgenography, outline of stomach in roentgenography, [Dienstfertig] 1276
secretion, action of chlorids on, [Frouin] 660
secretion, action of intravenous hypertonic solutions on, [Karmel] 735
secretion, effect of histamin on, [Matheson & Ammon] 1273
secretion in cardiac insufficiency, [Garofano] 1106
secretion, influence of duodenal contents on, [Kanders & Porges] 69
secretion, psychic influence on, [Langheinrich] 148
secretion, relation of carbon dioxide tension of alveolar air to, [Kauders & Porges] 1494
surgery, radical operations on, (Mayo) 1733
surgery, radical operations with special reference to mobilization of lesser curvature, [Mayo] 134—ab
syphilis and gastric trouble, [Stokes & Brown] 135
tumors, benign, recognition of, [Erkes] 1110
ulcer, [Sanders] 1407—ab
ulcer and cancer, [Schali] 69
ulcer, diagnosis of, [Young] 1488, [Cash] 1732
ulcer, experimentally produced gastrojejunal ulcer, [Montgomery] 722
ulcer, experimental production of, [Mann & Williamson] 1806
ulcer, fallibility of roentgenologic evidence of healed ulcer, [Hollander] *29
ulcer, fatal hemorrhage from eroded arteria cystica of gallbladder, [Jaffé] *1364
ulcer, fissural hemorrhages in chronic aortitis, simulating gastroduodenal ulcer, [Chabrol & Blum] 1546
ulcer, gallbladder disease as cause of stomach symptoms, [Serlinger] 1956
ulcer, method of healing of, [Stewart] 211
ulcer of duodenum and, [Hedlund] 70
ulcer, peptic jejunal ulcer and exclusion of pylorus, [Haberer] 1275
ulcer, perforated, [Stokes] 133—ab, [Prader] 515, [Schmidt] 591, [Lemmon] *771, [Niosi] 730
ulcer, perforation by stomach tube, report of case, [Schwartz] *1520
ulcer, perforation of ulcer on rear wall of, [Cloos] 363
ulcer, postoperative peptic ulcer, [Erekenbrecht] 363, [Brancati] 437
ulcer, preparedness of stomach for ulcer, [Moszkowicz] 732
ulcer, prophylaxis of postoperative peptic ulcer, [Haberer] 732
ulcer, pyloric portion of stomach as affecting predisposition to ulcer, [Koennecks] 810
ulcer, recurrence following use of silk in suturing mucosa, [Wiedhopf] 810
ulcer, relation of acid cells in stomach to, [Radasch] 584
ulcer, resection or gastro-enterostomy in, [v. d. Hütten] 969
ulcer, some problems of gastric and duodenal ulcer, [Moynihan] 961
ulcer, streptococci cause experimental ulcer, [Rosenow] 1879
ulcer, surgical treatment of, [Enderlen & v. Redwitz] 441, [Hedlund] 592, [Finsterer] 1733, [Beer] 2175
ulcer, synthesis of, [Agote] 661
ulcer, toxic manifestations following alkaline treatment of, [Hardt & Rivers] 1028
ulcer, treatment of chronic gastric and duodenal ulcers, [Holler] 1885
ulcer with goiter, [Haberer] 1109
- STOMACH TUBE**, perforation of gastric ulcer by stomach tube, report of case, [Schwartz] *1520
- STOMATITIS**, mercurial, [Besselsen] 1028, 1245—E, 1385—E
- STOOL**: See Feces
- STRABISMUS**, operative treatment of, [Marín Amat] 1347

- STREPTOCOCCEMIA**, postabortal hemolytic, [Williams] 353
- STREPTOCOCCUS**, bacteriostatic action of dyes on streptococcus viridans, [Norton & Davis] 1413
- difference between typical and atypical types of hemolytic streptococci, [Ando & Ito] 1344
- effect of animal passage on streptococcus hemolyticus, [Walker] 1647
- elective localization of streptococcus-pneumococcus group as disease factor, [Rosenow] 1097
- epizootic in cats caused by hemolytic streptococcus, [Jones] 431
- filtrates cause ileus, [Rosenow] 876
- general characteristics of hemolytic streptococci, [Ando & Ito] 1344
- immunity, natural and acquired, mechanism of, [Gay & Morrison] *1298
- in epidemic hiccup, [Rosenow] 875
- infection and antistreptococcus serums, [Meyer & Joseph] 1277
- infections, treatment with cocci dissolved in sodium hydroxide, [Mauté] 360
- meaning of production of hemolysin on pathogenicity of, [Ando & Ito] 1344
- prophylactic immunization of pregnant against streptococci, [Lourois] 1885
- streptococci cause experimental ulcer of stomach, [Rosenow] 1879
- toxic products produced by streptococcus hemolyticus, [Manwaring & others] 1648
- virulence of, determination of [Ruge] 1657
- STRIDOR**, respiratory stridor, especially in golfer, [Wiltshke] 1635
- STRIKE**, partial, in Vienna hospitals, 1327
- Spanish universities go on, 641
- STRONGYLOIDES stercoralis**, disease due to, [Thomas] 1109
- hematuria from strongyloidosis, [Fornara] 965
- STRONTIUM**, behavior of strontium in body, 1620—E
- STROPHANTHUS** preparations, potency of, [Strong & Wilmaers] *1308
- STRYCHNIN** and disturbances of vision, 406—E
- STUDENTS**, aid for, 196
- and military service, 1326
- honor loans for, 862, 1532
- increase of, and decrease of professors in Spanish schools, 641
- moral qualifications of, [Emerson] 953—ab
- opposition to favoritism, 1160
- pavilion for Argentinian students in Paris, 1788
- Scottish, in Paris, 1256
- special medical student, [McClintock] 954—ab
- strikes, government intervention in, 1019
- SUBMAXILLARY GLAND**, chronic inflammation in, [Baggio] 965
- metabolism of reducing substance of, [Anrep] 727
- removal of, [Truffert] 1181
- sugar consumption by active glands, 1385—E
- SUGAR**: See also Glucose
- SUGAR** consumption by active glands, 1385—E
- hypoglycemia after rectal infusions of, [Rubino & Varela] 217
- in Blood: See Blood, Sugar in
- in Urine: See Urine, Sugar in
- metabolism, [Gigon] 729
- superiority of sugar over salt for infusion, [Düttmann] 1185
- SUGGESTION** in crime, [Belbey] 1492
- in therapeutics, 1525—E
- SUICIDE** and homicide in England as compared with America, 1324
- increased incidence of, 1328
- juvenile suicides, 1013
- statistics, 1316—E, 1530
- SULPHARSPHENAMIN**, 919
- Abbott, 919
- Squibb, 1143
- SULPHUR** in external dermatotherapy, [Sabbouraud] 660
- SUN**, injury of retina by sun in spite of protective glasses, [Strebel] 660
- heating of tissues by heat and light rays, [Hill & Campbell] 1544
- SUPRACLAVICULAR** depressions in diagnosis of early pulmonary tuberculosis, [Bray & Duerschner] *1670
- SUPRARENALS**, emergency function of, 1007—E
- Extract: See Epinephrin
- hemorrhage, acute, nontraumatic, bilateral, [Severn] 1416
- hemorrhage in suprarenal capsules, [Michaux & Marsset] 1545
- implantation of nerves in suprarenal capsules, [Maragliano] 285
- in inanition, [McCarrison] 653
- inadequacy and asthma, [Drummond] 1031
- insufficiency, [Washington Alvarez] 286
- malignant tumors of, [Stevens] *171
- syphilis of, [Crohn] 217, [Deaderick] 955
- SURGERY**, a type of postoperative fever, probably malaria relapse, [Horsley] *1065
- arrest of bleeding in, [Stegemann] 438
- blood pressure during operations, [Lehrbecher] 363
- SURGERY**, constitution from surgical standpoint, Sskanzy & others] 1654
- differential blood count in surgical affections, [Stahl] 662
- influence of surgical affections on blood, [Löhr] 662
- lessons for surgery from World War, [Amallo Roldán] 959
- physical chemistry in relation to, [Schade] 1421
- pillow at foot of bed after abdominal operations, [Cullen] *1521
- plastic, autoplastics of bearded region, [Esser] 285
- postoperative cardiac insufficiency, [Blanco Acevedo] 589
- postoperative complications; bursting of colon following injection of pituitary extract, 1786
- postoperative pulmonary complications, [Cooke & Pickles] 959
- restricted use of tampons in wound incisions, [Chiarl] 69
- some practical surgical pathologic observations and deductions, [Broders] *104
- surgical end-results: taking stock, [Cushling] 1342
- surgical physiology, [Lefebvre] 1813
- Taylor efficiency system in surgery, [Ribeiro] 1347
- transactions of German Surgical Congress, 662
- SWEAT**: See Perspiration
- SWEDISH** Institute of Eugenic Biology, 45
- SWINDLER**, fraudulent vendor of medicines, 486
- scheme to defraud physicians, 563
- warning against, 412
- SYMPATHECTOMY**, periarterial, [Halstead & Christopher] *173, [Bruning] 216, [Selfert] 362, [Leriche] 660, 1776—E
- in treatment of roentgen ulcers, [Gundermann] 1884
- periarterial, in treatment of vascular spasms, [Forestier] 143
- perivascular, [Lehman] 654
- SYMPATHICOTONIA** in tachycardia and melanoderma, [Gilbert & Coury] 359
- SYNOVITIS**, chronic, [Ivanisovich] 145
- traumatic, treatment of, [McWilliams] 354
- SYPHILIDES**, nodular, disseminated nonulcerative, [Gutierrez] 725
- syphilitic disease of vessels in skin, [Da Costa] 1112
- SYPHILIS** and complement with special reference to biologic action of arsphenamin and syphilis, [Herb] 429
- and deforming arthritis, [Haguenau & Bernard] 1490
- and diabetes, [Pinard] 436, [Labbé] 878, [Smith] 1102, [Melnier] 1816
- and marriage, [Routh] 416
- and pregnancy, [Moore] 1269
- and pregnancy, recognition of syphilis in beginning of pregnancy, [Pinard] 1815
- and pregnancy, Wassermann in pregnancy and after delivery, [Lasseur & Vermelin] 1546
- and stomach trouble, [Stokes & Brown] 135
- and tuberculosis in children, [Genevri] 1652
- and tuberculosis coexistent in genital tract, [Magee] *179
- as factor in thyroid and pituitary disease, [Lennmalm] 592
- attributed to hire of a wig, 121
- autoserum treatment of pneumococcus meningitis, complicated by syphilis, [Horn] *1124
- bismuth in, [Levaditi] 1416
- bismuth in, untoward effects of, [Gorl & Voigt] 1494
- blood picture and individualizing treatment in, [Kyrle] 69
- Bruck's serodiagnosis of: See under Bruck's Test
- campaign against, 1018
- campaign against, in Belgium, 1252
- cardiovascular, diagnosis of, [Reid] 956
- cerebrospinal fluid in, monosymptomatic hyperalbuminosis in, [Bloch] 1815
- colloidal lability of serum proteins in syphilis with regard to Darányi's reaction, [Krommeke] 1657
- congenital, and premature births, [Kehrer] 1111
- congenital, arsphenamin in, [Renaud] 66
- congenital, blood picture in, [Nitschke] 362
- congenital, contamination of wife and child by hereditary syphilitic, [Pinard] 728
- congenital, contracture of fingers from, [Zinn & Vivaldo] 1739
- congenital, diagnosis of, [Leredde] 1738
- congenital, in Italy, [Nasso] 1738
- congenital, in Argentina, [Casabon] 1739
- congenital latent, cerebral syphilis aroused by trauma, [González J. Meneses] 1106
- congenital, prevention of, [Wagner] 968
- congenital, progressive myopathies due to, 435
- congenital, prophylaxis of, in Paris lying-in hospitals, [Vignes & Galliot] 729
- congenital, radiologic triad of, [Saralegui] 1739
- congenital, rectal treatment with arsphenamin in syphilitic children, [Modigliani & Castana] 1816
- SYPHILIS**, congenital, scietica from, [Brian] 1419
- congenital, tardy, [Bonaba] 514
- congenital, treatment of, [Comby] 143, [Morgan] 1185
- congenital, with symptoms of hereditary ataxia, [Linder] 440
- correlation of blood, spinal fluid and clinical findings in, [Johns] 1487
- diagnosis and treatment of, early, [Ullmann] 441
- diagnosis, early affection of auditory nerve in syphilis, [Bab] 1656
- diagnosis, precipitin test in, [Moon] *1502
- Dold's Reaction: See under Dold's Reaction
- flocculation and Wassermann tests compared, [Urkuhart] 659
- flocculation test of, new technic for, [Casilli] *1068
- flumerin in, [Hill & Young] *1365
- formaldehyd test in, [Johnston] 582
- in four generations, [Martelli] 1816
- in second generation, [Cooke & Jeans] 60
- in third generation, [East] 659, [Kraus] 1110
- incidence of, [Hala] 60
- Kolmer complement fixation test for: See under Kolmer Test
- iliac arch on nails in, [Milian] 435
- liver in chronic infections of children especially in, [Lereboullet] 284
- "local" Wassermann reaction new diagnostic aid in primary syphilis, [Stern & Rypins] 1413
- lumbar puncture in, routine, [Vaughan] 1957
- Melnick Reaction: See under Melnick Reaction
- mercurials in, [Hill & Young] 1474—C
- mercury inhalation therapy of, [Gutman] 955
- metasyphilis, [Redlich] 1819
- of Nervous System: See Nervous System, Syphilis of
- optimal action of syphilitic antigens, [Hohn] 734
- plurality of spirochetes of syphilis, [Fournier & Schwartz] 1490
- precipitin reaction for, [Moody] *383
- presence of spirochetes during immune phase of experimental recurrent infection that had been vigorously treated with arsphenamin, [Buschke & Kroó] 440
- problem of syphilitic child, [Rorke] 878
- proper course for proponents of new methods in treating syphilis, [Stokes] 1474—C
- prophylaxis and treatment of meningeal syphilis with a new endolumbar technic, [Gernerich] 69
- prophylaxis and treatment of, [Nichols & Walker] 1647
- puncture of lymphatic glands in syphilitics, [Oelze] 1034
- pyloric cancer in, [Curtis & Surmont] 1180
- refractory to arsenicals, [May] 1185
- reinfection in, [Schoenrich] 955
- relations between asthma, tuberculosis and syphilis, [Acuña & Garrahan] 1816
- Sachs-Georgi test for: See under Sachs-Georgi Reaction
- second initial lesion of, one year after first, [Nichols & Nichols] *843, [Rostenberg] 1332—C, [Corbus] 1332—C
- serodiagnosis in pregnancy, [Smith] 60
- serodiagnosis of, [van der Haeden] 1280, [Kolmer] 1339, [Rubinstein] 1738
- silver arsphenamin in Wassermann-fast syphilis, [Sutton] *622
- symptom-free children of syphilitic mothers, [Patschke] 364
- syphilitic macular atrophy, [Castello] 1485
- syphilitic necrosis of skull, [di Lorenzo] 1185
- to ward off syphilis in offspring, [Pedro] 731
- toxic exanthems and prognosis of, [Stümpke] 1277
- tracheal catheter in transmission of syphilis from new-born, [Sigwart] 1494
- treatment of, [Olliver] 208, 1167
- treatment of, abortive, [Bruck] 364, [Levy-Bling & Gerbay] 436, [Boas] 1424
- treatment before appearance of chancre, [Spillmann] 436
- treatment, experimental studies with mercurials in syphilis, clinical application, especially flumerin, [Hill & Young] *1365
- treatment, late results in, [Hazen] *1838
- treatment, value of bismuth salts in, [Pardo-Castello] 1878
- tryparsamid in, [Lorenz & others] *1497, 1521, 1620—E
- typhoid with, [Marini] 590
- Wassermann-fast syphilis, [Fontaine] 1407—ab
- Wassermann reaction in: See under Wassermann Reaction
- Wassermann reaction in, local, 1523—E
- SYRIA**, public health matters in, 45
- SYRINGE**, new ear and nasal syringe, [Mason] *1616
- thermo-injector, [Samengo] 967
- SYRINGOBULBIA** and syringomyelia, [Taylor & others] 1272
- SYRINGOMYELIA** and syringobulbia, [Taylor & others] 1272
- SYRUP LEPTINOL**, 1711—P

SOCIETIES

- Acad.—Academy*
A.—Association
Am.—American
Coll.—College
Conf.—Conference
Cong.—Congress
Cont.—Convention
Dist.—District
Hosp.—Hospital
Internat.—International
M.—Medical or Medicine
Nat.—National
Phar.—Pharmaceutical
Phys.—Physicians
Ry.—Railway
S.—Society
Surg.—Surgical or Surgeon, Surgery
- Accomac County M. S., 1528
 Alabama, M. A. of the State of, 1318, 1460
 Alaska Territorial M. A., 408
 Albany (N. Y.) M. S., 1462
 Allegheny County M. S., 1251
 All-Philadelphia Conf. on Social Work, 932
 All-Russian Convention of Bacteriologists, Epidemiologists, and Authorities on Sanitation, 1323
 Alpha Omega Alpha 486
 Am. Acad. of Ophthalmology and Oto-Laryngology, 1702
 Am. A. for Advancement of Science, 192
 Am. A. of Anatomists, 487
 Am. A. of Anesthetists, 1157
 Am. A. of Immunologists, 1157
 Am. A. of Museums, 1014
 Am. A. of Obstetricians, Gynecologists, Abdominal Surg., 1529
 Am. A. of Official Surgs., 487
 Am. A. of Pathologists and Bacteriologists, 1157, 1387
 Am. A. for Thoracic Surg., 1699
 Am. Biochemical S., 44
 Am. Bronchoscopic S., 933, 1528
 Am. Chemical S., 1322
 Am. Child Health A., 858, 1464, 1321
 Am. Climatological and Clinical A., 1157
 Am. Coll. of Phys., 1083
 Am. Conf. on Hosp. Service, 855
 Am. Cong. on Internal Med., 485, 782, 1083
 Am. Dietetic A., 1389
 Am. Federation for Hard of Hearing, 1857
 Am. Gastro-Enterological A., 1464
 Am. Gynecological S., 1626
 Am. Laryngological A., 487, 1702
 Am. Laryngological, Rhinological and Otological S., 1528
 Am. Library A., 412
 Am. M. S. of Vienna, 1015
 Am. Otological S., 1701
 Am. Pediatric S., 933, 1702
 Am. Pharmaceutical A., 1157
 Am. Philosophical S., 1251
 Am. Physical Education A., 1014
 Am. Physical S., 192
 Am. Physiological S., 192
 Am. Proctologic S., 1014
 Am. Psychological A., 192
 Am. Red Cross, 859
 Am. Roentgen Ray S., 782
 Am. S. of Bacteriologists, 192
 Am. S. of Biological Chemists, 192
 Am. S. for Clinical Investigation, 192, 1389, 1641, 1727
 Am. S. for the Control of Cancer, 487, 704
 Am. S. for Experimental Biology, 191, 335, 1322
 Am. S. for Experimental Pathology, 191, 411
 Am. S. for Pharmacology and Experimental Therapeutics, 411
 Am. S. of Tropical M., 1322
 Am. Students' Health A., 42
 Am. Surg. A., 1783
 Am. Urological A., 1702
 Argentine Pediatric Society, 1702
 Arizona Antituberculosis A., 929
 Arizona M. A., 702
 Arkansas M. S., 1460
 A. of the Alumni of the Coll. of Phys. and Surgs., 260
 A. of Am. M. Coll., 192, 705, 951
 A. of Am. Phys., 1389, 1723, 1801, 1954
 A. of Am. Teachers of Diseases of Children, 1529
 A. of Southern Railway Surgs., 1157
 A. of Women in Public Health, 1702
 Australasian M. A., 706
 Australian National Research Council, 933
 Belgian Pediatric S., 782
 Berlin M. S., 1703
 Boone (Ind.) County M. S., 1857
 Boston M. History Club, 1461
 Brazil Sociedade de Psychiatria, 1390
 Brazilian Public Health A., 859
 Bristol M. S., 1156
 British A. of Economic Biologists, 194
 British Columbia Hosp. A., 411
 British Columbia M. A., 1321
 British Cong. of Obstetrics and Gynecology, 933
 British M. A., 1323, 1627
 British M. Women's Federation, 1784
 Bronx County M. S., 116
 Bronx Physician's Club, 1388
 Brooklyn M. S., 409
 Brown-Redwood M. S., 409
 Canadian M. A., 411, 782
 Canadian Social Hygiene Council, 858
 Canadian S. of Anesthetists, 1464
 Canadian S. for the Study of Diseases of Children, 1528
 Cancer Research Cong., 1393
 Central Illinois M. S., 1386
 Chicago Council of M. Women, 1461
 Chicago Laryngological and Otological S., 1386
 Chicago League for the Hard of Hearing, 1780
 Chicago M. S., 409, 559, 635, 930, 1699
 Chicago Neurological S., 1623
 Chicago Ophthalmological S., 634, 856
 Chicago Pathological S., 1623
 Chicago S. of Internal M., 1012, 1699
 Chicago S. of M. History, 1081
 Chicago Tuberculosis S., 1623
 Chicago Urological S., 1386
 Cincinnati Acad. of M., 1782
 Cleveland Acad. of M., 117
 Clinical S. of Genito-Urinary Surgs., 486
 Clinical Surg. S. of Am., 1529
 Colo. Cong. of Ophthal. and Otolaryn., 1622, 1780
 Conf. of State and Ter. Health Officers, 1622
 Cong. of the A. of French Gynecologists and Obstetricians, 1703
 Cong. of the German S. for In. M., Vienna, 1629
 Cong. Internat. de Medecine et de Pharmacie Militaires, 1529
 Cong. of the Internat. Surg. A., 1465
 Cong. on Lopededy, 710
 Connecticut Public Health A., 40
 Crawford Long Memorial A., 188
 Czech A. for the Promotion of Research in Tuberculosis, 933
 District of Columbia M. S., 329
 Dutch Orthopedic S., 1703
 Dutch Oto-Laryngological S., 1626
 Eastern New York Eye, Ear, Nose and Throat A., 116
 Erie County M. S., 409
 Expeditionary Research A., 706
 Eye Sight Conservation Council of America, 637
 Florida M. A., 1699
 Florida Ry. Surgs. A., 1699
 French A. of Pediatrics, 1703
 French Cong. on Legal M., 1019
 French National Committee for the Prevention of Tuberculosis, 1018
 French Ophthalmologic Cong., 783
 French S. de biologie, 334
 French Tuberculosis A., 1255
 Fulton County (Ill.) M. S., 1386
 Geneva M. S., 1703
 Georgia, M. A. of, 1386, 1540
 Georgia Mental Hygiene S., 1081
 German Cong. for Internal M., 193
 German Dermatologic S., 563
 German Surg. Cong., 1788
 Halifax M. S., 1528
 Hartford County M. S., 1318
 Hawaii, M. S. of, 929
 Health Conservation A., Kansas City, Mo., 560
 Hosp. A. of Pennsylvania, 1157
 Idaho State M. Assn., 80, 1621
 Illinois S. for Crippled Children, 1386
 Illinois S. for Mental Hygiene, 483
 Illinois State M. S., 1526, 1781
 Indiana Acad. of Ophthalmology and Otolaryngology, 330
 Institute Medico of Valencia, 933
 Internat. A. of M. Museums, 1157
 Internat. A. for the Promotion of Child Welfare, 1784
 Internat. Confederation Against Venereal Disease, 1086
 Internat. Conf. on Spanish Theory of Tuberculosis, 564
 Internat. Cong. on Comparative Pathology, 638
 Internat. Cong. of Historical Studies, 1323
 Internat. Cong. of Ophthalmology, London, 194
 Internat. Cong. of Refrigeration, 1704
 Internat. Cong. of Surg., 192
 Internat. Cong. on Thalassotherapy, 783
 Internat. Health Conf., 1157
 Internat. Neurologic Conf., 1468, 1784
 Internat. Opium Commission, 1014
 Internat. S. of the History of M., 1464
 Internat. S. of M. Hydrology, 1703
 Interstate S. of Radiology and Physiotherapeutics, Omaha, Neb., 409
 Iowa, M. Women of, 1857
 Iowa State M. S., 1461
 Iowa Tuberculosis A., 560
 Isthmian Canal Zone, M. A. of the, 411
 Italian A. of General and Applied Chemistry, 859
 Italian Cong. on Hydrology, 783
 Italian M. S., 409, 636
 Italian Surg. and Internal M. Cong., 563
 Jacksonville M. S., 929
 Japanese Sectional Cong. of M., 1703
 John A. Andrew Clinical S., 779
 Kansas City Clinical S., 931
 Kansas M. Laboratory A., 1700
 Kansas M. S., 1250, 1461
 Kings County (N. Y.) M. S., 561, 856
 Latin Am. M. Cong., 193
 League Against Syphilis, 638
 Ligue Belge d'Hygiène Mentale, 933
 Ligue Française d'Hygiène Mentale, 933
 London (England), M. S. of, 1323
 Los Angeles County M. S., 114
 Louisiana State M. S., 780, 1319
 Maine M. A., 411, 1012, 1857
 Manhattan Roentgen-Ray S., 1251
 Manitoba M. A., 1013
 Maryland M. and Chirurgical Faculty, 1387
 Maryland Psychiatric S., 856
 Massachusetts A. for Occupational Therapy, 780
 Massachusetts Public Health Conf., 1081
 Massachusetts S. for Mental Hygiene, 331
 Mayo Clinic, A. of Phys. of, 1857
 M. Women's National A., 705, 1386
 Metropolitan M. S., New York City, 409
 Mexican Welfare S., 638
 Michigan Trudeau S., 1387
 Middle Tennessee M. A., 1625
 Military M. and Chemical Cong. (Italy), 119
 Milwaukee Acad. of M., 1783
 Minnesota Acad. of Ophthalmology and Otolaryngology, 260
 Minnesota Occupational Therapy A., 703
 Minnesota Pathological S., 1857
 Mississippi State M. A., 331, 1462
 Missouri State M. A., 931, 1527
 Montana, M. A. of, 1857
 Montreal Medico-Chirurgical S., 1528
 Nat. Acad. of Sciences, 1014
 Nat. Antinarcotic Conf., 1083, 1390
 Nat. A. for the Prevention of Infant Mortality, 1703
 Nat. A. for the Prevention of Tuberculosis, 1703
 Nat. Committee for Mental Hygiene, 1858
 Nat. Conf. of Social Workers, 1529
 Nat. Council of Social Hygiene, 933
 Nat. Health Council, 192
 Nat. Health Exposition A., 1083
 Nat. Industrial Conf. Board, 412
 Nat. M. Library A., 1386
 Nat. Rehabilitation Conf., 1529
 Nat. Tuberculosis A., 702, 933
 Nat. University Extension A., 1462
 Nebraska Radiological S., 1700
 Nebraska State M. A., 1387, 1624
 Netherlands Orthopedic S., 1784
 Nevada State M. A., 1462
 New Brunswick (Canada) M. S., 411, 1012
 New England Hosp. A., 560
 New England Pediatric S., 487
 New England Society of Psychiatry, 1387
 New Hampshire M. S., 1155, 1700
 New Haven County M. S., 1460
 New Jersey Extermination A., 560
 New Mexico Health Officers A., 1858
 New Mexico M. S., 703
 New York Acad. of Sciences, 1155
 New York, M. A. of the Greater City of, 1624
 New York, M. Jurisprudence S. of, 1082
 New York, M. S. of the State of, 856, 1624, 1799, 1953
 New York Obstetrical S., 1082
 New York State Conf. of Health Officers and Public Health Nurses, 1702
 New York Surg. S., 1624
 North Carolina Hospital A., 1320
 North Carolina M. S. of the State of, 1320
 North Carolina Public Health A., 1320
 North Dakota State M. A., 1782
 North Texas M. A., 43
 Northeast Colorado M. S., 559
 Northeast Indiana M. S., 41
 Northern M. A., 1388
 Northern Tri-State M. A. (Michigan, Indiana and Ohio), 1252
 Northwestern M. Officers' A. of the World War, 260
 Northwestern Wyoming M. S., 782
 Ohio Public Health A., 1321
 Ohio State M. A., 1388
 Oklahoma Acad. of Science, 485
 Oklahoma State M. A., 1527, 1701
 Ontario Health Officers' A., 1082, 1701
 Ontario M. A., 1528
 Ophthalmological S. of the United Kingdom, 706, 1389
 Oregon Tuberculosis A., 704
 Oxford Ophthalmological Cong., 933
 Pacific Coast A. of Anesthetists, 1157
 Pacific Northwest M. A., 487, 1157
 Pan-Pacific Scientific Cong., 45
 Paris Acad. of M., 197
 Paris Biologic S., 710
 Pennsylvania Hospital A., 1321
 Phi Delta Epsilon, 44
 Philadelphia A. for the Prevention and Relief of Heart Disease, 1388
 Philadelphia Laryngological S., 1156
 Philippine Islands M. A., 562
 Philippine Islands Medical A., 1082
 Philippine Islands Social Hygiene A., 637
 Porto Rico, M. A. of, 118
 Prussian Acad. of Sciences, 712
 Public Charities A., 1388
 Queens County M. S., 1624
 Rhode Island M. S., 1701
 Rockaway M. S., 1387
 Royal Institute of Public Health, 706
 Royal Surg. Aid S., 194
 Sioux Valley Eye and Ear Acad., 560, 637, 1733
 Sioux Valley M. A., 560, 1529

S. for the Study of Inebriety, 1323
S. for the Suppression of Narcotic Drugs Evil, 636
South African M. A., 413, 1323
South American Conf. on Hygiene, Microbiology and Pathology, 1019
South Carolina M. A., 704, 1388
South Dakota Historical S., 1013
South Dakota State M. A., 637, 1782
Southern California M. S., 933
Southern Gastro-Enterological A., 408, 560
Southern Hosp. A., 408
Southern Minnesota M. A., 1529
Southern Oregon M. A., 1701
Southern Public Health Laboratory A., 563
Southern States M. S., 930
Southern Surg. A., 205, 275
Southwestern Iowa M. S., 1081
Southwestern Kentucky M. A., 1623
Southwestern Virginia M. A., 1157
Spanish Medico-Surgical Academy, 45
St. Louis M. S., 116, 1250
State Pathological S. of Texas, 1528
State and Provincial Health Authorities of North America, 1622
Summit County M. S., 636, 1082
Swedish M. A., 46, 1703
Swedish S. for the Advancement of Science, 933
Tennessee Rotary S. for Crippled Children, 1321
Tennessee State M. A., 1082, 1252, 1406
Texas Railway Surg. and Hygienical A., 1528
Texas Roentgen Ray S., 1528
Texas, State M. A. of, 1528
Tippecanoe County M. S., 1155
Tri-State District M. A. (Iowa, Illinois, Wisconsin and Minnesota), 1157
Tri-State Hosp. A. (Minnesota, North Dakota, Wisconsin, Iowa), 1783
U. S. National Committee of Mental Hygiene, 933
Utah State M. A., 1783
Vancouver M. A., 1859
Venezuela M. Cong., 1465
Virginia, Maryland and District of Columbia, M. S. of, 1322
Virginia S. of Oto-Laryngology and Ophthalmology, 44
Virginia State Public Health A., 1321
Walter Reed M. S., 1388
Washington M. and Surg. S., 1622
Wayne County (Mich.) M. S., 1081, 1155, 1250, 1700, 1781
West Africa, Cong. on Tropical M. of, 1323
West Virginia State M. A., 932
Western Electro-Therapeutic A., 782, 1389
Western Ontario Acad., 1389
Western S. of Engineers, 44
Western S. for the Study of Hay Fever, Asthma and Allergic Diseases, 1157
Western Surg. A., 118, 133
Wisconsin, State M. S. of, 705
Wisconsin Surg. A., 411
Women's Med. A. of N. Y., 563, 1251, 1387, 1624
Wyoming State M. S., 333

T

TABES DORSALIS, diagnosis of, [Holmes] 585
antithesis of urogenital tuberculosis in tabetic patient, [Marshall & Carlson] *1844
intraspinal treatment of contracture in legs and lancinating pains of, [Lippmann] 1741
TACHYCARDIA, atropin test and orthostatic tachycardia in examination of nervous system of heart, [Daniélopou & Carniol] 1813
paroxysmal, [Abrahamson] 1881
paroxysmal, blood gases in, [Carter & Stewart] 1410
paroxysmal, ventricular, [Wolferth & McMillan] 1028
sympathicotonia in, [Gilbert & Coury] 359
TAENIA infestation, treatment of, [Pritchford] 1813
TALIPES, treatment of club foot, [Bankart] 141
TAMPONS, absorbable, [Kümmell] 662
no tampons in incision wounds, [Chiari] 69
TAPEWORM, treatment for, 55, [Pritchford] 1813
taenia solium—tapeworm of pork, 54
TAR Cancer: See under Cancer
TARSUS, undescribed bone in, [Cameron] 877
TARTAR EMETIC, effect of, on nonprotein nitrogen of blood, [Levy & Dimmitt] 277
in schistosomiasis japonica, [Libby] 1178
TASIKINESIA and akathisia, [Sicard] 1546
TEETH, asthenic reflex manifestations between eyes and, [Kahn] *1134
caries of, and tuberculosis, [Siffre] 588
caries of, as a source of focal infection, 203
caries of, relation of diet to development of, [Bliss] 356
demonstration of unerupted Hutchinson's teeth by roentgen ray, [Stokes & Gardner] *28
encephalitis following interference with dead teeth, report of 2 cases, [Burns] *1591
infected, and rheumatism, [Maranon] 1654
infections through the pulp of, [Farina] 213
TELEPHONES, insurance physicians remove, 337
TEMPERATURE: See also Fever
TEMPERATURE, heating of tissues by heat and light rays, [Hill & Campbell] 1544

TEMPERATURE oxidating ferments in mechanism of thermogenesis and fever, [Marluesco] 1654
subnormal, cause of, 717
TEMPORAL BONE, changes in, in experimental rickets and their relation to otosclerosis, [Kauffman & others] *681
TENDONS, regeneration of, [Wehner] 1548
regeneration, theory of hormone action of synovia in, [Wehner] 148
sheath inflammation as occupational affection in hand or foot, [Sattler] 1420
sheaths, xanthosarcomas of, [Kroglus] 592
transplantation procedure in pes cavus, 1394
TERATOMA evacuated through rectum, [Ohrenstein] 736
TESTICLES, absorption by tunica vaginalis, [Lorraea] 806
cancer, bilateral, [Tanner] 1099
cancer in boy of 14, [Garrahan & Ruiz] 67
changes in epididymis and, after resection of spermatic veins, [Nicastro] 144
clinical significance of experiments on, [Haberland] 1276
extract of, in gynecology, [Zénope] 1883
implantation, results of, [Stanley] 656
nervous bladder symptoms and low position of right testis, [Adler] 287
puncture of, in dead bodies, [Mühsam] 734
seat of endocrine function of, [Lipschutz] 1268
transplantation, [Voronoff] 66, [Haberland] 1420
transplantation, a critical discussion, [Hammesfahr] 810
transplantation, experimental, [Burckhardt & Milgenberg] 1275
transplantation of gonads, [Brandt & Lieschied] 1820
transplantation (sex gland operations), [Hau benreisser] 808
undescended, to lengthen spermatic cord with, [Welti] 364
undescended, traumatism of, [Gallo] 145
TESTIMONY, allowance of expert witness fees for physician, 1722—M1
competent testimony of alienist, 58—M1
cross-examination of experts—liability of roentgenologists and surgeons, 577—M1
expert, and the alienist, [Williams] 1806
expert, viewed as the weakest kind, 1721—M1
"hearsay" in qualification and cross-examination of experts, 426—M1
physician not qualified to testify as to tuberculin test on cattle, 1405—M1
psychology of witnesses' testimony, 417
statute of limitations and expert testimony in malpractice case, 652—M1
TETANUS after operations, [Wohlgemuth] 1421
alcohol treatment of trismus from Charcot's disease, [Vincent & Bernard] 1736
bacillus in soil and on vegetables, [Dubovsky & Meyer] 507
death of child from, [Martinez Vargas] 286
hyperehronic, localized in leg, [Bergé & Azonlay] 587
relation of tetanus bacilli in digestive tract to tetanus antitoxin in blood, [Tenbroeck & Bauer] 1647
TETANY, experimental, [Cruikshank] 211
in pregnant, [Niderhe] 591
parathyreoprival, 774—E
parathyreoprival, case of, with formation of cataract treated by transplantation of parathyroids, [Greppin] 730
parathyreoprival, endogenous poisons as cause of, [Hammett] 354
postoperative, [Grasmann] 1108
toxic nephritis in pyloric and duodenal obstruction: renal insufficiency complicating gastric tetany, [Rowntree & Brown] 1728—ab
TETRAHYDRONAPHTHALENE, formula of tetrahydronaphthalene ("tetralin"), [Hamor] 1791—C
TEXAS FEVER, hypertrophy of hemolymph nodes in Texas fever immunes, [Warthin] 1879
THEOCIN Sodium Acetate, 401
THERAPEUTICS, grants for research in, 1008
progress and conservatism in therapeutics; report of committee on therapeutics of Council on Pharmacy and Chemistry, 1635—P
progress of a remedy, 211
THERMO-INJECTOR, [Samengo] 967
THOMAYER, Joseph, 1395
THORACOCENTESIS and pneumothorax, [Rossi] 284
and resection of ribs, [Neumann] 1034
cold abscess of thorax after, [Carnot & Blamoutier] 964
edema after, [Lindblom] 1424
sudden death following, [Du Bray] 1339
THORACOPLASTY, extrapleural, for pulmonary tuberculosis, [Bull] 281
extrapleural, graded, for bronchiectasis, [Hedblom] 140
THORACOSCOPY for severing pleural adhesions, [Piguet & Giraud] 1546
THORAX wounds, significance of band duiness in, [Cox] 1488

THORAX surgery, recent phases of thoracic surgery, [Graham] *1825
THORNBURN, William, 1159
THORIUM, inhalations of emanations of, [Chazet & Chevallier] 1417
THROAT, cancer in mucosa of mouth and, [Heidrich] 1348
endocrine factor in disease of, [de la Cruz Correa & Becco] 807
milk-borne epidemic of septic sore throat in Portland, [Benson & Sears] *1608
THROMBO-ANGITIS obliterans, persistent leukoerythrosis in, [Thomas] 799
THROMBOBLASTS and blood platelets, [Stahl] 969
THROMBOPHLEBITIS of head, [Rivière & Berthoin] 1182
of lateral sinus, [Munyo] 1185
orbital, and furuncle of face, [Gallemaerts] 1183
THROMBOSIS, cerebral, as complication of ruptured tubal pregnancy, [Lavezzi] 965
from physical effort, [Ivanissevich] 590
mesenteric, [Mitchell] 206—ab, [McGuire] 1734
mesenteric vascular occlusion, [Brady] 722
venous, during attack of acute rheumatism in a child, [Poynton] 1489
THRUSH, treatment of vulvar pruritus with special consideration of, [Littauer] 884
THUMB, use of index finger for, [Dunlop] 724
THYMOL, action of camphor, menthol and thymol on circulation, [Heathcote] 1648
THYMUS, 1070—E
death in adult, [Pulawski] 513
dystymia in children, [De Sanctis] 1345, 1814
enlarged, [Stephens] 433
in parthenogenetic tadpoles, [Voss] 1656
in surgical infections, [Bircher] 1186
primary tumor of, associated with tuberculosis, [Sweany] *754
removal, 568
removal in infants, [Marique] 1345
THYROGLOBULIN, precipitin reaction of, [Hektoen & Schullhof] *386
THYROID: See also Golter; Hyperthyroidism
THYROID and bleeding from uterus, [Kräuter] 288
and formation of erythrocytes, [Holler] 969, [Unverricht] 1276
and intestinal bacteria, [Harries] 1414
blood supply of thyroid: its surgical significance, [Masthi] 584
cysts, cholesterol occurrence in, modification of Salkowski's test, [Read & Meloney] 1880
disease, cardiovascular system in, [Kerr & Hensel] 1410
disease, heart in, [Willius] 1098
disease, metabolism in, [Rowe] 1807
disease, syphilis as factor in, [Lennumalm] 592
diseases of, determination of epinephrin sensibility in, [Csépal & others] 1884
dysthyroidism, anaphylaxis and epilepsy, [Buscaino] 806
Goetsch test and radiography of, [Tarnauceanu] 588
hyperesthesia of thyroid region, [Lian] 963
larynx in disease of, [New] 1098
metastasizing tumor of, [Meloney] 354
problems, [Breitner] 591
red spot in, [Maranon] 359
substernal, with bilateral laryngeal paralysis, [Hubert] *842
surgery, factors of safety in, [Bartlett] 276—ab
surgery, mortality rate following, [Mayo & Boothby] *891
tablets, death from, 1703
thyroidism complicated by heart failure, report of group of cases, [Hamilton] *1771
THYROIDECTOMY, calcium content of blood following, [Parhon] 1807
effect of thyroparathyroidectomy on reproduction, [Hammett] 1879
effects of, [Hammett] 653
indications for, [Lebsche] 883
partial, better than medical treatment of exophthalmic goiter, [Grant] 511
primary suture after, [Orth] 811
technic for, [Streissler] 662
THYROPARATHYROIDECTOMY, effect of, on reproduction, [Hammett] 1879
THYROTOMY, technic of, [Hertzler] 956
TIBIA, fracture, inexpensive and efficient extension apparatus for, [Stanton] *915
fracture of spine of, [Stephens] *905
TICK, ear tick disease, [Curtis] *1053
TINCTURE NO. 111, Digitalis—P. D. & Co., 1003
TISSUE, connective, [Heringa] 288
interchanges between blood and tissue fluids, [Lévy] 1545
TITLES, honorary, relinquished, by German physicians, 710
TOAD poison, [Novaro] 590
TOBACCO, carbon monoxide content of tobacco smoke and its absorption on inhalation, [Baumberger] 1176
effects of smoking on function, [Bates] 430
nicotin content of tobacco smoke, [Baumberger] 1176

- TOBACCO, toxicity of tobacco smoke, especially cigarette, [Heinz] 1884
what we get when we smoke, 629—E
- TOE nail, ingrowing, operation for, [Ney] *374
- TOLYSIN, nontoxicity of, [Barbour & Lozinsky] 581
- TONE and rhythm discussed by Neumann, 611
- TONGUE, backward fall of root of, as cause of respiratory disturbances, [Robin] 805
cancer of, [Judd & New] 960
cancer of jaws, tongue, cheek and lips, [Crile] 959
cancer, treatment of, [Proust & Maurer] 880
fibrosarcoma of, [Brancati] 731
hemiglossitis of, [Worms & Bercher] 66
tuberculosis of, [Handfield-Jones] 585
- TONSIL as portal of infection, and indications for radical operations, [Fein] 1818
cartilage in, [Turner] 1651
cholesterol content of pharyngeal and palatal tonsils, [Maffeo] 1654
effect of roentgen ray on, [Babcock] *300, [Borden] 1411
electrocoagulation method of treating, [Novak] *1842
hypertrophied, radium in treatment of, [Williams] 1417
hypertrophied, roentgen ray in treatment of, [Nogier] 1417
infected, corneal ulcer due to, cured by tonsillectomy, [Williams] *917
tubercles in, an analysis of some cases, [Mullin] *1211
- TONSILLECTOMY, consequences of, [Norsk] 444
fatal infections following, [Tumpeier & Levinson] *20
indications and contraindications to, [Fernández Soto] 1107
lessons to be learned from results of tonsillectomies in adult life, [Alvarez] *1513
local anesthetic for, 1868
- TONSILLITIS, acute, [Bloomfield & Felty] 1728
—ab
associated, [Orgler] 1109
- TOOTH: See Teeth
- TORTICOLLIS, muscular, [Beck] 362
spastic, treatment of, [Cruchet] 1346
- TOUBIN, death of, 1256
- TRACHEA, abscesses of, following influenza, [Theisen] 956
cannula from physiologic aspect, [Mink] 1280
catheter in transmission of syphilis from newborn, [Sigwart] 1494
catheterization of, in new-born, technic of, [Kritzler] 883
displacement of, in course of pulmonary tuberculosis and its clinical symptomatology, [de Martin] 1816
intratracheal tumors, [Maier] 1109
scleroma of, [Forni] 284
- TRACHEOBRONCHIAL adenopathy, tuberculous, clinical and roentgen-ray study, [Frazer & MacRae] *1292
- TRACHEOTOMY, valve, [Zorraquin] 1738
- TRACHOMA, control of, 1147—E, [Phillips] 1332
—C, [Young] 1332—C
radium for, [Müller & Höglér] 441
- TRAINING Camps: See Military Training Camps
- TRANSFUSION: See Blood Transfusion
- TRANSILLUMINATION, rôle of, in diseases of nasal accessory sinuses, [Pratt] *1121
- TRANSVESTITISM, [Bing & Schönberg] 729
- TRAUMA and appendicitis, [Taylor] 511, [Ludington] *1448
and cancer, 1481—M1, [Pistocchi] 1492
cancer in throat attributed to injury of hand, 1172—M1
gas gangrene following, [Berkow & Tolck] *1689
latent inherited cerebral syphilis aroused by trauma, [González J. Meneses] 1106
neuroses due to, [Wimmer] 220
- TREMOR, striocerebellar, nature of, [Hunt] 137
- TREPHINING, decompressive, result of, [Anschutz] 67
- TRICHINIASIS epidemic, [Alexander] 1805
- TRICHOMONAS hominis, study of, [Hogue] 209
identity of, [Lynch] 277
infection, intestinal, 1023
treatment of vulvar pruritus with special consideration of, [Littauer] 884
- TRICHOPHYTOSIS on extremities, [Alexander] 440
- TRIGEMINAL AREA, lesions of, [Davis] *380
- TRIPLETS of tuberculous mother, [Armand Ugón] 514
- TROPICAL diseases in Massachusetts, [Shattuck] 277
medicine, Australian Institute of, 709
medicine, bacilli carriers in tropical pathology, [Nattan-Larrier] 881
medicine, Calcutta school of, 1085
medicine, what animal experimentation has done for, [Strong] 505
- TRYPANOSOMA cruzi in tissues of armadillo, [Crowell] *910
- TRYPANOSOMIASIS, prevention of, by altering vegetation, 336
- TRYPANOSOMIASIS, treatment of, [Marshall & Vassalo] 961, [Ouzilleau & Lefrou] 1813
treatment of, on Congo, 1707
- TRYPARSAMID and its penetration into spinal fluid, 1620—E
preliminary report of Council on Pharmacy and Chemistry, 1521
therapeutic use of, in neurosyphilis, [Lorenz & others] *1497
- TRYPSIN, quantitative determination of, [Northrop & Hussey] 581
- TSUTSUGAMUSHI DISEASE, blood in, [Kawamura] 1544
- TUBERCULIN cutaneous test, improvement in, [McNeil] 1735
diagnosis and treatment, [Philip] 1343
intracutaneous reaction of tuberculous persons to glycerin bouillon and tuberculin, [Helse & Brown] 1173
Petrushky's tuberculin liniment, [Ulrici] 809
Ponndorf's tuberculin treatment, [Chelnisse] 1738
reaction and anesthesia, [Blberstein] 1492
reaction, specificity of, [Tobias] 734
specificity of focal reaction, [Mau] 1657
test, intradermal, [Bergman] 807
test on cattle, physician not qualified to testify to, 1405—M1
tests, [Neustadt & Stadelmann] 1741
therapeutic use of, [Wilkinson] 1735
- TUBERCULOMA, primary multiple, of liver with degenerated hydatid cyst, [de Crespligny & Cleland] 1104
- TUBERCULOSIS: See also under names of various organs, as Kidney. Tuberculosis of
- TUBERCULOSIS, [Lanski] 646—C
a deficiency disease, [Soothill] 358
action of roentgen rays on, [Musante] 285
action of lymphocytes in, [Kaplanova] 1037
age at death of parents of tuberculosis and cancer patients, [Pearl] 579
amelioration of nutrition of tuberculous patients after intravenous injections of blood of animals, [Kisch] 1658
among North American Indians, 1404
and dental caries, [Siffre] 588
and pregnancy: See under Pregnancy
and syphilis coexistent in genital tract, [Maggie] *179
and syphilis in children, [Genevri] 1652
atavistic degeneration diathesis of, [Rivers] 659
auto-urine reaction in, [Kipfer] 729, [Venuti] 966
bacilli, action of leukocytes from immunized horses on, [Howard] 1740
bacilli, differentiation between tubercle bacilli and smegma bacilli in urinary sediment, [Lebedev] 1349
bacilli, human and bovine, attempt to differentiate by means of anaphylactic reaction, [Corper & Simon] 1173
bacilli in blood, determination of, [Köster] 1034
bacilli in blood stream, [Otabe] 586
bacilli, in feces, [Nüssel] 1886, [Fried] 1956
bacilli, in sputum, homogenization method for, [Rosenbluth] 1548
bacilli, lack of acid-fastness of, in tissues preserved in liquor formaldehyd, [Starry & Goldberg] 1174
bacilli, preservation of, by means of glycerin, [Twort] 142
bacilli, resistance of tubercle bacilli staining against boiling, [Preis] 69
bacilli, staining of, [Mjedloff] 1092—C, [Shoub] 1341, [Ritter] 1400—C
bacilli, staining of, with dyes for fats, [Lommatzsch] 442
bacilli, types of organism found in series of tuberculous children, [Gordon & Brown] 1097
bacilli, virulence of tubercle bacillus and localization of tuberculous lesions, [Brownling] 1544
bacillus, action of cod liver oil on, [Campbell & Kieffer] 428
bacillus in culture; properties of endospore, [Row] 1179
bacillus, preparation of nucleic acid from, [Johnson & Brown] 429
basal metabolism in tuberculous women, variations in, [Pierson] 721
biologic diagnosis of, [Nehring] 148
bovine, transmissibility of, 937
calcium in vomiting and diarrhea in tuberculous, [Monteleone] 964
calcium therapy in tuberculosis, [Hartwich-Bormann] 810, 1619—E
campaign against, 1020, 1088, 1255, [Jessen] 1277, 1394, [Sanders] 1424
campaign, antituberculosis campaign in Austria, 1863
campaign, position of colony in, [Tinker] 358
clinic and physician, [Frank] 357
cod liver oil in, [Smith] 1484, 1778—E
conjugal pulmonary, [de Besche & Jørgensen] 444
cure, patented, 420—P
demineralization in, [Barkus] 1877
- TUBERCULOSIS diagnosis, standardized method of, [Edwards] 584
ear, nose and throat affections in tuberculous, [Siemens] 1280
early silicosis and, 113—E.
effect of fat soluble A vitamin on experimental tuberculosis, [Smith] 1484, 1778—E
experimental, chemotherapy of acridine dyes in, [Smith] 657
experimental, in rats on varied diets, [Lange & Simmonds] 1484
Framingham experiment, results of, [Armstrong] 1267
graduate instruction in, with particular reference to University of Minnesota, [Myers] 344—ME
hospitals for advanced cases, [McKnight] 509
human, of bovine origin, [Alexander] 280
in children, primary extrapulmonary infection in, [Ghon & Werthelmer] 968
in infants, [Nobécourt & Paraf] 879
in infants, prognosis in, [Stoeltzner] 1036
in infants, prophylaxis of, [Dubost & others] 359
in negro, [Landis] 584, [Carter] 721
in school children in Berlin suburb in 1921, [Poelchau] 1493
in school children in eastern Brandenburg, 1396
indigent migratory consumptive, 1720
infection in, [Hamburger] 1035
infection in, dish towel as source of, [Floyd & Sikorsky] 1877
influenza and mortality from pulmonary tuberculosis, 1087
institute for research on physiology of altitudes and, 1859
international conference on Spanish theory of, [Ferran's] 564
intestinal putrefaction in, [Cassini] 881
intracutaneous reaction of tuberculous persons to glycerin bouillon and tuberculin, [Helse & Brown] 1173
liver in chronic infections of children, especially in, [Lereboullet] 284
lymphocyte index in, [Webb & others] 1173
miliary, primary foci, and immunity, [Huebschmann] 441
nontuberculous interlobar pleurisy in tuberculous, [Sergent & Durand] 879
occult, fever from, [Arcangeli] 1883
prevention of, in new-born, [Debré] 1814
primary infection of adult with, [Cain & Hillebrand] 1180
primary tumor of thymus associated with, [Sweany] *754
propaganda for remedies against, 640
prophylaxis, committee on, 1018
pulmonary, and appendicitis, [Armstrong] 1730
pulmonary, and pathology of personality, [Neumann] 734
pulmonary, artificial pneumothorax in, from economic and social standpoints, [Rist & Hirschberg] 963
pulmonary, artificial pneumothorax, induced, bilateral, with normal intercurrent pregnancy, [Gendron] 587
pulmonary, better treatment for tuberculosis patients with bronchitis, [McClure] 1651
pulmonary, causes of failure of ambulatory treatment and their remedy, [Blümel] 1819
pulmonary, cauterizing adhesions in artificial pneumothorax treatment of, [Jacobaeus] 427
pulmonary, chronic bronchiectasis terminating in, [Bray] 721
pulmonary, chronic spondylitis and its relation to, [Griep] 1548
pulmonary, clinical and prognostic significance of diazo and urochromogen reactions, [Lemmens] 1886
pulmonary collapse therapy in tuberculosis, 1707
pulmonary, common sources of error in lung examinations, [Duncan] *1213
pulmonary, compression of lung by paraffin oil, [Archibald] 427
pulmonary, diagnostic use of passive movements of lungs, [Ladeck] 1549
pulmonary, differential leukocyte count in, in children, [Raffauf & Grimm] 442
pulmonary, displacement of trachea in course of, and its clinical symptomatology, [de Martini] 1816
pulmonary, effect of bed rest in, [Brown & Heise] 428
pulmonary, diagnosis, elicitation and evaluation of physical signs in, [Stoll] *1650
pulmonary, extrapleural thoracoplasty for, [Bull] 281
pulmonary, hypotrophy of trapezius as early sign of, [Iafolla] 965
pulmonary, in Northern Greenland, [Rohleder] 1549
pulmonary, incipient, phlebitis in, [Laffergue] 879
pulmonary, influence of various symptoms in prognosis of, [Trudeau] *331
pulmonary, instruction in treatment of, 860
pulmonary, laryngoscopy important in, [Minor] 428

- TUBERCULOSIS**, pulmonary, miliary, [Stivelman & Hennen] *536
pulmonary, mode of infection in apical tuberculosis, [Brown] 1877
pulmonary, operative treatment of, [Brunner] 662, [Alexander] 1033, [Rivière & Romanis] 1345
pulmonary, phenolsulphonephthalein test in, [Merkien & Minvielle] 65
pulmonary, physiologic enhancement of rest cure in, [Knopf] 1548
pulmonary, primary lower lobe tuberculosis, [Kahn] 1484
pulmonary, prophylactic effect of deep breathing on, [Otabe] 586
pulmonary, secondary infections of, [Wingfield] 728
pulmonary, sodium morrhuate in, [Fine] 428, [Tewksbury] 428
pulmonary, spontaneous pneumothorax in, [Barth] 1548
pulmonary, supraclavicular depressions in diagnosis of, [Bray & Dierschner] *1670
pulmonary, treatment with eamphor, [Alexander] 287
pulmonary, use of thermometer in preventing, [Clark-Jones] 63
pulmonary, William's symptom in roentgenologic diagnosis of, [Guarini] 285
relation of different forms of, to age, [Lydtin] 1110
relations between asthma, tuberculosis and syphilis, [Acuña & Garrahan] 1816
roentgen treatment and sun treatment for, [Corica] 1883
sanatorium, reorganization of, 1019
sanatorium for combating tuberculosis in children, 1864
sanatorium treatment contrasted with home treatment, [Cox] 726
sanatoriums, importance of, 1864
seasonal variation in weight in, [Strandgaard] 664
selective tuberculous involvement of endocrine glands, [Coffen] 1268
sensitization experiments with tubercle bacillus, [Smith] 278
sensitiveness of skin to poisons in, [Zieler & Markert] 662
serodiagnosis of, [Aronson] 721, [Paraf] 729, [Takenomata] 1491, [Coulthard] 1541
serologic test in tuberculosis in children, [Rüscher] 1741
Sphalinger treatment of, 861
surgery for, [Wetherill] *6
transient inflammatory tuberculous phenomena in children, [Rüscher] 1110
treatment of, [Andreotti] 1035, 1631
treatment, rules for experimentation and control of new measures in, [Gaussel] 879
Tuberculin Treatment: See under Tuberculin
tyrosin reaction in diagnosis of, [Pissavy & Monceaux] 728
war epidemiology of, [Redeker] 442
Wassermann reaction in, [Boas & With] 970, 1329, 1456—E
work in France, Rockefeller mission retires from, 859
- TUMORS**: See also under names of various organs
TUMORS and blood diastase, [Hirschfeld] 1349
artificial production of, [Kazama] 219
effects of operative interference with endocrines on growth and malignancy of transplanted tumor of rabbit, [Brown & others] 1954—ab
epigastric tug, [Emerson] 1807
experimental, and chronic inflammation, [D'Agata] 730
experimental, of animals, [Bierich] 68
immediate microscopic diagnosis of, [Shaw] 802
in cow embryo, [Widakowich] 1420
in Dutch East Indies, 1020
malignant, statistics of, [Petzold] 218
malignant, urine hemolysis coefficient in, [Bortolotti] 1184
treatment with endocrine extracts, [Engel] 1349
- TURPENTINE** in treatment of adnexitis, [Tuma] 443, [Nyström] 736
- TWIN** pregnancy, diagnosis of, [Offermann] 1278
tubal twins, [Arey] 1343
- TYMPANITES**, treatment of, 1537
- TYPES**, human, and growth reactions, [Stoekard] 954
- TYPHOID**, [Hébert & Bloch] 729
acetonitril test for, [Hunt] 653
affecting joints, [Bonrges] 587
agglutination for, in cholelithiasis, [Jungeblut] 730
and diphtheria, [Urioste] 361
and syphilis, [Angel Marini] 590
aortitis, ulcerous, [Marchiafava] 730
autolysate-precipitin reaction in, [Laird & others] 1027
bacilli in fetal blood, [Vignoli] 805
bacilli, new medium for cultivation of typhoid group of organisms in blood, [Otaki & Akimoto] 1345
- TYPHOID** bacilli, pathogenesis of experimental infection of guinea-pigs with, [Friedberger & Meissner] 1818
bacilli, results of injection of, into gallbladder, [Beckwith] 431
carrier, treatment of, [Barilari & Rodríguez] 589
death rate in large cities in 1922, 333
diagnosis value of plasmophagocytosis in early diagnosis of typhoid, [Obtani] 1345
epidemic of, [Maione] 213
epidemic at Cochrane, 1083, 1464
in Barcelona, [Gallart Monés] 437
in infants, [Medi] 361
in large cities of United States in 1922, 11th annual report, *691
in 1922, 776—E
in Paris, 1468, 1628
in Spanish army, [Soier y Garde] 807
mixed infection with typhoid and Malta fever, [Auricchio] 589
osteomyelitis in, [Winslow] 1484
pathogenesis of, [Oeller] 516
phlebitis, [Pozzo] 514
shock treatment of, [de Verbizier] 963
spine, unusual case of, with symptoms of spinal cord affection, [Turner] 658
spleen, [Pasehkis] 217
spleen and paresis of diaphragm, [de Lavergne] 964
vaccination against, 1469
vaccination, anaphylaxis and antianaphylaxis in cases treated with vaccines, [Sillitti] 284
vaccine treatment of, [de Finis] 806
vaccine, triple change in, 783
vaccine against, [Loir & Legangneux] 142
Weisz' reaction in, [Salmoni] 730
Widal reaction in vaccinated, value of, [Shera] 64
Widal test, 646
- TYPHUS**, [Kuczynski] 663
cultivation of tissue in study of, [Krontowski & Hach] 1494
etiology of, in laboratory workers, 1939—E
exanthematous, in Roumania, 1161
gangrene of intestine as complication of, [Gregory] 1887
prevention in Morocco, [Martial] 142
treatment by method of Dr. A. Brenner, [Tomanski] 1111
- TYROSIN REACTION** in diagnosis of tuberculosis, [Pissavy & Monceaux] 728
- U**
- ULCERS**: See also under names of organs, as Stomach, Uleer of
ULCERS, callous, of legs, treatment of, [Hütten] 441
epidemic tropical ulcers, [Adams] 1878
Peptic: See Stomach Ulcers
perforating, of foot and elsewhere, cause and treatment of, [Kappis] 734
- ULNA**, resection of distal end of, for shortening radius following fracture, [Hoag] 800
- ULTRAVIOLET LIGHT**, bactericidal action of, [Jones & van der Lingen] 723, 849—E
compensatory action of ultraviolet rays on avitaminotic disturbances of bone marrow, [Ishido] 1657
therapeutic effects of visible and ultraviolet rays of various wave lengths, [Hess] 1803—ab
- UMBILICAL CORD**, retention of, [Heinlein] 1423
spontaneous intra-uterine rupture of, during labor, [Geller] 1423
strangulation of fetus by, [Nijhoff] 812
- UNCINARIASIS**, analyzing hookworm culture conditions, [Stoll] 1483
ankylostoma larvae in soil of native villages in Java, [de Nooy] 149
betanaphthol and thymol in, [Phippen] 1103
betanaphthol in, [Leach & Hampton] *8
campaign in Brazil, 45
carbon tetrachlorid treatment of, [Lambert] *526, [Smillie & Pessoa] 579, [Cooper & Vadala] 957
control of, [Ackert] 579
diagnosis of, [Mhaskar] 1178
in the Philippines, 632—E
incidence among persons who were cured 5 years ago, [Sisco] *451
relation between number of eggs found in human feces and number of hookworms in host, [Stoll] 1483
- UNIVERSITY** City, laying of corner stone of, 1706
of Brussels, anniversary of founding of, 124
of Illinois College of Medicine, new medical buildings of, 946
of Jena, conflict between University and ministry of public instruction, 1633
professorial chairs in universities, 337
state universities and politics, 1697—E
- UREA**, conditions attending excretion of, 1073—E
xanthidrol reaction in microchemical tests for urea in kidneys, [Walter] 1276
- UREMIA**, [Strauss] 732
and nitrogen retention, [Lax] 1035
electrocardiogram in uremia and severe chronic nephritis with nitrogen retention, [White & Wood] 1728—ab
- UREMIA** in mental affections, [Uribe] 1347
uremic symptoms in heart disease, [Alvarez] 1883
- URETEROLYSIS**, pyelotomy, and extirpation of kidney, special technic, [Kolischer & Katz] *1757
- URETERS**, accidental bilateral occlusion of, [Herman] 1176
accidental injuries of, during pelvic operations, [Maury] 275—ab
calculi, diagnosis and treatment of, [Kretschmer] *1425
calculi in kidney and treatment of, [Israel] 733
cystic enlargement of lower ureter, [Hübner] 517
disposition of, in certain abnormal conditions of urinary bladder, [Lower] *1200
double kidney and, [Braasch & Scholl] 279
double, kidney with 2 ureters, [Guyot & Jeaneney] 1652
experimental division of one, [Jones] 1271
kinks due to aberrant vessels, [Crosbie] 1731
primary tumor of, [Aschner] 62
stricture of, acquired in male, [Herbst & Thompson] 1176
stricture of, conservative renal surgery associated with, [Hunner] 1176
- URETHRA**, dilatation of urinary organs from valvular obstruction to outlet of bladder, [Schmidt] 810
injury, treatment of, [Jastram] 1276
innervation and influence of drugs on, [Perutz] 217
stricture, traumatic, an unusual case of, [Colston] *307
strictures and fistulas in, treatment of, [Petroff] 362
syringe, a deep, simple and inexpensive adaptation of bulb type, [Seherck & Jost] *1069
traumatic rupture of both bladder and urethra, [Plisson] 1182
ulcer of orifice, [Bokay] 287
- URETHRITIS**, pyocyanus, [Grimberg & Ilzan] 283
- URETHROSCOPY**, fatal air embolism during, 1017
- URETHROTOMY**, [Nin Posadas] 437
- URIC ACID** determination, [Rother] 517
in blood, 327—E, [Weil & Guillaumin] 729
in blood in diagnosis and prognosis of nephritis, [Czoniezer] 216
in blood serum, quantitative determination of, [Harpuder] 1277
metabolism, [Lewis & Corley] 1543
- URINAL**, improvised, after cystostomy, [Jeanbrau] 1653
- URINARY TRACT**, bacteriophage in treatment of colon bacillus infection of, [Beckerlich & Hauduroy] 1545
calculi, endemic, in Siam, [Schneider] 148
calculi, etiology of, [Keyser] 1267
calculi, septicemia following passage of calculus through urethra, [Nelken] *1846
manifestations of disease of, [Niseggi] 437
of fetuses and infants, [Brown & Corbelle] 1877
roentgenography of, during excretion of sodium iodid, [Osborne & others] *368
roentgen-ray treatment from standpoint of an old urologist, [Nieolich] 1653
staphylococcus infection of, cure of, [Picker] 663
suppuration in, in infants, [Casaubón] 1740
tumors of lower urinary tract, diathermy in, [Corbus] 1486
- URINE**, acidity of, and albuminuria, [Hanns] 1180
acetone in, in measles, [Nagahara] 1104
acidity of, and food, [Hasselmann] 1035
albumin and other urinary proteins, simple and rapid test for, [Exton] *529
albumin, colorimetric determination of, [Jørgensen & Tørring] 70
alkaline tide in, [Hubbard & Munford] *304, [Benedict] 869—C
amino-acid fraction of, in infants, [Goebel] 442
bacteriology of, in acute nephritis in children, [Hill & others] 1097
bile acids in, [Igantowsky] 441
bile in, removal of, 1333
bilirubin, quantitative estimate of, [Adler & Meyer] 1493
carbophosphaturia, [Martinet] 360
chlorids, influence of phosphates on excretion of chlorids, [Rockemann] 1655
creatinin, causes of error in Folin test for, [Pittarelli] 966
diastase in blood and, as test of renal efficiency, [Harrison & Lawrence] 659
differentiation between tubercle bacilli and smegma bacilli in urinary sediment, [Lebedev] 1349
effect of meals on urinary constituents, [Dodds] 1030
excretion of organic acids in urine of patients with diabetes, [Fitz & others] 1642—ab
glomerular, contents of, [Wearn & Richards] 1644—ab
hemolysis coefficient in malignant tumors, [Bortolotti] 1184

- URINE, hippuric acid in, formation of, [Snapper & others] 1037
incontinence, due to spina bifida, [Delbet & Léri] 878, 1490, [Cuzzolino] 1418
incontinence, faradism in treatment of, [Hallowes] 64
incontinence of, operative treatment of, [Brjosowsky] 1420, [Unger & Höring] 1886
influence of temporary closure of renal artery on, [Marshall & Crane] 1729
iodin in, estimation of, [Marsh] 581
management of female urinary bladder after operation and during pregnancy; further study of residual urine in its bearing on urinary tract disturbances, [Curtis] *1126
nitrogenous compounds of, undetermined, 1007—E
retention in female, [Calmens] 145
sugar in: See also under Glycosuria
sugar, action of phlorizin on sugar in blood and urine in diabetes and nephritis, [Rosenberg] 1657
sugar in, excretion of, [Kast & others] 581
testing single specimens of urine, [Gray] 800
tube-casts in, [Souza Lopes] 966
urochromogen reaction in, [Flesch-Thebesius & Lion] 732
- UROBILIN, [Adler] 216
formation of, in intestines, [Kammerer & Miller] 1655
- UROBILINOGEN, origin of, [Adler] 733
- UROLOGY, origin and progress of, share of France in, [Jeanbrau] 1032
progress in, [Lewin] 1887
- URTICARIA and hemiplegia, [Lermoyez & Alajouanine] 1737
caused by light, preliminary report, [Duke] *1835
stopping during measles, [Apert & Broca] 1545
toxic substances in blood in, [van Leeuwen & Zeydner] 357
- USEFUL DRUGS, 1636—P
- UTAH state board November examination, 423
- UTERUS, absence of vagina and, report of case, [Ferreira] *1616
action of ergot and hypophysis solution on, [Haskell & Rucker] 353
action of radium on, [Kotzareff & Mollow] 282
adnexa, inflammatory tumors of, in pregnancy, [Richter] 1549
adnexa, torsion of, before puberty, [Cohen] *382
adnexitis, blood picture as guide to treatment of, [Premrou] 443
adnexitis, deep roentgen-ray therapy in, [Flaskamp] 1037
adnexitis, turpentine in treatment of, [Tuma] 443, [Nyström] 736
amputation of cervix above isthmus, [Hartmann] 282
anesthesia, regional, of, [Cotte] 880
benign affections of, radium in treatment of, [Schaedel] 288
cancer, antecedents of, [Stajano] 146
cancer, diagnosis of, [Norris] 799
cancer of cervix, results of treatment, [Ross] 138
cancer of cervix, incipient, treatment of, [Neuhaus] 1741
cancer of cervix uteri, irradiation of, [Siegel] 811
cancer of cervix, result of radium treatment of, [Beuttner] 1491
cancer of cervix, treatment with roentgen rays and radium, [Schmitz] 1645
cancer, precancerous condition of cervix, [Huggins] 136
cancer, surgery and roentgen rays in, [Küstner] 438
cancer, Wassermann and Meinicke's reaction in, [Niedermayr] 884
cervix a focal point of infection, [Dickinson] 1173
chronic endocervicitis, [Burns] 1344
double, cesarean section for delivery of pregnant right uterus at term, [Shoemaker] *103
excision: See Hysterectomy
fibroids, myomectomy versus hysterectomy, [Giles] 1344
fibroma as cause of death, [Dartigues] 1815
fibromas, radiotherapy and surgical treatment of, [Kouwer] 1105
fibromyoma complicating pregnancy, [Mussey] 1648
fibromyoma, roentgenotherapy of, [Béclère] 427
hemorrhage and the thyroid, [Kräuter] 288
hemorrhage, radium treatment of hemorrhage not due to cancer or fibroma, [Siredey] 1417
hemorrhage, revision of uterine cavity in puzzling cases of, [Hesse] 1035
hemorrhage, treatment of, [Geist] 1343
hemorrhage, utero-placental, [Portes] 1274
hemorrhagic diseases of, [Castaño] 807
infections of cervix, body of uterus and fallopian tubes, [Curtis] *161
inversion, acute (puerperal), [Evans] 133—ab
inversion, acute, in delivery, [Dantin] 435
malformation of kidney and, [Eismayer] 810
movements of, [Wijsenbeek & Grevenstuk] 288
myoma, large cervical, [Solomons] 1179
- UTERUS myoma, localization of, [Rosner] 435
myoma, treatment of women with myoma, [Nassauer] 1494
obstetric future after incision of cervix during childbirth, [Balard] 143
polypi, removal of, from infant, [Gibb] 1416
prolapse, promontory fixation in, [Schmid] 1549
prolapse, treatment of, [Witter] 139, [Natvig] 444, [Frank] 799
prolapse, vaginal operation for, [Cullen] 136
prolapse, vaginal pessary in, [Novak] *1294
retroflexion of, [Meyer-Rüegg] 964
retroflexion, surgical treatment of, [Falgowski] 1350
rupture of, after pituitary treatment, [Pouliot & Truchard] 1418
rupture of, spontaneous, during pregnancy, [Kane] 1173
sarcoma of, [Reel & Charlton] 1806, [Masson] 1877
secretion, effect of, on coagulation of blood, [Kross] 960
syphilitic disease of, [Mouchotte] 964
ventrifixation of, [Fuchs] 1278
ventrifixation, Alexander-Adams operation for, [Bumm] 1423
- UVULA, double, and congenital perforate soft palate, with repair of perforation, [Trinder] *914
- V
- VACCINATION: See also under names of diseases, as Typhoid, Vaccination in
VACCINATION, antivaccinationist methods of controversy, 1086
free to postal employees, 194
local, [Besredka] 360
validity of ordinances requiring, 1026—M1
- VACCINE THERAPY: See also under names of diseases
VACCINE THERAPY and mixed infections, [Grimberg] 283
complement fixation under, [Codina Castellvi] 661
test for power of immunizing response to therapeutic inoculation; vaccine response test, [Wright & others] 1490
therapeutic, inoculation, [Colebrook & others] 962, 1273
- VACCINES sterilized with formaldehyd, [Costa] 143
- VACCINIA and smallpox, [Bachmann & Biglieria] 1740
immunity against, [Gins] 147
research on vaccinia: neurotropic ectodermoses, [Levaditi & Nicolau] 1489
- VAGINA, absence of uterus and, report of case, [Ferreira] *1616
artificial, from small intestine, [Hortolomei] 1110
cicatrical atresia of, [Piceoli] 513
hemorrhage from varices in, [Veen] 1186
- VAILLANT, distinctions accorded to, 197, 563, 862
- VARICOCELE, radical cure of, with fixation of testicle, [Amorosi] 589
treatment of, [Ferrando] 437
- VARICOSE VEINS, hemorrhage from varices in vagina, [Veen] 1186
treatment of varicose ulcers by periarterial sympathectomy, [Robineau] 1346
- VARIOLA: See Smallpox
- VAS DEFERENS, ligation of, [Sand] 592, [Haubenreisser] 808
- VASCULAR SYSTEM, pathology of, in women, [Van Rooy] 1112
treatment of vascular spasms by periarterial sympathectomy, [Forestier] 143
- VAUGHAN'S crude soluble poison, new experiments with, [Underhill & Kapsinow] 1100
- VEGETABLE and animal pathology in relation to human diseases, 324—E
comparison of antiscorbutic vitamin in fresh and conserved vegetables, [Gralka] 1349
- VEIN, renal rupture of, by slight injury, [Atkinson] 1031
simultaneous ligation of vein and artery, experimental study, [Brooks & Martin] *1678
- VENA CAVA, superior, ruptured, [Stephens] 433
- VENEREAL DISEASE, anti-venercal instruction, 567
books on prevention of, banned in New Zealand, 337
campaign against, 267, 708
decree in Prague, 1088
in Iceland, 1703
in New Zealand, 415, 706
international confederation against, 1086
prophylaxis of, at Madrid, 1390
report of American Society Hygiene Association on medical researches in, [Hoffman] 1153—ab
statistics in Germany, 1910-1921, 1162
treatment of, 1254
welfare work among patients with, 124
world war against, [Bayet] 1652
- VENOM: See under Snake; Toad
- VENTRAL DECUBITUS, life saving by, [Rautenberg] 882
- VENTRICULOGRAPHY: See under Brain
- VERONAL: See Barbitol
- VERRUCA, Peruvian, prophylaxis of [Arce] 1419
treatment of flat warts by internal administration of mercury, [Fox] 873
- VERTEBRAE: See also under Spine
- VERTEBRAE, cervical, minor displacement of, [Gruet] 65
fusion of atlas with occipital bone, [Lupo] 513
lumbar, abnormalities of, as cause of sciatic pain, [Moore] 1646
lumbar, fifth, malformation of, [Benassi] 1184
lumbosacral pain and sacralization of 5th vertebra, [Gordon] 1486
- VETERANS, medical, of World War, meeting of, 1245
- VETERAN'S BUREAU, annual report of, 191
army officers withdrawn from, 264
changes in, 264
Colonel Forbes in message on, 707
course in tuberculosis completed, 1627
directors of, appointed, 639
head of, issues announcement on training of chiropractors, 1323
hospitals opened, 1323
Medical Corps, 413
modifies rule on chiropractic training, 1702
neuropsychiatric school graduates, 1466
news, 336
school of neuropsychiatry in, 263
senate investigation of, 564, 707
survey of Philippine subdistrict of, 565
tuberculosis course repeated, 1704
- VETERINARY medicine, chair of animal pathology at Cambridge, 862
work in India, 1391
- VIGORON, 54—P
- VINCENT, professor, election of, to Academy of Sciences, 123
- VISCERA, transposition of, with malformation of heart and congenital heart block, [Meyer] 1181
- VISCEROPTOSIS: See Splanchnoptosis
- VISION, disturbances of, in hysteria, [Stibbe] 1112
defective treatment of, 1952
recording of, 1477
strychnin and disturbances of, 406—E
- VITA OIL, 645—P
- VITAL CAPACITY, determination and interpretation of changes in lung volumes in certain heart lesions, [Lundsgaard] *163
determination of lung volume without forced breathing, [Van Slyke] 1646
in health and heart disease, [Pratt] 135
of children, [Stewart] 59
vital capacity readings, [Lattimore] 1540—ab
- VITAL SPARKS, 1711—P
- VITAL STATISTICS, births and miscarriages, [Waldstein] 1658
birth and mortality statistics in large cities of Germany in 1922, 1632
charts on mortality and births in Vienna, 710
for first 6 months in 1922, French, 123
for 1921, England and Wales, 708, 1861
for 1922, French, 1532
in prognosis, 404—E
mortality in Germany, 1863
mortality among women, 1020
of large cities of Germany for the third quarter of 1922, 198
principal causes of death, 1921, 44
- VITAMIN A, effect of fat soluble A vitamin on experimental tuberculosis, [Smith] 1484
A, influence of, on blood platelets, [Bedson & Zilva] 1030
A, influence of, on weight of new-born, [Schlossmann] 1656
A, intestinal flora of rats on diet deficient in, [Creekmur] 431
A, isolation of, [Kagawa] 589
A, storage of, in body, 851—E
and cereal decoctions, [Springer] 878
antiscorbutic vitamin in oriental fruits and vegetables, [Embrey] 958
assimilation in avitaminosis and hunger, [Collazo] 1492
B, eggs as a source of, [Osborne & others] *302
B in yeast, [Heller] 1543
B, rôle of, in nutrition, [Osborne & Mendel] 429
C, relation of vitamin C to bacterial infection, [Findlay] 1031
content of certain proprietary preparations, [Coward & Clark] 510
deficiency, compensatory action of ultraviolet rays on avitaminotic disturbances of bone marrow, [Ishido] 1657
excretion of, 777—E
immunologic significance of, [Werkman] 1647
influence of antineuritic vitamin in cockerels, [Souba] 1409
investigations in animals on vitamin and mineral deficiencies, 935
lack of vitamins and bacterial infection, [Werkman] 1647
of growth (A and B) and endocrine glands, [Glanzmann] 1742
ophthalmia of dietetic origin, [Mori & others] 1483

VITAMIN potency of pollock liver oil, [Holmes] 1270
removal of liver and avitaminosis in their relation to sugar metabolism, [Bickel] 1547
some aspects of vitamins and radiant energy, 1695—E
substances with incomplete vitamin action, [Pantaleoni] 660
underfeeding, [Cramer] 357
what can vitamins do? 1776—E
VIVISECTION, animal experimentation and drugs, [Loevenhart] *151
autovivisectionist science, 1148—E
benefit to animals of medical experimentation, [Parker] 506, [Howard] 506
difficulties of Hawden, the antivivisectionist, 349—ME
Hawden on antivivisection, 1148—E
mammalogists favor vivisection, 1626
relation of antitoxins to animal experimentation, [Place] 505
the antivivisectionists, 1394
value of animal experimentation, [Cannon] 505
what animal experimentation has done for exotic and tropical medicine, [Strong] 505
VOCAL CORDS, unusually early metastasis in carcinoma of, [Hertzler] 956
aphonia from paralysis of left vocal cord, [Lukin] *1846
VOCATIONAL fitness of a patient, 556—E, 1864
VOICE, persistent fistular voice, [Seemann] 1279
VOIGHT-filled milk bill favorably reported, 118
VOLSTEAD ACT: See also under Alcohol; Prohibition
VOLSTEAD ACT and Association for Protection of Constitutional Rights, [Coleman] 1536—C
VOLVULUS in pregnancy, [König] 362
VOMITING, cardiac features of, 849—E
habitual, in infants, [Acuna] 514
induced by tartar emetic, mechanism of, [Weiss & Hatcher] 725
treatment of vagotonic vomiting, [Ortega Belgrano] 1817
VULVA, fibropoma of labium majus, [Love-lace] *375
VULVITIS, chronic, [Schoenhof] 1740

W

WAR: See also Army; Soldiers
WAR and anatomy, 555—E
future warfare, 1325
influence of, on predisposition to disease in schoolchildren, [Lewandowski] 1276
lessons for surgery from World War, [Amalio Roldán] 959
WART: See Verruca
WASHINGTON state board July examination, 203
WASSERMANN REACTION and flocculation tests compared, [Urquhart] 659
and Meinicke's reaction in cancer of uterus, [Niedermayr] 884
and Sachs-Georgi tests, comparison of, [Feinblatt] 210
comparison of Dold and Meinicke reaction with, [Fortig] 1656
comparison of, with the Kahn flocculation test in 1000 cases, [Litterer] 1406—ab
effect of mercurials on, [Strickler] 1808
in late syphilis, [Thaysen] 220
in obstetrics, [Gaujoux & Foulquier] 436
in pregnancy, [Belding & Adams] 60, [Laseur & Vermelin] 1546
in scarlet fever, [Christensen] *1118
in tuberculosis, [Boas & With] 970, 1329, 1456—E
in yaws; effect of treatment on Wassermann reaction in yaws, [Goodpasture & de Leon] 1732
inability of high cholesterol serum to increase strength of, [Thalhimer & Hogan] 1485

WASSERMANN REACTION, is a positive reaction possible in nonsyphilitics? [Boas & Kissmeyer] 1549
local, [Stern & Ryplins] 1413, 1523—E
negative, unreliability of, 338
positive, in fatal case of estivoautumnal malaria, [McConnell] *1123
prognostic value of, in metasyphilis, [Thaysen] 1037
titration with variable amounts of serum in Sachs Georgi and, [Sparmann] 1884
trend of, 1317—E, [van Saun] 1536—C
with fresh serum, [Durupt] 588
WATER, chlorination of, 1537
gas, dangers of use of, for illumination, 414
law of hydration of tissues, and its significance for water exchange in tissues, lymph formation and genesis of edema, [Schade & Menschel] 1742
metabolism, [Siebeck] 515, [Oehme] 803
pollution, factors affecting plankton, 1042—ab
slow working sand filter, [Flu] 149
wholesomeness of water from deep wells, 1400
WEATHER, seasonal variability of disease, 476—E
WEBSTER, Noah, as epidemiologist, [Warthlin] *755
WEIGHT, relative weight of parts of body, 1024
seasonal variation in, of tuberculous patients, [Strandgaard] 664
WEIL'S DISEASE: See Jaundice
WELCH, William H., received the gold headed cane, 1157
WELLS, wholesomeness of water from deep wells, 1400
WEST VIRGINIA state board October examination, 349
WESTCOTT, Edward Noyes, monument to, 478—E
WHIFFEN AND SONS, Limited, license revoked, 1626
WHISKY: See Alcohol; Prohibition
WHOOPIING COUGH, contagiousness of, [Bartier & Renard] 359
cultivation of bacillus pertussis, [Povitzky] 875
effect of pertussis vaccine on period of contagion of, 55
intracutaneous reactions in, [Riesenfeld] *153, [Hull & Nauss] *1840
preventive serotherapy, [Debre] 1652
treatment by roentgen ray, [Bowditch & Leonard] 1098
vaccine prophylaxis of, [Auricchio] 730
WIDAL Reaction: See under Typhoid
WILLIAM'S SYMPTOM in early roentgenologic diagnosis of pulmonary tuberculosis, [Guarini] 285
WILLS, making of, by persons in extremis, [Fenning] 1795
WILSON, T. S., distinguished service medal awarded to, 46
WINE: See under Alcohol
WINK, J. A., and Company, license revoked, 1626
WISCONSIN state board January examination, 1793
WITNESSES, allowance of expert witness fees for physician, 1722—M1
competence of insane persons to be witnesses, 1338—M1
WOMEN physicians demand equal pay with men, 861
relation of organized women to medical profession, [Means] 1152—ab
WOOD'S METAL, 344
WOOD'S V. TABULES, 1710—P
WORK, Postmaster General, transferred to Interior Department, 637
WORKMEN'S COMPENSATION ACT, claims of physicians and hospitals under contracts, 1539—M1

WORKMEN'S COMPENSATION ACT, compensation for services requested by employer, 1539—M1
compensation from medical standpoint, [Phillipsen] 150
compensation of injured mentally defective workman, 1539—M1
estimation of disability in industrial accidents, 123
extension of, to include agricultural laborers, 1467
permanent loss of member and total disability, 58—M1
physician's report for accident Industrial board, 796—M1
previous condition of injured employee unimportant, 352—M1
right of injured employee to choose own physician, 1481—M1
total disability from fracture injury to old man, 1482—M1
validity of award based on condition when discharged by physicians, 720—M1
WOUNDS: See also under names of organs and regions
WOUNDS, active epithelial implants on wound surfaces by Pels-Léusden's method, [Peschke] 438
case of pharyngeal diphtheria probably due to auto-infection from a diphtherie lesion of thumb, [Baldwin & others] *1375
healing, cause of itching in, 496
healing of, after roentgen rays, [Vogt] 147
treatment of, [Mercade] 1652
use of Reverdin-Halsted grafts, [Schlaepfer] 1807, 1884
WREN, Christopher, bicentennial of, 783
WRIST, compression of median nerve in fracture of, [Navarro] 589
fracture of, [Schinz] 439
WYNN Mountain named in honor of Frank B. Wynn, 1157

X

XANTHINURIA, 647
XANTHOMA and lipoidemia, [Yamakawa & Kashiwabara] 1495
XANTHOSARCOMAS of tendon sheaths, [Krogius] 592
XEROPHTHALMIA of dietetic origin, [Mori & others] 1483

Y

YEAST extract in diabetes, [Winter & Smith] 1810
epidermal mycosis due to yeast fungus, [Petges] 1882
influence of butter fat and, on magnesium and phosphorus assimilation, [Bogert & Trail] 429
laxative action of, [Murlin & Mattili] 1409
vitamin B in yeast, [Heller] 1543
YELLOW FEVER, 268
eradicated from Peru, 412
eradication of, in Latin America, [Lebrede] 661
experimental, hepatic lesions of, [Perrin] 800
in Brazil, 1390
in Mexico, [Connor] 1409
YERK'S Wine Extract of Cod Liver Oil, 343—P

Z

ZINC, pharmacology of, [Schwartz & Alsberg] 1175
poisoning, 707
stearate tilcum powder, pneumonia from inhalation of, [Edmonds] *105
ZONITE, 1024

AUTHOR INDEX

In this Index are the names of the authors of articles which have appeared in THE JOURNAL, the names of those who have read papers before Societies as published in THE JOURNAL and those whose articles have been abstracted in the Current Medical Literature Department. The * preceding the page reference indicates that the article appeared in full in THE JOURNAL. The author's name is followed by a brief clue to the subject of the article.

A

- Abbott, A. W., Appendicitis, 133
 Abbott, G. K., Diverticulitis of gallbladder, 1733
 Abe, B., Acidosis, 443
 Abel, J. J., Substance obtained from pituitary, 1875
 Abell, L., Adenoma of gallbladder, 206, 1484
 Abelman, H. W., Intravenous needle, *399
 Abernethy, M., Leprosy, 514
 Aboulker, H., Meningitis, 1815
 Abraham, O., Influenza pneumonia, 969
 Abrahamson, L., Tachycardia, 1881
 Abramson, J., Psychology, 1814
 Achard, C., Sclerosis, 1346
 Ackert, J. E., Hookworm disease, 579
 Acuña, M., Vomiting in infants, 514; Infantile-ism, 590; Anemia, 1184; Asthma, tuberculosis and syphilis, 1816
 Adam, A., Dyspepsia, 1493
 Adam, E., Status epilepticus, 1546
 Adams, A. W., Gluteal aneurysm, 1489
 Adams, C. B., Wassermann in pregnancy, 60
 Adams, F. D., North Carolina extension plan, 1714
 Adams, W. B., Tropical ulcers, 1878
 Adams, W. R., Bone grafting, 584
 Adler, A., Urobilin, 216; Nervous bladder symptoms, 287; Bilirubin in blood, 515; Urobilinogen, 733; Bilirubin in urine, 1493
 Adler, E., Bilirubin in blood, 68
 Adrogué, E., Arcus juvenilis, 514; Cholesterol crystals, 1817
 Adson, A. W., Removal of parotid, 133
 Agnew, F. F., Occlusion of retinal artery, 1099
 Agote, L., Stomach-gallbladder-duodenum syndrome, 661
 Ahrens, Drainage of hepatic duct, 1036
 Aikenhead, D. C., Respiration after anesthesia, 208
 Aimard, J., Diathermy in gallbladder disease, 1184
 Aitkens, H. B., Size of drops, 1713
 Alajouanine, Urticaria and hemiplegia, 1737
 Albrecht, H., Aches in abdomen and back, 441; Hyperemesis of pregnancy, 1035; Infected abortion, 1548
 Alcheck, Hemorrhagic purpura, 1736
 Alessandrini, P., Pneumoperitoneum, 590
 Alexander, A., Trichophytosis, 440
 Alexander, B., Camphor in tuberculosis, 287
 Alexander, H., Surgical treatment of tuberculosis, 1033
 Alexander, I. H., Tuberculosis, 280
 Alexander, M. E., Trichiniasis, 1805
 Alexander, W., Neuralgia and myalgia, 1885
 Alexander, W. G., Marble bones, 1805
 Alford, L. B., Neuroses and psychoses, 431
 Alkan, Soft food containing little fluid, 734
 Alksnis, J., Spinal cord tumor, 1742
 Allan, W., Renal glycosuria, *471
 Allbutt, C., Angina pectoris, 1812
 Allen, E., Ovogenesis, 1956
 Allen, F. M., Diabetic lipemia, 279; Insulin, 1801; Hypertension, 1879
 Allen, K., Toxin-antitoxin mixtures, 1030
 Alles, R. W., Measurement of pelvis, 1542
 d'Allocco, O., Brain tumors, 1883
 de Almeida, G., Sudden transient glaucoma, 966
 Alpers, B. J., Iodids and nonprotein nitrogen, 1643
 Alsberg, C. L., Cadmium and zinc, 1175
 Alurralde, M., Neurosyphilis, 145
 Alvarez, C., Uremia and heart disease, 1883
 Alvarez, W., Suprarenal insufficiency, 286
 Alvarez, W. C., Gastric peristalsis, 654; Tonsillectomy, *1513; Medical education, 1637
 Alwens, W., Encephalography, 1035
 Ambrozic, Rachitis and growth, 442
 Ameuille, Artificial pneumothorax, 728
 Ammon, S. E., Histamin and gastric secretion, 1273
 Amorosi, P., Varicocele, 589
 Ancona, G., Asthma, 1418
 Anderes, Pituitary extract in pregnancy, 1741
 Anderson, H. B., Pancreatitis, *1139
 Anderson, J. H., Abnormalities of duodenum, 877
 Anderson, J. S., Urea in spinal fluid, 142
 Anderson, J. W., Vesicular granulum dermatitis, 1485
 Ando, K., Characteristics of hemolytic streptococci, 1344; Pathogenicity of streptococci, 1344; Types of hemolytic streptococci, 1344
 Andreotti, J. B., Tuberculosis, 1035
 Andreen-Svedberg, A., Widal's test of liver function, 1744
 Andrews, C. L., Primary retroperitoneal sarcoma, 1733
 Andrews, E., Femoral hernia, 1731
 Andrijevski, Spontaneous generation of microbes, 1279
 Andrus, W. D. W., Surgery of thoracic esophagus, 1807
 de Angelis, F., Reflexes in new-born, 284
 Anglesio, B., Cylindromas, 360
 Anrep, G. V., Blood sugar metabolism of salivary glands, 727; Metabolism of reducing substance of submaxillary, 727
 Anschütz, W., Decompressive trephining, 67; Hematuria and nephritis in appendicitis, 68
 Antoine, E., Angiomas of rectum, 1180
 Antunes de Menezes, A., Sachs-Georgi test, 1419
 Aperlo, G., Cancer of pylorus, 1033
 Apert, E., Meningitis with lymphocytosis, 660; Hirsutism, 728; Urticaria stopping during measles, 1545
 Araoz Alfaro, G., Spirochetal bronchitis, 215
 Arcangeli, U., Fever from tuberculosis, 1883
 Arce, J., Celiac and hypogastric neuroses, 661; Peruvian verruca, 1419
 Archangelsky, B. A., Roentgen rays and pregnancy, 1348
 Archibald, E., Compression of lung, 427
 Archibald, R. G., Nodular leprosy, 509; Undulant fever, 1032
 Ardin-Delteil, Hemibulbar retro-olivary syndrome, 143; Paroxysmal hemoglobinuria, 213
 Arey, L. B., Tubal twins, 1343
 Armand-Delille, P. F., Sun rays and rachitis, 1654
 Armand Ugón, A., Congenital myxedema, 144; Triplets of tuberculous mother, 514
 Armstrong, A., Tuberculosis and appendicitis, 1730
 Armstrong, D. B., Framingham experiment, 1267
 Arnaud, J., Smallpox, 963
 Arnesen, Nonprotein nitrogen, 1038
 Arneth, J., Urethral gonorrhea, 883; Blood count, 1036
 Arnett, J. H., Purpuric eruption, *1132
 Arnold, L., Pellagra, *365
 Arnstein, A., Extracardiac murmurs, 1277
 Aroeira Neves, Dermatomycoses, 1739
 Aron, H., Pathology of growth, 1657
 Aron, M., Grafts of embryonal bones, 65
 Aronson, J. D., Complement fixation in tuberculosis, 721
 Aróstegui, G., Poliomyelitis, 661
 Arraiza, D., Atrophy of jaw, 1106
 Arrak, A., Blood pressure in kidney affections, 1742
 Arrizabalaga, G., Hydatid cysts, 1817
 Artucio, H., Hereditary ataxia, 732
 Asal-Falk, B., Casein, 440
 Aschner, B., Anemias, 1495
 Aschner, P. W., Tumor of ureter, 62
 Ascoli, M., Pathologic physiology of stomach, 965
 Ashby, H. T., Diabetes, 586; Nephritis, 1272
 Ashford, B. K., Tropical sprue, 1027
 Ashhurst, A. P. C., Earliest recognition of appendicitis, 789
 Ashmore, B. L., Epilepsy, 277
 Askanazy, Carcinoma of stomach, 882, 1034
 Asteriades, T., Exophthalmic goiter, 805
 Astraldi, A., Eosinophilia, 214; Tuberculous epididymitis and fistula, 514; Hypertrophied prostate, 1419
 Astruck, P., Hypnosis, 591
 Atchley, D. W., Calcium chlorid diuresis, 1643
 Atkinson, E. M., Rupture of renal artery and vein, 1031
 Aub, J. C., Retention of lead, 1643
 Aubertin, C., Obesity and hypertension, 1815
 Aubriot, P., Paresthesia, 213
 Auricchio, L., Typhoid and Malta fever, 589; Whooping cough, 730
 Austin, J. H., Acidosis, 1727
 Austin, M. A., Humerus fracture, 1731
 Autenrieth, W., Arphenamin in urine, 69
 Autor, Pernicious anemia, 1034
 Avendaño, L., Depopulation, 1034
 Avierinos, Celiacgia, 880
 Ayer, J. B., Meningitis, 1953
 Azoulay, R., Tetanus, 587

B

- Baar, G., Indicanemia, 1494
 Baar, H., Lymphatic reaction, 591
 Baastrup, C. L., "Nervous headache," 1038
 Bab, M., Affection of auditory nerve in syphilis, 1656
 Babcock, J. W., Tonsillitis, *300
 Babcock, K. C., Medical licensure, 1262
 Babcock, R. H., Chronic heart patient, 1030
 Babler, E. A., Endothelioma of cheek, 133
 Babonneix, L., Progressive lipodystrophy? 963
 Baccarani, U., Protracted fever, 966
 Baccarini, L., Rupture of spleen, 360
 Bachmann, Smallpox and vaccinia, 1740
 Bachrach, R., Tuberculosis of genitals, 663
 Baer, Duodenal tube, 1654
 Baer, J. L., Prevention of conception, 573
 Baerg, W. J., Spider bite, 1808
 Baggio, G., Artificial anus, 514; Inflammation in submaxillary gland, 965
 Bagley, C., Jr., Brain abscess, 206
 Bail, O., Colon bacilli bacteriophagy, 1493; Fleming's lysozym, 1548
 Bailey, F. W., Appendicitis, 276
 Bainbridge, W. S., Cancer problem, 1417
 Baird, E. H., Traumatic peritonitis, 1408
 Bak, I., Febrile autophagia, 288
 Baker, W. P., Bathing beach sanitation, *907
 Bakwin, H., Dehydration in new-born, 59; Anoxemia, 797
 Balado, M., Diagnostic biopsy, 590
 Balard, P., Obstetric future after incision of cervix, 143; Fibroma praevia, 1418
 Balboni, G. M., Hydatid cyst of lung, 137
 Baldwin, A. H., Pharyngeal diphtheria, *1375
 Baldwin, J. F., Autocesan section in mouse, 128
 Ball, E., Blackwater fever, *1847
 Ballenger, E. G., Colloidal silver chlorid as germicide, 876
 Balthazard, V., Therapeutic abortion, 512
 Banerji, R. N., Beriberi, 1179
 Bankart, A. S. B., Club foot, 141
 Banting, F. G., Insulin in diabetes, 510, 1726
 Bar, Tuberculosis and pregnancy, 142
 v. Barabás, Z., Protein therapy, 362; Varicella and herpes zoster, 1349
 Barát, Sugar in blood and tissues, 1655
 Barbier, H., Whooping cough, 359
 Barbour, H. G., Tolysin, 581
 Barchetti, Rachitis and growth, 441
 Barcia, P., Bullet in pericardium, 1185
 Barclay, A. E., Function of muscles of stomach, 427
 Bard, L., Cancer, 1545
 Barilari, M. J., Typhoid carrier, 589
 Barkus, O., Tuberculosis, 1877
 Barling, S. G., Pyloric stenosis, 727; Jaundice, 1810
 Barlow, D. L., Apituitarism and anencephalic syndrome, 511
 Barnes, M. E., Anopheline mosquitoes, 1483
 Barney, C. O., B. acidophilus milk, *1896
 Barney, J. D., Silent kidney, 1731
 Báron, A., Blocking phrenic nerve in diaphragm injury, 1743; Tuberculosis of shoulder, 1744
 Barr, D. P., Exercise and acid-base equilibrium, 1543
 Barré, J. A., Pott's disease, 1181
 Barrenscheen, Blackwater fever, 1494
 Bársony, T., Motility of stomach, 218
 Barth, A., Bronchial asthma, 146
 Barth, G., Spontaneous pneumothorax, 1548
 Bartlett, W., Thyroid surgery, 276
 Baruch, R., Choked optic disk in syphilis, 1656
 Basch, G., Nephritis hypertension, 587; Infantile paralysis, 1346
 Bass, C. C., Transformation of intestinal flora, 508
 Bassler, A., Appendicitis, *1454
 Bassoe, P., Brain tumor, 874
 Bastianelli, R., Tender bone points, 801
 Bates, R. L., Effects of smoking, 430
 Bauer, A. W., Glycosuria in pregnancy, 149
 Bauer, J. H., Tetanus bacilli in digestive tract and tetanus antitoxin in blood, 1647
 Bauer, K. H., Hemophilia, 808
 Bauer, R., Cirrhosis, 147
 Baugh, W. P., Obstruction of intestine, *181
 Baumann, E., Intracardiac injection of epinephrin, 1738
 Baumann, E. J., Endocrines and respiratory exchange, 138; Splenectomy and respiratory exchange, 1270

- Baumann, M., Subphrenic abscess, 1348
Baumberger, J. P., Carbon monoxid in tobacco smoke, 1176; Nicotin in tobacco smoke, 1176
Bayer, C., Cancer, 734
Bayet, Venereal peril, 1652
Baylac, Polynucleosis of spinal fluid in epilepsy, 1545
Baylor, J. W., Growths of nasopharynx, 1267
Bayne-Jones, S., Epizootic caused by hemolytic streptococcus, 431; Ultraviolet light, 723; Influenza-like bacilli in cats, 1100
Bazett, H. C., Pulse wave velocity, 354
Bazy, L., Luxation of shoulder, 1346
Beams, A. J., Orthopnea, 655
Beard, R. O., Report of committee on trained nursing, 852
Bearse, C., Osteomyelitis, *991
Beattil, M., Spontaneous cancers, 1349
Beattie, A. C., Anaphylaxis, *1437
Beauvy, A., Pyoculture, 213
Becco, R., Endocrine factor in disease of ear, nose and throat, 807
Beck, A. C., Prolonged labor, 353
Beck, O., Muscular torticollis, 362
Becka, J., Refractometry of serum, 1495
Becker, A., Gangrenous femoral hernia, 967
Becker, E., Fracture of os calcis, 1110
Becker, J., Fat tissue in new-born, 1036
Beckerich, Colon bacillus infection of urinary apparatus, 1545
Beckmann, J. W., Migration of hydrochloric acid in body, 429
Beckwith, T. D., Injection of bacillus typhosus into gallbladder, 431
Béclère, Uterine fibromyoma, 427
Béclère, A., Brain tumors, 1417
Bedson, S. P., Vitamin A and blood platelets, 1030
Beeler, R. C., Double spontaneous pneumothorax, 1028
Beer, T., Gastric and duodenal ulcers, 1275
Béhal, A., Pasteur's centenary, 587
Belbey, J. C., Suggestion in crime, 1492
Belding, D. L., Wassermann in pregnancy, 60
di Bella, V., Gonococcus ophthalmia, 1418
Bénard, H., Dissociated icterus, 1490
Bénard, R., Scleroderma and pituitary, 143
Benassi, G., Color of blood after carbon monoxid, 730; Malformation of vertebra, 1184
Benedict, A. L., Alkaline tide in urine, 869; Do animals talk? 1091
Benedict, C. G., Respiration apparatus, 1730
Benedict, E. M., Calcium chlorid diuresis, 1643
Benedict, F. G., Respiration apparatus, 1730
Bengolea, A. J., Gallstone operations, 514
Bennett, T. I., Gastric function, 1103
Bensaude, R., Megacolon, 511; Angiomas of rectum, 1180
Benson, R. L., Sore throat, *1608
Benthin, W., Gynecologic peritonitis, 147, 1278
Bercher, J., Hemiglossitis, 66
Berczeller, L., Anastomosis of intestine, 735
Bergé, A., Nephritis hypertension, 587; Hyperchronic tetanus, 587
Berger, H. C., Chicken blood transfusion in pneumonias, 1176
Bergman, A., Gangrene of lung, 215; Sporadic myoclonus, 215; Intradermal tests for tuberculosis, 807; Exercise and tuberculosis, 1740
Bergmann, Parkinson's disease, 1819
Bergstrand, H., Nephrosis and glomerulonephritis, 1820
Berkheiser, E. J., Backache, *1831
Berkow, S. G., Gas gangrene, *1689
Bernard, E., Paraplegia, 213; Arthritis and syphilis, 1490; Alcohol treatment of trismus, 1736
Bernard, L., Public health in United States, 434; Tuberculosis and pregnancy, 512
Bernheim-Karrer, L., Eczema and myocarditis, 1886
Bernton, H. S., Occupational sensitization to castor bean, 1027; Hay-fever, *1301; Protest against circularization of hay fever article, 1951
Berry, J. A., Arthritis simulating appendicitis, 1273
Bertoin, R., Thrombophlebitis of head, 1182
de Besche, A., Conjugal tuberculosis, 444
Besredka, A., Vaccination, 360
Bessesen, D. H., Mercurial stomatitis, 1098
Bettencourt, A., Bilharziasis, 1419
Bettman, R. B., Diverticulum, *230
Bettoni, L., Sarcoma of prostate, 1549
Beuttner, O., Cervix cancer, 1491
Bevan, A. D., Revision of curriculum, 779, *1187
Bevier, G., Nostrum guzzling, 789
Bevilacqua, A., Sheep-pox in man, 214
Beye, H. L., Empyema, *1117
Beyers, C. F., Subpleural lipoma, 962
Bezançon, F., Fever and arthropathies from proteins, 1417; Acute gout, 1738
Biberstein, H., Anesthesia and tuberculin reaction, 1492
Bickel, A., Removal of the liver and avitaminosis in relation to sugar metabolism, 1547
Bickel, G., Spinal fluid in tuberculous meningitis, 1106
Bier, A., Circulation and nutrition of tissues, 1421; Problems of nutrition, 1658
Bierich, R., Experimental tumors, 68
Biering, K., Ovarian pregnancy, 518
Bigler, W., Leukorrhea, 729
Biglieri, Smallpox and vaccine, 1740
Bill, A. H., Pubiotomy, 1542
Billings, F., General practitioner, *519; Hospital service, 1075; Medical profession and laity, 1151
Billings, F. T., Aneurysm of iliac artery, 583; Duodenal tube, *1774
Bilz, G., Cancer, 1349
Binet, Hemorrhagic pancreatitis, 1491
Bing, R., Transvestitism, 729; Extraparadigm rigidity, 1654
Blügel, Air in vascular system, 1743
Binger, C. A. L., Edema and bicarbonate administration in pneumonia, 653; Determination of lung volume, 1646; Blood in pneumonia, 1727
Binnerts, A., Deafness, 1037
Bircher, E., Injury of semilunar cartilage, 363; Thymus in surgical infections, 1186
Blacher, M. E., Sweating and loss of energy, 730
Blshop, L. F., Heart disease, *547; Fibrillation of auricle, 798
Bitschal, J., Peritonitis with bladder disease, 1350
Bittman, F. R., Measles, 875
Bittorf, Addison's disease, 1819
Bize, Polynucleosis of spinal fluid in epilepsy, 1545
Bjerre, P., Obsessions, 664
Blacher, W., Heart in diphtheria, 1742
Black, S. O., Torsion of appendices epiploicae, 508
Blackburn, C. B., Digestion disorders, 1104
Blackier, G., Menorrhagia, 1103
Blackfan, K. D., Prophylaxis in measles and chickenpox, 958
Blacklock, B., Blackwater fever, 1880
Blahd, M. E., Hemangioma, *1452
Blair, V. P., Ranula, 276
Blamoutier, P., Visceral hemorrhages, 360; Abscess of thorax after thoracentesis, 964; Encephalitis, 1737
Blanchard, Parasites of blood, 283
Blanco Acevedo, E., Cardiac insufficiency, 589
Blanco Soler, C., Gallstones, 1347
Blankenhorn, M. A., Chylous and chyloform ascites, 1875
Blatt, P., Hydronephrosis, 663
Blechnmann, G., Heart murmurs, 359
Bleckwenn, W. J., Tryparsamid, *1497
Blencke, H., Metatarsophalangeal arthritis deformans, 664
Bliss, G. L., Diet and dental caries, 356
Bliss, S. W., Effects of insulin on diabetic dogs, 1270
Bloch, A., Rhinopharyngeal cough, 1183
Bloch, Arthur, Pyelitis vs. hydronephrosis, 1887
Bloch, B., Eczema, 1882
Bloch, C. E., Chronic dyspepsia, 592
Bloch, J. C., End-to-side entero-anastomosis, 1652; Peritonitis, 1737
Bloch, M., Typhoid, 729; Spinal fluid in syphilis, 1815
Bloch, R., Intraspinal anesthesia, 1105
Block, E. B., Epilepsy with megacolon and polymastia, 508
Blond, K., Epithelial cysts, 515
Bloomfield, A. L., Antiseptics and bacterial flora of upper air passages, 1099; Acute tonsillitis, 1728
Bluestone, E. M., Nonmedical clinical assistants in hospitals, 1075; Hospitals and practitioners, 1165
Blum, D. M., Diverticulum, *230
Blum, G., Tyrosin reaction in sputum and leukocyte proteases, 1736
Blum, J., Fissural hemorrhages in chronic aortitis, 1546
Blum, L., Diuretic action of mercurials, 588; Insulin in diabetes, 963; Meningococcemia, 1490
Blümel, K. H., Tuberculosis, 1819
Blumer, G., Jaundice, 1873
Blumgarten, A. S., Endocrinology, 656
Boas, E. P., Exophthalmic goiter, *1683
Boas, H., Wassermann in tuberculous, 970; Syphilis, 1424; Is a positive Wassermann possible in nonsyphilites? 1549
Boas, L., Psychogenic dyspepsia, 67; Hyperacidity and paralytic ulcer, 1275
Bock, A. V., Organic acids in urine with diabetes, 1642
Bockus, H. L., Biliary drainage, 1804
Bodansky, M., Detoxification of cyanids, 1410
Bodon, C., Intracardiac injection of epinephrin, 1415
Bogendorfer, L., Micro-organisms of intestine, 216
Bogert, L. J., Influence of yeast and butter fat on magnesium and phosphorus assimilation, 429
Bohman, G., Phlegmonous enteritis, 1888
v. Bokay, J., Ulcer of urethral orifice, 287
Böker, H., Gastroptosis, 1035
Boland, F. K., Spontaneous hematoma and sarcoma of kidney, 275, 1484; Appendicitis, 1540
Bolk, L., Mongoloid idiocy, 812
Bolognesi, G., Snake bites, 434
Bolt, Spleen and erythrocytes, 443
Bolt, W., Dermoid cyst, 1956
Bonaba, J., Syphilis, 514
Bondi, S., Sounding of duodenum, 218; Constitution and variability, 1818
Bonheim, P., Prolapsed hemorrhoids, 147
Bonn, R., Traumatic extravasation of lymph, 808
Bonnet, M., Calcium chlorid for conservation of catheters, 1653
Bonorino Udaondo, C., Eosinophilia in stomach content, 145; Spinal fluid in neurosyphilis, 590
Boothby, W. M., Basal metabolism standards, 430; Goiter surgery, *891; Heart in goiter, 1725
Boots, R. H., Arthritis of serum sickness, *12; Sodium salicylate in arthritis, 1647
Boquet, A., Sheep-pox, 1813
Borbe, Incarceration of intestine in mesentery, 439
Borchardt, W., D'Herelle's phenomenon, 1656; Bile acids in fluids in icterus, 1885
Borchers, E., Resection of stomach, 362
Borden, C. K. C., Roentgen ray and tonsils, 1411
Bordet, E., Aneurysm of ascending aorta, 1546; Dilation of heart, 1652; Electrocardiograms in cantering rhythm, 1814; Aortitis, 1815
Bordier, H., Roentgen epitheliomas cured by diathermy, 142, 283, 588
Bordon Posse, C., Anemia and purpura, 732; Diabetic acidosis, 1107
Borges, I., Bilharziasis, 1419
Borgherini, A., Encephalitis, 1883
Borrel, Sexual perversions, 1346
Bortagaray, M. H., Malaria, 285
Bortolotti, C., Urine hemolysis coefficient in malignant tumors, 1184
v. Borza, J., Hypertrophy of prostate, 663
Boserup, O., Rhinopharyngeal scleroma, 219
Bost, T. C., Calcification of ovary, *912; Heart massage, 960
Botelho, R., Snake venoms, 1886
Botto, O., Influenza colitis, 1419
Boulau, Radiography after iodized oil injections, 66
Boulanger-Pilet, G., Meningococcus septicemia, 65
Bourde, Celiacgia, 880
Bourges, H., Arthrotrophic, 587
Bouzat, L. G., Syphilis of mamma, 590
Bowditch, H. I., Roentgen ray in pertussis, 1098
Bowen, B. D., Hypothyroidism, 1177
Bowler, J. P., Diseases associated with anemia, 582
Bowman, K. M., Blood chemistry in mental diseases, 873; Metabolism in mental disease, 1340
Boyd, G., Toxemia of burns, 797; Intestinal intoxication, 1029
Boyd, W., Gallbladder absorbs cholesterol, 877
Boyd, W. H., Toxic products produced by streptococcus hemolyticus, 1648
Braasch, W. F., Duplication of kidney pelvis and ureter, 279
Brack, E., Heart failure after operations, 439; Seminal vesicle contents in cadaver, 1820
Brady, L., Mesenteric vascular occlusion, 722
Braeunig, K., Malformation of intestines, 967
Brahme, L., Immobilization of extremities after encephalitis, 1413
Bram, I., Exophthalmic goiter, 1731
Brams, J., Bacteria in preputial secretions, 957; Streptococci in preputial secretions, 957; Balanitis, 1485
Brams, W. A., Postgraduate study abroad, 130
Brancati, R., Peptic ulcers, 437; Fibrosarcoma of tongue, 731
Brandt, Transplantation of gonads, 1820
Brandt, M. L., Insufflation test, *398
Brattström, E., Extrophy of bladder, 364
Braun, A., Dilatation of stomach, 1185
Braun, L., Kidney factor in high blood pressure, 882
Braun, W., Liver atrophy, 733
Bray, H. A., Chronic bronchiectasis, 721; Tuberculosis, *1670
Breitner, B., Thyroid problems, 591; Exophthalmic goiter, 809; Treatment and prevention of goiter, 1886
Brenner, A., Osteomalacia with epilepsy, 808
Bretagne, P., Ocular autoserotherapy, 1183
Brett, P. C., Liquid petrolatum, 1415
Breuer, F., Stagnation in cancer, 517
Breukink, H., "Catharsis-hypnosis" form of psychanalysis in certain psychoses, 1744
Brewer, G. E., Cancer, 960
Bridges, J. R., Intracardiac injection of epinephrin, 1476
Bridré, J., Sheep-pox, 1813
Briggs, A. P., Blood in pregnancy, 800
Brill, N. E., Splenectomy in purpura hemorrhagica, 1875
Brinckmann, A., Tuberculous bronchial glands, 220
Bringmann, K., Surgical import of histologic findings in blood, 1884
Brisotto, P., Adenoids, 661
Brito Foresti, J., Leprosy, 732
Brojowski, Incontinence of urine, 1420
Broca, R., Meningitis with lymphocytosis, 660; Urticaria stopping during measles, 1545
Brocq, L., Affections of skin, 436
Brocq, P., Omentum grafts, 359; Hemorrhagic pancreatitis, 1491

- Broders, A. C., Surgical pathologic observations, ★104
 Brody, S., Milk secretion during lactation, 1269
 Brogden, J. C., Actinomycosis of gastro-intestinal tract, 209
 Brooks, B., Simultaneous ligation of vein and artery, ★1678
 Brooks, H., Drugs in pneumonia, 876; Digitalis toxemia, 1955
 Broun, G. O., Gonococcus, 875; Blood during exercise, 1100; Exercise stimulates hematopoietic tissues, 1100
 Brown, E. B., Preparation of nucleic acid from tubercle bacillus, 429
 Brown, E. W., Urine in nephritis, 1097; Organisms found in tuberculous children, 1097
 Brown, G. E., Anemia of nephritis, 207; Blood volume in obesity, 1728; Toxic nephritis in pyloric obstruction, 1728; Capillaries in cardio-vascular-renal disease, 1729
 Brown, G. T., Asthma, ★249
 Brown, G. V., Urinary tract of fetuses and infants, 1877
 Brown, H. H., Prophylactic serum in appendicitis, 1488
 Brown, L., Rest in tuberculosis, 428; Reaction of tuberculous to glycerin bouillon and tuberculin, 1173
 Brown, O. H., Apical tuberculosis, 1877
 Brown, P. K., Angina pectoris, 1029, ★1692
 Brown, P. W., Stomach trouble and syphilis, 135
 Brown, S., Jr., Health of schoolchildren, ★1351
 Brown, T. A., Perforation of esophagus, 212
 Brown, T. K., Erythrocytes in pneumonia, 356
 Brown, T. R., Hemoclastic shock as test of liver function, 1729
 Brown, W. H., Endocrines and tumors, 1954
 Browning, C. H., Virulence of tubercle bacillus, 1544
 Bruck, W., Syphilis, 364
 Brulé, Bilirubinemia in icterus, 143; Liver and gallbladder disease, 1491
 Brunin, Regional anesthesia, 804
 Brüning, F., Periarterial sympathectomy, 216; Trophic function of sympathetic nerves, 968
 Brunner, A., Tuberculosis, 662
 Brunthaler, Immunization against rheumatism, 440
 Brusa, P., Rubella, 214
 Brush, F., Occupational therapy, 1806
 Bryant, J., Convalescence, 580
 Buchheim, L., Roentgen examination of alimentary tract, 362
 Buckhardt, H., Testis grafting, 1275
 Buckman, T. E., Chlorid content of red corpuscles and their percentage volume, 1644; Polycythemia, 1954
 Buckstein, J., Intestinal digestion of connective tissue, 207; Intragastric determination of acidity with celluloid capsule, ★551; Celluloid capsule to determine motility of gastro-intestinal tract, ★621
 Buerger, L., Bladder cancer, 1486; Embolism of large arteries, 1733
 Bufalini, M., Lipomatosis of neck, 284
 Bufnoir, M., Lesions simulating Pott's disease, 1181
 Bujadoux, Tick paralysis, 588
 Bull, C. G., Diphtheria bacilli, 1483
 Bull, L. B., Habronemic conjunctivitis, 142
 Bull, P., Fracture of leg, 220; Tuberculosis, 281; Myositis, 444; Kidney tumor, 1350; Injury from indelible pencil, 1350
 Bullock, F. D., Chondrorhabdomyosarcoma, 875
 Bullowa, J. G. M., Diphtheria, ★240
 Bulmer, F. M. R., Fate of arsenic after injection, 798
 Bumm, E., Puerperal infection, 968; Alexander-Adams operation and ventrifixation, 1423
 Burch, L. E., Autotransfusion, 275
 Burckhard, G., Pains in lumbar region, 1037
 Burckhardt, H., Bile peritonitis, 1186
 Burdick, A. L., Labor and cesarean section, 353
 Burger, K., Diagnosis of pregnancy, 1111
 Burhans, C. W., Pachymeningitis, ★604
 Burket, W. C., Intestinal anastomosis, 63
 Burmeister, J., Inactivation of protoplasm, 516
 Burnam, C., Cancer, ★1669
 Burns, J. W., Chronic endocervicitis, 1344
 Burns, R., Jr., Encephalitis, ★1591
 Burrell, L. S. T., Artificial pneumothorax, 1273
 Buscaino, V. M., Dysthyroidism, anaphylaxis and epilepsy, 806
 Buschke, A., Spirochetes in recurrent infection, 440; Spirochetes in brain in recurrent, 515; Gonococcus vaccine, 734
 Buschmann, Vagotonic leukopenia in neuroses, 1741
 Bushnell, G. E., Breath sounds, ★895
 Busman, G. J., Malignant endotheliomas, 136
 Bussy, Enucleation in panophthalmia, 1183; Roentgen-ray and affections of eye, 1418
 Butts, D. C. A., Autolysate-precipitin reaction in typhoid, 1027
- C
 Caboche, H., Polyps of nasal fossa, 1183
 Cabot, V. S., Carcinoma, ★909
 Cadenat, F., Crooked limbs, 1652
 Cademaule, P., Physical culture, 587
 Cadwalader, W. B., Multiple sclerosis, 1339
 Cahen, J., Displacement of cervical vertebrae, 65
 Caille, A., Left-handedness, 1729
 Cailliau, Roger's disease, 1491
 Caillods, Focus of myositis with necrobiosis, 1491
 Cain, Tuberculosis, 1180
 Cajori, F. A., Sweat and response of body to external heat, 1727
 Caleagno, B. N., Echinococcus disease, 286
 Caldwell, R., Surgery of gallbladder, 206
 Calicó, J., Syphilitic asthma, 146
 Callander C. L., Arterial decortication, 654
 Calligaris, Sthenic function and pseudoparalytic myasthenia, 284
 Calmens, A., Urine retention, 145
 Calmette, A., Pasteur's centenary, 587
 Calvé, J., Tuberculous spondylitis, 512
 Camera, U., Congenital vaginal anus, 144; Hypospadias, 436; Exstrophy of bladder, 806
 Cameron, H. C., Meningeal hemorrhage, 1103
 Cameron, P. D., Undescribed bone in tarsus, 877
 Cammidge, P. J., Diabetes, 282
 Campbell, H. B., Cod liver oil and tubercle bacillus, 428
 Campbell, J. A., Heating of tissues, 1544; Artificial pneumothorax, 1880
 Campbell, W. R., Insulin in diabetes, 510; Insulin hypoglycemia and carbohydrate equivalent of insulin in man, 1641
 Campos, E., Ptosis of eyelid, 514
 Camurati, M., Hereditary osteitis, 513
 Camus, J., Extracortical regulating and psychic centers, 1346
 Canavan, M. M., Lacrimal gland in mental diseases, 278
 Cancik, J., Bacteriophagy in pyocyanus cultures, 970
 Canelli, A. F., Histology of liver, 1184
 Cange, A., Entropion, 1183
 Cannan, R. K., Blood sugar metabolism of salivary glands, 727
 Cannon, H. C., Vitamin B, ★302
 Cannon, W. B., Animal experimentation, 505
 Cantelli, O., Doll's eye sign, 1816
 Cantonnet, Writing for blind, 1183
 Canuyt, G., Abscess of nasal septum, 1182
 Capon, N. B., Intracranial birth trauma, 1244
 Capp, C. S., Hemorrhage and pulmonary ventilation, 354
 Capps, J. A., Localization of pain in peritoneum, 207; Pneumonia, ★750; Arsenic in endocarditis, 798; Kyes' chicken serum in lobar pneumonia, 1643
 Capuani, G., Oxygen to start a pneumothorax, 144
 Carbonell, M. V., Sterilization of grain bags, 1107
 Card, T. A., Restricted diet and sexual life, 1409
 Carelli, H. H., Pneumoperitoneum, 1805
 Carleton, D., Myositis ossificans traumatica, 1174
 Carlson, G. W., Tabes, ★1844
 Carniol, Motility of stomach, 1180; Atropin test and orthostatic tachycardia, 1813; Sleep and motility of stomach, 1882
 Carnot, P., Visceral hemorrhages, 360; Abscess of thorax, 964; Encephalitis, 1737
 Carr, J. W., Dropsy, 64
 Carrasco, E., Basal metabolism, 1545
 Carrillo, M. N., Blocking celiac plexus, 1033
 Carrión, A. L., Dermatomyces, 211
 Carslaw, J., Affections of spleen, 281
 Carter, E. P., Blood in tachycardia, 1410
 Carter, H. G., Tuberculosis among negroes, 721
 Carter, J. B., Ethylene, ★765, ★1440; Ethylene and acetylene, 1476
 Casariego, A. G., Renal crepitation, 1653
 Casaubón, A., Pneumococcus infection, 881; Anemia, 1184; Inherited syphilis, 1739; Suppuration in urinary passages, 1740
 Case, J. T., Postoperative ileus, 134; Pericarditis calcuosa, ★236
 Cash, S. L., Gastric and duodenal ulcers, 1732
 Casilli, A. R., Flocculation test, ★1068
 Caspari, J., Antianaphylactic stage, 1818
 Cassini, V., Intestinal putrefaction, 881
 Cassoute, Organotherapeutic action of milk, 512
 Castana, V., Rectal treatment with arsphenamin, 1816
 Castaño, C. A., Celiac and hypogastric neuroses, 661; Hemorrhagic uterine disease, 807; Sterility, 1817
 Castellano, T., Endocarditis, 144
 Castellvi, J. C., Complement fixation and vaccine therapy, 661
 Castex, M. R., Hydatid cyst of liver, 286; Syphilis of mamma, 590
 Castorina, G., Leishmaniasis, 144, 589
 de Castro Freire, L., Sachs-Georgi reaction in syphilis, 1419
 Catalano, O., Spinal fluid in neurosyphilis, 590
 Cathcart, E. P., Postarsphenamin dermatitis, 505
 Cattell, M., Action of ether on circulation in shock, 722
 Caussade, Sputum examination, 963
 Cautley, E., Hodgkin's disease, 432
 Cavassa, N. E., Corn liquor, 1419
 Cave, H. W., Suppurative pleurisy, 1342
 Caylor, H. D., Exophthalmic goiter, 584
 Centanaro, D. E., Ovarian tumors, 514
 Chabanier, H., Retention of blood nitrogen, 283
 Chabrol, E., Duodenal intubation, 587; Icterus, 1490; Fissural hemorrhages in aortitis simulating gastroduodenal ulcer, 1546
 Chace, A. F., Reflex anuria, ★1043
 Chamberlain, H. G., Atropin and gastric function, 207; Olive oil and gastric function, 655
 Chambers, W. H., Hydrogen ion concentration of blood in carcinoma, 1175
 Chans, A. O., Measles, 285
 Charlton, P. H., Sarcoma of uterus, 1806
 Charron, L., Toxemia in pregnancy, 879
 Chatin, P., Otitis, 283
 Chaton, Focus of myositis with necrobiosis, 1491
 Chauffard, A., Hepatic insufficiency, 512
 Chavannaz, G., To aid percussion in diagnosis of ascites, 435
 Chelnisse, L., Anthrax, 512; Donndorf's tuberculin treatment, 1738
 Chelmonski, A., Psychic needs of sick, 1888
 Cheplin, H. A., B. acidophilus milk, ★1896
 Chesney, A. M., Production of toxic substances by pneumococci, 209
 Chevalley, M., Diphtheria, 1183
 Chevallier, Inhalations of thorium, 1417
 Chevreil, Spinal meningitis, 728
 Chiappori, R., Cystic spinal meningitis, 145; Hydatid cyst in brain, 1419
 Chiari, O. M., No tampons in incision wounds, 69; Peritonitis, 1109
 Chlasserini, A., Hydrocephalus, 144
 Chilcote, R. C., Anaphylaxis, ★303; Streptococcus hemolyticus, 1648
 Child, F. S., Jr., Traumatic pneumothorax, ★1452
 Choay, Pituitary extracts, 1105
 Chomé, E., Middle ear infections, 435
 Chou, Y., Food requirement of children, 442
 Christensen, G. E., Wassermann, ★1118
 Christiansen, J., Test for sugar, 444
 Christiansen, V., Trauma of nerves, 150
 Christie, A. C., Anomaly of liver, 59
 Christie, C. D., Orthopnea, 655; Controlling diabetics in outpatient department, 1543
 Christophe, L., Bone grafting, 1180
 Christopher, F., Sympathectomy, ★173
 Christophers, S. R., Smallpox vaccination, 1179
 Chun, J. W. H., Pneumonic plague, 878
 Churchman, J. W., Bactericidal power of acid fuchsin, 724; Bacteriostasis, 1647
 Ciaccia, S., Contracture of fingers, 513
 Ciaprinì, G., Spinal anesthesia, 965
 Cignozzi, O., Purulent pleurisy, 284; Echinococcus of spleen, 436; Malarial splenomegaly, 1492
 Cinquemani, F., Asepsis in gastro-intestinal operations, 1106
 Cipra, A., Internal secretion and respiratory exchange, 1270
 Cirera Salse, L., Diathermia, 286
 Citron, H., Clinical chemical methods, 734
 Clark, A. J., Vitamin content of certain proprietaries, 510; "Colloidal" preparations of metals, 961; Protein therapy, 1031
 Clark, J. G., Cholecystectomy, 1342
 Clark, M. H., Fetal monstrosity, 1734
 Clark, O., Gummatous lymphomas, 731
 Clarke, J. A., Jr., Hypersensitiveness, ★11
 Clarke, R. M., Constipation, 801
 Clarke, W. C., Medical education, ★1195
 Claude, Endocarditis, 513; Sexual perversions, 1346
 Claveaux, E., Acidosis without glycosuria, 361
 Clawson, B. J., Carcinoma, ★909
 Claytor, T. A., Rupture of heart, ★1371
 Cleland, J. B., Tuberculoma of liver, 1104
 Clemens, J. R., Melaniferous leukocytes in malaria, 716
 Clerc, A., Cryptogenous septicemia, 143; Epinephrin and alkaloids of cinchona, 1180; Auricular fibrillation, 1814
 Clerf, L. H., Lye preparations, ★1600
 Cloos, W., Perforation of gastric ulcer, 363
 Clough, H. D., Extraction of insulin, 1729; Perfused insulin and blood sugar, 1729
 Cluzet, Inhalations of thorium, 1417
 Coates, V., Intestinal lesions precede anemia, 1735
 Coffen, T. H., Tuberculous involvement of endocrine glands, 1268
 Coffey, R. C., Abdominal pain, 134
 Coffey, W. B., Angina pectoris, 1029
 Cohen, H., Gonorrhea, ★1052
 Cohen, I., Fat necrosis of breast, ★770
 Cohen, M., Torsion of uterine adnexa, ★382
 Cohen, S. S., Myelogenous leukemia, 1802
 Cohn, A. E., Myocardial involvement in rheumatic fever, 1644
 Cohn, H. M., Liver function test, 738
 Cole, W., Barbitol poisoning, ★373
 Colebrook, L., Therapeutic inoculation, 962, 1273, 1490
 Coleman, G. E., Bacillus botulinus, 506, 507
 Coleman, G. H., Localization of pain sense in peritoneum, 207; Pneumonia, ★750
 Coleman, W., Association for protection of constitutional rights, 1536; Chronic valvular disease, 1723
 Coley, S. W., Roentgen-ray examinations of gastro-intestinal tract, 1407
 Collazo, J. A., Assimilation in avitaminosis and hunger, 1492
 Collet, F. J., Maxillary sinusitis, 659
 Collins, F. K., Resection of intestine, 354
 Colmers, F., Spastic ileus in influenza, 735
 Colombet, Kidney tests and salt in diet, 1032

- Colston, J. A. C., Traumatic urethral stricture, *307
- Colwell, A. H., Anemia, 582
- Comby, J., Hereditary syphilis, 143; Paralysis due to pain, 1181
- Commandeur, Home for nursing mothers, 1417
- Connell, R. E. W., Retinal hemorrhage in Black-water fever, 358
- Conner, L. A., Pneumonia, 135
- Conner, M. E., Yellow fever, 1409
- Conover, J. R., Autolysate-precipitin reaction in typhoid, 1027
- Conrad, C. E., Exanthem in infants, 1178
- Conroy, F. C., Convalescent serum in measles and chickenpox, 958
- Conroy, M. J., Islands of Langerhans in diabetes, 1270
- Coogler, C. P., Malaria, 1650
- Cook, H. W., Visual albuminuria guide, 582
- Cooke, C. O., Postoperative pulmonary complications, 559
- Cooke, J. V., Syphilis, 60
- Cooke, W. E., Lymphatic leukemia, 962
- Coombs, H. C., Blood pressure in cerebral anemia, 1409
- Coons, J. J., Protein sensitization and focal infection, 357
- Cooper, A. T., Carbon tetrachloride in hookworm disease, 957
- Cooper, C. M., Focal infection and seminal vesicles, 1791
- Cooper, J. R., Fibroma of stomach, *549
- Corbeille, C., Urinary tract of fetuses and infants, 1877
- Corbus, B. C., Syphilis, 1332; Diathermy in tumors of urinary tract, 1486
- Corbus, B. R., Botulism, 1805
- Cordier, P., Movable kidney, 1882
- Corica, Roentgen rays and sun in tuberculosis, 1883
- Corley, R. C., Uric acid metabolism, 1543
- Cornell, E. L., Metabolism in pregnancy, 583
- Corper, H. J., Tubercle bacilli, 1173
- Correa, J. de la C., Endocrine factor in disease of ear, nose and throat, 807
- Corson, E. F., Pruritus ani, 1485; Rhus, 1951
- Corvetto, A., Parasitic pulmonary diseases, 807
- Costa, S., Vaccines sterilized with formaldehyde, 143
- da Costa, S. M., Hemangiomas, 1112; Syphilitic disease of skin, 1112
- Costa Cruz, Bacteriophagy, 966
- Costain, W. A., Peritonitis, 138; Lymphaticostomy in peritonitis, 1343
- Costantini, Polycystic disease of liver, 1181
- Cottalorda, J., Palpation of hip through rectum, 804
- Cotte, G., Regional anesthesia of uterus, 880
- Cottin, Echinococcus disease, 1180
- Coulaud, E., Scleroderma and pituitary, 143; Scleroderma and goiter, 143
- Coulthard, H. L., Complement fixation in tuberculosis, 1544
- Coury, Sympathicotonia in tachycardia and melanoderma, 359
- Coutard, H., Irradiation of ovary and subsequent fecundation, 1274
- Coventry, W. A., Cholecystectomy, 133
- Cowan, J., Valvular disease, 803
- Coward, K. H., Vitamin content of certain proprietary, 510
- Cowell, S. J., Nonspecific desensitization, 357
- Cowen, M., Bile pigments in blood, 282
- Cowen, S. O., Hemolytic splenomegaly, 64
- Cowle, D. M., Method for feeding infants, 356; Insulin in diabetes, 1641
- Cox, A. N., Band dulness in chest wounds, 1488
- Cox, G. L., Sanatorium or home treatment for tuberculosis, 726
- Cozzolino, O., Enuresis, 1418
- Craik, R., Lead poisoning, 658
- Cramer, A., Anemia due to bothrioccephalus, 65
- Cramer, W., Vitamin underfeeding, 357
- Crance, A. M., Hematuria, 1177
- Crane, M. M., Temporary closure of renal artery and urine, 1729
- Crawford, R. H., Polycystic kidney, 960
- Crawford, S., Napkin eruption, 280
- Crawford, W. W., Ectopic pregnancy, *913
- Creekmur, F., Intestinal flora on diet deficient in vitamin A, 431; Otosclerosis, *681
- de Crespligny, C. T., Auricular fibrillation; death after quinidin, 1104; Tuberculoma of liver, 1104
- Creyx, M., Enlarged spleen in heart disease, 1737
- Cribbier, Sputum examination, 963
- Crile, D. W., Epinephrin in cardiac failure, 63
- Crile, G. W., Cancer of colon, 357; Carcinoma of jaws, 959
- di Cristina, G., Scarlet fever, 806
- Crohn, W. H., Syphilis of suprarenals, 217
- Crola, R. O., Intraperitoneal infusion, 514
- Croll, H. M., Sugar in urine, 581
- Cromarty, R. P., Surgery of duodenal membranes, 208
- Crookshank, P. G., Encephalitis, 1473
- Crosbie, A. H., Ureteral kinks, 1731
- Crothers, B., Injury of spinal cord cause of fetal death, 799
- Crouter, C. Y., Arthritis, *289, 1270; Sweat and response of body to external heat, 1727
- Crowe, S. J., Growths of nasopharynx, 1267
- Crowell, B. C., Trypanosoma cruzi, *910
- Cruchet, R., Spasmodic torticollis, 1346; Blood transfusion from animals to men, 1653
- Cruikshank, E. W. H., Tetany, 211
- Crulckshank, J. N., Hemorrhages of new-born, 1735
- Csépál, Epinephrin sensibility in thyroid diseases, 1884
- Cullen, G. E., Respiratory center in acidosis, 1727
- Cullen, T. S., Vaginal operation for prolapse, 136; Pillow at foot of bed after abdominal operations, *1521
- Cumming, H. S., Report of conference on education of sanitarians and future of the public health in United States, 1246
- Currier, F. P., Botulism, 1805
- Curschmann, H., Heterochromia of iris, 68; Paradoxical pulse, 217; Polycythemia rubra, 664; Undernutrition and endocrine disturbances, 664; Migraine, 734
- Curtis, A. H., Infections of uterus, *161; Sterility, *393; Residual urine, *1126
- Curtis, F., Pyloric cancer, 1180
- Curtis, M. E., Otiobiosis, *1053
- Curtis, M. R., Chondrorhabdomyosarcoma, 875
- Curtis, W. L., Otiobiosis, *1053
- Cushing, H., Surgical end-results, 1342
- Cuthbert, C. F., Alcaptonuria, 1415
- Cutler, G. D., Towel shoulder-cap, *471
- Cutter, I. S., The Dean's problems, 954; Art of medicine, 1010
- Cutter, R. K., Bacillary dysentery, *1674
- Cutter, W. D., Shall a fifth or intern year be required for the M.D. degree? 952
- Cutting, R. A., Quinin and sugar mobilization, 139
- Czapski, E., Gymnastic exercises for infants, 1493
- Czermak, H., Goiter, 1109; Influenza, 1109
- v. Czlrer, L., Breast cancer, 810
- Czonicz, G., Uric acid in blood in nephritis, 216
- D
- d'Agata, G., Experimental tumors, 730; Cineplastic amputation, 1134; Cancer of rectum, 1274
- Dahl-Iversen, E., Ileus and malformation of intestines, 1182
- Dahlstedt, H., Cauterization of pleural adhesions, 1888
- Dajceva, K., Fever, 287
- Daland, E. M., Cancer of lip, 63; Keloids, 584
- Dalché, Menstruation, 589
- Dale, H. H., Action of pure ether, 1103
- Dalziel, K., Affections of spleen, 281
- Damaye, H., Melancholia with asthenia and melanoderma, 1814
- Dambrin, C., Syphilis of long bones, 1345
- Daniel, A., Hemotherapy in scarlet fever, 1738
- Daniel, G., Pyelitis, 438
- Daniéopolu, Motility of stomach, 1180; Angina pectoris, 1490; Atropin test and orthostatic tachycardia, 1813; Sleep and motility of stomach, 1882
- Dantin, Uterine inversion, 435
- Darányi, J. V., Colloids of blood plasma, 148
- Darling, I. A., Phenobarbital in epilepsy, 1541
- Darling, S. T., Malaria, *740; Oriental sore, 1260
- Dartigues, L., Fibroma of uterus, 1815
- Dauwe, F., Neurasthenia, 804
- David, V. C., Hernias of cecum and appendix, 134
- Davidoff, L. M., Pyelographic mediums, *168
- Davidson, A. H., Emphysema and labor, 1881
- Davidson, H. J., Eclampsia, 960
- Davies, I. J., Bronchiectasis, 1103
- Davis, C. B., Ventricleulography in brain tumor, 874
- Davis, C. H., Weight in pregnancy, *249
- Davis, D. J., Acid fast actinomycete, 505; Bacteria in preputial secretions, 957
- Davis, G. E., Bacteriostatic action of dyes on streptococcus viridans, 1413
- Davis, L. E., Paratrigenital lesions, *380; Sensibility of face, 1340
- Davis, N. C., Calcium chloride and botulism, 1647
- Dawson, J. B., Ring carcinoma of small intestine; carcinoma of prolapsed stomach, 1104
- Day, R. V., Perirenal tumors, *840
- Dayton, N. A., Osteomalacia, 355
- Deaderick, W. H., Syphilis of suprarenals, 955
- Deakin, V. R., Functional liver tests, 1342
- Deaver, J. B., Chronic appendicitis, 722
- Debray, E., Law on social adaptation of mentally backward, 435
- Debré, R., Preventive serotherapy, 1652; Prevention of tuberculosis, 1814
- De Castro, A. B., Accessory mouth, 1958
- Deelman, H. T., Tar cancers, 1744
- Degrals, P., Beta rays of radium, 1653
- Dehan, J., Fibroma praevia, 1418
- De Jong, O., Salt is cause of bakers' dermatitis, 1812
- Delagendière, H., Osteoperiosteal grafts, 434
- Delannoy, E., Goiter with metastasis, 804; Intestinal invagination, 1882
- Delbet, P., Pyoculture, 213; Pasteur's centenary, 587; Incontinence of urine, 578, 1490
- Delezenne, Pasteur's centenary, 587
- Della Cloppa, A., Meningitis, 881
- Deluca, F. A., Glycemia in pregnant, 967
- Demaria, E. B., Retrobulbar optic neuritis, 1420
- Dembo, L. H., Encephalitis after scarlet fever, 797
- Deming, C. L., Sarcoma of kidney, *902
- Demuth, Stomach function tests, 442
- Deniker, M., Hydatid cysts, 1346
- Denis, W., Kidney and excretion of inorganic salts, 1175; Inorganic constituents of blood in nephritis, 1175
- Denk, Irreducible hernia, 1186; Lumbar encephalography, 1743
- Dennie, C. C., Arspenamin dermatitis, 505
- Dennis, W. A., Hypertrophy of prostate, 582
- Depisch, Chemistry of spinal fluid, 1494
- Deppe, L., Costal and abdominal breathing, 148
- Deruby, K. G., Disinfecting action of quinin, 884; Diphtheria toxin, 1744
- Dersch, R., Staining of organisms, *460
- Descarpentries, M., Injections of laked own blood, 1180
- Desgrez, A., Diet in diabetes, 212; Diabetic acidosis and levulose, 805
- Desmarest, E., Blood supply to sutured portion of intestine, 964
- Desogus, V., Pituitary gland in cerebral lesions, 806
- Desqueyroux, J., Amino-acids in blood, 1180
- Destéfano, F., Lymphogranulomatosis, 1547
- Destéfano, J., Menstrual hemoptysis, 807; Edema, 807
- Deusch, G., Iodids and blood viscosity, 216; Thyrogenous constipation, 1422
- Deutschländer, C., Luxation of hip, 146
- Dew, H. R., Schistosomiasis, 1031
- Dewes, H., Sugar in blood during anesthesia, 362
- Dhalluin, A., Goiter with metastasis, 804; Dislocation of spine, 1345
- D'Illooghe, G., Protein therapy in genito-urinary diseases, 805
- Dickinson, A. M., Intestinal obstruction after appendicitis, 1102
- Dickinson, G. K., Cervix a focal point of infection, 1173
- Dide, Bilateral posterior pontine syndrome, 435
- Dienstfertig, A., Outline of stomach in roentgenography, 1276
- Dieterich, Suture of nerves, 1742
- Dietl, C., Gynecologic diagnosis, 364
- Dietrich, H. A., Blood changes in cancer, 217; Ileus and pregnancy, 735
- Dlmmitt, P. S., Tartar emetic and nonprotein nitrogen of blood, 277
- Dinguzli, Mohammedan prayers and hygiene, 963; Hygienic reforms among Mohammedans, 1490
- Dittel, L. G., Test for patency of tubes, 735
- Dittrich, B., Vaginal operation for prolapse, 591
- Dixon, M., Purpura, 511
- Dixon, W. E., Pituitary secretion, 1811
- Djenab, K., Secretin, 511
- Dobrotowski, Bladder tumors, 1887
- Dodds, E. C., Effect of meals on urinary constituents, 1030
- Dodson, J. M., Preventive medicine, *1
- Doisy, E. A., Migration of hydrochloric acid, 429
- Dolan, T., Fatal phenol absorption through skin, 212
- Domagk, C., Pituitary tumor and diabetes insipidus, 1035
- Donaldson, B., Digitalis toxemia, 1955
- Douay, Tubal and angular pregnancy, 1814
- Douglas, E., Arspenamin and blood coagulability, 1878
- Douglas, S. R., Isolation of diphtheria bacillus, 357
- Douglass, H. L., Breast tumors, *445
- Doull, J. A., Pharyngeal diphtheria, *1375
- Dournashkin, R. L., Gonorrhea, *1052
- Dowman, C. E., Epinephrin reaction, *1069; Traumatic cysts of brain, 1540
- Downes, W. A., Chronic obstructive jaundice, 205, *377
- Doyle, D. G., Bacillus diphtheriae, *1675
- Doyle, J. B., Glossopharyngeal neuralgia, 580
- Draganescu, Bulbar hemisyndrome, 1180
- Dragstedt, C. A., Intestinal antiseptics, 210
- Dragstedt, L. R., Intestinal antiseptics, 210
- Draper, W. F., Report of Public Health Service activities, 1246
- Drevermann, P., Defects in dura and skull, 438
- Dreyer, N. B., Pulse wave velocity, 354
- Drossbach, Action of caffeine on blood viscosity and corpuscles, 1885
- Drucker, P., Hemoglobin and corpuscle volume, 70, 1037
- Drummond, T., Asthma and suprarenal inadequacy, 1031
- Druskin, S. J., Determination of calcium, magnesium, potassium and sodium in blood, 1100
- Drysdale, H. H., Parkinson's disease and encephalitis, 140
- Duarte Salcedo, R., Congenital spastic paralysis, 1106
- Dubost, R., Prophylaxis of tuberculosis, 359
- Duboucher, Hematoma of spleen, 512; Polycystic disease of liver, 1181
- Dubovsky, B. J., Bacillus botulinus, 506, 507; Isolation of bacillus botulinus, 506; Bacillus tetani, 507

- Du Bray, E. S., Death following thoracocentesis, 1339
- Dudley, H. W., Pituitary gland, 1341
- Ducschner, A. H., Tuberculosis, *1670
- Dufour, H., Shock, fixation abscess and vaccine therapy in infectious diseases, 729
- Duhot, Sugar in blood and spinal fluid, 964
- Duke, W. W., Caffein, *998; Food as cause of bladder pain, 1730; Urticaria, *1835; Anemia, 1957
- Duncan, E. A., Lung examination, *1213
- Dunham, H. G., Infantile paralysis, *224
- Dunham, J. D., Carcinoma of stomach, *550
- Dunlop, J., Use of index finger for thumb, 724
- Dunn, A. D., Carbon dioxide and oxygen in stomach gas, 651
- Dunn, J. R., Optic neuropathies, *1113
- Dunn, J. S., Arteriosclerotic kidney and interstitial nephritis, 211
- Dupasquier, Sporotrichoid tuberculous "gumma," 1882
- Dupouy, R., Hemorrhagic syndrome in encephalitis, 1736
- Durand, Nontuberculous interlobar pleurisy in tuberculous, 879
- Durupt, Wassermann, 588
- Dutheillet de Lamothe, G., Migraine and affections of sinus, 1183
- Düttmann, E., Superiority of sugar over salt solutions for infusion, 1185
- Duttman, G., Kidney function with hypertrophied prostate, 1185
- Dutton, L. O., Appendicitis, 1808
- Dutton, W. F., Inside story of dope, 1475
- Duval, Roentgenography of bile passages, 878
- Duvoir, Benzene and benzoin intoxication, 213
- Duzár, J., Instability of colloids in infants' serum, 1109
- E**
- Eadie, G. S., Diurnal variation in blood sugar, 1027; Effect of insulin on glucose hyperglycemia, 1729
- East, C. F. T., Pneumococcal influenza, 141; Transmission of syphilis, 659
- Eastman, J. R., Abdominal abscesses, *833
- Eastwood, E. H., Oxyuris vermicularis in appendix, 1031
- Ebaugh, F. G., Sequelae of encephalitis, 797
- Echols, G. L., Extramural psychiatry, 1540
- Ecker, E. E., Blood platelet count, *621
- Eckman, R. S., Protein value of peanut flour, 1175
- Eckstein, A., Irradiation with quartz lamp, 1655
- Eckstein, F., Mosquitoes and malaria, 1494
- Eddy, W. H., Protein value of peanut flour, 1175
- Edelstein, Stomach function tests, 442
- Ederer, S., Chemistry of brain in dystrophy, 1110
- Edington, G. H., Bone fractures, 281; Polydactylism of foot, 726
- Edler, C. F., Colloidal silver chlorid as germicide, 876
- Edmonds, W., Pneumonia from inhalation of zinc stearate, *105
- Edmunds, C. W., Botulism, 1875
- Edwards, A. C., Folin-Wu blood sugar method, 1100
- Edwards, H. R., Tuberculosis, 584
- Edwards, H. T., Chlorid content of red corpuscles and their percentage volume, 1644
- Edye, B. T., Cystadenoma of retroperitoneal origin, 434
- Egdahl, A., Syphilis of lung, 429
- Ege, R., Gastric acidity, 970
- Egerer-Seham, G., Physiology of exercise, 873
- Ehrlich, F., Constriction of afferent leg between gastro-enterostomy and entero-anastomosis, 286
- Ehrström, R., Polyarthritides and heart disease, 1496
- Eidene, R., Fatalities with local anesthesia, 1108
- Eiselsberg, A., Reconstruction of jaw and chin, 732
- Elsendath, D. N., Pyelography in abdominal diagnosis, 134
- Eisenstädt, H., Hemoclastic crisis, 517
- Eising, E. H., Sarcoma in bone, *1429
- Eisler, F., Sounding of duodenum, 218
- Eismayer, G., Malformation of uterus and kidney, 810
- Eitel, J., Encephalography, 882
- Ekehorn, G., Exposure of kidney, 1887
- Elders, C., Anemia, 443
- Eliassow, W., Inulin in diabetes, 147; Carbohydrates and blood sugar, 516
- Elischer, F., Stenosis of pylorus, 1036
- Elkeles, G., Pneumonia and influenza, 364
- Ellis, A. W. M., Retinitis, 1812
- Elsberg, C. A., Experimental convulsions, 1878
- Elschnig, A., Refraction in diabetes, 968
- Elschnig, H. H., Therapeutic akinesia in blepharospasm, 731
- Elwyn, H., Diffuse glomerulonephritis, 1339
- Emanuel, J. G., Dilatation of left auricle, 1415
- Embrey, H., Antiscorbutic vitamin in oriental fruits and vegetables, 958
- Emerson, C. P., Moral qualifications of medical student, 953; Danger of stereotyped curriculum, 1009; Pneumothorax, 1028
- Emerson, H., Death rate of physicians, 343; Protection of health in boarding schools, *1310; Medical examinations, *1376
- Emerson, M. L., Epigastric tug, 1807
- Emerson, W. R. P., Nutrition and growth, 355
- Emery, E. S., Jr., Blood in myxedema, 1805
- Emile-Weil, P., Artificial pneumothorax in pulmonary gangrene, 213; Suffocating pneumothorax, 1490; Pseudohemophilia, 1546
- Emrys-Roberts, E., Cell degeneration, 1031
- Enderlen, Goiter, 438; Ulcer of stomach, 441
- Endtz, A., Epilepsy with schizophrenia, 1186
- Enfield, C. D., Roentgenologist's report, *999
- Engel, C. S., Cancer and nerve tissue, 218
- Engel, D., Itching of ears in pyrosis, 147; Treatment of tumors, 1349
- Engelson, H., Bronchial sprochetosis, 444
- Engländer, M., Sodium chlorid, 1035
- Erb, K. H., Appendix in hernia on left side, 1186
- Erckenbrecht, H., Postoperative peptic ulcer, 363
- Erdmann, J. F., Tumors of breast, 1173
- Eriksen, S., Experimental botulism, 430
- Erkes, F., Benign gastric tumors, 1110
- Erlacher, P., Prognosis in poliomyelitic paralysis of muscles, 364
- Ernberg, H., Butter flour pap, 592
- Esau, Emphyema, 1276; Diseases of abdomen in and after influenza, 1657
- Escat, E., Labyrinth deafness from arteriosclerosis, 1183
- Eschbach, Amebic hepatitis, 65
- Escomel, E., Polymorphonuclear leukocytes in tuberculous sputum, 1419
- Escudero, P., Pilocarpin and nervous system, 1807
- Eskuchen, K., Examination of spinal fluid, 148
- Essen, Carbon dioxide tension of alveolar air and blood chlorids, 1495
- Esser, J. F. S., Autoplastics of bearded region, 285
- Estella y B. de Castro, J., Prescurvy stage, 589
- Esty, J. R., Heat resistance of bacillus botulinus spores, 507
- Etcheverry Boneo, F., Tuberculosis and pregnancy, 967
- Eustis, A., Gallbladder disease and diabetes, 957
- Evans, E., Inversion of uterus, 133
- Evans, F. A., Pernicious anemia, 582; Modification of Folin and Wu blood sugar determination, 1727
- Evans, G., Arteriosclerosis, 1272, 1415
- Eversole, H. O., Aid for Russian physicians, 1475
- Ewart, G. A., Intussusception from sigmoid cancer, 1734
- Exalto, J., Intracardiac injection of epinephrin, 1424
- Exton, W. G., Protein test, *529
- Eyerly, T. L., Diverticulum of bladder, 870
- Eyermann, C. H., Bronchial asthma, *1039
- Eyster, J. A. E., Roentgen ray in diagnosis of heart disease, 1724; Early diagnosis of heart lesions, 1731
- Eyzaguirre, R., Breast feeding, 1033
- F**
- Faber, E. E., Obesity with arrhythmia, 518; Obesity of endogenous and exogenous origin, 1496
- Faber, H. K., Leishmaniasis, *93
- Faber, K., Pernicious anemia, 592
- Fabritius, Urethral gonorrhea, 883
- Fahr, G. E., Hypertension heart, *981
- Fahr, T., Eclampsia, 216
- Fairbank, H. A. T., Separate center of ossification for tip of internal malleolus, 877
- Falcone, R., Retractable mesenteritis, 361
- Falls, F. H., Transfusion, *678
- Falta, W., Diabetic edema, 1495
- de Faria, G., Bacillary dysentery, 1816
- Farina, P., Infection through pulp of teeth, 213
- Farnum, W. B., Quinidin in auricular fibrillation, 308
- Fasano, M., Sagging liver, 965
- Fasiani, G. M., Tumor of orbit, 806
- Faure-Beaulieu, Benzene poisoning, 65; Benzene anemia, 213
- Faust, E. C., Dysentery, 1880
- Favreau, Tuberculosis of kidneys, 1653
- Fawcett, J., Anaphylactic shock, 962
- Fay, T., Internal hydrocephalus, *461; Intracranial pressure, *1445
- Fedeli, F., Tumors of carotid gland, 436
- Feil, H., Stokes-Adams syndrome, *26
- Fein, Tonsils as portal of infection, 1818
- Feinblatt, H. M., Wassermann and Sachs-Georgi tests, 210; Leukocytosis, *613
- Feissly, R., Hypophysis extracts and blood coagulation, 66
- v. Fekete, A., Albuminuria of pregnancy, 1658
- Feldman, W. M., Prenatal hygiene, 432
- Felty, A. R., Acute tonsillitis, 1728
- Fenning, F. A., Making of willis, 1795
- Ferguson, W. J. W., Spinal fluid, 432
- Fernández, U., Puerperal infection, 881
- Fernández Dávila, G., Depopulation, 1034; Pulmonary docimasias, 1034
- Fernández Soto, Tonsillectomy, 1107
- Fernández-Victorlo, A., Endocrinopsychopathies, 1654
- Fernicola, C., Hernia of brain, 1817
- Féron, Urinary elimination of arsenic, 1416
- Ferrando, E., Varicocele, 437
- Ferreira, C., Public health service, 514
- Ferreira, G. J., Absence of uterus, *1616
- Ferreri, G., Lymphosarcoma of pharynx, 731
- Ferrero, V., Blastoma of lymph glands, 1274
- Fetter, W. J., Estimation of phosphates of blood, 1411
- Fibiger, J., Experimental cancer, 592
- Field, H., Jr., Excretion of organic acids in urine with diabetes, 1642
- Fiessinger, N., Cirrhosis, 1546; Tyrosin reaction in sputum, and leukocyte proteases, 1736
- Figueira, L., Rabies, 1419
- Figueras, A., Blood transfusion, 1107
- Figuerola, L., Blood clotting in bladder, 67
- Filippella, P., Eruptive fever, 1816
- Findlay, G. M., Carcinoma of lung, 586; Vitamin C and bacterial infection, 1031
- Findlay, L., Alcohol in prolapse of rectum, 728; Pyloric stenosis, 1650
- Fine, M. J., Sodium morrhuate in tuberculosis, 428
- de Finis, G., Vaccines in typhoid and Malta fever, 806
- Fink, H. W., Hydroa vacciniforme seu aestivale, 873
- Fink, K., Pregnancy kidney, 1278
- Finkelstein, R., Excretion of dyes through stomach, 1275
- Finocchetto, R., Pyelolithotomy, 437; Amputation of thigh, 1547
- Finsterer, H., Stomach and duodenal hemorrhages, 218; Stomach and duodenal ulcer, 1733
- Fioravanti, L., Dermoid cyst, 285
- Fiori, P., Diversion of portal blood in cirrhosis, 66
- Fischer, H., Surgical treatment of esophagus, 722
- Fischer, M., Jaundice due to reticulo-endothelial system, 68
- Fischer, R., Blood serum diagnosis of cancer, 963
- Fishbein, M., Hyperpyrexia, *771
- Fishberg, A. M., Myocardial insufficiency, *1516
- Fishberg, M., Care and feeding of infants, 421
- Fishel, C. R., Inhalation of barium, *102
- Fitz, R., Excretion of organic acids in urine in diabetes, 1642
- FitzGerald, J. G., Bacillus diphtheriae, *1675
- Fitzsimmons, H. J., Tuberculosis of ankle joint and tarsus, 60
- Flagowski, W., Retroflexion of uterus, 1350
- Flaskamp, W., Inflammations of adnexa, 1037
- Flaum, A., Spirochetal jaundice, 1424
- Fleisher, M. S., Yeastlike bodies in blood, 800
- Fleming, G. B., Growth and basal metabolism, 797
- Flesch-Thebesius, M., Urochromogen reaction in urine, 732
- Fletcher, A. A., Insulin in diabetes, 510; Insulin hypoglycemia and carbohydrate equivalent of insulin in man, 1641
- Flexner, S., Encephalitis, 1874; Poliomyelitis, 1953
- Floyd, C., Dish towel as source of infection with tubercle bacillus, 1877
- Flöystrup, G., Rubella without rash, 1650
- Flu, P. C., Slow working sand filter, 149
- Flynn, H. B., Protozoan debris and malignancy, 208
- Fontaine, B. W., Fibrosis of lungs, *1129; Wassermann-fast syphilis, 1407
- Foot, N. C., Endothelial response in tuberculous meningo-encephalitis, 355
- Foot, F., Effect of hemorrhage on pulmonary ventilation, 354
- Forbes, M. V., Complement fixation test in gonorrhea, 1486
- Forbes, R. P., Congenital malaria, 797
- Ford, W. W., Mushroom poisoning, 1875
- Foreman, G. E., Colon bacillus therapy and leukocytes, 1812
- Forestier, J., Vascular spasms and periarthral sympathectomy, 143; Intervertebral foramina, 1653; Iodized oil, 1736; Intratracheal injections of iodized oil, 1736; Body fluids in malignant disease, 1737
- Formara, P., Hematuria from strongyloidosis, 965
- Forner, Epinephrin sensibility in thyroid diseases, 1884
- Form, G., Scleroma of larynx and trachea, 284
- Forrest, W. D., Insulin, 1811
- Forsell, G., Movement of mucous membrane of digestive tract, 1028
- Forsyth, J. A. C., Diabetes, 282; Erosion of rectum by ectopic placenta, 1651
- Förtig, H., Comparison of Dold and Melnicke reaction with Wassermann, 1656
- de Fossey, Anaphylactic chronic colitis, 1490
- Foster, G. L., Blood sugar after ingestion of glucose, 1175
- Foster, N. B., Hypertension and cardiorenal diseases, 135; Insulin, 1801
- Foulquier, Wassermann in obstetrics, 436
- Fournier, Spirochetes of syphilis, 1490
- Fox, H., Pneumolith or broncholith, *175; Treatment of warts with mercury, 873
- Fracassi, T., Meningeal hemorrhage, 732; Tumor in parietal lobe, 1883
- Fraenkel, M., Epilepsy, 1111
- Fraga, C., Beriberi, 731
- Fragomele, A., Absorption experiment in diagnosis of infectious diseases, 1654
- Franca, C., Bilharziasis, 731
- Frank, D., Rectal prolapse, 1884

- Frank, I., Cocain poisoning, ★1908
Frank, J. A., Physician and tuberculosis clinic, 357
Frank, P., Fats and gastric secretion of acid, 1495
Frank, R. T., Cystocele, rectocele and uterine prolapse, 799
Franke, F., Cancer recurrence, 664
Fränkel, J., Luxation of hip, 808
Fraser, D. T., Assay of insulin, 1808
Fraser, F. R., Quinidin in auricular fibrillation, 1344
Frazer, T., Broncho-adenopathy, ★1292
Frazier, C. H., Chordotomy, 579
Freeland, E. H., Rheumatism, 961
Freeman, L., Mesenteric lymphadenitis, 132; Gastrectomy and gastro-enterostomy, 1028
Freeman, W., Blastomycosis of brain, 1878
Frehse, K., Alcohol and acidity of gastric juice, 882
Frei, Sedimentation and specific gravity of plasma and erythrocytes, 440
French, H. E., Two year medical schools, 951
Frenkel, H., Palpation in ophthalmology, 1183
Freudenthal, P., Carcinoma of intestine, 219
Freund, L., Intensive X-ray treatment, 218
Fried, B. M., Tubercle bacilli in feces, 1956
Fried, C., Goiter, 967
Fried, H., Belladonna poisoning by topical application, 958
Friedberger, Experimental infection with typhoid bacilli, 1818
Friedenwald, J., Pain in abdomen, 62; Aneurysm of hepatic artery, 798; Animal experiments with Lyon-Meltzer method, 1270
Friedländer, E., Colloidal gold solution, 591
Friedman, J. C., Changes in shape and size of hearts during progress of compensation, 1727
Friedrich, Blood in oxygen breathing, 968
Frothingham, C., Influenza, 1803
Frouin, A., Chlorids and gastric secretion, 660
Frowein, B., Iodids and blood viscosity, 216
Fuchs, D., Albuminuria of pregnancy, 1658
Fuchs, H., Ventrifixation of uterus, 1278
Fukuda, Y., Excretion of hemoglobin by kidney, 725
Full, Blood in oxygen breathing, 968
Fullerton, A., Unilateral dluresis, 583; Pains of renal origin, 1031
Fulmer, H. C., B. acidophilus milk, ★1896
Fulton, F. T., Paroxysmal auricular fibrillation, 1728
Funk, C., New Polish periodical, 1792
Funsten, R. V., Muscular dystrophy, 1645
Fürst, W., Obstetric examination through rectum, 1422
Furtwaengler, A., Perforation of duodenum, 439
Fuss, E. M., Cell count in puerperium, 1742

G

- Gaarenstroom, G. F., Cancer of rectum, 288
Gabriel, G., Control of puncture of corpus callosum by ventriculography, 811
Gaeta, G., Bladder calculus, 1883
Gage, I. M., Granuloma inguinale, 1098
Gaifami, P., Cesarean section, 805
Galbraith, F. B. D., Alcohol in prolapse of rectum, 728
Galewski, H., Secretion of fasting stomach, 733
Galland, M., Tuberculous spondylitis, 512
Gallart Monès, F., Typhoid, 437
Gallemaerts, Furuncle of face and orbital thrombophlebitis, 1183
Gallino, J. A., Iridocyclitis, 1420
Galliot, Inherited syphilis, 729
Gallo, A. G., Traumatism of testicle, 145
Galloway, J., Hodgkin's disease, 281
Gamberini, C., Hour-glass stomach, 806; Pericarditis, 1274
Gamboa, M., Toxic paralysis of leg, 1816
Ganduso, R., Blocking splanchnic nerves for abdominal surgery, 360
Gandy, C., Meningococcus septicemia, 65
Gans, O., Respiration of skin, 882
Gänssbauer, H., Dysmenorrhea, 442
Gänssle, H., Placenta praevia, 1348
Ganter, G., Pressure in pleural cavity and site and shape of exudates, 882; Noises in stomach, 1275
Garban, Liver and gallbladder disease, 1491
García, O., Acid fast actinomycete, 505; Gonococcus, 875
Gardner, B. S., Hutchinson's teeth, ★28
Gargano, C., Paget's disease, 144
Garin, C., Bronchopulmonary spirochetosis, 588; Tick paralysis, 588
Garlough, L. N., Intestinal worms and appendicitis, 422
Garofeano, Pancreas in asystolia, 660; Gastric secretion in cardiac insufficiency, 1106
Garrahan, J. P., Cancer in testicle, 67; Maternity hospitals, 361; Infantism, 590; Rickets, 967; Asthma, tuberculosis and syphilis, 1816
Garrelon, Vagus-sympathetic balance, 1738
Garzón, R., Endocarditis, 144
Gast, W., Bronchial fistulas, 439
Gastinel, Hodgkin's disease, 805
Gastou, P., Syphilis in bones and joints, 1815
Gatch, W. D., Closure of empyema cavities, 132
Gaté, Sporotrichoid tuberculous "gumma," 1882
Gates, F. L., Studies with bacterium pneumosintes, 356; Nasopharyngeal secretions in influenza, 1411; Anaerobic treponemes, 1411; Injection of bacterium pneumosintes vaccines, 1646
Gaujoux, Wassermann, 436
Gauss, Anesthesia by acetylene, 1276
Gaussel, A., Tuberculosis, 879
Gay, F. P., Streptococcus immunity, ★1298
Gay, L. N., Myeloid leukemia of skin, 873
Gelssmar, J., Schick test, 1655
Geist, S. H., Uterine hemorrhage, 1343
Geller, Intra-uterine rupture of cord, 1423
Gendron, A., Pneumothorax with pregnancy, 587
Génévrier, J., Syphilis and tuberculosis, 1652
Genil-Perrin, G., Near-paranoia, 1346
Gennerich, Meningeal syphilis, 69
George, W. E., Tuberculous meningitis, 803
Gerard, M. W., Afferent impulses of trigeminal nerve, 1340
Gerbay, Syphilis, 436
Gerstenberger, H. J., Pachymeningitis, ★604
Gerstley, J. R., Eczema, ★1141
Gertz, H., Induced motor action, 149
Gesell, R., Effect of hemorrhage on pulmonary ventilation, 354
Geyelin, H. R., Insulin in diabetes, 1801
Ghon, Extrapulmonary infection in tuberculosis, 968
Gibb, C. de W., Uterine polypi in infant, 1416
Gibb, W. E., Kolmer modification of Wassermann, 136
Gibbs, C. B. F., Perfused insulin and blood sugar, 1729
Gibbs, C. E., Sex studies in dementia praecox, 580; Basal metabolism in psychoses, 655
Gibson, C. L., Ether intramuscularly for hiccup, ★399
Gibson, H. J. C., Carcinoma of lung, 586
Giddings, E., Pneumonia after measles, 959
Giffin, H. Z., Diseases associated with anemia, 582
Gigon, A., Sugar metabolism, 729
Gichiro, Excretion of dyes through pancreas, 1275
Gilbert, Sympathicotonia in tachycardia and melanoderma, 359
Gilbert, G. B., Lymphocyte index in tuberculosis, 1173
Gilbert, T. C., Interstitial pregnancy, 1271
Gillbride, J. J., Gastropexy, ★1745
Gillcreest, E. L., Fractures of elbow and humerus, 206
Giles, A. E., Myomectomy vs. hysterectomy, 1314; Gynecologic operations and life insurance, 1812
Gilford, H., Addison's pernicious anemia, 727
Gillespie, R. D., "Service" patients in mental hospital, 726
Gins, H. A., Smallpox and vaccinia immunity, 147
Giordano, A. S., Ligation of thyroid vessels in goiter, 584; Bile in pancreatitis, 721
Gioseffi, M., Hygiene in breeding oysters, 660
Giraud, Thoracoscopy for severing pleural adhesions, 1546
Girbal, E., Cardiac infantilism, 587
Giroux, Electrocardiograms in cantering rhythm, 1814
Gismondi, A., Varicella following herpes, 284; Butter-flour in infant feeding, 361
Glusti, L., Argentine rodent, 145
Glaessner, Blackwater fever, 1494
Glanzmann, E., Vitamins of growth and endocrines, 1742
Glaser, Vagotonic leukopenia in neuroses, 1741
Glass, E., Acute pancreatitis, 1276
Glénard, R., Hepatism, 1491
Glenny, A. T., Toxin-antitoxin mixtures, 1030
Glesinger, Blood in diphtheria, 1819
Glesinger-Reischer, Blood in diphtheria, 1819
Globus, J. H., Heart muscle in dystrophy, 580
Göbell, R., Ischemic contracture of muscles, 1276
Gödl, A., Aneurysm of splenic artery, 1348
Godoy, A., Malaria, 966
Goebel, F., Amino-acid in urine, 442
Goeckerman, W. H., Lupus erythematosus, ★542
Goglia, G., Adiposis dolorosa and lipomatosis, 730
Gelay, J., Jaundice from arsphenamin, 1105
Gold, Erosion of vessels by drainage tubes, 1420
Goldberg, B., Calcium lactate, ★79
Goldberg, M., Lack of acid-fastness of tubercle bacilli in tissues preserved in liquor formaldehydi, 1174
Goldberger, J., Protein and pellagra, 1866
Goldblatt, H., Radiation with mercury vapor quartz-lamp, 282
Goldschmidt, Scurvy, 1109
Goldschmidt, W. N., Prerenal toxemia, 1273
Goldwater, S. S., Nonmedical assistants in hospitals, 1075
Golob, M., Cancer, ★1299
Gómez, Sterility, 1817
Gompertz, L. M., B. acidophilus, ★90
Gonin, R., Apoplexy after arsphenamin, 1105
Gonzalez Olachea, M., Encephalitis, 807; Abdominal aortitis, 1033
Goodpasture, E. W., Wassermann in yaws, 1732; Histology of yaws, 1732
Gordon, A., Lumbosacral pain and sacralization, 1486

- Gordon, J. K., Organisms found in tuberculous, 1097
Görl, Bismuth for syphilis, 1494
Gottesleben, Colostomy with Witzel fistula for ileocecal invagination, 1743
Götting, H., Transfusion in anemia, 438
Gottschalk, A., Glycosuria in pregnancy, 515; Cell metabolism, 1034
Gougerot, H., Precancer conditions, 880
Gould, A. G., Protein sensitization, ★394
Gourdon, Vocational training, 963; Insufficient hip joints, 1184
Govaerts, Eugenics, 805
Gowland, A., Iridocyclitis, 1420
Grabfield, G. P., Metabolism in mental disease, 1310; Iodids and nonprotein nitrogen of blood, 1643
Gradenigo, G., Leptomenigitis, 66
Graff, E., Sterility, 1278
Gragert, O., Sedimentation of corpuscles in malignant disease, 1741
Graham, E. A., Lobectomy for bronchiectasis, 723; Liver tests, 1342; Thoracic surgery, ★1825
Graham, R., Experimental botulism, 430
Graham, R. R., Gallbladder surgery, 138
Gralka, R., Antiscorbutic vitamin in vegetables, 1349
Gram, H. C., Hemoglobin and corpuscles, 441
Gramén, K., Ether in blood, milk, urine and breath after ether anesthesia, 1280
Grant, D. H., Isopropyl alcohol, 1341
Grant, F. C., Internal hydrocephalus, ★161
Grant, R. L. T., Partial thyroidectomy, 511
Grasmann, K., Postoperative tetany, 1108
Grasmann, M., Postoperative tetany, 1108
Graves, M. L., Hypophysis disorders, 1408
Graves, R. C., Psychographic mediums, ★168
Gray, H., Testing urine, 800; Lipemia retinalis, ★995
Gray, S., Menorrhagia, 212
Green, N. W., Lung abscess, 723
Green, R. P., Muscular exercise and acid-base equilibrium, 1543
Greenbaum, S. S., Kolmer test, ★836
Greenfield, J. G., Syringomyelia and syringobulbia, 1272
Greenhill, J. P., Fetal monstrosities, 960
Gregory, A., Gangrene of intestines in typhus, 1887
Greig, D. M., Teres minor muscle, 878
Greil, A., Congenital diseases and abnormalities, 146
Greppin, M., Parathyreoprival tetany, 730
Grevstuck, A., Movements of uterus, 288; Diabetes and pancreas extract, 1280
Greving, R., Fever, 662
Griep, K., Spondylitis and tuberculosis, 1548
Griffith, H. K., Endothelioma of male breast, 586
Griffiths, H. E., Gallbladder disease and secretory function of stomach and pancreas, 961
Grimberg, A., Pyocyanus urethritis, 283; Vaccine therapy and mixed infections, 283; Gonorrhea, 587
Grimm, Leukocyte count in tuberculosis, 442
Grober, Hypertension, 663
v. Gröer, F., Hygiogenesis, 440; Diphtheria antitoxin, 442
Groover, T. A., Anomaly of liver, 59
Grosli, L. C., Bone defects, diabetes insipidus and exophthalmos, 655
Grosser, P., Cutaneous reactions, 440
Grossman, M., Quinin and hemoclasia, 217; Drugs and blood sugar, 1494
Grosso, P. P., Rocking-shoe, ★1313
Grote, L. R., Diagnosis of pancreas function from duodenal contents, 288
Gruget, Displacement of cervical vertebrae, 65
Gruhit, O. M., Typing of blood in eclampsia, 1877
Grün, E., Meinicke reaction, 1034
Grunbaum, A., Delay in excretion of hippuric acid with contracted kidney, 1112
Guarini, C., Williams' symptom in tuberculosis, 285
Gueissaz, E., Erythema nodosum after delivery, 360; Blood in pregnant, 729
Guglielmetti, J., Epinephrin, 145
Guibert, J., Ascaris, 588
Guibal, P., Ulnar paralysis after humerus fracture, 1813
Guiérrez, A., Albee implant in spine, 145
Guiller, R. P., Goiter, 1097
Guillaumin, Uric acid in blood, 729
Guillermín, R., Caffeinism, 1106
Guisez, J., Cancer of esophagus, 1491
Gundermann, Secretion of bile, 1185; Roentgen ulcers, 1884
Günzburg, L., Kidney function tests, 809
Guthrie, C. G., Iso-agglutinin groups in blood, 1099; Third iso-agglutinin and iso-agglutinin, 1808
Gutiérrez, A., Colon and omentum, 215; Gastrectomy for gastropotosis, 215
Gutiérrez, P., Syphilids, 725
Gutiérrez, V., Fracture of skull, 145
Gutman, J., Effects of mercury inhalation, 955; Mercury inhalation therapy of syphilis, 955
Gutmann, R. A., Asthma, 964
Gutzeit, K., Polycythemia rubra, 218, 822
Guyot, J., Kidney with 2 ureters, 1652
Gwyn, N., Collapse of lung, 1803

- György, P., Narcosis and acidosis, 440
Gyotoku, K., Enzymes in duodenal fluid with goiter, 585
- H**
- Hahner, Peptic ulcer, 732; Draining common bile duct, 1109; Gastric ulcer and goiter, 1109; Peptic ulcer and exclusion of pylorus, 1275
Haberland, H. F. O., Testis grafting, 1276, 1420
Hach, Typhus, 1494
Haden, R. L., Gastro-enterostomy, 723; Hemoglobin, 1341; Blood after intestinal obstruction, 1412; Anemia, 1957
Hadfield, C. F., Ether, 1103
Hadley, E. E., Traumatic psychosis, 138
Hagelstam, J., Neuroses, 1496
Hagen, S., Ophthalmology, 1350
Hagenbach, E., Nephrotomy, 1279
Hager, B. H., Staining of organisms, *460
Haggard, W. D., Breast tumors, *445
Haggart, W. W., Traumatic shock, 1733
Hagge, Capillary circulation, 1741
Haguenau, Deforming arthritis and syphilis, 1490
Hahn, F., Eosinophilia, 442
Haig, H. A., Cell degeneration, 1031
Haines, W. D., Goiter, *984
Hajós, K., Oxyuriasis, 734
Haia, W. W., Syphilis, 60
Halahan, R., Hydatid cysts, 1342
Halban, J., Menopause, 1422; Splenectomy in thrombopenic menorrhagia, 1740
Hall, A., Ectopic pregnancy, 428
Hall, A. J., Encephalitis, 1544
Hall, G. R., Blackwater fever, 1881
Hall, I. C., Botulism, 1647
Hallowes, K. R. C., Urine incontinence, 64
Halperine, Malformations of fallopian tubes, 143
Halphen, Foreign body in bronchus, 1490
Halsey, R. H., Heart disease, *971
Halstead, A. E., Sympathectomy, *173
Hamburger, F., Tuberculosis, 1035
Hamburger, R., Scurvy, 1109
Hamburger, W. W., Heart following acute infections, 1724; Heart failure, 1728
Hamid, Chromocholescopy as liver function test, 440
Hamilton, B. E., Thyroidism, *1771
Hammer, H., Paraneuritis, 517
Hammesfahr, C., Testis transplantation, 810
Hammett, F. S., Tetania parathyreopriva, 354; Effect of loss of thyroid and parathyroid glands, 653; Thyroparathyroidectomy and reproduction, 1879
Hamor, W. A., Tetrahydronaphthalene ("tetralin"), 1791
Hampton, G. G., Hookworm disease, *8
Handfield-Jones, R. M., Tuberculosis of tongue, 585
Hanhart, E., Friedreich's ataxia, 1547
Hannecart, A., Fixation of fractured olecranon, 1813
Hannon, R. R., Glucose ingestion and respiratory exchange in diabetics, 1269; Ketogenic-antiketogenic balance in diabetes, 1642
Hanns, A., Internal secretion and blood, 143; Nervous spasms, 660; Acidity of urine and albuminuria, 1180; Musical murmurs, 1815
Hansborg, H., Blood and tissues after sodium chlorid injection, 664
Hansen, I., Anemia with goiter, 220; Amebic dysentery, 286
Hansen, K., Specific and nonspecific therapy, 1038
Hansen, K. M., Sugar in blood, 970
Hanzlik, P. J., Phenylenediamines, 956; Lead poisoning, 1341; Toxicity of inorganic lead compound, 1341
Harbitz, F., Tuberculosis of brain, 1638; Hyperplastic disease in blood-producing organs, 1350
Hardman, R., Diagnostic throat culture in diphtheria, *240; Laryngeal diphtheria, *524
Hardt, L. L., Peptic ulcer, 1028
Harer, W. B., Action of ether, chloroform, etc., on respiration, 725
Harmelin, M., Ophthalmoplegia in pneumonia, 1736
Harnett, W. L., Aneurysm of spleen, 433
Harper, P., Leprosy, 658
Harpuder, K., Uric acid in blood serum, 1277; Bile and purin metabolism, 1817
Harrar, J. A., Dystocia in pelves, 1542
Harriss, D. J., Intestinal bacteria and thyroid, 1414
Harris, I., Pulse in goiter, 1734
Harris, M. L., Personal medical advertising, 56
Harrison, G. A., Blood diastase tests, 659; Diastase in blood and urine in diabetics, 1031
Harrop, G., Mountain sickness, 1644
Hartenberg, P., Epilepsy, 660
Hartley, P., Diphtheria antitoxin, 586
Hartmann, H., Cervicectomy, 282; Choicectomy, 359; Fundus uteri hysterectomy, 1105
Hartmann-Keppel, G. L., Ascaris in liver and bile ducts, 1346
Hartwich-Borrmann, Calcium treatment, 810
Hartwig, E., Arterial hypertension, 811
Harvey, S. C., Regeneration of meninges, 1028
Harvey, W. F., Smallpox vaccination, 1179
Harvey, W. G., Precocious sexual development, 1179
Haskell, C. C., Action of ergot and hypophysis solution on uterus, 353; Experimental nephritis, 1271; Danger of pituitary extract, 1791
Hass, J., Ankylosis of hip, 148
Hasselmann, C. M., Food and acidity of urine, 1035
Hassencamp, E., Endocarditis lenta, 438
Hassin, G. B., Encephalitis with psychosis, 579
Hastings, A. B., Edema with bicarbonate administration in pneumonia, 655; Blood in lobar pneumonia, 1727
Hastings, J. P., Myxedematous dyspituitarism, 212
Hatcher, R. A., Vomiting, 725
Hattori, S., Appendicitis, 443
Haubenreisser, W., Sex gland operations, 803
Haudck, M., Duodenal ulcer, 735
Hauduroy, Colon bacillus infection of urinary tract, 1545
Haus, O., Percussion of hilus, 1494
Hausam, E., Pregnancy in leukemia, 364
Hausmann, T., Dysentery, 1495
Havemann, A., Liver function tests, 734
Hawks, E. M., Ectopic pregnancy, 960
Hawthorne, C. O., Intracranial hemorrhage, 358
Hayek, Proteins, 1819
Haythorn, S. R., Preventive medicine, *885
Hazen, H. H., Syphilis, *1838
Heaney, N. S., Prevention of conception, 573
Heathcote, R. St. A., Action of camphor, menthol and thymol on circulation, 1648
Hébert, P., Typhoid, 729
Hecht, A. F., Liver function tests, 442
Hedblom, C. A., Bronchiectasis, 140
Hedlund, E., Gastric and duodenal ulcer, 70, 592
Hedri, A., Camphor phenol in treatment of joints, 732
v. Hedry, N., Cancer in actinomycotic lesions, 1884
Heeres, Spleen and erythrocytes, 443
Hefke, Lead poisoning, 1656
Hegener, C. A., Accommodation in ametropic eyes, 1033
Hegner, R. W., Intestinal protozoa, 278
Heidrich, L., Cancer in mucosa of mouth and throat, 1348
Heim, K., Blood and roentgen exposures, 590
Heine, Neurogenous heterochromia of iris, 1657
Heineberg, A., Vaginal hysterectomy, 353
Heinlein, F., Retention of cord, 1423
Heinz, R., Toxicity of tobacco smoke, 1884
Heise, F. H., Rest in tuberculosis, 428; Intracutaneous reaction of tuberculous to glycerine bouillon and tuberculin, 1173
Heissen, F., Acroparesthesia, 516
Hektoen, L., Scarlet fever, *84; Thyroglobulin, *386
Heller, E. P., Duodenal tubes, *31
Heller, T., Motor underdevelopment, 1036
Heller, V. G., Vitamin B in yeast, 1543
Helimuth, K., Nonprotein nitrogen and toxicoes of pregnancy, 516; Weight of newly born, 968; Nonprotein nitrogen in parturients, 1348
Hekley, G. F., Esophagus carcinoma, 1484
Helvestine, F., Jr., Carcinoma of liver, 875
Hemke, Gout, 968
Henderson, D. K., "Service" patients in mental hospital, 726
Henderson, M. S., Infantile paralysis, 210
Hendrix, B. M., Arthritis, 1270
Hendry, W. B., Maternal mortality, 1957
Henkel, M., Febrile abortion, 439; Labor with flat pelvis, 883; Asphyxia neonatorum, 1034; Fever at childbirth, 1278
Henle, A., Esophageal strictures, 517
Hennell, H., Tuberculosis, *536
Henner, K., Parkinsonian syndromes, 736
Henrichs, J., Disease of ectodermal origin, 812
Henrichsen, J., Rupture of intercostal artery, 1491
Henriksen, P., Disease of ectodermal origin, 812
Henriques, A., Myelogenous leukemia, 61
Henry, A. K., Ligaturing left subclavian artery, 877
Henschen, S. E., Perception and presentation, 1037
Hensel, G. C., Cardiovascular system in thyroid disease, 1410
Hensen, Irradiation of lacrimal glands, 218
Herb, F., Complement and syphilis, 429
Herbst, R. H., Stricture of male ureter, 1176
Herbst, W. P., Surgery of gallbladder, 210
Herfarth, H., Surgery of spleen, 1348
Heringa, G. C., Connective tissue, 288
Herman, L., Bilateral occlusion of ureters, 1176
Hermet, P., Heart disease and pregnancy, 729; Sedimentation of erythrocytes, 806
Herrera, A. L., Sedimentation in biology, 437
Herrick, W. W., Encephalitis, *528; Tests of circulation, 1102; Hyperglycemia and hypertension, 1804
Herrman, C., Infant feeding, 273
Herrmann, E. T., Hay-fever, 1413
Hertz, Intraspinal anesthesia, 1105
Hertzler, A. E., Carcinoma of vocal cords, 956; Thyrotomy, 956
Herxheimer, H., Heart in athletes, 969
Hescheles, J., Fica bites, 442
Hess, A. F., Light waves in relation to rickets, *687; Copper as constituent of milk, 1728; Ultraviolet rays, 1803
v. Hess, C., Discrimination of colors, 440; Blindness in smallpox, 883
Hess, F. O., Epinephrin and white corpuscles, 1109
Hess, J. H., Heated bed, *1313
Hess, O., Liver and circulation, 364
Hesse, E., Liver function tests, 734
Hesse, W., Uterine hemorrhage, 1035
Hesser, S., Classification of blood, 736
Hetényi, G., Efficiency test for liver, 517; Sugar in blood and tissues in diabetes, 1655
Heuer, G. J., Chronic lung abscess, 723
Hewer, E. E., Addison's disease, 961; Lactation and ovulation, 1811
Hewitt, J. A., Sugar in blood, 1488
Heymann, A., Nephrotomy, 810
Heynemann, T., Eclampsia, 216
Higgins, J. A., Poisoning by anesthetics, 1808
Higier, H., Osteoarthropathy, osteomalacia and late rachitis, 517
Hilgenberg, F. C., Perforation of gallbladder, 363; Testis grafting, 1275
Hilgenreiner, Plastic closure of hernial opening, 1111
Hill, J. H., Mercurials in syphilis, *1365, 1474
Hill, L., Heating of tissues, 1544; Artificial pneumothorax, 1880
Hill, L. W., Urine in nephritis, 1097
Hill, O. W., Intraperitoneal injections, 1408
Hillemand, P., Megacolon, 511; Tuberculosis, 1180
Hilikowitz, P., Clinical pathologist, 943
Hilse, A., Suppurative pericarditis, 808
Himwich, H. E., Exercise and acid-base equilibrium, 1543
Hindhede, M., Protein and pellagra, *1685
Hine, T. G. M., Staphylococci, 433
Hines, L. E., Diarrhea, 1647
Hinkelman, A. J., Hematometric differential counting, 210
Hinman, F., Hydronephrosis, *315; Renal disuse atrophy, 1809
Hinrichmeyer, C., Resection of choroid plexus, 1108
Hinsdale, G., Femur fracture, *469
Hinselmann, Circulation in eclampsia, 1103; Pregnancy kidney disease, 1102
Hinton, W. A., Wassermann in pregnancy, 955
Hirsch, C., Puncture of subphrenic abscess, 809
Hirsch, E. F., Sacrococcygeal chordoma, *1369; Blood with roentgen ray, *1505
Hirsch, H., Roentgen-ray sickness and cachexia, 439; Roentgen ray in hemorrhage, 518
Hirsch, S., Cephalography, 1035
Hirschberg, F., Artificial pneumothorax, 963; Gastric cancer, 1736
Hirschboeck, F. J., Aneurysm of aorta, 210
Hirschfeld, H., Blood diseases and tumors, 1349
Hirschmann, C., Reconstruction of esophagus, 732
Hirst, J. C., Cystitis, 1101
His, W., Research, 438
Hitchens, A. P., Epidemiologic survey, *665
Hittmair, A., Epinephrin in blood diseases, 516
Hitzberger, Pulsatory motions of diaphragm, 1495
Hitzler, Goiter, 438
Hoag, C., Resection of ulna for shortening radius, 800
Hoag, L. A., Pyloric stenosis, 139
Höber, R., Chemistry of blood sedimentation, 364; Chemistry of phagocytosis, 1277
Hobson, S., Nephritis, 1175
Hodges, A. B., Production of toxic substances by pneumococci, 209
Hodges, F. J., Tryparsamid, *1497
Hodges, F. M., Subdiaphragmatic abscess, *1055
Hoelen, E., Occult spina bifida, 812
Hoffman, F. L., Cancer statistics for Japan, 944; Cancer control, 956; Cancer statistics for Algiers, 1332
Hoffman, R. V., Venereal diseases, 1153
Hoffmann, H., Rumpel-Leede's phenomenon, 441
Hoffmann, P., Amino-acids and stomach function, 1349
Hoffmann, R., Vegetative nervous system, 1495
Hoffmann, V., Plastic substitute for resected stomach, 149
Hofman, V., Adenoma of lung, 1279
Hofmann, W., Furuncles of face, 1420
Hofmeier, M., Placenta praevia, 1278
v. Hofmeister, F., Roentgen-ray injuries of larynx, 441
Hogan, B., Wassermann reaction, 1485
Högier, F., Trachoma, 441; Sciatica, 591
Hogue, M. J., Trichomonas hominis, 209; Diarrhea, 355
Hohlfeld, M., Intubation, 440
Hohn, J., Syphilitic antigens, 734
Holländer, A., Sachs-Georgi and Dold reactions, 1656
Hollander, E., Gastric ulcer, *29; Tip for gastro-duodenal tubes, *1217; Meltzer-Lyon test, 1804
Hollander, L., Postinfluenzal herpes zoster, *470
Hollier, G., Thyroid and erythrocytes, 969; Gastric and duodenal ulcers, 1885
Holm, E., Splenectomy in anemia, 518
Holman, E. F., Hypoglycemia in goiter, 1099

- Holman, W. L., Filter candles, *1142
Holmes, A. D., Pollock liver oil, 1270
Holmes, G., *Tabes dorsalis*, 585
Holmes, G. W., Toxle goiter, 1410
Holmes, R. W., Cesarean section, 353; Prevention of conception, 573
Holmgren, I., Intraspinal introduction of fluids, 1744; Frontal reflex in cerebral affections, 1888
Holst, J. E., Glycosuria, 516, 664
Holsteln, Idiosyncrasy against cow's milk, 1658
Holt, L. E., Jr., Lead poisoning, 1197
Holtén, C., Amebic dysentery, 1549
Holzer, P., Heart function test, 969
Holzknecht, G., X-ray injuries, 287
Hönck, E., Pyosalpinx, 1111
Honeij, J. A., Eventration of diaphragm, 1730
Hoogslag, W., Diabetes, 69
Hoon, M. R., Carcinoma of ovary, 354
Hopkins, B. E., Toxin-antitoxin mixtures, 1030
Horalek, H., Hemoptysis, 1493
Horgan, E. J., Splenectomy in anemia, 1102
Horine, C. F., Resection of intestine, 354
Höring, F., Incontinence of urine, 1886
Horn, W. S., Meningitis, *1124
Horneck, K., Sedimentation of corpuscles, 591
Horsley, J. S., Jr., Postoperative fever, *1065
Hortolomel, N., Artificial vagina, 1110
Horvat, A., Sedimentation of corpuscles, 591
Hoseplan, V. M., Anaphylaxis, *303
Houssay, B. A., Epinephrin, 145; Blood pressure after irritation of splanchnic nerves, 589, 1740; Hemolytic action of venoms, 590
Howard, C. N., Functional aphasia, *104
Howard, C. P., State university hospital, 1401
Howard, H. A. H., Diabetes, 282
Howard, J. W., Tubercle bacilli, 1740
Howard, L. H., Control of contagious diseases in animals, 506
Howard, M. Q., Magnesium sulphate as sedative, 1339; Cerebellar syndrome resembling multiple sclerosis, 1413
Howard, W. T., Jr., Cancer, *71
Hoyer, W. A., Blood in erythema nodosum, 1888
Hristide, Angina pectoris, 1490
Hrma, A., Epinephrin and antibodies, 736
Hubbard, R. S., Alkaline tide, *304
Hübel, Rectal administration of ether, 1423
Huber, H. L., Asthma, 207
Hubert, L., Substernal thyroid, *842
Hübner, E., Cystic enlargement of ureter, 517
Huck, J. G., Isoagglutinins before and after ether, *670; Isoagglutinin groups in blood, 1099; Third iso-agglutinin and iso-agglutinin, 1808
Hudelo, L., Chancre, 435
Huebschmann, Primary foci, miliary tuberculosis and immunity, 441
Hug, E., Argentine rodent, 145
Huggins, R. R., Precancerous condition of cervix uteri, 136
Hughes, T. A., Insulin, 1810
Hulk, J. F., Obliteration of portal vein, 811
Hull, T. G., Pertussis, *1840
Hülse, W., Edema, 968
Hume, E. M., Mercury vapor quartz lamp, 281
Humes, C. D., Spinal fluid in epilepsy, 1269
Hunner, G. L., Renal surgery with ureteral stricture, 1176
Hunt, E. F., Urine in nephritis, 1097
Hunt, Ernest L., Leiomyoma of stomach, 1098
Hunt, J. R., Striocerebellar tremor, 137
Hunt, R., Acetonitril test for thyroid, 653
Hunter, D., Test meal in gastro-intestinal disorders, 804
Hurst, A. F., Hypersthenic gastric diathesis; duodenal ulcer, 433; Achlorhydria and anemia, 659
Hussey, R. G., Trypsin and pepsin, 581
Hustin, A., Blood transfusion, 1180
v. d. Hütten, F., Callous ulcers of legs, 441; Gastric ulcer, 969; Regional anesthesia in abdominal operations, 1185
Hyatt, T. P., Oral hygiene, 1951
Hyman, H. T., Hyperthyroidism, 1339; Autonomic imbalance, 1804
- Iacono, L., Pseudotuberculosis, 589; Cholera, 1033
Iafolla, G., Tuberculosis, 965
Iams, J. D., Nasal diphtheria, 1730
Ignatowsky, A. I., Bile acids in serum and urine, 441
Ihlefeldt, Influence of mother's age and repeated pregnancies on child, 733
Inada, S., Ginseng and metabolism, 585
Ingals, M., Sacrococcygeal chordoma, *1369
Inglis, W. D., Vomiting of pregnancy, 357
Ingvar, S., Cerebellum, 592; Spinal deviation of movements, 736
Iraeta, D., Hemoclastic crisis in pregnant, 115, 1740; Retractometer index of serum in pregnancy, 145
Ireland, M. W., Training camps, *1438
Irens, E. E., Invasion of body by bacteria from intestinal tract, 1413; Arthritis and iritis, *1899
d'Irsay, S., Heart failure, 1728
Iving, F. C., Benzin and iodine vs. soap and water, 1173
Isaacs, R., Polycythemia vera, 1029
Isch-Wall, Suffocating pneumothorax, 1490; Pseudohemophilia, 1546
Iser-Solomon, Pneumonia, 1736
Isildo, B., Ultraviolet rays and avitaminotic disturbances of bone marrow, 1657
Ishikawa, Y., Spermatozoa, 586
Isola, A., Hereditary ataxia, 732
Israel, S., Nose deformities, *690
Israel, W., Kidney and ureter calculi, 733
Ithurrat, F., Echinococcus disease, 286
Ito, N., General characteristics of streptococci, 1344; Pathogenicity of streptococci, 1344; Types of streptococci, 1344
Ivanissevich, O., Synovitis, 145; Thrombosis, 590
Iversen, P., Blood after sodium chloride, 665; Intravenous injection of antitoxin, 1489
- Jackson, A. S., Carcinoma of appendix, 1267
Jackson, C., Cancer of larynx, 654
Jackson, G. H., Jr., Encephalitis, 957
Jacob, P., Pneumothorax, 587
Jacobaeus, H. C., Artificial pneumothorax, 427
Jacobowsky, B., Blood sugar after heat puncture, 1038
Jacobsen, H., Spastic ileus, 150
Jacobson, C., Parathyroid tetany, 1027
Jacod, M., Hay-fever, 1183
Jaffé, R. H., Hemorrhage, *1364
Jaffin, A. E., Eventration of diaphragm, 1730
Jahr, H. M., Hippuric acid synthesis, 655
Jakobovits, M., Blood in pregnancy, 733
Jakseh-Wartenhorst, R., Carbon monoxid poisoning, 968
Jamin, F., Psychic infantilism, 663
Jancke, C. E., Femur fracture, 364
Janet, J., Gonorrhea, 283, 588, 1882
Janke, H., Chromocystoscopy, 1887
Janku, J., Tubercle of optic disk, 1279
Japiot, Roentgen ray in eye affections, 1418
Jarno, L., Antipepsin in gastric juice, 286
Jarvis, D. C., Roentgen rays in deafness, 1645
von Jaschke, R. T., Leukorrhea, 517
Jassenezki-Woino, Caries of costal cartilages, 1421
Jastram, M., Urethra injury, 1276
Jatrou, S., Spinal cord tumors, 809; Ether mask, 970
Jáuregui, P., Shifting the ulnar nerve, 145
Jayle, F., Malformations of fallopian tubes, 143; Radiotherapy in gynecology, 436
Jean, G., Rupture of iliac artery, 1652
Jeanbrau, E., Urology, 1032; Improvised urinal, 1653
Jeandelize, P., Ocular autoserotherapy, 1183
Jeanneney, G., Arterial hypertension, 1491; Kidney with 2 ureters, 1652; Traumatic shock, 1737
Jeannin, C., Midwives, 588
Jeans, P. C., Syphilis, 60
Jeanselme, E., Myopathies due to syphilis, 435
Jégat, Y., Gangrene of hepatic flexure in amebic dysentery, 359; Osteogenous exostoses, 587
Jellinek, S., Electric shock, 1810
Jensen, V., Multiple sclerosis, 1280
Jervell, O., Pyelitis, 1038
Jessen, F., Tuberculosis, 1277
Jimenez Diaz, C., Mucocombranous colitis, 1654
Jobling, J. W., Pellagra, *365
Johannsen, N., Diabetes, 592
John, H. J., Blood sugar, 209
John, L., Food consumption in pregnancy and lactation, 1036
Johns, F. M., Prostatic secretion, *463; Syphilis, 1487
Johnson, F. C., Eruptive fever, 59
Johnson, J. L., Mastoiditis, *399
Johnson, S. R., Inactivation and complement fixing substances in syphilitic serum, 430; Serum and antigen in complement fixation, 430
Johnson, T. B., Tubercle bacillus, 429
Johnsson, A., Renal diabetes, 70
Johnston, D. A., Syphilis, 582
Joly, Retraction of palmar aponeurosis, 805; Carcinomatous pleurisy, 1546
Jonas, L., Acidosis, 1727
Jones, A. G. M., Pernicious anemia, 962
Jones, C. M., Pancreatic function, 137; Infectious jaundice, 1728
Jones, E. C., Tuberculosis, 63
Jones, W. C., Division of one ureter, 1271
de Jong, S. I., Temperature after spinal cord injury, 964
Jonsson, S., Agglutinins in blood of Icelanders, 970
Jordan, C. N., Ethylene and acetylene, 1712
Jordan, H. P. B., Mercuric dermatitis, 357
Jorge, J. M., Toxic paralysis of leg, 1816
Jørgensen, J. O., Conjugal tuberculosis, 444
Jørgensen, S., Albumin, 70; Glucose intravenously, 220
Joseph, K., Streptococcus infection, 1277
Joslin, E. P., Insulin in diabetes, *1581, 1726; Levulose and diabetic metabolism, 1727
Jost, W. E., Urethral syringe, *1069
Joyce, C., Patent foramen ovale, 212
Juaristi, V., Atrophy of jaw, 1106
Juarros, C., Injury of centrum ovale, 438
Judd, E. S., Surgery of gallbladder, 210; White bile in common duct, 276, 1484; Carcinoma of tongue, 960; Lesions of stomach, 1406
Jullien, Artificial pneumothorax, 728
Jundell, I., Rachitis, 592
Jungeblut, C. W., Agglutination for typhoid in cholelithiasis, 730
Jungmann, P., Salt metabolism, 809
Junker, H., Gonorrhea of seminal vesicles, 1742
Juster, E., Syphilis, 1105
- Kaboth, G., Liver in pregnancy, 219; Blood volume in pregnancy, 1887
Kabrbel, G., Preservation of milk, 1495
Kackell, R., Bacteria in stools, 287
Kaess, F. W., Salivary fistula, 811
Kagawa, T., Vitamin A, 589
Kahn, I. S., Pneumothorax, *1060; Tuberculosis, 1484
Kahn, M. H., Illuminating box, *320
Kahn, P., Hysteria, 1652
Kahn, R. L., Inactivation and complement fixing substances in syphilitic serum, 430; Serum and antigen in complement fixation, 430
Kahn, S. H., Insulin, *1903
Kahn, W. W., Eyes and teeth, *1134
Kaiser, F. J., Floating liver, 439
Kaiser-Petersen, J. E., Influenza and encephalitis, 288
Kälin, H., Fracture of humerus, 439
Kallaway, C. H., Insulin, 1810
Kämmerer, Urobilin in intestines, 1655; Endocrine lesions of genitals, 1658
Kampmeier, O. F., Renal cysts, 960
Kanai, Phagocytosis, 1277
Kane, H. F., Rupture of uterus, 1173
Kanter, A. E., Fusiform bacilli and spirochetes about clitoris, 1412
Kaplanova, M., Lymphocytes in tuberculosis, 1037
Kappis, M., Ulcer of foot, 734
Kapsinow, R., Vaughan's crude soluble poison, 1100
Karmel, J., Gastric secretion, 735
Kashiwabara, M., Lipoidemia and xanthoma, 1495
Kast, L., Sugar in urine, 581
Kästner, H., Puncture of corpus callosum, 662
Kato, T., Anoxemia, 1496
Katsch, G., Blood pressure, 591
Katz, H., Pyelotomy, *1757
Katzenbogen, S., Casein in rheumatism, 511
Katzenstein, M., Elasticity of the bladder, 1887
Kauders, F., Duodenal contents and gastric secretion, 69; Hypoxemia, 1493; Carbon dioxide tension of alveolar air and gastric secretion, 1494
Kaufman, A. B., Otosclerosis, *681
Kawamura, R., Tsutsugamushi disease, 1544
Kazama, Y., Production of tumors, 219
Kearney, F. X., Lyon-Meltzer method, 1270
Keefe, J. W., Retroflexion of uterus, 1098
Kehrer, E., Premature births, 1111
Keldel, A., Neurosyphilis, *818
Keiller, W., Anatomy in medical curriculum, 953
Kellmann, K., Diagnostic cutaneous reactions, 440
Keiser, V. D., Preparing histologic sections, *690
Keith, A., Man's posture, 1343
Keith, N. M., Blood volume in anemia and leukemia, 1027; Blood volume in obesity, 1728
Kelemen, J., Movement of apices in pleural infiltration, 68
Kellaway, C. H., Nonspecific desensitization, 357
Kellert, E., Saprophytes, 209
Kelley, C. M., Slide rule, *397
Kelley, F. L., Rocky Mountain spotted fever, 1413
Kellogg, W. H., Diphtheria test, *748, 1399
Kelman, S. R., High blood pressure, 1028
Kemp, C., Subacute inflammatory processes, 967
Kennaway, E. L., Arsenic cancer, 141
Kerlin, W. S., Encephalitis, 1487
Kerppola, W., Disease in spinal cord, 70; Hypertension, 1888
Kerr, H. H., Brain abscess, 276
Kerr, W. J., Thyroid disease, 1410
Kersten, H., Spastic conditions, 440
Kessel, L., Hyperthyroidism, 1339; Metabolic rate in untreated goiter, 1727; Autonomic imbalance, 1804
Kestner, O., Profession, standard of living and nutrition, 1276
Ketron, L. W., Myeloid leukemia of skin, 873
Kettle, E. H., Affections of spleen, 281
Key, E., Embolotomy, 1312
Keyes, A. B., Osteomyelitis, *1451
Keyser, L. D., Urinary lithiasis, 1267
Kidd, F., Epithelial tumors of bladder, 1416
Kieffer, J., Tubercle bacillus, 428
Kiehn, H., Puerperal sepsis, 1658
Kilduffe, R. A., Kolmer modification of Wassermann, 136
Kilgore, A. R., Tumors of breast, 801
Killian, H., Foreign bodies in esophagus, 732
Killian, J. A., Reflex anuria, *1043
Kinura, N., Cancer of lung, 1545
King, C. C., Peptic ulcer, 1407
King, H., Anesthetic action of pure ether, 1103
King, J. H., Radium, 1106
Kling, W. E., Laboratory technician, 1648

- Kinney, V. C., Blood pressure, *1767
Kinsella, R. A., Arthritis, *671; Cultivation of gonococcus, 875; Streptococcus endocarditis, 1643
Kipfer, R., Wiedbolz' urine reaction, 729
Kirehmayr, L., Meckel's diverticulum, 441
Kirchner, W. C. G., Fractured spine, 205
Kirkham, H. L. D., Women's Auxillary to A. M. A., 573
Kirklin, B. R., Diseased gallbladder, 59
Kirschner, M., Suture of bones, 662
Kisch, B., Extrasystoles, 216
Kisch, E., Intravenous injections of blood in tuberculosis, 1658
Kisch, F., Pseudo-obesity, 147; Myxedema in lipomatosis, 439; High blood pressure, 1819
Kissmeyer, Is a positive Wassermann possible in nonsyphilitics? 1549
Kitcher, H. D., Insulin and utilization of sugar in body, 1642
Klaften, E., Pregnancy hemeralopia, 1422
Klecan, J. C., Raynaud's disease, 1268
Klein, G., Glucose injections in infiltrates, 218
Klein, O., Pituitary diuresis in nephritis, 1495
Kleinschmidt, R. E., Hydrogen ion concentration of blood in carcinoma, 1175
Kleitman, N., Sodium citrate and respiration and circulation, 657
Klemperer, P., Parathyroid hyperplasia in carcinomatosis, 583
Klewitz, F., Surviving heart, 809
Kligler, I. J., Staphylococcus pyogenes aureus and albus, 957
Klika, M., Catheterization, 1549
Kling, C., Encephalitis, 518
Klippel, M., Humoral reactions in paralysis, 1346
Klose, Polyposis of gallbladder, 1420
Klotz, O., Leishmaniosis of nose, 1409
Knaus, H., Artificial anus, 1348
Knipfer, A., Refractometric tests with cancer, 660
Knipping, H. W., Pituitary obesity, 882; Metabolism in scurvy, 1035; Internal secretions and pregnancy, 1108
Knopf, S. A., Rest cure in tuberculosis, 1548
Knowles, F. C., Pruritus ani, 1485
Koeh, R., Blood in pregnancy, 733
Koennecke, W., Atony of stomach, 438; Predisposition to gastric ulcer, 810
Koessler, K. K., Asthma, 207; Catabolism of amino-acids, 1728
Kolischer, G., Pyelotomy, *1757
Kollarits, J., Psychie direction of chronic and incurable patients, 1033; Nervous dizziness, 1547
Kölliker, Amputation stumps, 1350
Kolmer, J. A., Bacterial infections, 655; Complement fixation reaction in syphilis, 1339
König, E., Vulvulus in pregnancy, 362; Pott's disease, 970
Königer, H., Reactivity during treatment, 662
Konjetzny, G. E., Fibrous osteitis, 662
Koopman, J., Blood serum, 812
Kopaczewski, W., Anaphylaxis, 588
Kopeloff, N., Bacillus acidophilus, *602; Is stomach a focus of infection? 799
Korenchevsky, V., Calcium, 1958
Kornfeld, F., Movement of apices in pleural infiltration, 68
Kornitzer, E., Hypertrophy of prostate, 810
Korns, H. M., Clinical study of quinidin, 655; Experimental study of quinidin, 655
Koser, S. A., Bacillus welchii in bread, 1412
Köster, O., Tubercle bacilli, 1034
Köster, P., Diagnosis of pregnancy, 1656
Koster, S., Hypnosis, 443
Kostlivy, S., Floating kidney, 1110
Kotzareff, A., Radium and uterus, 282
Kouwer, J. B., Uterine fibromas, 1105
Kowitz, Metabolism in scurvy, 1035
Krabbel, M., Nephritis, 1348
Kramer, B., Influence of pancreas extracts on depancreatized animal, 139
Kramer, P. H., Familial splenomegaly, 444; Immunization against diphtheria, 1744
Krantz, W., Cultures of spirochetes in mediums containing arsphenamin, 735
Kraus, A., Syphilis, 1110
Kraus, F., Vegetative system and individuality, 217
Kraus, R., Prevention of serum sickness, 218; Titrating antitoxins, 514; Avidity test of antitoxins, 1347, 1886; Snake venom antiserums, 1739
Krause, E., Staphylococcus pyogenes aureus and albus, 957
Krauss, T. F., Scarlet fever, *454
Kräuter, R., Thyroid and bleeding from uterus, 288
Krebs, O. S., Blood in pregnancy, 800
Kreibich, C., Angioneuroses, 1657
Kretschmer, H. L., Ulcer of bladder, 62; Echinococcus disease in right kidney, 960; Keratoderma blennorrhagica, *993; Ureteral stone, *1425
Krida, A., Secondary os calcis, *752
Kristenson, A., Counting blood platelets, 736
Kritchevsky, I. L., Heterogenous anaphylaxis, 1412; Immunity reactions and biogenetic law, 1412
Kritzler, H., Puerperal fever, 733; Catheterization of trachea, 883
Krock, F. H., Filter candles, *1142
Kröck, L., Salt in bile, 1185
Krogh, A., Insulin in diabetes, 592
Krogus, A., Xanthosarcomas of tendon sheaths, 592; Endocarditis and rheumatism, 1496; Rheumatic endocarditis, 1817
Krömeke, Daranyi's reaction, 1657
Krontowski, Typhus, 1494
Kroó, H., Spirochetes during recurrent infection, 410; Spirochetes in brain in recurrent, 515
Kross, I., Uterine secretion and blood coagulation, 960; Menstruation, 1542
Krull, C. A., Ocular tuberculosis, 1279
Krumbhaar, E. B., Lymphoid metaplasia in bone marrow, 277; Necropsies, *1682; Hemolytotoxic system, 1802
Krummenacher, Pleurisy, 1813
Kuczynski, M. H., Typhus, 663
Kuiper, J., Infectious diseases and heart, 1112
Kümmell, H., Absorbable tampons, 662
Kundratitz, K., Tuberculous meningitis, 218
Kurosu, M., Deafness through mumps, 1489
Kurtzahn, H., Dilatation of esophageal stenosis, 1423
Küstner, H., Uterine cancer, 438; Asphyxia of cesarean section infants, 1422
Küttner, H., Suprarenalectomy in epilepsy, 1743
Kuttner, L., Diseases of intestine, 438; Carcinomas of colon, 733
Kylin, E., Hypertension, 1658; Capillary tension, 1888
Kyrie, J., Syphilis, 69
- L**
- Labbe, M., Levulose in diabetes, 434; Nutrition in acute diseases, 729; Diabetes and syphilis, 878; Kala-azar, 963; Acidosis, 1882
Lacassagne, A., Irradiation of ovary and subsequent fecundation, 1274
Ladd, W. S., Diabetes, 1642
Ladeck, E., Passive movements of lungs, 1549
Lafforgue, Phlebitis in incipient tuberculosis, 879
Lafora, G. R., Chorea and athetosis, 361
Lagrange, F., Neuroparalytic keratitis, 213
Lagrange, H., Senile cataract, 1183; Anaphylactic conjunctivitis, 1491
Lahey, F. H., Biliary fistula, *893; Lingual goiter, 1343
Laignel-Lavastine, Psychoses, 66; Goiter, 143; Acute scleroderma, 359
Laird, J. L., Typhoid, 1027
Lamb, F. W., Scoliosis, 59
Lambert, A. Van S., Abscess of lung, 1803
Lambert, R. A., Oriental sore, *986
Lambert, S. M., Hookworm disease, *526; Sprue, *1910
Lambotte, A., Osteosynthesis for recent fractures, 1180
Lampe, Endocarditis lenta, 1109
Lampronti, G., Eczema, 1739
Landau, Hypertrophy of prostate, 1493
Landing, H. A., Skeleton at different ages, 1038
Landis, H. R. M., Tuberculosis, 584
Landsberg, M., Urea content in saliva, 1657
Lang, F. J., Goiter, 515
Langdon, J. F., Fracture of lesser trochanter of femur, 1733
de Lange, C., Immunization against diphtheria, 812; Digestion leukocytosis, 1423, 1886
Lange, L. B., Experimental tuberculosis, 1484
Langemak, Goiter, 1741
Langer, E., Dry gonococcus vaccine, 734
Langer, H., Epituberculous infiltration of lungs, 442; Tuberculosis of bronchial glands, 442; Prognosis of tuberculosis, 1035
Langer, J., Leukocytes, 733
Langheinrich, O., Psychie influence on stomach secretion, 148
Langstein, Nutritional disturbances, 1547
Lanman, T. H., Hypophysial duct tumor, 1343
Lanski, J., Constipation, tuberculosis, hydrothorax, 646
Lapidus, H., Spirochetal jaundice, 1424
Lapp, J. A., Liability of hospital, 1078
Larrabee, R. C., Purpura, *838
Lasker, W., Arthrodismia, 1349
Lasseur, P., Wassermann in pregnancy, 1546
Latarjet, A., Hypogastric plexus, 282
Lattes, L., Biologic demonstration of paternity, 1816
Lattimore, R., Vital capacity readings, 1540
Lattin, B., Size of drops, 1537
Laubry, Aneurysm of ascending aorta, 1546
Laurentie, L., Thirty-six pregnancies, 805
Laurie, H., Arthritis, 1812
Laurie, T. F., Double kidney and double ureter, 279
Lavalie, C. R., Compression of spinal cord, 145
Lavandera, M., Cystitis, *32
de Lavergne, V., Typhoid spleen and paresis of diaphragm, 964
Lavezzi, G., Cerebral thrombosis in ruptured tubal pregnancy, 965
Läwen, A., Differential diagnosis of abdominal affections, 68; Nerve blocking in differential diagnosis, 1743
Lawrence, C. S., Injury to carotid artery, *1068
Lawrence, R. D., Blood diastase tests, 659; Diastase in blood and urine in diabetes, 1031
Lax, H., Uremia and nitrogen retention, 1035
Layera, J., Optic neuritis in sinusitis, 1420
Leach, C. N., Hookworm disease, *8
Leahy, S. R., Problem child, 508
Leake, C. D., Pneumonia, 356
Leb, A., Pulmonary embolism, 1349
Lebedev, D., Tubercle bacilli and smegma bacilli in urinary sediment, 1349; Heart after infectious diseases, 1349
Lebrede, M. G., Yellow fever, plague and malaria, 661
Lebsche, M., Thyroidectomy, 883
Le Calvé, J., Blood crisis after constriction of extremity, 435, 1737
Leckie, J. P., Empyema, 1103
Leelere, F. S., Diabetes, 139
Lecote, Angina pectoris, 1815
Lee, F. S., Tests for fatigue, 653
Leendertz, G., Blood serum and quantitative analysis, 216
Leenhardt, Meningitis with influenza bacillus, 964
Lefebvre, C., Surgical physiology, 1813
Lefrou, G., Parasites of blood, 283; Sleeping sickness, 1813
Legangneux, Typhoid, 142
Legg, A. T., Transplantation of tensor fasciae femoris, *242
Leggett, E. A., Modification of Folin-Wu method, 1100
Legueu, Gonorrhea, 143; Eosinophilia, 214; Local suppuration after bladder operations, 1182
Lehmau, E. P., Perivascular sympathectomy, 654
Lehmann, Suppuration in kidney, 1887
Lehndorff, H., Anemia, 287
Lehrbecher, A., Blood pressure, 363; Perenteritis, 364; Intravenous general anesthesia, 1421
Leicher, H., Endocrines and serum calcium, 882
Leimdörfer, A., Paravertebral dulness from enlarged auricle, 1277
Leiser, J. J., Infant feeding, 496
Leitch, A., Arsenic cancer, 141; Tar cancer, 141; Paraffin cancer, 141
Leiva, L., Amebic dysentery, 958; Effect of stasis on amebic dysentery, 958
Le Lorier, V., Hypertension in pregnancy toxemia, 879
Lemcke, D., Psychoses, 655
Lemere, H. B., Osteomyelitis, *596
Lemierre, A., Edema in cirrhosis, 284; Retention of bile, 963
Lemmens, K., Diazo and urochromogen reactions in tuberculosis, 1886
Lemmon, G. B., Perforated ulcer, *771
Lemon, W. S., Intestinal tuberculosis, 1957
Lenaz, Blood pressure, 1654
Lennmalm, F., Syphilis as factor in thyroid and pituitary disease, 592
Lennox, W. G., Neurosyphilis, 579
Lenoble, E., Amebic dysentery, 359; Osteogenous exostoses, 587
Le Noir, Anaphylactic enterocolitis and dyspepsia, 1490
Lenormant, C., Tumor of bladder, 283; Hydrocephalus, 880
Lenzmann, Intravenous injections of oily substances, 734
Leo, H., Disinfection of mouth, 1034
Léon, N., Parasitology, 588
de Leon, W., Wassermann in yaws, 1732
Leonard, R. D., Pertussis, 1098
Lepehne, G., Spleen, 286
Lereboullet, P., Liver in chronic infections, 284; Liver in children, 587
Leredde, E., Syphilis, 1738
Léri, A., Gonococcemia abscess, 963; Urinary incontinence, 878, 1490; Infantile paralysis, 1346
Leriche, R., Periaarterial sympathectomy, 660; Celiacic neuromas, 1182; Transplanted nerves, 1182; Phlebitis, 1738
Lermoyez, Paralysis of larynx, 880; Urticaria and hemiplegia, 1737
Leroux, Intratracheal injections of iodized oil, 1736
Leskinen, S., Pregnancy, 736
Lesné, Antiscorbutic power of milks, 359
Lessing, A., Ovarian cancer, 1108
Levaditi, C., Syphilis, 1416; Neurotropic ectodermoses, 1489
Levant, Retroplacental hemorrhage, 1274
Levene, A., Adenoids, 1817
Levesque, J., Edema in cirrhosis, 284; Bronze-skin, 587; Retention of bile, 963
Lévi, L., Pituitary syndromes, 1346
Levi, P., Bilirubin and fibrinogen in blood, 1656
Levinson, A., Tonsillectomy, *20
Levinson, S. A., Peritoneal tuberculosis, 721
Lévy, G., Endocrine disturbances and nitritoid crises, 1417
Levy, J., Dilution of milk for infants, 216
Levy, M. D., Tartar emetic and nonprotein nitrogen, 277; Detoxification of cyanids, 1410
Lévy, R., Blood and tissue fluids, 1545
Levy, R. L., Quinidin, 1872

- Levy-Bing, Syphilis, 436; Absorption of bismuth preparations, 1105; Urinary elimination of arsenical compounds, 1416
- Lévy-Bruhl, Benzene poisoning, 65; Benzene anemia, 213
- Lévy-Franckel, A., Syphilis, 1105
- Lévy-Soial, E., Dermatitis, 435
- Lévy-Welssmann, Gonococcus infection, 1182
- LeWald, L. T., Relation of heart and its valves, 722; Lung abscess, 723
- Lewandowski, A., Predisposition to disease, 1276
- Lewin, A., Urology, 1887
- Lewin, L., Pregnancy, 1492
- Lewis, D., Myositis ossificans, *1281
- Lewis, H. B., Uric acid metabolism, 1543
- Lewis, N. D. C., Sarcoma of gallbladder, 62
- Lewis, P. A., Complement fixation reaction in tuberculosis, 721
- Lewis, T., Interpretations of electrocardiogram, 807
- Lewisohn, R., Chills following transfusion, *247; Transfusion in new-born, 1166
- Lewison, M., Heart disease, *828; Cardiac arrhythmias, *1520
- Lewton, D. L., Intracardiac epinephrin injection, 1637
- Lexer, E., Surgical infection, 662
- Leynen, F., Repair of perineum, 659
- Leyton, O., Diabetes mellitus, 1810
- Lian, C., Hyperesthesia, 963
- Libarona Brian, S., Articular rheumatism, 67; Sciatica, 1419
- Libby, W. E., Schistosomiasis japonica, 1178
- Libman, E., Endocarditis, *813; Verrucous endocarditis, 1724; Bacterial endocarditis, 1727
- Lichtenstern, R., Ejaculatory duct after prostatectomy, 1279
- Lieb, C. C., Hyperthyroidism, 1339
- Liebesny, P., Respiratory metabolism, 148
- Liebreich, E., Eosinophilia, 1276
- Liebgme, A., Paroxysmal hemoglobinuria, 728
- Lieschied, Transplantation of gonads, 1820
- Lilienthal, H., Posterior mediastinotomy, 723
- Lindblom, S. H., Thoracocentesis, 1424
- Lindenberg, H., Leishmaniasis of nose, 1409
- Linder, C., Hereditary ataxia, 440
- Lindhard, J., Circulation, 727
- Lindstedt, F., Catarrhal icterus, 1548
- Lintz, W., Menstruation, 1268
- Linzenmeier, Capillary circulation, 1741
- Lion, B., Urochromogen reaction in urine, 732
- Lippmann, H., Gaucher's splenomegaly, 734; Intraspinal treatment of contracture, 1741
- Lipschutz, A., Endocrine function of testicle, 1268
- Lisbonne, Meningitis with influenza bacillus, 964
- Lisser, H., Endocrine disease, 1807
- Lister, S., Influenza, 358
- Litchfield, H. R., Diagnostic throat culture in diphtheria, *240; Laryngeal diphtheria, *524
- Littauer, A., Vulvar pruritus, 884
- Litterer, W., Wassermann and Kahn flocculation test, 1406
- Little, C. F., Pericarditis, 1725
- Litvak, A., Poliomyelitis, 873; Anthrax, *1769
- Lloyd, P. C., Botulism, 1875
- Locke, E. A., Pneumonia, *1507
- Lockwood, A. L., Lung abscess, 723
- Lockwood, B. C., Atropin and gastric function, 207; Olive oil and gastric function, 655
- Loeb, R. F., Calcium chlorid diuresis, 1643
- Loeper, Cancer of stomach, 66; Leukocyte influx into stomach, 880; Carcinomatous pleurisy, 1546; Body fluids in malignant disease, 1737
- Loevenhart, A. S., Drugs and animal experimentation, *151; Tryparsamid, *1497
- Loewenberg, Calcium chlorid, 1545
- Loewenhardt, F. E. R., Gout and kidneys, 440; Cholangitis, 1276
- Loewy, A., Endocrine obesity, 516
- Loftus, J. E., Cerebrospinal rhinorrhea, *841
- Löhlein, W., Blindness after migraine, 67
- Löhr, W., Ossifying myositis, 439; Surgical affections and blood, 662
- Loir, Typhoid, 142
- Lombard, Hematoma of spleen, 512
- Lomholt, S., Radioactive substances in fluid form, 518
- Lommatzsch, R., Staining of tubercle bacilli, 442
- Long, E., Multiple sclerosis, 1274, 1491
- Longcope, W. T., Infectious mononucleosis, 135; Sensitization, 356
- Lorber, Endocrine lesions of genitals, 1658
- Lorentz, F. H., Gonococci, 441; Changes of bacilli in gases, 1277
- Lorenz, W. F., Tryparsamid, *1497
- di Lorenzo, A., Syphilitic necrosis of skull, 1185
- Lorey, Irradiation of lacrimal glands, 218
- Lortat-Jacob, Diabetes insipidus, 511
- Lossius, I., Tumor in cerebellopontile angle, 812
- Lotmar, F., Multiple sclerosis, 143
- Lotsch, F., War amputations and prostheses, 732
- Louros, N. K., Puerperal infection, 1108; Immunization of pregnant against streptococci, 1885
- Lovace, W. R., Fibrolipoma, *375
- Lovett, R. W., Report of the committee on trained nursing, 851
- Lo Vullo, B., Nitritoid crises, 589
- Lowe, B. H., Internal secretion and respiratory exchange, 1270
- Lowenburg, H., Infant feeding, 1101
- Lower, W. E., Disposition of ureters, *1200
- Lowsley, O. S., Pyelography, 876
- Löwy, J., Dupuytren's contracture, 1279
- Lozinsky, E., Tolysin, *581
- Luckhardt, A. B., Calcium lactate, *79; Physiological effects of ethylene, *765; Ethylene as gas anesthetic, *1440; Ethylene and acetylene, 1476
- Ludington, N. A., Rupture of long head of biceps flexor cubiti muscle, 1484; Traumatic appendicitis, *1448
- Ludlow, A. I., Papilloma of buttock, 1178; Liver abscess, 1342
- Ludwig, F., Dysmenorrhea, 729
- Luikart, R., Phenobarbital sodium in vomiting, 1877
- Lukes, J., Immunity in anthrax, 1495
- Lukin, N., Aphonia, *1846
- Lükö, Periappendicular abscess, 970
- Lumbard, J. E., Anesthetizing with ethyl chlorid, *321
- Lund, F. C., Ophthalmologic magnet, 1549
- Lundsgaard, C., Lung volumes, *163; Stair running and circulation, 1175; Heavy exercise, 1543
- Lundwall, K., Aneurysm of splenic artery, 1348
- Lupo, M., Fusion of atlas with occipital bone, 513
- Lustig, A., Pellagra, 216
- Luton, Gonococemic abscess, 963
- Lutz, Exclusion of pylorus, 1743
- Lydtin, K., Tuberculosis, 1110
- Lynch, K. M., Trichomonas, 277; Aspergillus scalp lesions, 1878
- Lyon, E. P., Lack of physicians, 718
- Lyon, G., Serotherapy and hematotherapy, 1814
- Lyon, M. W., Jr., Giemsa's blood stain, *473
- Lyons, H. R., Otitis media, *176
- Lyons, J. H., White bile in common duct, 276, 1484
- M**
- Maass, H., Development of bone, 515
- Mabon, T. M., Modification of Folin and Wu method, 1727
- Macaggi, G. B., Injury of arteries of colon, 284; Ligation of plantar arch, 1274
- Macalister, A., Hospital intern year, 927
- McBride, R. W., Anaphylaxis, *1437
- McBride, W. L., Arsphenamin dermatitis, 505
- McCallum, F., Pharyngeal diphtheria, *1375
- McCann, W. S., Glucose ingestion and respiratory exchange of diabetic, 1269; Ketogenic-antiketogenic balance in diabetes, 1642
- McCarrison, R., Suprarenal glands, 658
- McCarthy, J. F., Reflex anuria, *1043
- McCartney, J., Epilepsy, 511
- McCartney, J. L., Sterilization by spermotoxin, 653
- McClelland, J. R., Saliva, 354
- McClendon, J. F., Goiter, *600
- McClintock, J. T., Special medical student, 954
- McClure, C. W., Pancreatic function, 137; Peptic activity of gastric contents, 277
- McClure, J. C., Tuberculosis, 1651
- McClure, W. B., Intestinal anastomosis, 63
- McConnell, G., Encephalitis following scarlet fever, 797; Malaria, *1123
- McConnell, J. W., Sclerosis, 1339
- McConnell, R. L., Myositis purulenta tropica, 1032
- McCormick, N. A., Nutrition and insulin hypoglycemia, 1811
- McCoy, J., Deafness and roentgen rays, 1645
- MacCready, P. M., Chronic lung abscess, 723
- McCrudden, F. H., Pneumonitis, *609
- McDonald, A. L., Dystocia, 800
- Macdonald, H., Catharsis in "colds," *1375
- McDonald, S. F., Pneumococcus pericarditis, 1544
- McDowall, R. J. S., Anesthetics and lungs, 585; Histamin action, 1811
- Macera, J. M., Dystrophy of fibro-elastic tissue, 881
- Macfie, J. W. S., Cockroaches and disease, 509
- MacGowan, G., Hematuria, 1809
- McGuire, P. F., Epidemiologic survey, *665
- McGuire, S., Mesenteric thrombosis, 1734
- McIver, M. A., Torsion of omentum, 506; Traumatic shock, 1733
- Mackall, L. L., Earliest recognition of appendicitis, 572
- McKee, C. M., Diphtheria bacilli, 1483
- McKenna, H., Intestinal obstructions, *1666
- McKenna, C., Intestinal obstruction, 1273
- Mackenzie, G. M., Pneumococcus immunity, 1643
- MacKenzie, W. C., Anatomy, 1958
- Mackie, T. J., Diphtheria, 875
- McKnight, J. B., Hospitals for tuberculosis, 509
- MacLachlan, W. W. G., Anemia, 1800
- McLaughlin, A. J., Public health training, 1247
- Maclean, E. J., Chorea gravidarum, 1341
- MacLeod, J. J. R., Insulin, 278; Insulin and glucose hyperglycemia, 1729; Nutrition and insulin hypoglycemia, 1811
- McLester, J. S., Nephritis, 1271
- McMaster, P. D., Bile duct drainage, 724
- McMillan, T. M., Tachycardia, 1028
- MacNeal, W. J., Cancer, *466
- McNeil, C., Tuberculin test, 1735
- McNeil, I., Hernia, 1416
- Macomber, D., Sterility, *978
- McPhedran, A., Insulin in diabetes, 1726
- McQuarrie, I., Iso-agglutination, 1099
- Macrae, D., Jr., Breast cancer, 133
- Macrae, F., Cholelithiasis, 63
- MacRae, J. D., Broncho-adenopathy, *1292
- McVay, J. R., Cancer of rectum, 354
- McWhorter, G. L., Gallbladder dissection, 960
- MacWilliam, J. A., Sensory phenomena, 585
- McWilliams, C. A., Traumatic synovitis, 354
- Madlener, M., Parchment paper for drains, 1111
- Maffeo, L., Cholesterol content of tonsils, 1651
- Magarinos Torres, C., Bone marrow in immunization, 731
- Magee, D. M. P., Tuberculosis and syphilis, *179
- Magenta, M. A., Snake venom and heart, 1420
- Magnus, G., Lymphatics, 439
- Magnuson, P. B., Os calcis fractures, *1511
- Magrou, J., Cancer, 1546
- Mahnert, A., Sedimentation of corpuscles, 591
- Mahu, Middle ear infections, 435
- Maier, O., Intratracheal tumors, 1109
- Main, D. C., Dementia praecox, 873
- Maione, P., Typhoid, 213
- Maitland, C. D., Intestinal stasis, 1810
- Majoor, R. H., Acidosis, *83; Creatinin, *384; Glucose tolerance tests, 723; Blood chemistry in allergy, 1269; Insulin in diabetes, *1597
- Mallardi, M., Leishmaniasis, 1184
- Mallory, W. J., Aneurysm, *1356
- Malten, Psoriasis, 1819
- Manasse, P., Nerve grafting, 515
- Maun, A. T., Hernia, 1957
- Mann, F. C., Pancreatitis, 721; Gastric ulcer, 1806
- Manwaring, W. H., Capillary permeability in anaphylaxis, *303; Intestinal lesion in anaphylaxis, *1437; Adaptations of fixed tissues in anaphylaxis, 1486; Streptococcus hemolyticus, 1648
- Maragliano, D., Nerve implantation in suprarenal capsules, 285
- Maranon, G., Red thyroid spot, 359; Oldest case of Addison's disease, 881; Metabolism, 1545; Rheumatism, 1654
- Marchal, G., Cancer of stomach, 66; Alimentary leukocyte influx into stomach, 880
- Marchand, L., Epilepsy and paralysis, 1105; Status epilepticus, 1546
- Marchiafava, E., Aortitis, 730
- Marconi, Share of epinephrin in hypertension induced by irritation of splanchnic nerve, 1740
- Marcus, A., Nervous dermatoses, 147
- Martan, A. B., Eczema, 1183
- Margarucci, O., Cyst in liver, 513
- Marin Amat, M., Squint, 1347; Gumma of inner canthus, 1655
- Marine, D., Endocrine and respiratory exchange, 138, 1270; Splenectomy and respiratory exchange, 1270
- Marinesco, G., Herpes zoster, 512; Bulbar hemi-syndrome, 1180; Oxidating ferments in thermogenesis and fever, 1654
- Marini, M. A., Typhoid with syphilis, 590
- Marion, G., Balanic hypospadias, 1032
- Marique, A., Thyrectomy, 1345
- Markert, H. J., Tuberculosis, 662
- Markow, H., Menstruation, 1268
- Markwalder, J., Balneology and pharmacology, 733
- Marrack, J. R., Retinitis, 1812
- Marsh, H. L., Iodin in urine, 581
- Marsh, P. L., Diabetes, 655
- Marshall, C. H., Trypanosomiasis, 961
- Marshall, E. K., Jr., Elimination of phenolsulphonephthalein, 723; Temporary closure of renal artery, 1729
- Marshall, J. A., Preparing blue celluloid injection material, *181
- Marshall, V. F., Tabes, *1844
- Marsset, Hemorrhage in suprarenal capsules, 1545
- Martelli, C., Syphilis in 4 generations, 1816
- Martini, R., Disease prevention, 142
- Martin, C. F., Myocardial lesions, 1723
- Martin, E., Boiled human milk, 1656
- Martin, J. P., Syringomyelia and syringobulbia, 1272
- Martin, K. A., Ligation, *1678
- Martindale, J. W., Pain in abdomen, 62; Lyon-Meltzer method, 1270
- Martinet, A., Carbophosphaturia, 360
- de Martini, A., Bilirubin in blood, 285; Displacement of trachea in tuberculosis, 1816
- Marvin, H. M., Quinidin in auricular fibrillation, 1410
- Marx, E., Difference in tension of the eyes, 1424
- Maselli, D., Hydatid fremitus in bladder, 144
- Masland, H. C., Splint for patella, *319
- Mason, E. H., Diabetes, 1642
- Mason, J. M., Gunshot wounds of abdomen, 205
- Mason, W. B., Ear and nasal syringe, *1616
- de Massary, E., Emotional instability, 805
- Masson, J. C., Sarcoma of uterus, 1877
- Master, A. M., Electrocardiograms, *98
- Mastin, E. V., Blood supply of thyroid, 584

- Mathes, P., Gynecology, 1656
Matheson, A. R., Histamin and gastric secretion, 1273
Matsuoka, Retention of inorganic iron in perfused liver, 1818
Matthill, H. A., Yeast, 1409
Matzenauer, Gonorrhea, 218
Mau, C., Focal reaction, 1657
Maurer, A., Cancer of tongue, 880
Maury, J. M., Pelvic operations, 275
Mauté, A., Streptococcus infections, 360
Mauthner, Tubal pregnancy, 518
Maver, M. E., Alimentary absorption of calcium, 1483
Maxey, K. F., Malaria, 1650
Maximow, A. A., Roentgen rays in inflamed connective tissue, 1411
May, J., Syphilis, 1185
Mayer, A., Constitution in obstetrics, 591; Spastic ileus, 663
Mayo, C. H., Diverticulum of esophagus, 276; Goiter, *891
Mayo, W. J., Radical operations on stomach, 134, 1733; Lymphatic involvement in infections, *221
Mazza, S., Hemoclastic crisis in pregnant, 145, 1740; Refractometer index of serum in pregnancy, 145; Diagnostic biopsy, 590
Meanes, L. L., Organized women and medical profession, 1152
Means, J. H., Goiter, 1410
Mebane, T. S., Injury to hip, 724
Medi, A., Copper sulphate in spinal fluid, 284; Typhoid, 361
Megaw, J. W. D., Beriberi, 1179
Meigs, J. V., Fibroma and sarcoma of ovary, 277
Meineri, P. A., Syphilitic diabetes, 1816
Meinicke, E., Modified Meinicke reaction, 1034
Meissner, Experimental infection with typhoid bacilli, 1818
Melchior, E., Leukemia, 219
Melen, D. R., Paraffin in bladder, *685
Meleney, F. L., Tumor of thyroid, 354; New test for cholesterol, 1880
Mella, H., Amaurosis, 138
Mendel, F., Perlingual administration of drugs, 287
Mendel, L., Kidney function tests, 1109
Mendel, L. B., Eggs as source of vitamin B, *302; Vitamin B in nutrition, 429
Mendelson, R. W., Resistance of Siamese to disease, 1178
Mendoza-Guazon, M. P., Schistosomiasis, 583
Meneses, G. J., Syphilis, 1106
Menetrier, P., Cancer, 1737
Menne, F. R., Blood platelets, 430
Menschel, Hydration of tissues, 1742
Menville, L. J., Leukemia, 61
Mercadé, S., Wounds, 1652
Mériel, Ulcers of ileum, 512
Merklen, P., Phenolsulphonophthalein test in tuberculosis, 65; Phenolsulphonophthalein test in nephritis and cardiac diseases, 1815
Mermingis, K., Inguinal route to bladder, 1820
Merrill, E. F., Roentgen ray in cardiac diagnosis, 1339
Merritt, E. A., Anomaly of liver, 59
Méry, Prophylaxis of measles, 1417
Mestre, R., Liver in pregnancy, 967
Mestrezat, W., Sugar in spinal fluid and blood, 1654
Meulengracht, E., Anemia with stenosis, 150
Meunier, L., Blood in stomach and feces, 1180
Meyer, A. W., Atrophy of muscles, 810
Meyer, E., Alcoholism, 1034; Parkinsonian sequelae of encephalitis, 1493
Meyer, Else, Bilirubin in blood, 515; Bilirubin in urine, 1493
Meyer, Erich, Arsphenamin injuries, 440; Diabetes insipidus, 1742
Meyer, F., Streptococcus infection, 1277; Removal of hair by roentgen rays, 1547
Meyer, G. P., Hypersensitiveness, *11
Meyer, J., Jaundice, *1766
de Meyer, J., Physostigmin, 434
Meyer, K., Blood grouping, 1277
Meyer, K. F., Bacillus botulinus, 506, 507
Meyer, P., Malformation of heart, 1181
Meyer, P. S., Prodigiosus and roentgen rays, 1656
Meyer, W., Lung suppuration, 723
Meyer-Bisch, R., Liver in encephalitis, 1742; Diabetes insipidus, 1742
Meyer-Rüegg, H., Retroflexion of uterus, 964
Mhasker, K. S., Hookworm infection, 1178
Michael, J. C., Head injuries, *1047
Michaelsson, E., Arterial embolectomy, 592
Michaux, Hemorrhage in suprarenal capsules, 1545
Michelsson, F., Osteomyelitis of ribs, 732
Miguiac, G., Syphilis, 1345
v. Mikulicz-Radecki, F., Lipoids in ovaries, 590
Miles, W. R., Psychologic tests for diabetics, 207; Physical measurements of diabetics, 278
Millan, G., Nails in syphilis, 435; Syphilitic hemiplegia, 1815
Miliani, A., Epitheliomas of lip, 360
Miller, C. M., Dermoid of conjunctiva, 509
Miller, E. B., Muscle indicator, *1453
Miller, J. A., Abscess of lung, 1803
Miller, J. L., Peptone in migraine, 1728, *1894
Miller, K., Urobilin in intestines, 1655
Miller, R., Celiac disease, 728
Miller, R. T., Jr., Surgery of thoracic esophagus, 1807
Miller, S., Arthritis, 659
Millet, J. A. P., Hypothyroidism, 1177
Milligan, J., Open air schools, 209
Mills, G. W., Arsphenamin in mental disorders, 1541
Mills, J. L., Papyraceous fetus, *1775
Milne, L. S., Arterial hypertension, 507
Milner, A. E., Diathermy in lupus, 281
Mink, P. J., Tracheal cannula, 1280
Mino, P., Hereditary ataxia, 284; Blood groups, 966
Minor, C. L., Tuberculosis, 428
Minot, A., Retention and elimination of lead, 1643
Minot, G. R., Infectious jaundice, 1728; Polycythemia, 1954
Minvielle, Phenolsulphonophthalein test in tuberculosis, 65
Mirizzi, P. L., Splanchnic anesthesia, 731
Mirkin, A., Determination of calcium, magnesium, potassium and sodium in blood, 1100
Mitchell, J. F., Mesenteric thrombosis, 206
Mitchell, J. H., Saccharomycetic interdigital erosion, 136
Mitterstiller, S., Pseudarthrosis, 1109
Mixsell, H. R., Pneumonia following measles, 959
Mixon, J. F., Obstetrics in home, 1540
Miyake, H., Movable duodenum, 363
Mjedloff, P., Tubercle bacilli, 1092
Mobitz, W., Atrioventricular automatism, 1655
Mocquot, Bronchiectasis, 587
Modigliani, E., Rectal treatment with arsphenamin, 1816
Moffat, B. W., Disease of scaphoid, *87
Mohr, F., Psychophysical relations in internal medicine, 734
Moll, Nutritional disturbances, 440
Möllendorff, W., Irradiation with quartz lamp, 1655
Möller, E., Stair running and circulation, 1175; Heavy exercise, 1543
Mollow, M., Radium and uterus, 282
Monceaux, R., Tuberculosis, 728
Monckelberg, C., Pneumococcus puerperal septicaemia, 282
Mond, Blood sedimentation, 364
Monrad-Krohn, G. H., Motor symptoms, 444; Fatigue test in neurasthenia, 1038; Tuberculosis of brain, 1038
Montavani, M., Lab-ferment in fetus, 1183
Monteleone, R., Vomiting and diarrhea in tuberculous, 964
Montes Pareja, J., Bullet in pericardium, 1185
Monteverde, J. A., Malaria, 1033
Montgomery, A. H., Gastrojejunal ulcer, 722
Montgomery, J. G., Transfusion of chicken blood in pneumonias, 1176
Monthus, A., Spinal anesthesia, 1183
Moody, A. R., Ophthalmic migraine, 432
Moody, W. B., Precipitin reaction for syphilis, *383; Systemic infections following abortion, 800; Invasion of body by intestinal tract bacteria, 1413
Moon, V. H., Precipitin test, *1502
Moore, B. H., Abnormalities of lumbar vertebrae, 1646
Moore, H. F., Pneumococcus types, 1651
Moore, J. E., Neurosyphilis, *818; Pregnancy and syphilis, 1269
Moore, J. W., Diabetes and leukemia, 803
Moore, W. J., Appendicitis, 1881
Moorhead, J. J., Fractures of long bones, *1207; Roentgen-ray silhouettes, *1455
Moorhead, T. G., Congenital cardiac anomaly, 1179
Moorhouse, V. H. K., Retinal reflex, 653
Moppert, G. G., Diaphragmatic hernia, 512
Moral, Sedimentation of corpuscles, 1034
Morat, D., Hemoclastic crisis in drug addicts, 880
Morawitz, P., Hemorrhagic diatheses, 1277
Moreali, G., Disinfection of earth, 213
Moreau, J., Tuberculosis of mesenteric glands, 65; Osteochondritis of knee, 1345
Morenas, L., Intestinal helminthiasis, 588; Bronchopulmonary spirochetosis, 588
Morgan, E. A., Syphilis, 1485
Morgan, H. J., Blood in pneumonia, 1727
Morgulis, S., Test of renal function, 655; Modification of Fölln-Wu method, 1100
Mori, S., Ophthalmia, 1483
Moriarty, M. E., Cretinism, 1097
Morison, R., Cholelithiasis, 63
Moro, E., Types seen by pediatricians, 883
Morquio, L., Digestive disturbances, 285; Hydatid cyst in brain, 514
Morris, R. S., Pericarditis, 1725
Morrison, L. F., Streptococcus immunity, *1298
Morter, R. E., Myocardium as index of age, 1734
Morton, C. A., Malignant diseases of breast, 802
Mosenthal, A., Pneumoradiography of kidney, 1887
Mosenthal, H. O., Blood pressure, 1804
Mosher, G. C., Purpura and gestation, 1733
Moszkowicz, L., Preparedness of stomach for ulcer, 732
Motohashi, S., Splenectomy and antibody production, 278
Mott, F. W., Dementia præcox, 1814
Motzfeldt, K., Glycosuria of pregnancy, 149
Mouchet, A., Scoliosis vs. Pott's disease, 1181
Mouchotte, J., Syphilis of uterus, 964
Mouradian, Mycosis chancre, 1105
Mourek, J., Epituberculous infiltration, 443
Mourgue, R., Decerebrate rigidity, 806
Mouriquand, G., Deficiency diseases, 288
Moutier, F., Intestinal amebiasis, 729
Moxey, V., Intestinal obstruction, 64
Moynihan, E., Gastric and duodenal ulcer, 961; Duodenal ulcer, 1415
Muggia, Aspiration of foreign body, 1547
Mühsam, E., Puncture of testicles, 734
Mühsam, H., Menstruation, 1742
Müller, A., Mammary cancer, 515; Bismuth calculus in appendix, 1423
Müller, E., Gonorrhea, 1278
Müller, Edward, Poliomyelitis, 216
Müller, E. F., Leukopenia, 734
Müller, F., Blood pressure, 883
Müller, H. R., Pyelography, 876
Müller, L., Trachoma and radium, 441
Müller, V., Tuberculosis and pregnancy, 970
Müller, W., Callus formation in foot, 69; Modification of structure of bone, 363; Mechanical strain on epiphysis, 1035
Mullin, W. V., Tubercles in tonsil, *1211
Mulzer, Spirochetes and nervous system, 735
Munford, S. A., Alkaline tide, *304
Munro, W. T., Syphilis of lung, 433
Munyo, J. C., Maxillary sinusitis, 1184; Thrombophlebitis of lateral sinus, 1185
Murayama, K., Breast cancer, 585
Muret, Obstetric shock, 881; Pains in gynecology, 1546
Murlin, J. R., Pancreas extracts and depauperized animal, 139; Laxative action of yeast, 1409; Extraction of insulin, 1729; Perfused insulin and blood sugar, 1729
Murphy, D. P., Pregnancy in tuberculosis, 353; Luxation of hip, *549
Murray, J. A., Experimental cancer, 141
Musante, E., X-rays in tuberculosis, 285
Muscholl, E., Hypernephroma, 808
Musgrave, W. E., Clothing for California comfort, 777
Muskens, L. J. J., Myoclonic reflexes, 1037, 1230
Mussey, R. D., Uterine fibromyomas, 1648
Mutermilch, S., Secondary infection of cancers and radiotherapy, 1417
Myers, B., Persistent jaundice, 1735
Myers, J. A., Graduate instruction in tuberculosis, 344
Myers, V. C., New colorimeter, 429; Sugar in urine, 581
Myers, W. H., Dengue fever, 1541
- N
- Nagahara, Urine in measles, 1104
Nakamura, O., Gelatin and bacteriophages, 1495
Nanu, I., Arteriovenous aneurysm, 804
Nario, C., Achlorhydria, 214
Nassau, E., Blood picture changes, 287
Nassauer, M., Myoma, 1494; Sterility, 1548
Nasso, I., Leishmaniasis, 1184, 1883; Syphilis, 1738
Naswitis, K., Function of spleen, 68
Nather, K., Access to subphrenic abscess, 362; Refractometer findings in cancer, 809; Pre-disposition and cancer, 1033
Nattan-Larrier, L., Bacilli carriers, 881
Nativg, H., Genital prolapse, 444
Naujoks, H., Intraperitoneal injection of ether, 1278
Nauss, R. W., Pertussis, *1840
Navarro, A., Calculus in appendix, 214; Wrist fracture, 589
Navarro, J. C., Hydrocephalus, 434
Naville, F., Encephalitis, 1274
Nazari, A., Ulcerous typhoid aortitis, 730
v. Neergaard, K., Electronarcosis, 362
Negrete, J., Venoms, 590
Negro, M., Kidney tests and salt in diet, 1032; Cancer of prostate, 1653
Nehring, E., Tuberculosis, 148
Neill, J. M., Edema in pneumonia, 655; Blood in lobar pneumonia, 1727
Nelken, A., Septicemia, *1846
Nelken, L., Guanidin poisoning and blood, 1493
Nelson, E. E., Pituitary extract, 1100
Német, G., "Mitral form" of healthy hearts, 1657
Netter, A., Meningococcus septic fever, 964
Neuburger, M., Auenbrugger biontennial, 444
Neuhaus, F., Cancer of cervix, 1741
Neuhof, S., Heart block, 798
Neumann, F., Spontaneous appearance of spirochetes resembling pallida in nonsyphilitic rabbit, 1493
Neumann, H., Hemophilia, 1277
Neumann, K. E., Puncture of thorax, 1034
Neumann, W., Tuberculosis, 734
Neuschloss, Viscosity of blood serum, 1740
Neuschloss, S. M., Potassium ions and muscle tonus, 809
Neustadt, A., Tuberculin tests, 1741
Neuwirt, K., Reflex anuria, 663
Neveu-Lemaire, Gnats in human pathology, 880
Nevin, M., Experimental measles, 875
New, G. B., Carcinoma of tongue, 960; Larynx in thyroid diseases, 1098; Cleft palate, 1648
Newell, E. D., Brain lesions, 205
Newman, J. A., Tuberculosis, 1173

Ney, G. C., Ingrowing toe nail, *374
Nicastro, G., Resection of spermatic veins, 144
Nicholl, J. W., Quinidin in auricular disease, 212
Nichols, A. A., Second initial lesion of syphilis, *843
Nichols, H. J., Syphilis, 1647
Nichols, W. C., Second initial lesion of syphilis, *843
Nicol, W. D., Protein tests, 1544
Nicolas, J., Sporotrichoid tuberculous "gumma," 1882
Nicolau, S., Neurotropic ectodermoses, 1489
Nicolich, Roentgen rays from standpoint of urologist, 1653
Nidderhe, W., Tetany in pregnant, 591
Niedermayr, R., Wassermann and Meinicke's reaction in uterine cancer, 884
Niedermeyer, A., Decapsulation of kidney, 1657; Diagnosis by smelling, 1884
Nielsen, C., Poisoning by local anesthetics, 1808
Nelson, A. L., Hip disease, *1442
Niemeyer, R., Glucose in heart disease, 516
Nienkemper, Arne's blood count, 1036
Nigst, P. F., Coagulability of blood, 729
Nijhoff, G. C., Strangulation of fetus, 812
Nin Posadas, J., Urethrotomy, 437
Niosi, F., Gastric ulcer, 730
Nisbet, O. M., Intestinal antilepsia, 210
Niseggi, C. H., Disease of urinary apparatus, 437
Nissen, R., Parabiosis, 884
Nitschke, W., Blood in syphilis, 362
Nobécourt, P., Diabetes, 514; Tuberculosis, 879
Nobel, E., Liver function tests, 442
Noble, E. C., Nutrition and insulin hypoglycemia, 1811
Noehren, A. H., Multiple calculi, *25
Noel, R., Protein metabolism, 1654
Nogier, T., Hypertrophied tonsils, 1417
Noguchi, H., Rocky Mountain spotted fever, 1412
Nolrit, R. H., Congenital scoliosis, 283
Noon, C., Excision of fibula, 1103
von Noorden, C., Diabetes, 661, 969
de Nooy, J. A., Hookworm, 149
Nordgren, R., Chorea, 592
Norgaard, A., Hemoglobin and corpuscles, 444
Norman, N. P., Duodenal tube, *400
Norris, C. C., Pregnancy in tuberculosis, 353; Uterine neoplasm, 799
Norsk, F., Tonsillectomy, 444
Northrop, J. H., Trypsin and pepsin, 581
Norton, J. F., Dyes and streptococcus viridans, 1413
Nouet, C., Writing for blind, 1183
Novak, E., Vaginal pessary, *1294
Novak, F. J., Jr., Electrodiagnosis of tonsils, *1842
Novaro, V., Toad poison, 590
Nové-Josserand, Pott's disease, 1181
Nürnberg, L., Transfusion, 517; Irradiation of spleen in hemorrhage, 884
Nussbaum, R., Widal's liver function test, 441
Nüssel, K., Tubercle bacilli in feces, 1886
Nuttall, H. C. W., Tuberculosis of sacro-iliac joint, 1735
Nyfeldt, A., Rhinopharyngeal scleroma, 219
Nyiri, W., Kidney test with thiosulphate, 1276
Nyström, B., Blood cyst in ovary, 70; Adnexitis, 736
Nyulasy, A. J., Round ligaments, 141

O

Obarrio, J. M., Internal hydrocephalus, 1420
O'Brien, K., Nutrition and insulin hypoglycemia, 1811
Ochsner, E. H., Fatigue intoxication, 874
Ockerblad, N. F., Catheter, *250
O'Connor, J., Empyema, 1880
O'Day, J. C., Gastro-enterostomy, 584
Oddo, C., Addison's disease, 359; Cardiac infantism, 587
Oddo, J., Addison's disease, 359
Oehler, L., Cardiospasm, 69
Oehme, C., Water metabolism, 808
Oeller, H., Typhoid, 516
Oelze, F. W., Puncture of lymphatic glands, 1034
v. Oettingen, K., Blood during pregnancy, 516
O'Farrell, P. T., Premature infant, 659
Offenbacher, R., Insulin in diabetes, 147
Offermann, W., Twin pregnancy, 1278
Ohmori, D., Prostate and seminal vesicles, 1279
Ohrenstein, J., Teratoma, 736
Ohtani, M., Plasmophagocytosis in diagnosis of typhoid, 1345
Okada, S., Pericarditis, 1104
O'Keefe, E. S., Protein sensitivity, *1120
Okuda, S., Pyocyaneus bacteriophages, 1658
Olitsky, P. K., Bacterium pneumosintes, 376; Nasopharyngeal secretions in influenza, 1411; Injection of bacterium pneumosintes vaccines, 1616
Oliva, C., Hernia of bladder, 1274
Oliver, E. A., Syphilis, 208
Oliver, J., Excretion of hemoglobin, 725; Arsenophenamin and blood coagulability, 1878
Oliver, S. F., Gallstones, 581
Olsted, W. H., Insulin, *1903

O'Neil, R. F., Pyleography, 1731
O'Neill, B. J., Ectopic pregnancy, *913
Oplitz, E., Dosage of roentgen and radium rays, 1492; Carcinoma dose of roentgen rays, 1805
Oplitz, H., Red cell sedimentation and specific gravity, 440; Regeneration of blood, 591
Oppenheim, M., Jarisch-Herxheimer reaction, 884
Oppermann, Tuberculosis and pregnancy, 1492
Orator, Refractometer findings in cancer, 809
Ordway, T., Four years in medicine, 952; Leukemia, 1800
Orgler, A., Tonsillitis, 1109
Orr, H. W., Chronic infections, 1101
Orr, T. G., Gastro-enterostomy, 723; Blood after intestinal obstruction, 1412; Blood after pyloric obstruction, 1412; Phrenic shoulder pain, *1434
Orrico, J., Congenital ataxia, 514
Ortega Belgrano, R., Neurasthenia, 215; Vagotonic vomiting, 1817
Orth, O., Strumectomy, 811
Osborne, E. D., Urinary tract roentgenography, *368
Osborne, E. S., Keratitis, *548
Osborne, O. T., Proprietary preparations, 127; Medical school curriculum, 1487
Osborne, T. B., Eggs as source of vitamin B, *302; Vitamin B in nutrition, 429
Osgood, R. B., Myeloma of vertebrae, 1174
Osman, A. A., Meningeal hemorrhage, 1103
Osnato, M., Epilepsy, 1541
Otake, S., Breathing in tuberculosis, 586; Tubercle bacilli in blood, 586
Otake, I., Cultivation of typhoid group of organisms in blood, 1345
Ott, W. O., Removal of parotid, 133
Ottenberg, R., Jaundice, *1519
Oudard, Lymphosarcoma of scrotum, 1182
Oury, Endocarditis, 513
Outerbridge, G. W., Anuria, *102
Ouzilleau, Sleeping sickness, 1813
Owen, W. B., Medical profession and laity, 1151
Owensby, N. M., Semi-insane, 1540

P

Pacalin, G., Pneumococcus keratitis, 213
di Pace, I., Malaria parasites, 660
Pacheco, G., Bacillary dysentery, 1816
Pack, G. T., Benzyl benzoate and nitrogenous metabolism, 139
Padua, R. G., Vaccination, *1361
Page, C. M., Flexion-contraction, 1646
Pagniez, P., Bronchial splanchnitis, 963; Gonorrheal arthritis, 1545
Paisseau, Hemorrhagic purpura, 1736; Pneumonia, 1736
Pajzs, P., Goiter, 1743
Palacio, J., Polycystic kidney, 214
Palitzsch, P., Encephalitis sequelae, 216
Palmer, L. J., Kolmer modification of Wassermann, 136
Palmieri, Tuberculosis of skin, 1654
Pansdorf, H., Blood pressure, 591
Pansini, G., Complement fixation, 964
Panton, P. N., Pernicious anemia, 962
Papastratigakis, C., Dystrophic syndrome, 283
Paraf, J., Complement fixation in tuberculosis, 729; Tuberculosis in infants, 879
Pardee, H. E. B., Electrocardiograms, *89; Pregnancy and heart disease, 135, 656
Pardee, I. H., Forced respiration, *178
Pardo-Castello, V., Syphilitic macular atrophy, 1485; Bismuth in syphilis, 1878
Parham, D., Colloid carcinoma, 654
Parhon, M., Blood in thyroidectomized animals, 1807
Park, W. H., Prevention of diphtheria, 507
Parker, F., Jr., Poison producing diphtheroids, 278
Parker, G. H., Animals and medical experimentation, 506
Parker, H. L., Respiratory rhythm after encephalitis, 137
Parker, R. R., Rocky Mountain spotted fever, 800
Parkinson, J., Quinidin in auricular disease, 212
Parr, L. W., Apparatus for fractional filtration, *1775
Parsons, J. P., Schizophrenic catatonia, 1541; Insulin in diabetes, 1641
Parsons, L. G., Pyloric stenosis, 727
Parsons-Smith, B. T., Aneurysm of aorta, 63
Parturier, G., Ptoxis of duodenum, 1883
Pascale, G., Aneurysm of pelvic vessels, 144
Paschkis, K., Abscess of spleen, 217
Pasman, F. R., Nitrous oxid analgesia in labor, 967
Pasman, R. E., Closure of abdomen, 1343
Passey, R. D., Soot cancer, 141
Pastore, S., Pseudoleukemia and osteosclerosis, 213
Pataleoni, M., Substances with incomplete vitamin action, 660
Paterson, D., Primary purpura, 432
Patrick, A., Blackwater fever, 510
Patterson, H. A., Epilepsy, 873
Patterson, S. W., Bile pigments in blood, 282; Dysentery bacilli in colitis, 358; Syphilis of lung, 1812

Patzschke, W., Symptom-free children of syphilitic, 364
Paul, H. E., Bone suppuration and renal calculus, 1809
Paul, S., Occlusion of bile duct, 442
Paullan, E. D., Affections of lenticular nucleus, 66; Scopolamine addiction, 213
Pave, S., Venoms, 590
Payr, E., Polycystic degeneration of kidneys, 1887
Pearce, L., Endocrines and tumors, 1951
Pearl, R., Age at death of parents of tuberculous and cancer patients, 579
Peck, C. H., Suppurative pleurisy, 1342
Peco, G., Periarthritis, 590
Pedro, A., Purgatives, 361; To ward off syphilis in offspring, 731; Myiasis, 1816
Peiper, A., Age predisposition in children, 147
Peiper, H., Addison's disease, 1350
Peixoto, A., Century of progress, 285
Peller, S., Cancer and pregnancy, 1348; Cardiac asthma, 1820
Pemberton, J. de J., Goiter surgery mortality, 1733
Pemberton, R., Heat in arthritis, *289; Arthritis: blood gases and blood flow, 1270; Studies on sweat, 1727
Peña Chabarría, A., Espundia in Colombia, 1107
Penhallow, D. P., Duodenal diverticulum, *1372
Pepper, O. H. P., Oliguria and nitrogen retention, 798
Peralta Ramos, A., Maternity hospitals, 361
Pereira da Silva, E., Rabies, 1419
Peremans, G., Asymmetry of pelvis and leg, 1646
Pergola, M., Thermoprecipitation in plague, 213
Perkins, H., Celiac disease, 728
Perkins, J. J., Artificial pneumothorax, 1273
Perkins, R. J., Rheumatoid arthritis, 1272
Perrin, M., Internal secretion and blood, 143
Perrin, T. G., Yellow fever, 800
Petrochoud, G., Cryptogenous septicemia, 143
Perry, M. C., Glycolysis, *1614
Perry, W. H., Caisson disease, *1455
Perthes, G., Calvé-Legg-Perthes' affection of hip, 438; Roentgen-ray injuries of larynx, 441
Perutz, A., Innervation and influence of drugs on urethral glands, 217
Pessoa, S. B., Hookworm disease, 579
Peters, A., Diseases of conjunctiva, 441
Peters, J. T., Diabetes, 444
Peters, W., Aseptic renal pyuria, 1186; Surgery and kidney function tests, 1348
Petersen, A. J., Roentgen ray, *1505
Petersen, O. V. C. E., Heart block, 884
Petersen, W. F., Resistance to peritoneal tuberculosis following oil injections, 721
Peterson, M. F., Prophylaxis in measles and chickenpox, 958
Petges, G., Mycosis from yeast fungus, 1882
Petit-Dutaillis, D., Cholecystectomy, 359
Petow, H., Ferments in blood, 217
Petragnani, G., Asthma, 1418
Petrén, K., Encephalitis, 1413
Petroff, N., Resection of urethra, 362
Petzold, H., Malignant tumors, 218
Peugniez, Retraction of palmar aponeurosis, 805
Peutz, J. L. A., Pancreas stones, 1655; Polyserositis, 1744
Pewny, R., Sedimentation of erythrocytes in gynecology, 518
Peyton, S. M., Isoagglutinins, *670
Peytou, Pontine syndrome, 435
Pezzi, C., Antagonism between epinephrin and cinchona, 1180
Pfalz, W., Hypertension, 439
Pfanner, W., Valve breathing, 662
Pfandler, M., Plight of German children, 1819
Pfister, M., Hemorrhagic erosions of rectum, 441
Phaneuf, L. E., Laceration of perineum in child, 1029
Phemister, D. B., Cysts, *593; Hyperostoses overlying endothelioma of meninges, 1267
Philip, R., Tuberculin in tuberculosis, 1313; Tuberculosis of lymphatic system, 1514
Phillips, G., Accident insurance, 150
Phillips, O. S., Trachoma, 1332
Phillips, H. G., Acanthostomiasis, 1103
Piccoli, S., Clitoral atresia of vagina, 513
Pichler, H., Reconstruction of jaw, 732
Pichon, E., Rachitis, 729
Picher, R., Syphilis of bladder, 517; Staphylococcus infection of urinary apparatus, 663
Pickles, W., Postoperative pulmonary complications, 559
Pico, C. E., Bacteriophagy, 145, 590, 1420
Piéchaud, F., Enlarged spleen in heart disease, 1737
Piédelièvre, Measles and scarlet fever, 729
Pierce, H. F., Leaks in metabolism apparatus, 202
Pierra, L. M., Puerperal infection, 806
Piersol, G. M., Biliary drainage, 1804
Pierson, P. H., Metabolism in tuberculous, 721
Piguet, Thoracoscopy for severing pleural adhesions, 1546
Pijper, C., Base for ointments, 659
Pilez, A., Depersonalization, 148; Wagner's treatment of paralysis, 586

- Pilot, I., Bacteria in preputial secretions, 957; Hemolytic streptococci in preputial secretions, 967; Fusiform bacilli and spirochetes about clitoris, 1412; Balanitis, 1485; Jaundice, ★1766
- Pinard, Tuberculosis and pregnancy, 212; Syphilitic origin of diabetes, 436; Contamination of wife and child by hereditary syphilitic, 728; Syphilis and pregnancy, 1815
- Pinardi, G., Invagination of colon, 966
- Pinault, L. G., Sarcoma of heart, 1029
- Pinto, C., Malaria, 966
- Piper, E. B., Puerperal sepsis, 136
- Pirc, Colon bacilli and specific antigenic reactions, 1279
- Pisani, S., Botulism, 213
- Pissavy, A., Diagnosis of tuberculosis, 728; Tuberculous meningitis, 1736
- Pistocchi, G., Cancer and trauma, 1492
- Pittarelli, E., Thiosulphuric acid in organic fluids, 965; Causes of error in Folin test for creatinin, 966
- Pitzman, M., Pernicious anemia, 139
- Place, E. H., Antitoxins and animal experimentation, 505
- Platter, H. M., Medical practice act, 925
- Plaut, F., Spirochetes and nervous system, 735
- Plaut, R., Diseases of pituitary, 67
- Plaza, A., Epinephrin in burns, 438
- Plisson, L., Rupture of bladder and urethra, 1182
- Plum, T., Glucose injections, 220
- Plummer, H. S., Iodin in goiter, 1955
- Poehlmann, A., Preventive arsphenamin treatment, 1819
- Poelchau, Tuberculosis, 1493
- Poindecker, Sedimentation speed of erythrocytes, 735
- Polák, Inguinal hernia, 1279
- Polano, O., Gynecologic diagnosis, 364
- Poletti, G. B., Oral affections in pregnancy, 730
- Polettini, B., Grafts of cartilage and bone, 360; Ligation of hepatic artery, 513
- Policard, A., Transplanted nerves, 1182
- Pollak, R., Meningitis, 1495
- Pollitzer, R., Vitamin content of milk and rachitis, 589
- Pollock, L. J., Experimental convulsions, 1878
- Polonovski, Sugar in blood and spinal fluid, 964
- Pomaret, M., Blood pressure and phenolic compounds, 142
- Porges, O., Duodenal contents and gastric secretion, 69; Hypoxemia, 1493; Carbon dioxide tension of alveolar air and stomach secretion, 1494
- Portes, L., Pulse in retroplacental hemorrhage, 1274; Uteroplacental hemorrhage, 1274
- Portu Pereyra, E., Purpura with hemorrhage, 144; Hydatid cyst of lung, 1184
- Posey, W. C., Little's disease, ★80; Alopecia of eyelids, ★1204
- Post, W. E., Albuminuria, ★293
- Potel, G., Movable kidney, 1882
- Pototschnig, G., Blocking splanchnic nerves for abdominal surgery, 360
- Potter, H. W., Endocrine therapy in mental deficiency, 1268; Hereditary and nonhereditary mental defect, 1340
- Potts, C. S., Charcot-Marie atrophy, 1541
- Potts, J. B., Combination sedan and ambulance, ★102
- Potts, T. K., Kidney tuberculosis, 434
- Pouliot, L., Rupture of uterus after pituitary treatment, 1418
- Poulsen, E., Fat-soluble vitamin A in infant feeding, 812
- Pousson, A., Nephrolithotomy and pyelolithotomy, 588
- Povitzky, O. R., Bacillus pertussis, 875
- Powell, C., Peritoneal drainage, 134
- Powell, H. M., Diphtheria bacillus, 1483
- Poynton, F. J., Primary purpura, 432; Endocarditis, 802; Diabetes, 961; Venous thrombosis with rheumatism, 1489
- Pozzo, F., Typhoid phlebitis, 514
- Prader, J., Perforated gastric ulcer, 515
- Prat, D., Refusal to submit to operation, 589
- Pratt, E. L., Transillumination, ★1121
- Pratt, G. P., Test of renal function, 655
- Pratt, J. H., Vital capacity, 135
- Preble, W. E., Obesity, 1731
- Preis, K., Tubercle bacilli, 69
- Premrou, M., Adnexitis, 443
- Presho, E., Toxicity of inorganic lead compounds and metallic lead, 1341
- Pribram, E. E., Infectious processes in the abdominal cavity, 219; Ovarian tumors, 593
- Price, G. E., Abdominal reflex in encephalitis, 914
- Priest, W. S., Jr., Heart following infections, 1724
- Primrose, W. B., Polydactylism of foot, 726
- Prince, H. L., Chronic appendicitis, 1102
- Pringle, G. L. K., Arthritis, 659
- Progulski, Diphtheria antitoxin, 442
- Proubasta, F., Porro's operation, 437
- Proust, R., Cancer of tongue, 880
- Pulawski, A., Thymic death, 513
- Punschel, A., Blood sugar and alimentary glycemia, 969
- Puppel, E., Placenta extracts, 1108
- Pust, Gastropotosis, 883
- Putter, E., D'Herell's phenomenon, 1657
- Q**
- Quarella, B., Splanchnic nerve blocking, 214
- Querrioux, Tuberculosis of kidneys, 1653
- de Quervain, F., Goiters, 881; Protection of parathyroids, 1186
- Quinan, C., Albuminuria, ★899
- Quipby, W. C., Perirenal insufflation of oxygen, 876
- R**
- Rabl, Calcium retention, calcification of vessels, and function of kidneys, 1276
- Racchiusa, Influenza and encephalitis, 1491
- Radasch, H. E., Acid cells in stomach and ulcer, 584
- Rader, J. E., Abdominal pregnancy, 1809
- Radnal, E., Gonorrheal epididymitis, 218
- Raffauf, C. J., Leukocyte count in tuberculosis, 442
- de Raffele, Juvenile arthritis deformans, 1184
- Ragot, Transfusion from animals to men, 1653
- Ragsdale, A. C., Milk secretion during lactation, 1269
- Rajam, R. V., Pyopneumothorax, 1958
- Ramadier, J., Syphilis of ear, 213; Paralysis of dilators of larynx, 880
- Ramel, E., Gonorrhea and spondylitis, 1813
- Ramiro Arroyo, Strangulated scrotal hernia, 882
- Ramond, Gastric cancer with erosion, 1736; Ptoxis of duodenum, 1883
- Rand, C. W., Osteoma of skull, 1267
- Rankin, W. S., Medical profession and laity, 1151
- Raphael, T., Schizophrenic catatonias, 1541
- Rathery, F., Chronic nephritis, 1815
- Ratnoff, H. L., Occult bleeding in feces, 1036
- Raulston, B. O., Peptone in migraine, 1728, ★1894
- Rautenberg, E., Ventral decubitus, 882; Rheumatic purpura, 1492
- Rautmann, H., Function of spleen, 146
- Ravaut, P., Amebiasis, 880
- Ravdin, I. S., Chronic appendicitis, 722
- Raven, M. O., Cardiac rheumatism, 803
- Ravenel, M. P., Appendicitis, 343
- Ravina, A., Bronchial spirochetosis, 963; Gonorrheal arthritis, 1545
- Ravogli, A., Anaphylaxis in angioneurotic eruption, 140
- Rawls, J. L., Multiple myeloma, 1178
- Razetti, L., Pasteur centennial, 1654
- Razzaboni, G., Fracture of scapula, 144; Hydro-nephrosis, 806
- Read, B. E., Metabolism of Chinese, 1178; New test for cholesterol, 1880
- Recio, A., Transfusion, 1107
- Rectenwald, J. J., Thoracic abdominal gate, 507
- Redeker, War epidemiology of tuberculosis, 442
- von Reding, A., Cesarean section, 1111
- Redlich, E., Metasyphilis, 1819
- v. Redwitz, E., Ulcer of stomach, 441
- Recl, P. J., Sarcoma of uterus, 1806
- Rees, H. M., Blood platelet count, ★621
- Regan, C., Poliomyelitis, 873, ★1769
- Regan, J. C., Poliomyelitis, 873, ★1769
- Regaud, C., Secondary infection of cancers and radiotherapy, 1417
- Reh, H., Tuberculosis of bones, 148
- Rehfuss, M. E., Gallbladder disease, 959
- Rehn, E., Kidney function tests, 809
- Reiche, A., Oxygen insufflation in tuberculous meningitis, 1742
- Reichel, H., Alcohol and school, 1278
- Reid, W. D., Heart in anemia, ★534; Cardio-vascular syphilis, 956; Heart murmurs, 1339
- Rieder, W., Carbuncle, 1741
- Reimann, H. A., Occult blood in stool, 581
- Reiter, Influence of mother's age and repeated pregnancies on child, 733
- Remond, Cholesterinemia in diabetes, 878
- Renard, Whooping cough, 359
- Renaud, M., Arsphenamin in syphilis, 66
- Renault, J., Kala-azar, 359
- Rennie, J. K., Valvular disease of heart, 863
- Reschke, K., Epithelial implants by Pels-Leusden's method, 438
- Reuter, F. A., Sarcoma of gallbladder, 62
- Reverchon, L., Mastoiditis, 1183
- Rey, Postpleuritic scoliosis, 1548
- Reyher, P., Spasmophilia, 1276
- Rhein, J. H. W., Falsceau de Turck and temporal lobe, 137
- Ribadeau-Dumas, L., Bronchiectasis, 587
- Ribas Ribas, E., Cholecystitis, 1274
- Ribeiro, L., Jr., Taylorism in surgery, 1347
- Ribeyrolles, A. B., Seroprophylaxis of measles and scarlet fever, 286; Hemoclastic crisis, 590
- Ribierre, Angina pectoris, 1815
- Ribón, V., Mechanism of hearing, 145
- Rice, J. W., Sachs-Georgi test, 430
- Rice, L., Dengue epidemic, 1409
- Richards, A. N., Contents of glomerular urine, 1644
- Richardson, C. W., Nasopharyngeal surgery, 955
- Richardson, E. P., Hyperthyroidism, ★820
- Richardson, H. B., Diabetes, 1642
- Richet, C., Glory of Pasteur, 967
- Richet, C., Jr., Anaphylactic colitis, 1490
- Richet, De W. G., Rupture of aortic aneurysm, 1029
- Richter, C., Gonorrhea, 1278
- Richter, G., Tumors of adnexa, 1549
- Richter-Quittner, M., Chemistry of spinal fluid, 1494
- Rickmann, L., Tuberculosis of larynx, 218
- Riddell, R. G., Suppurative appendicitis, 1031
- Riddoch, G., Pernicious anemia, 962
- Ridlon, J., Backache, ★1831
- Riese, H., Urogenital surgery, 1887
- Riesenfeld, E. A., Pertussis, ★158
- Rietschel, Dynamic "protein fever," 809
- Rieux, J., Malaria, 729; Banti's disease, 1815
- Riising, J., Kidney disease, 1820
- Rinaldi, R., Anemia and purpura, 732
- Risser, A. S., Glass retained in hand and foot, 1645
- Rist, E., Parallel striae after right pneumothorax, 587; Artificial pneumothorax, 963
- Ritter, A., Injury of brain, 439
- Ritter, J., Staining tubercle bacilli, 1400
- Rivalier, E., Herpes, 1882
- Rivers, A. B., Peptic ulcer, 1028
- Rivers, T. M., Bacillus para-influenza, 209; Influenza-like bacilli isolated from cats, 1100
- Rivers, W. C., Diathesis of tuberculosis, 659
- Rivière, A., Thrombophlebitis of head, 1182
- Riviere, C., Surgery in tuberculosis, 1345
- Roberts, C. S. L., Mechanics of sacro-illiac joint, 1651
- Roberts, J. B., Pericardiotomy, 722
- Roberts, P. W., Hallux valgus, ★540
- Robertson, B., Toxemia of burns treated by exsanguination transfusion, 797
- Robichaux, E. C., Metastatic infarcts of liver, 1177
- Robin, A., Ferment of cancer, 963
- Robln, P., Respiratory disturbances, 805
- Robineau, Varicose ulcers, 1346
- Robins, C. R., Sarcoma of kidney, 276, 1484
- Roch, M., Rheumatism and casein, 511; Paroxysmal hemoglobinuria, 728
- Rocha-Botelho, Titrating antitoxins, 514; Avidity test of antitoxins, 1347; Snake venom antiserums, 1739
- Rochat, Tubal and angular pregnancy, 1814
- Rocher, H. L., Congenital scoliosis, 283; Local and spinal anesthesia, 434
- Rochet, Hypogastric plexus, 282; Suppuration after bladder operations, 1182
- Röckemann, W., Phosphates and excretion of chlorides, 1655
- Rodríguez, R. O., Typhoid bacilli carrier, 589
- Rodríguez Gómez, F., Gangrene of lung, 285
- Rodríguez Villegas, R., Loose bodies in knee, 145
- Roederer, C., Pott's disease, 1181
- Roello, G., Sarcomas, 730
- Roger, H., Metabolism of fats, 66; Hemiplegia in heart disease, 964
- Rogers, M. F., Myocardium as index of age, 1734
- Rogers, R. R., Secondary megacolon, 1177
- Roggen, A., Myxedema and pituitary, 1349
- Rogoff, J. M., Blood pressure during cerebral anemia, 1409
- Rohde, C., Chronic duodenal ulcer, 363
- Rohleder, S., Tuberculosis, 1549
- Rohmer, P., Antidiphtheria vaccination, 1181
- Rolando, S., Ureosecretory constant, 1653
- Roldán, A., Lessons for surgery from World War, 959
- Rollet, Enucleation in panophthalmia, 1183
- Rolly, F., Therapeutic effect on sepsis of local inflammation and abscess formation, 1494
- Romanis, W. H. C., Surgery in tuberculosis, 1345
- Rona, P., Ferments in blood, 217
- Roncagli, D. B., Spontaneous cures of cancer, 144
- Ronchi, A., Leukocyte extracts and Gärtner's bacillus, 807
- Rønné, H., Blepharitis, 518
- Roorda Smit, J. H., Syphilis of brain centers for hearing, 812
- Root, H. F., Diabetic gangrene, 137; Psychologic tests for diabetes, 207; Physical measurements of diabetes, 278; Lipemia retinalis, ★995; Levulose and diabetic metabolism, 1727
- Roqueta, G., Cerebrospinal rhinorrhea, 215
- Rorke, M., Syphilitic child, 878
- Rosamond, E., Quinin in malaria, 1649
- Rose, C. B., Carcinoma, ★1750
- Rosello, H. J., Bigeminal pulse with false bradycardia, 214
- Rosen, M., Elasticity of bladder, 1887
- Rosen, S., Jaundice, ★1519
- Rosenbaum, S., Amino-acids and stomach function, 1349
- Rosenberg, F., Albuminurie neuroretinitis, 1886
- Rosenberg, M., Action of phlorizin on sugar in blood and urine in diabetes and nephritis, 1657
- Rosenbloom, J., Pentosuria, ★250; Hydrocyanic acid poisoning, 581
- Rosenbluth, Tubercle bacilli in sputum, 1548
- Rosenbund, F., Scurvy and dystrophy, 1036
- Rosenburg, J., Jaundice, 1184
- Rosenfeld, G., Chronic constipation, 1279
- Rosenfield, H. H., Liver function, ★743
- Rosenheck, C., Cerebral neoplasm, ★470
- Roseno, A., Blood in fibrous osteitis, 809

- Rosenow, E. C., Streptococcus in hiccup, 875, 876; Bacteria in lesions of encephalitis, 957; Elective localization of streptococcus-pneumococcus group as disease factor, 1097; Encephalitis, *1583; Streptococci cause experimental stomach ulcer, 1879
- Rosenstein, P., Varices in bladder, 1278
- Rosenstern, J., "Temporary dwarfs," 1036
- Rosenthal, F., Jaundice due to reticulo-endothelial system, 68
- Rosenthal, G., Emphysema, 66
- Rosenthal, N., Splenectomy in purpura hemorrhagica, 1875
- Rosenthal, S. M., Phenoltetrachlorophthalein test for liver function, 209
- Rosinski, B., Pregnancy pyelitis, 1278
- Rosner, A., Uterine myomas, 435
- Ross, J. W., Cancer of uterine cervix, 138
- Rossi, F., Thoracocentesis and pneumothorax, 284
- Ross-Johnson, M., Lactation and ovulation, 1811
- Rost, E., Nutrition, 362
- Rost, F., Abscesses of sweat glands in axilla, 68
- Rostenberg, A., Second initial lesion in syphilis, 1332
- Roth, G. M., Anemia of nephritis, 207
- Rothberg, V. E., Modification of Folin and Wu method, 1727
- Rother, J., Uric acid determination, 517
- Rothschild, M. A., Arborization of right and left branches of bundle of His in heart, 1727; Bacterial endocarditis, 1727
- Rotman, D. B., Encephalitis with psychosis, 579
- Roubier, C., Kidney cancer, 283
- Roubinovich, J., Social adaptation of mentally backward, 435
- Roucaurol, E., Endo-urethral and endovaginal diathermy, 588
- Rouiller, C. A., Substance obtained from pituitary, 1875
- Rous, P., Drainage of bile duct, 724
- Roussel, J. N., Blood pressure in psoriasis, lichen planus and erythematous lupus, 61
- Roussy, G., Tar cancer, 512
- Routh, A., Syphilis and marriage, 1416
- de Rouville, G., Gangrene from abortion, 1418
- Rouzaud, J. J., Cholesterinemia in diabetes, 878; Diathermy in gallbladder affections, 1184
- Rovsing, T., Antethoracic esophagus, 664; Kidney calculi, 1887
- Row, R., Tubercle bacillus endolipase, 1179
- Rowe, A. H., Metabolism in thyroid disease, 1807
- Rowland, J. A., Fetal malpresentation, 803
- Rowley, W. N., Blood sugar during pregnancy, 799
- Rowntree, C., Breast cancer, 1880
- Rowntree, L. G., Urinary tract roentgenography, *368; Toxic nephritis in pyloric obstruction, 1728
- Roxo, H., Syphilitic encephalitis of base, 1347
- Rozies, H., Malta fever and fixation abscess, 588
- Rubin, I. C., Pain in shoulders, *1050
- Rubino, Hypoglycemia after rectal infusions of sugar, 217; Action of hydrogen, calcium and mercuric ions on glycolysis in blood, 1818
- Rubinstein, Syphilis, 1737
- Rucker, M. P., Action of ergot and hypophysis solution on uterus, 353; Danger of pituitary extract, 1791
- Rud, E. J., Red corpuscles, 664, 736
- de Rudder, B., Ileus after diphtheria, 809
- Rudolf, R. D., Fate of arsenic after intrathecal and intravenous injection, 798
- Rudolph, M., Digestion, 966
- Rueda, M., Lumbar puncture, 1347
- Rueda, P., Puericulture, 437
- Ruge, C., Virulence of streptococci, 1657
- Ruggles, E. W., Radium appliance, *1374
- Rühle, R., Proteins and bacterial fermentation, 1884
- Ruiz, F., Cancer in testicle, 67
- Ruiz Mereno, M., Intussusception, 590
- Rumpf, Blood pressure, 1034
- Rupel, E., Gonorrhea, *530
- Ruppel, W. G., Lymph and lyophobe proteins as antigen and antibody, 1034
- Rüschler, E., Inflammatory tuberculous phenomena, 1110; Serologic tests in tuberculosis, 1741
- Russ, S., Immunity, 208
- Russell, H. B., Liquid petrolatum, 1415
- Russell, J. W., Orthostatic albuminuria, 803
- Rydgard, F., Tuberculosis of genitals, 1421
- Ryerson, E. S., Medical curriculum, 778
- Ryle, J. A., Dyspeptics, 510; Anaphylactic shock, 962
- Rypins, H., Wassermann, 1413
- S
- Sabatini, G., Encephalitis, 730
- Sabouraud, R., Scar-forming affections of scalp, 436; Sulphur in dermatotherapy, 660; Alopecia, 880
- Sabrazès, J., Basophilic inclusions in neutrophils, 434; Oxydases and peroxydases of blood, 804
- Sacco, A. N., Aneurysm, 215
- Sachs, E., Bladder impeding delivery, 1278
- Sack, Colon bacillus pyelitis and sepsis, 1548
- Sacks, B., Verrucous endocarditis, 1724
- Sadler, J. E., Breast cancer statistics, 960
- Sahlgren, E., Compression of spinal cord, 1424
- Sahli, H., General neuroses, 881
- de Saint-Martin, Botulism, 1183
- Sainton, P., Pituitary tumor, 435
- Sakagami, K., Ozena, 586
- Salaghi, M., Tuberculosis of spine, 1184
- Salant, W., Sodium citrate and respiration and circulation, 657
- Salmon, A., Postencephalitic kinesis, 1033
- Salmon, G., Weisz' reaction in typhoid, 730
- Salomon, A., Action of atropin on stomach, 287
- Salomon, R., Genital flora, 516, 1422; Parenteral protein therapy and blood coagulation, 590
- Salomon, W., Codein dosage, 287
- Saloz, M., Echinococcus disease, 1180
- de Salterain, J., Maxillary sinusitis, 1184
- Saltzstein, H. C., Cancer, *448
- Salvat Navarro, A., Malta fever, 215
- Samengo, L., Thermo-injector, 967
- Sampson, J. A., Ovarian hematomas, 136
- Sanchez-Covisa, I., Hypospadias and epispadias, 285
- de Sanctis, S., Dysthymic children, 1345, 1814
- de Sanctis-Monaldi, T., Gases of blood, 730
- Sand, K., Steinach operation, 592; Alternating sex glands, 1882
- Sandelin, T., Hallux valgus, 736
- Sanders, J., Tuberculosis, 1424
- Sanders, R. L., Peptic ulcer, 1407
- Sandherr, Bilirubin in serum and gallbladder diseases, 1884
- Sandiford, L., Basal metabolism standards, 430; Comparison of Du Bois, Harris and Benedict standards for basal metabolism, 430
- Sander, Drugs and blood sugar, 1494
- Sansby, J. M., Intraperitoneal transfusion, 797, *1763
- Santa Cecilia, J., Cataract, 731; Pulsating exophthalmos, 1347, 1739
- Sante, L. R., Pneumoperitoneum, *464
- Saralegui, J. A., Padiologic triad of syphilis, 1739
- Sarno, A., Cortical lesions, 1107
- Satanowsky, P., Erythema nodosum, 967
- Satta, F., Fracture of humerus, 513
- Sattler, E., Tendon sheath inflammation, 1420
- Saupe, E., Duodenal roentgenograms, 809; Nutritional disturbance in semilunar bone, 1185
- Sauphar, G., Eczema, 1882
- Savage, W. G., Canned foods and health, 1345
- Savolin, M., Glycosuria, 70; Transfusion in anemia, 736
- Sayad, W. Y., Regeneration of meninges, 1028
- Scarpa, V., Lowering of blood pressure, 67
- Schabacker, P. L. E., Peptic activity of gastric contents, 277
- Schade, H., Correction of swelling of colloids, 147; Physical chemistry and surgery, 1421; Hydration of tissues, 1742
- Schadel, H., Radium in uterine affections, 288
- Schaefer, H., Bronchial disease, 1493
- Schäfer, Retransfusion of own blood, 1422; Ovarian cancer, 1423
- Schali, F. A., Gastric cancer and ulcer, 69
- Schamberg, J. F., Kolmer test, *836
- Scheele, K., Cancerous bladder, 1549
- Scheer, K., Endogenous infection of intestine, 1036
- Schenk, F., Tuberculous meningitis, 218
- Scherck, H. J., Urethral syringe, *1069
- Scheunig, F., Nature of cells in sex glands, 1108
- Schick, B., Diphtheria, 1029; Food consumption in pregnancy and lactation, 1036
- Schiff, E., Malaria, 1277
- Schill, E., Contraction of mesentery, 1656
- Schiller, H., Control of ovarian and uterine cycle, 353
- Schilling, Cervical implantation of placenta, 1278
- Schilling, E., Measles, 515; Pulse changes as heart test, 969
- Schindler, R., Gastroscopy, 286
- Schinz, H., Fracture of wrist, 439
- Schippers, J. C., Diphtheria immunization, 812; Digestion leukocytosis, 1423, 1886
- Schirmer, Akropachia; pseudohypertrophic pulmonary osteoarthropathy, 1491
- Schlaepfer, K., Reverdin-Halsted grafts, 1807, 1884
- Schlager, Kidney function tests, 1492; Internal kidney disease, 1547
- Schlesinger, A., Migraine, 1184
- Schlesinger, F., Modified percussion, 440
- Schlosser, H., Extirpation of brain tumor, 968
- Schlossmann, Vitamin A, 1656
- Schmid, Prolapse of uterus, 1549
- Schmidt, C. F., Action of ether, chloroform, etc., on respiration, 725; Action of morphin on respiration, 725; Mammalian decerebration, 725
- Schmidt, C. O., Valvelike closure of urethra opening, 810
- Schmidt, E. R., Gastric and duodenal ulcers, 591
- Schmieden, V., Fibrous pericarditis, 808; Cancer of bladder, 1350
- Schmitt, W., Placental circulation, 217
- Schmitz, H., Carcinoma of cervix uteri, 1645
- Schnabel, A., Encephalitis, 1817
- Schneider, O., Endemic urolithiasis, 148
- Schneiderman, H., Glycosuria, *825
- Schneiders, E. F., Liver function, *743
- Schoenhof, C., Chronic vulvitis, 1740
- Schoenholz, P., Botulinus spores, 507
- Schoenrich, H., Syphilitic reinfection, 955
- Schohl, E., Blood picture, 287
- Scholl, A. J., Jr., Duplication of kidney pelvis and ureter, 279; Urinary tract roentgenography, *368
- Scholz, G., Anaphylaxis and heart failure in diphtheria, 663
- Schönbauer, Erosion of blood vessels, 1420
- Schönberg, S., Transvestitism, 729
- Schönfeld, H., Enterogenous salt fever, 362
- Schönfeldt, B., Spontaneous pneumothorax, 1110
- Schönmeler, A., Ovary in hernia, 1348
- Schott, E., Vein pressure in baths, 216; Encephalography, 882
- Schottmüller, Peripancreatic fat necrosis from gallstone, 1492; Syphilitic aortitis, 1655
- Schreiber, H., Ferments in blood serum, 217
- Schridde, H., Gray hair and cancer, 217; Burns of skin, 734
- Schroeder, E., Urinary fistulas, 1278
- Schroeder, J. H., Roentgen irradiation, *23
- Schröder, G. E., Multiple sclerosis, 1280
- Schubert, A., Ischemic contracture, 139, 1885
- Schulhof, K., Thyroglobulin, *386
- Schulmann, E., Pituitary tumors, 435
- Schultz, O. T., Otosclerosis, *681; Insulin, *1592
- Schulze, A. G., Vomiting of pregnancy, 210
- Schumacher, K., Arphenamin injuries, 1548
- Schumacher, P., Pregnancy and tuberculosis, 591
- Schussler, H., Jr., Leishmaniasis, *93
- Schütz, E., Gastric anacidity, 1275
- Schütze, Cancer of sigmoid flexure, 1278
- Schwab, H., Diuretic action of mercurials, 588
- Schwartz, A., Plurality of spirochetes of syphilis, 1490
- Schwartz, F., Gonorrhea, 1486
- Schwartz, G., Perforation of gastric ulcer, *1520
- Schwartz, E. W., Cadmium and zinc, 1175
- Schwarz, F., Tuberculosis of suprarenal capsules, 1110
- Schwarz, H., Respiratory metabolism, 148
- Schwarz, L., Lead poisoning, 1656
- Schwenkenbecher, A., Goiter, 515
- Schweisen, C., Auricular fibrillation in goiter, 518
- Schwyzler, A., Hydronephrosis, 133
- Scott, L. C., Dengue fever, *387
- Scott, W. M., Actinomycosis, 211
- Serlinger, F. A. C., Gallbladder disease, 1956
- Sears, F. W., Education of sanitarians, 1477
- Sears, H. J., Sore throat, *1608
- Secher, K., Heart and physical training, 970; Heart weight after epinephrin, 970
- Secor, W. L., Goat's milk in infant feeding, 273; Milk and Malta fever, 645
- Sée, P., Internal mycoses, 729
- Seelig, M. G., Bile duct anomaly, 1342
- Seelye, W. C., Cesarean section in pneumonia, 355
- Seeman, M., Fistular voice, 1279
- Seff, I., Paravertebral anesthesia, *1612
- Segers, A., Sarcoma of omentum, 285; Intracranial hypertension, 1492
- Seham, M., Physiology of exercise, 873
- Seifert, E., Compensatory phenomena after splenectomy, 217; Periarterial sympathectomy, 362
- Seitz, A., Pneumococci, 217
- Selby, W. M.D., Punctured wound of rectum and bladder, 1103
- Sellards, A. W., Amebic dysentery, 958; Effect of stasis on development of amebic dysentery, 958; Immunity in yaws, 1732
- Sellers, T. B., Vomiting of pregnancy, 582
- Senken, G. H., Diet in cancer, 1867
- Senear, F. E., Hydroa vacciniforme seu aestivale, 873
- Senez, A., Kurloff bodies, 1107
- Serés, M., Kidney operations, 215; Prostatectomy, 286
- Sergent, E., Bronchitis and pulmonary emphysema, 112; Tuberculosis and pregnancy, 511; Addison's disease, 587; Nontuberculous pleurisy in tuberculosis, 879
- Sever, J. W., Fractures, *1603
- Severn, A. G. M., Suprarenal hemorrhage, 1416
- Seyffardt, Intraspinal anesthesia, 364
- Sézary, A., Addison's disease, 359; Endocrine symptoms, 513; Bronze-skin, 587
- Sgalitzer, M., Spinal cord tumors, 809
- Shaffer, E. L., Biliary drainage, 128
- Shambaugh, G. E., Graduate training in otolaryngology, 1333
- Shannon, W. R., Nonspecific irritation and anaphylactic diseases, 1413
- Shattock, C. E., Acromioid embryoma, 877
- Shattuck, G. C., Tropical diseases, 277; Pelagra, 580
- Shattuck, H. F., Hematemesis in nephritis, 1027
- Shaw, E. H., Diagnosis of tumors, 802
- Sheets, O. B., Atresia of nipples, *551
- Sheldon, F. B., Bone lesions of smallpox, 654
- Shennan, T., Oats in tubercles in stomach wall, 1031
- Shera, A. G., Widal reaction, 64
- Sherburne, C. C., Streptococcus endocarditis, 1643
- Sherrill, J. W., Hypertension, 1879
- Shima, Y., Pericarditis, 1104
- Shivers, C. H. de T., Gonococcal infection, *1379
- Shoemaker, J. A., Double uterus, *103
- Short, J. J., Blood pressure, 1801
- Shoub, H. L., Staining tubercle bacilli, 1341
- Shoulders, H. H., Acute brain injuries, 1406

- Sieard, J. A., Paresis, 435; Akathisia and tasi-
kinesia, 1546; Iodized oil, 1736
- Sick, K., Muscularis mucosae in evacuation of
stomach, 1656
- Siebeck, R., Water metabolism, 515
- Siegel, P. W., Carcinoma of cervix uteri, 811
- Siegmund, H., Influenza croup, 440; Colloid
treatment, 883; Birth injuries to brain, 1493
- Siemens, Ear, nose and throat affections, 1280
- Sierra, A. M., Physiologic tests in insane, 967
- Siess, Sedimentation of erythrocytes, 735
- Siffre, Tuberculosis and dental caries, 588
- Sigwart, W., Atonic hemorrhages in cesarean
section, 442; Tracheal catheter in transmis-
sion of syphilis, 1194; Puerperal infection,
1818
- Sikorsky, L., Dish towel as source of infection
with tubercle bacillus, 1877
- Sillitti, G., Typhoid, 284
- da Silva, R., Purulent cholecystitis, 731
- da Silva, S. C., Otosclerosis, 966
- Silver, D., Hallux valgus, 1646
- Silverman, D. N., Diarrhea, 1487
- Simmonds, N., Experimental tuberculosis, 1484
- Simmons, C. C., Cancer of lip, 63
- Simó, A., Blood in arthritis, 218
- Simon, H., Operations in region of gallbladder,
1350; Hay's sulphur test, 1818
- Simon, R., Grafts of embryonal bones, 65
- Simon, S., Human and bovine tubercle bacilli,
1173; Tuberculosis in bones and joints, 1421
- Simon, W., Febrile abortion, 442
- Simpson, B. S., Intestinal obstruction, 1650
- Singer, H. D., Ambulatory automatism, 1340
- Singh, M., Bladder calculus, 1958
- Singleton, A. O., Fractures of shaft of femur,
206
- Sintou, J. A., Malaria, 1179
- Siperstein, D. M., Intraperitoneal transfusion,
797, 1097, 1399, *1763
- Siredey, A., Uterine hemorrhage, 1417
- Sisco, D. L., Hookworm disease, *451
- Sjöbring, H., Psychic energy and mental insuf-
ficiency, 1038
- Slater, B. H., Intestinal obstruction, 1273
- Slawik, E., Edema in infants, 1655
- Stemons, J. M., Lipoids of maternal and fetal
blood, 723
- Sloan, E. P., Duodenal ulcer, *977
- Slonaker, J. R., Diet and sexual life, 1409
- Sluder, G., Cricoidia, *690
- Slye, M., Inheritability of cancer, 657
- Smeesters, E., Paralysis of scapular girdle, 65
- Smiley, W. A., Cocain poisoning, *1908
- Smillie, W. G., Hookworm disease, 579
- Smith, A. H. D., Embolism of brachial artery
in pneumonia, 658
- Smith, E. B., Heart disease, 64
- Smith, E. C., Cardiac anomaly, 1179
- Smith, E. S., Aneurysm of heart with pericar-
ditis, 62
- Smith, F. C., Syphilis in pregnancy, 60
- Smith, F. M., Electrocardiographic changes after
occlusion of coronary artery, 1644
- Smith, G. G., Cancer of bladder, 1486
- Smith, J. H., Syphilis and diabetes, 1102; Poly-
cystic kidney, 1407
- Smith, L. W., Hypophyseal duct tumor, 1343
- Smith, M. L., Tubercle bacillus, 278; Aeridin
dyes in tuberculosis, 657; Fat soluble
vitamin A and tuberculosis, 1484
- Smith, S. C., Heart records, *973
- Smith, W., Diabetes, 510; Sugar in blood, 727;
Yeast extract in diabetes, 1810; Insulin and
diabetic blood sugar, 1811
- Smith, W. R., Ruptured aneurysm of splenic
artery, *1692
- Snapper, L., Hippuric acid, 1037; Delay in
excretion of hippuric acid with contracted
kidney, 1112
- de Snoo, K., Puerperal fever, 1280
- Soames, K. M., Radiation with mercury vapor
quartz-lamp, 282
- Sobernheim, Smallpox, 1492
- Söderbergh, G., Neurology of abdominal walls,
884
- Söderlund, G., Tuberculous epididymitis, 1888
- Soler y Garde, F., Typhoid, 807
- Sollier, P., Hemoclastic crisis in drug addicts,
880
- Solomons, B., Cervical myoma, 1179
- Sommer, J., Subphrenic abscess, 1110
- Sommer, R., Loose bodies in joints, 1884
- Sonne, C., Asthma, 518
- Soothill, V. F., Tuberculosis, 358
- Sordelli, A., Oligodynamia, 1107
- Souba, A. J., Influence of antineuritic vitamin,
1409
- Soupaull, Peritonitis, 1737
- Souques, A., Intravenous injections of spinal
fluid in Parkinsonian syndromes, 728
- Souttar, H. S., "Darning" a hernia, 63
- de Souza Araújo, H. C., Medical impressions of
British Guinea, 966
- de Souza Lopes, H. L., Tube-casts in urine, 966
- Sparmann, Titration in Sachs-Georgi and Was-
sermann reactions, 1884
- Specht, O., Endocrine glands, spastic conditions
and electric excitability, 1185; Bile secre-
tion, 1348
- Spencer, H. R., Ovariectomy, 1488
- Spengler, N. L., Milk supply, 1541
- Speroni, D., Impressions of America, 808
- Spiegel, E., Tonus of striated muscles, 1657
- Spiess, G., Sphenoidal sinus disease, 1035
- Spiller, W. G., Chordotomy, 579; Encephalitis,
*1843
- Spillmann, L., Syphilis, 436
- Spilbury, B., Electric shock, 1810
- Spirito, F., Placental grafts, 513
- Springer, M., Vitamins and cereal decoctions, 878
- Sprunt, T., Tonsillar appendage containing car-
tilage, 1651
- Squarti, G., Benzoin reaction, 214
- Squirm, C. M., To prevent blood clotting, 67
- Stadelman, E., Mexican tax on samples, 1537
- Stadelmann, E., Tuberculin tests, 1741
- Stahl, O., Blood count in surgical affections,
662; Cleft palate, 1421
- Stahl, R., Blood platelet and thromboplasts, 969
- Stajano, C., Uterine cancer, 146; Reflex picture
with intra-abdominal hemorrhage, 214;
Chronic irritation, 589
- Stander, H. J., Lipoids of maternal and fetal
blood, 723
- Stanley, L. L., Testicle implantation, 656
- Stanton, E. M., Fracture apparatus, *915
- Stanton, J. N., Hemihypertrophy, *1432
- Starlinger, W., Stability of colloids of plasma,
148
- Starr, M. P., Organic acids in the urine of dia-
betics, 1642
- Starry, A. C., Tubercle bacilli, 1174
- Stefani, J., Cancer, 1417
- Stegemann, H., Arrest of bleeding, 438, 1108;
Gas peritonitis, 1421
- Steiger, M., Epilepsy and X-rays, 143
- Stein, H. E., Diverticulum of bladder, *620
- Steindler, A., Panastagaloid arthrodesis for
flail ankle, 1646
- Stekhoven, W. S., Card library, 1112
- Stephani, E., Nutritional disturbances of in-
fants, 1884
- Stephens, G. A., Enlarged thymus; ruptured
heart; ruptured superior vena cava, 433
- Stephens, J. W. W., Plasmodium ovale, 509
- Stephens, R., Fracture, *905
- Sterling, A., Idiosyncrasy and anaphylaxis, 1712
- Stern, D., "Local" Wassermann reaction, 1413
- Stern, F., Liver in encephalitis, 1742
- Sternberg, W., Mechanism of introducing gas-
troscopic tube, 1887; Progress in gastro-
scopy, 1888
- Stevens, A. M., Eruptive fever, 69
- Stevens, W. E., Suprarenal tumors, *171
- Stevenson, G. H., Splint for musculoskeletal par-
alysis, 1881
- Stevenson, G. S., Spirochete stain in sclerosis,
580
- Stewart, C. A., Vital capacity, 59
- Stewart, D. A., Tuberculosis of intestine, 580
- Stewart, H. J., Blood in tachycardia, 1410
- Stewart, M. J., Gastric ulcer, 211; Sarcoma of
radius, 877
- Stewart, W. B., Congenitally defective heart,
1808
- Stibbe, F. S., Brain disease, 288; Hysteria,
1112
- Stieda, C., Peritonitis, 733
- Stifel, J. L., Bone defects, diabetes insipidus
and exophthalmos, 655
- Still, G. F., Hypertrophy of pylorus, 1488
- Stillmunkes, Polynucleosis of spinal fluid in
epilepsy, 1545
- Stirling, W. C., Gangrene of scrotum and penis,
*622
- Stivelman, B. P., Tuberculosis, *536
- Stivers, C. G., Speech development, 61
- Stockard, C. R., Human types and growth
reactions, 954
- Stoddart, W. H. B., Psychic origin of organic
affections, 805
- Stoeckel, W., Intraligamentous ganglioneuroma,
884
- Stoeltzner, W., Tuberculous infants, 1036
- Stofer, D. D., Anemia, 1957
- Stokes, A. C., Gastric and duodenal ulcer, 133
- Stokes, A. M., Extraction of insulin, 1729
- Stokes, J. H., Hutchinson's teeth, *28; Stomach
trouble and syphilis, 135; Postarsphenamin
dermatitis, 505; New methods in syphilis,
1474
- Stoll, H. F., Pneumonia, *844; Tuberculosis,
*1659
- Stoll, N. R., Hookworm culture, 1483; Relation
between number of eggs found in feces and
number of hookworms in host, 1483
- Stolz, C. E., Mercurochrome-220 soluble, 1023
- Stone, H. B., Ulcerative colitis, 206, 1484
- Stone, I. S., Patency of fallopian tubes, 206
- Stone, N. C., Perfused insulin and blood sugar,
1729
- Stookey, B. P., Experimental convulsions, 1878
- Storford, J. S. B., Elements of sensation, 1272
- Storer, E. J., Therapeutic inoculation, 962, 1273,
1490
- Storey, C. L., Dislocation, *914
- Stoss, M., Statistics of goiter, 1186
- Straat, H. L., Blue sclerotics and fragile bones,
812
- Strandgaard, Weight of tuberculous, 664
- Stransky, E., Nutritional disturbances, 440;
Alimentary reaction of leukocytes, 733
- Straub, G. F., Backache, *674
- Strauch, F. W., Intestinal arteriosclerosis, 1035
- Strauss, A., Hemoperitoneum, *1287
- Strauss, H., Diet in kidney disease, 286; Uremia,
732; Hematuria, 1886
- Strauss, J. F., Cocain poisoning, *1908
- Strauss, L., Bilirubin reaction in blood, 68;
Bilirubin in serum and gallbladder diseases,
1884
- Strauss, O., X-ray treatment, 216; Cancer, 218
- Strauss, S., Changes in hearts during progress
of compensation, 1727
- Strebel, J., Injury of retina by sun, 660
- Strecker, H., Circulation of spinal fluid, 591
- Strecker, J., Glycosuria in pregnancy, 515
- Streeter, G. L., Extra-uterine pregnancy, *989
- Streissler, E., Thyroidectomy, 662
- Strickler, A., Dermatitis venenata, *1588; Was-
sermann reaction, 1808
- Strickler, C. W., Abdominal adhesions, 1649
- Stroganoff, Eclampsia, 591, 1810
- Strong, G. F., Chorea, 1029; Digitalis, *1308
- Strong, R. P., Animal experimentation, 505
- Strouse, S., High blood pressure, 1028; Insulin,
*1592; Blood sugar determinations, 1713
- Strunsky, M., Osteomyelitis, *1833
- Stuart, H. C., Foreign protein in human milk, 797
- Stückgold, E., Action of hydrotherapy and heat
on blood, 147
- Stümpke, G., Toxic exanthems and syphilis, 1277
- Sturman, F. J., Epilepsy, 1037
- Sulger, E., Tonus of striated muscle, 810
- Sullivan, W. J., Technique of a knot, *180
- Summers, J. E., Dextrocardia and abdominal re-
flex, 1649
- Sumner, F. W., Death from antitoxin, 1272
- Supplee, G. C., Copper as constituent of milk,
1728
- Surbek, K., Malaria, 1656
- Surmont, H., Pyloric cancer in syphilitic, 1180
- Suter, A., Perforation of stomach, 1738
- Sutherland, C. G., Urinary tract roentgenog-
raphy, *368
- Sutton, I. C., Wassermann-fast syphilis, *622;
Syphilitic headache, 801
- Suzuki, T., Infant mortality, 1104
- Svartz, N., Diazo reaction and leukocyte figure,
150
- Svehla, K., Anal fissure, 1885
- Sweany, H. C., Tumor of thymus, *754
- Sweet, J. E., Influence of pancreas extracts on
depancreatized animal, 139
- Swett, P. P., Infectious arthritis, 724
- Swift, H. F., Arthritis, *12; Sodium salicylate
and formation of immune bodies, 356; Myo-
cardial involvement in rheumatic fever,
1644; Sodium salicylate in arthritis, 1647
- Symonds, B., Blood pressure, *232
- Symonds, C., Value of vomiting in intestinal
obstruction and appendicitis, 1489
- Szabó, I., Pycelography, 1348
- Szenes, A., Paralysis of intestines, 1548
- Szilárd, Z., Anastomosis of intestine, 735
- Szymanowicz, J., Ovarian cysts and pregnancy,
1105
- Szyska, W., Parkinsonian syndromes, 1035

T

- Taege, H., Arsphenamin in urine, 69
- Tagliavacche, N., Cholecystenterostomy, 145;
Duodenal ulcer, 215
- Takamizu, J., Ginseng and metabolism, 585
- Takemata, N., Tuberculosis, 1491
- Talbot, F. B., Cretinism, 1097
- Tallqvist, T. W., Autonomic nervous system, 736
- Talvi, W., Movements in larynx and pharynx,
1496
- Tanaka, A., Nonacid dysentery bacillus, 1881
- Tannenbaum, K. H., Aneurysm of hepatic
artery, 798
- Tannenbergh, J., Mycosis of kidney pelvis, 1549
- Tanner, C. O., Malignancy of testes, 1099
- Tansard, Gonorrhea, 880
- Taoka, K., Serum globulin in Iuetin reaction,
1345
- Tapie, J., Leukemia, 587
- Targowla, R., Spinal fluid in herpes zoster,
283; Reaction of spinal fluid with paregoric
in paresis, 435
- Tarnaucaanu, Goetsch test, 588
- Tatum, A. L., Quinin and sugar mobilization,
139
- Tauber, R., Ratio of sexes, 1422
- Tauzin, Arterial hypertension, 1491
- Taylor, C. J. G., Trauma and appendicitis, 511
- Taylor, H. M., Cyst of epiglottis, 1487
- Taylor, J., Syringomyelia and syringobulbia,
1272
- Taylor, J. M., Physical therapeutics, 1332
- Taylor, J. S., Vomiting of pregnancy, 582
- Taylor, R., Celiac disease, 873
- Taylor, S. P., Vomiting of pregnancy, 582
- Taylor, W. N., Syphilitic mastitis, 60
- Teachenor, F. R., Pneumoventreuli cerebri
after fracture of skull, 133
- Tedeschi, V., Myograph, 67
- Teichmann, W., Syphilis, 286
- Teissier, Inoculability of herpes in encephalitis,
1545
- Telfer, S. V., Administration of insulin, 1810
- Tello, S. J., Neurotropism, 1347
- Tenbroeck, C., Tetanus bacilli in digestive tract
and tetanus antitoxin in blood, 1647
- Tenckhoff, B., Glucose to prevent operative
miscarriages, 149
- Tennant, C. E., Cystin calculi, *305; Skin prep-
aration in hypodermic punctures, *1066
- Terra, F., Leishmaniasis and mycosis, 731;
Blastomycosis, 966
- de los Terreros, C. S., Erysipelas, 589

- Terrien, F., Senile changes in eye, 588; Ocular disturbances in respiratory affections, 1653
Terris, Tuberculous meningitis, 1736
Terry, B. T., Polychrome methylene blue to locate malignancy in tissues, *1774
Tesar, V., Inflammations of maxillary sinus, 970
Tewksbury, W. D., Tuberculosis, 428
Thaler, H., Amenorrhea, 735; Rectal administration of ether in childbirth, 1423
Thalhimer, W., Wassermann reaction, 1485; Glycolysis, *1611
Thannhauser, S., Uric acid in gout, 968; Cholesterol metabolism, 1655
Thavara, M. C., Epidemic resembling plague, 1415
Thayer, W. S., Aid for Russian physicians, 1476
Thaysen, T. E. H., Wassermann in late syphilis, 220; Wassermann in metasymphylis, 1037; Cancer in colon, 1496; Syphilis of aorta, 1888
Thederling, Irradiation in hair diseases, 68
Theilhaber, A., Cellular immunity in cancer, 1740
Theisen, C. F., Abscesses of larynx and trachea after influenza, 956
Thierry, A., Maternity house, 360
Thiers, J., Spinal fluid in sclerosis, 1346
Thirollox, J., Intravenous infusion, 359; Ophthalmoplegia in pneumonia, 1736
Thoma, E., Infectious diseases, 1109
Thomas, A., Angiospasm in arteritis and intermittent claudication, 436
Thomas, A. O'D., Adenocarcinoma of appendix, 1735
Thomas, E., Heart, 1274
Thomas, Erich, Diseases due to strongyloides stercoralis, 1109
Thomas, H. B., Fractures, *309
Thomas, H. M., Jr., Leukocytosis in thromboangiitis obliterans, 799
Thomas, W. A., Albuminuria, *293
Thompson, A., Stricture of male ureter, 1176
Thompson, W., Carbon dioxide and oxygen in stomach gas, 654
Thomsen, O., Gonococcus types, 149
Thomson, J., Recurrent drowsiness, 1650
Thorburn, W., Spinal cord surgery, 281
Thorner, M., Intussusception, *1063
Throckmorton, T. B., Paralysis, *1058
Thursfield, H., Primary purpura, 432
Tilgert, H. M., Pelvic infections, 1408
Tilanus, C. B., Jr., Exostoses in os calcis, 1424
Tinel, J., Hemorrhagic syndrome in encephalitis, 1736; Variations of leukocytic formula, 1815
Tinker, S., Tuberculosis, campaign, 358
Tinkham, H. C., Arterioesenteric obstruction, 1174
Tixier, L., Cancer of breast, 1182
Tobias, G., Tuberculin reaction, 734
Tofte, A., Nervous headache, 1038
Tolk, N. R., Gas gangrene, *1689
Tomanowski, J., Typhus, 1111
Tomovic, Scopolamin addiction, 213
de Tonl, G., Permeability of meninges, 1106; Hab-ferment in fetus, 1183
Tonina, T. A., Open-air schools, 807
Tonnet, Irradiated carcinomatous pleurisy, 1546; Body fluids with cancer, 1737
Toomey, J. A., Encephalitis after scarlet fever, 797
Toomey, N., Leukoderma, 139
Torday, Protein treatment, 362
Tormey, A. R., Hematuria and appendicitis, *472
Tormey, T. W., Hematuria and appendicitis, *472
Törnelli, E., Mechanism of vesicular breath sounds, 1112
Törning, Albumin, 70
del Toro, J., Surgery of gallbladder, 959
Torraza, L., Lipoma of mammary region, 285; Accumulation of intravenously injected gases in peritoneal cavity, 661; Absorption by tunica vaginalis, 806
Torres Boonen, M., Splenectomy, 1740
Totani, G., Pericarditis, 1104
Tóth, Epinephrin sensibility in thyroid diseases, 1884
Tournay, A., Sympathetic and sensibility, 1346
Townsend, R. S., Hemorrhage into pericardium, 803
Toyoda, T., Cholera acidosis, 207
Trail, R. K., Yeast and butter fat in magnesium and phosphorus assimilation, 429
Traugott, C., Alimentary hyperglycemia and glycosuria, 217
Traver, A. H., Traumatic asphyxia, *843
Trétrop, Pseudo-adenoids, 1183
Trinder, J. H., Perforate soft palate and double uvula, *914
Trinkler, N. P., Cure of cancer, 362
Trivas, Paralysis of inferior laryngeal nerve, 1883
Troell, A., Structure of goiters, 70; Exophthalmic goiter, 1108; Bone grafts, 1112; Gasterectomy, 1744
Truchard, J., Rupture of uterus after pituitary, 1418
Trudeau, F. B., Tuberculosis, *831
Trueblood, D. V., Intestinal anastomosis, 876
Truffert, P., Removal of submaxillary glands, 1181
Trumpy, E., Pemphigus of conjunctiva, 812
Tsukasaki, R., Alcohol precipitate of serum as antigen, 1496
Tsurumi, M., Cholera acidosis, 207
Tucker, R. O., Version, 1407
Tuft, L., Hemihypertrophy, *1432
Tuma, J., Adnexal affections, 443
Tumpeier, I. H., Tonsillectomy, *20
Turner, A. L., Tonsillar appendage containing cartilage, 1651
Turner, C. W., Milk secretion during lactation, 1269
Turner, D., Indications for radium, 1272
Turner, H., Typhoid spine, 658
Turpin, Diabetes insipidus, 511; Arthritis, 587
Turquety, Eczema, 1183
Turtle, W. R. M., Fatal phenol absorption through skin, 212
Twort, C. C., Preservation of tubercle bacilli, 142
Twyman, E. D., Intussusception, 1177
Tyler, M., Menstruation and blood concentration, 1173
Tzanck, A., Blood transfusion, 66
- U
- Uhlhorn, C., Wound diphtheria, 1421
Uthoff, W., Glaucoma, 882
Ujhelyi, J., Drainage after goiter operations, 732
v. Ujj, C., False passage in intubation, 287
Ullmann, K., Syphilis, 441
Uriei, H., Petruschky's tuberculin liniment, 809
Unger, F., Albuminuric neurorinitis, 1886
Umemura, R., Phagocytosis of pus cells, 219; Immunologic studies of intestinal fluids, 727
Underhill, F. P., Benzyl benzoate and nitrogenous metabolism, 139; Vaughan's crude soluble poison, 1100; Menstruation and blood concentration, 1173
Unger, E., Incontinence of urine, 1886
Unterberger, F., Roentgen injury of ovaries, 1278
Unverricht, Thyroid and erythrocytes, 1276
Urban, K., Goiter surgery, 969
Uribe, G., Uremia in mental affections, 1347
Urioste, J. P., Typhoid and diphtheria, 361
Urquhart, A. L., Wassermann and flocculation tests, 659
Usbeck, G., Cutaneous reactions in tuberculous with spinal fluid from tuberculous and non-tuberculous meningitis, 1818
Usher, C. H., Carcinoma of choroid, 877
U'sse, Chronic melancholia, 1346
Uyematsu, S., Redlich-Fisher miliary plaques, 431
Uzan, M., Pyocaneus urethritis, 283; Gonorrhea, 587
- V
- Vaccarezza, R. F., Lymphogranulomatosis, 1547
Vaccari, C., Lipoma of intestine, 1274
Vadala, A. J., Hookworm disease, 957
Vaglianos, Antiscorbutic power of milks, 359
Vale, C. F., Abdominal rigidity, *321
Vallardi, C., Pneumothorax, 214
del Valle, D., Localization of tenderness, 215
del Valle, D., Jr., Pyloric syndrome from stretching of round ligament of liver, 1739
del Valle Sárraga, R., Blood analysis, 959
Vallen, S., d'Herelle's phenomenon, 1657
Vallery-Radot, P., Migraine and anaphylaxis, 1346
Van Allen, C. M., Endocrines and tumors, 1954
Van Blommestein, J. H., Obstetric examination by rectum, 812
Van Bogaert, L., Tuberculosis of mesenteric glands, 65
Van Buskirk, J. D., Fatigue tests, 653
Vandeput, Regional anesthesia, 804
Van der Hoeden, J., Syphilis, 1280
Vander Hoof, D., Experimental nephritis, 1271; Achylia gastrica and spinal sclerosis, 1876
van der Lingen, J. S., Ultraviolet light, 723
Van der Perk, L., Dilatation of stomach, 1037
van der Spek, L. A. M., Skin capillaries, 1655
van der Ven, J. C., Intussusception, 69
van der Zande, F., Hemorrhagic blood platelet insufficiency, 1186
van Dongen, J. A., Therapeutic abortion, 1186
Van Gaasbeek, C. B., Leprosy, 802
Van Gorder, G., Plaster pylon, 878
Vanicek, Spontaneous generation of microbes, 1279
van Leeuwen, W. S., Blood in asthma, urticaria, epilepsy and migraine, 357; Anaphylactic nature of diseases, 443
Van Lier, E. H. B., Colon diseases, 811
van Loghem, J. J., Pasteur centennial, 443
van Neck, M., Cicatrical contractions, 1813
Van Nest, A. E., Sugar test in pregnancy, 799
Van Niel Schuur, J. F. W. S., Lumbar drainage, 1112
Van Rijnberk, G., Compression of heart, 443; Lepers in art, 811; Organs without local nervous apparatus, 1112; Writing medical articles, 1280
van Rooy, A. H., Vascular system, 1112
van Sam, A. L., Trend of Wassermann, 1536
Van Slyke, D. D., Determination of lung volume, 1646
van Valkenburg, C. T., Focal symptoms in epilepsy, 1744
Varela, Hypoglycemia, 217; Blood glycolysis, 1818
Vargas, M., Tetanus, 286
Variot, G., Cervical myotonia, 359; Roger's disease, 1491
- W
- Varzhabedian, M. A., Sterility from radium, 127
Vassallo, S. M., Trypanosomiasis, 961
Vaughan, V. C., Hygeia, 1151
Vaughan, W. T., Hay-fever, *215; Lumbar puncture, 1957
Vaux, C. L., Arsphenamin for mental disorders, 1541
Veen, H., Hemorrhage from ovaries in vagina, 1186
Vegni, R., Necropsy in encephalitis, 1883
Veillet, L., Radiologic control of bismuth, 963
Vendel, S. N., Herpes zoster, 1549
Venuti, M., Wildbolz urine reaction, 966
de Verbizier, A., Typhoid, 963
Vermelin, H., Wassermann in pregnancy, 1546
Verploegh, H., Laryngeal tuberculosis, 1744
Versari, A., Antimony in lepra, 1033
Vey, E., Parenteral protein therapy and coagulation of blood, 590
Vickers, J. L., Elimination of phenolsulphonophthalein, 723
Viers, R. S., Mental defect, 1340
Victor, A. C., Splachnaptosis, 656
Vignard, Osteochondritis of the hip, 804
Vignes, H., Inherited syphilis, 729; Sedimentation of erythrocytes, 806
Vignoli, J., Typhoid bacilli in fetal blood, 805
Viko, L. E., Quinidin in auricular fibrillation, 1410
Vila de Abadal, J., Chronic mastoiditis, 1275
Villegas, R. R., Posterior gastro-enterostomy, 960
Vincent, C., Paraplegia, 213; Alcohol treatment of trismus, 1736
Vinson, P. P., Stricture, *1754
Vielle, H., Bacilli of colon group, 964
Vivaldo, Contracture of fingers from syphilis, 1739
Voelecker, Hypertrophy of prostate, 1711
Vogeler, K., Aneurysm of renal artery, 1186
Vogt, A., Heredity of ocular anomalies, 1738
Vogt, E., Healing of wounds after X-rays, 147; Bladder during delivery, 516
Voigt, Syphilis, 1494
Volhard, Fibrous pericarditis, 808
Volk, R., Tuberculosis of skin, 1035
Volhner, H., Narcosis and acidosis, 440; Metabolism and diuresis, 1034; Protein therapy, 1885
Vollmond, E., Gonococcus types, 149
Volpe, C., Glycuronuria in pregnancy, 513
Volpino, Influenza and encephalitis, 1491
Vorhaus, M. G., Bacillus acidophilus, *90
Voronoff, S., Testicle grafts, 66
Vos, H., Acidity of stomach content, 443
Voss, H., Thymus in parthenogenetic tadpoles, 1656
de Vries, W. M., Rupture of aorta, 1112
Vulliet, H., Transolecranon operations, 512
Vysin, V., Tarry stools in cholelithiasis, 970

- Warthin, A. S., Noah Webster, *755; Diphtheria myocarditis, 1723; Hypertrophy of hemolymph nodes, 1879
- Warwick, M., Bleeding and coagulation time in new-born, 210
- v. Wassermann, A., Tuberculosis, 1884
- Wassertrüding, O., Central luxation of hip, 364
- Waters, E. G., Hematuria, *1216
- Watkins, A. B. K., Meningeal hemorrhage, 1416
- Watkins-Pritchford, W., Tenia infestation, 1813
- Watson, B. P., Pituitary extract in labor, 353; Puerperal infections, 1344
- Wearn, J. T., Thrombosis of coronary arteries, 1027; Glomerular urine, 1044
- Weaver, G. H., Pharyngeal diphtheria, 1537
- Webb, G. B., Lymphocyte index in tuberculosis, 1173
- Webster, J. H. D., Roentgen rays in malignant disease, 962
- Webster, W. J., Sensory phenomena with defective blood supply to muscles, 585
- Weed, L. H., Absorption of spinal fluid into venous system, 954
- Wegelin, C., Fat embolism, 1547
- Wehner, E., Tendon regeneration, 148, 1548; Gastropexy, 1035; Nephritis, 1820
- Weibel, W., Peritoneal and genital tuberculosis, 218
- Weidman, F. D., Purpuric eruption, *1132; Liquid petrolatum, *1761; Blastomycosis of brain, 1878
- Weil, M. P., Uric acid in blood, 729
- Weilbauer, A., Duodenal tube, 733
- Weill, E., Deficiency diseases, 283
- Weill-Hallé, B., Gonorrheal arthritis, 587
- Weinstock, M., Light waves and rickets, *687
- Weis, H. A., Effects of radium on ovaries, 1343
- Weiser, E., Dilatation of heart, 1495
- Weiss, E., Atresia of esophagus, *16
- Weiss, H. B., Diaphragmatic pleurisy, *1664
- Weiss, S., Vomiting induced by tartar emetic, 725
- Weisz, E., Determination of borders of lung and exudates, 663
- Weitzgasser, H., Chronic gonorrhea, 218
- Weitz, W., Hemodynamic problems, 733; Hypertension, 969
- Wells, H. G., Cancer, *737; Alimentary absorption of calcium, 1483
- Wells, M., Botulism, 1805
- Welsch, G., Calvé-Legg-Perthes' affection of hip, 438
- Welti, Lengthening spermatic cord with undescended testicle, 364
- Welz, W. E., Sugar test in pregnancy, 799; Measurement of pelvis, 1542
- Wengraf, F., Rachitis and growth, 441, 442
- Werkman, C. H., Immunologic significance of vitamins, 1647; Lack of vitamins in bacterial infection, 1647
- Wernicke, R., Oligodynamia, 1107
- Wertheimer, Extrapulmonary infection in tuberculosis, 968
- Wesselink, Pseudohermaphroditism and sterility, 443
- Wessely, Mask for ether narcosis, 970
- Westenhöfer, Milking calices of kidney, 1350
- Westmoreland, W. F., Surgical conditions of right side of abdomen, 206
- Weston, P. G., Magnesium sulphate as sedative, 1339
- Westphal, K., Action of nerves on bile ducts, 969
- Wetherill, H. G., Tuberculosis, *6
- Wheeler, W. I. de C., Spinal tuberculosis, 64
- Wheeler, H., Duodenal motility, *615
- White, C. J., Infantile eczema, 505
- White, E. C., Use of mercurochrome—220 soluble, 1261
- White, E. P. C., Osteitis deformans, 207
- White, G. B., Rheumatoid arthritis, 1272
- White, P. D., Quinidin in auricular fibrillation, 1410; Electrocardiogram in uremia and nephritis with nitrogen retention, 1728
- Whitehorn, J. C., Aporrhagia reactions in psychoses, 873
- Whitman, A., Deformities of long standing, *18
- Whitsitt, L. M., Diphtheria, 509
- Whittemore, W., Nontuberculous pulmonary abscess, 1411
- Whittingham, H. E., Dysentery, 1958
- Wilborg, A., Erythema nodosum, 1038
- Wiczynski, T., Lipoids in corpus luteum, 735
- Widakowich, V., Tumor in embryo, 1420
- Widal, F., Pasteur's centenary, 587
- Widerøe, S., Stenosis of duodenum, 220
- Widowitz, Dysentery bacilli, 1886
- Wiedhopf, O., Recurrence of gastric ulcer, 810
- Wieland, E., Exfoliative dermatitis, 660
- Wieland, H., Anesthesia by acetylene, 1276
- Wiener, H., Gastric chlorin in diagnosis, 1275
- Wiesel, J., "Rheumatic" infection, 1657
- Wieser, Proteins, 1819
- Wijnenbeek, I. A., Movements of uterus, 288
- Wilbur, R. L., Medicine and human welfare, *1889
- Wilcox, E. A., Pelvic inflammation, 1540
- de Wilde, P. A., Death of fetus, 443
- Wildner, R. M., Insulin and utilization of sugar in body, 1642
- Wilhelmi, O. J., Riedel's lobe, *1755
- Wilkinson, W. C., Tuberculin, 1735
- Willems, C., Access to liver, 65
- Willemse, A., Preclimacteric corpulence, 1037
- Williams, A., Goiter, *600
- Williams, B. G. R., Cresylecht violet, 581
- Williams, C. B., Corneal ulcer cured by tonsillectomy, *917
- Williams, E. H., Expert testimony, 1806
- Williams, F. A., Heart in goiter, 1725
- Williams, F. E., Dysentery bacilli in colitis, 358
- Williams, F. H., Hypertrophied tonsils, 1417
- Williams, H., Epidemic jaundice, *532
- Williams, J. F., Efficiency tests, *16
- Williams, J. R., Insulin, 1799
- Williams, P. F., Postabortal hemolytic streptococemia, 353
- Williams, T. B., Anaphylaxis, 1486
- Williamson, C. S., Gastric ulcer, 1806
- Willis, G. S., Cancer after exposure to radium, *466; Breast carcinoma, 1732
- Willius, F. A., Heart in thyroid disease, 1098; Mitral stenosis, 1806
- Wilmaers, A., Digitalis, *1308
- Wilson, F. N., Roentgen ray in cardiac diagnosis, 1339
- Wilson, G., Chorea, 874; Neuritis, *1443; Charcot-Marie atrophy, 1541
- Wilson, L. B., Graduate medical education, 790; Heart in goiter, 1725
- Wilson, M. A., Complement fixation test in gonorrhea, 1486
- Wilson, R. M., Supplies for leper stations, 201; Chaulmoogra oil in leprosy, 1636
- Wilson, W. J., Mitral stenosis, 1805
- Wiltchke, F., Respiratory stridor, 1655
- Wimmer, A., Traumatic neuroses, 220; Brain tumors, 970; Mediumic insanity, 1345
- Wingfield, R. C., Tuberculosis, 728
- Winkelman, N. W., Chorea, 874
- Winkelstein, A., Gallbladder, *1748
- Winslow, C. E. A., Recruiting of sanitarians, 1246
- Winslow, N., Osteomyelitis from bacillus, 354; Typhoidal osteomyelitis, 1484
- Winter, F., Postoperative irradiation of cancer, 883
- Winter, G., Tuberculosis and pregnancy, 1492
- Winter, L. B., Diabetes, 510; Sugar in blood, 727; Yeast in diabetes, 1810; Insulin and blood sugar, 1811
- Winther, K., Postencephalitic psychic disturbances, 1038
- Wiseman, W. R., Food poisoning from bacillus aertrycke, 726
- Wishart, M. B., Diabetic lipemia, 279
- With, C., Wassermann in tuberculosis, 970
- Witherspoon, J. A., Medical education, *1191
- Witter, F. C., Uterine prolapse, 139
- Wittgenstein, A., Endolumbar treatment with arsphenamin, 516
- Wnorowski, Weight of newly born, 968
- Wohlgemuth, K., Tetanus after operations, 1421
- Wolbach, S. B., Influenza, 1803
- Wolf, Classification of nephritis, 360, 588; Cirrhosis, 1546
- Wolf, E. P., Experimental chemical inflammation, 1647
- Wolf, G. D., Palate retractor, *101
- Wolfe, J. T., Bronchial asthma, 1649
- Wolferth, C. C., Tachycardia, 1028; Quinidin, *1289
- Wollenberg, H. W., Monocytes, 516
- Wollenberg, R., Suprarenal operations in epilepsy, 1743
- Wong, S. Y., Iron and hemoglobin in blood, 1543
- Wood, J. E., Jr., Electrocardiogram in uremia and nephritis with nitrogen retention, 1728
- Woodland, W. N. F., Glomerulus during renal secretion, 653
- Woods, A. C., Optic neuropathies, *1113
- Woodwell, M. N., Schizophrenic catatonia, 1541
- Woodyatt, R. T., Hyperpyrexia, *771; Insulin in diabetes, 1726
- Worms, G., Hemiglossitis, 66
- Wotzilka, G., Nose breathing and treatment of lungs, 217
- Wright, A. E., Therapeutic inoculation, 962, 1273, 1490
- Wynn, J. A., Sensitivity to epidermal and pollen proteins, 874

Y

- Yacoel, Electrocardiograms, 1814
- Yamagawa, K., Breast cancer, 585
- Yamakami, K., Hyperchloremia in asphyxia, 1495
- Yamakawa, S., Lipoidemia and xanthoma, 1495
- Yamakita, M., Anticoagulants and oxygen capacity of blood, 1495; Gaseous metabolism and blood flow in brain under narcosis and hypnosis, 1495; Anoxemia, 1496
- Yamanouchi, M., Intestinal fluids, 727
- Yanagihara, H., Tuberculosis of skin, 1104
- Yates, A. G., Biliary fistula, 141
- Yates, H. W., Extrophy of bladder and genital abnormality, 1542
- Yates, J. L., Pneumothorax, 798; Myocardium as index of age, 1734
- Yearsley, M., Catarrhal deafness, 64
- Yerger, C. F., Abscess of cerebellum, *244
- Young, A., Fixation of fractures, 281; Ulcers of stomach and duodenum, 1488
- Young, G., Optic nerve and sphenoidal and ethmoidal sinuses, 432
- Young, H. B., Trachoma, 1332
- Young, H. H., Mercurials in experimental syphilis, 1474, *1365; Nasal drill for removal of septal spur, *1216
- Young, H. McC., Standard technique for phenol-sulphonaphthalein test, 1543

Z

- Zagari, E., Isotonic infusion of salt and glucose, 589
- Zahn, K. A., Blood in spasmophilia, 287
- Zangemeister, Cervical implantation of placenta, 1278
- Zanger, C., Hypertrophy of prostate, 810
- Zarate, E., Extra-uterine pregnancy, 805
- Zeisler, E. P., Pityriasis rubra pilaris, 874
- Zeissler, J., Bacteria in stools, 287
- Zeitoun, M., Medicine in Egypt, 881
- Zénope, B., Extract of testes in gynecology, 1883
- Zerner, Catalase in blood in cancer, 218
- Zeydner, Blood in asthma, urticaria, epilepsy and migraine, 357
- Ziegner, Carcinoma of stomach, 1820
- Zieler, K., Sensitiveness of skin to poisons in tuberculosis, 662
- Zilva, S. S., Vitamin A and blood platelets, 1030
- Zimmermann, R., Local anesthesia in operative gynecology, 1422
- Zingher, A., Diphtheria prevention, *456; Immunization with diphtheria toxin-antitoxin, 508; Test for susceptibility and immunity to diphtheria, 1023, 1867
- Zinny, Contracture of fingers from syphilis, 1733
- Ziskoven, H., Blood grouping, 1277
- Zoepffel, H., Acute edema of pancreas, 439; Duodenal ulcer, 1279
- Zondek, H., Endocrine obesity, 516; Hydrops and eclampsia, 1422; Pluriglandular insufficiency, 1817
- Zondek, M., Pyelotomy, 1887
- Zorraquin, G., Acute laryngeal asphyxia, 1738
- Zschocke, Influenza croup, 440
- Zucker, E., Access to American publications, 1548

INDEX TO PAGES

OF THE JOURNAL, ACCORDING TO WEEKLY ISSUES—VOLUME 80, JANUARY-JUNE, 1923

Pages	No.	Date	Pages	No.	Date	Pages	No.	Date	Pages	No.	Date
1-70	1	Jan. 6	519-592	8	Feb. 24	1039-1112	15	April 14	1497-1580	21	May 26
71-150	2	Jan. 13	593-664	9	March 3	1113-1186	16	April 21	1581-1658	22	June 2
151-220	3	Jan. 20	665-736	10	March 10	1187-1280	17	April 28	1659-1744	23	June 9
221-288	4	Jan. 27	737-812	11	March 17	1281-1350	18	May 5	1745-1820	24	June 16
289-364	5	Feb. 3	813-884	12	March 24	1351-1424	19	May 12	1821-1888	25	June 23
365-444	6	Feb. 10	885-970	13	March 31	1425-1496	20	May 19	1889-2018	26	June 30
445-518	7	Feb. 17	971-1038	14	April 7						

THE JOURNAL

American Medical Association

Annual Subscription, \$6.00

PUBLISHED WEEKLY

Single Copies, 20 Cents

VOLUME 80, No. 26

535 North Dearborn Street, CHICAGO, ILL.

JUNE 30, 1923

CONTENTS AND SUBJECT INDEX

Human Welfare and Modern Medicine: Presidential Address. Ray Lyman Wilbur, M.D., Stanford University, Calif.....1889

Treatment of Migraine with Peptone: Evidence of the Anaphylactic Character of the Seizure. Joseph L. Miller, M.D., and B. O. Raulston, M.D., Chicago1894

Studies on the Therapeutic Application of Bacillus Acidophilus Milk, with Report of Cases. Harry A. Cheplin, Ph.D.; H. Clifford Fulmer, M.D., and Clyde O. Barney, M.D., Syracuse, N. Y.....1896

Some Less Frequently Considered Portals of Infection in Arthritis and Iritis. Ernest E. Irons, M.D., Chicago1899

Observations on the Use of Insulin in Diabetes Mellitus. William H. Olm-

stead, M.D., and S. H. Kahn, M.D., St. Louis.....1903

A Study of the Action of Calcium in Experimental Cocain Poisoning. Ira Frank, M.D.; Jerome F. Strauss, M.D., and William A. Smiley, M.D., Chicago1908

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

A Personal Experience with Sprue. Sylvester M. Lambert, M.D., New York.....1910

EDITORIALS

The Etiology of Typhus Fever in Laboratory Workers.....1939

Research in Epilepsy.....1939

The Treatment of Amebiasis.....1940

CURRENT COMMENT

A Study of Salicylates in Rheumatism1941

Acquired Racial Immunity to Infectious Diseases.....1941

A Mad Mountain Lion.....1941
(Subject Index on next page)

PROCEEDINGS OF THE SAN FRANCISCO SESSION

Minutes of the House of Delegates.1911

Reports of the Secretary; the Board of Trustees; the Treasurer; the Auditor; the Bureau of Legal Medicine and Legislation; the Judicial Council; the Council on Health and Public Instruction; the Council on Medical Education and Hospitals, and the Council on Scientific Assembly.

INDEX

List of Journals Indexed.....1959

Semiannual Index to the Reading Matter in The Journal and to the Current Medical Literature.....1961

Index to Authors.....2002

Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on June 14, 1918.
Copyright, 1923, by the American Medical Association

Bulletin

Our business for May, 1923, was the largest of any May since we've been serving the medical profession.

We thank you.

A Great Surgery

KEEN'S SURGERY has proved its claim to pre-eminence. Its remarkable success is due in no small degree, first, to the weight of surgical opinion it records; secondly, to the strikingly practical character of its text; thirdly, to its wide scope, covering not only general surgery, its principles and practice, but *monographically*, every one of the surgical specialties as well; fourthly, to the wealth of truly instructive illustrations, numbering 4096—of which 186 are in colors. Volumes 7 and 8 contain the surgical advances of recent development.

No one but Dr. Keen could have brought together such an assemblage of surgical authority. There are 129 contributors, representing the best surgical thought of Europe as well as of America, the entire work being edited in the strictest sense of the word by Dr. Keen himself. It is this weight of authority that established for KEEN'S SURGERY the confidence it enjoys. Its principles are sound; its practice safe.

Keen's Surgery. Written by 129 specialists. Edited by W. W. Keen, M.D., LL.D., Hon. F.R.C.S., Eng. and Edin. Eight octavos, totalling 8700 pages and 4096 illustrations, 186 in colors. Per set, including *Index Volume*: Cloth, \$79.00 net. Volumes VII and VIII only, with *Index Volume*: Cloth, \$25.00 net.

SAUNDERS, Publishers

See Page 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "E," Editorial; "C," Correspondence; "T," Therapeutics; "MI," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics.

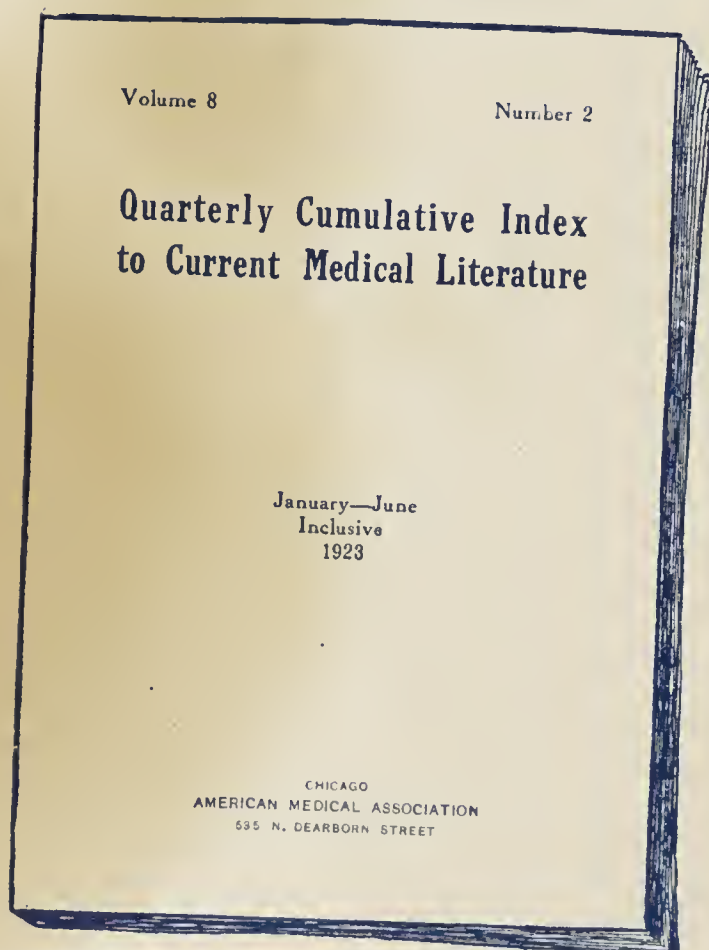
A. M. A., auditor's report.....	1920
Committee on Credentials, preliminary report	1911
proceedings of the San Francisco Session	1911
report of Board of Trustees.....	1915, 1919
report of Bureau of Legal Medicine and Legislation	1921
report of Council on Health and Public Instruction	1926
report of Council on Medical Education and Hospitals.....	1928
report of Council on Scientific Assembly.....	1937
report of Judicial Council.....	1925
report of secretary.....	1911
treasurer's report	1920
Advertising an article on hay-fever, protest against	C-1951
Amebiasis, treatment of.....	E-1940
Amidopyrine-Abbott	1910
Anatomy, value of knowledge of, to physician	1958
Anemia, pernicious	1957
transfusion in	1957
Arthritis	*1899
Automobile used by physician, exemption of	MI-1952
Bacillus acidophilus milk.....	*1896
Bladder calculus, unusually large.....	1958
Books Received	Adv. page 26
Bramwell, Byrom, presentation of portraits of	1946
Calcium, effects of, on skeleton.....	1958
in cocaine poisoning	*1908
Children, housing conditions affecting.....	1949
Cocain poisoning, calcium in.....	*1908
Correspondence	1951
Criminal liability of trephined persons.....	1947

Death certificate not evidence as to injury causing death	MI-1952
Deaths	1950
Dermoid cyst of ovary.....	1956
Diabetes, insulin in.....	*1903
Digitalis toxemia	ab-1955
Dispensaries, public assistance in Peru.....	1945
Dysentery, flagellate	1958
serum therapy of.....	ab-1953
Encephalitis, serum therapy of.....	ab-1953
Epilepsy, research in.....	E-1939
Epinephrin Chloride Solution-Abbott.....	1910
Feces, tubercle bacilli in.....	1956
Flagellate dysentery	1958
Foreign Letters	1946
Gaillard, Georges, death of.....	1948
Gallbladder disease and stomach symptoms	1956
German army, venereal disease in.....	1949
Goiter, iodine in	ab-1955
Hay-fever, protest against circularization of article on.....	C-1951
Health conditions in Japan.....	1945
Hernia, diaphragmatic	1957
Housing conditions as affecting children.....	1949
Hydrophobia from bite of lion.....	E-1941
Immunity to infectious diseases.....	E-1941
Index to Volume 80.....	1963
Infectious diseases, racial immunity to.....	E-1941
Injury, death certificate not evidence as to injury causing death.....	MI-1952
Internal secretions and tumors.....	ab-1954
Intestine tuberculosis	1957
Iodin in goiter	ab-1955
Iritis	*1899
Japan, health conditions in.....	1945
Journal of Medical Research changes hands	1945
Labor, maternal mortality.....	1957
League of Nations Health Committee.....	1945
Lion, bite of, causing hydrophobia.....	E-1941
Lumbar puncture in syphilis.....	1957
Marriages	1950
Medicine and human welfare.....	*1889
Medicolegal	1952
Meningitis, serum therapy of.....	ab-1953

Mental hygiene, league of.....	1947
Migraine, peptone in.....	*1894, 1910
Milk, bacillus acidophilus.....	*1896
Mouth, accessory	1958
hygiene of, request for reprints of articles on	C-1951
New and Nonofficial Remedies.....	1910
News	1942
Ovary, dermoid cyst of.....	1956
Ovogenesis during sexual maturity.....	1956
Pasteur, results of Pasteur tag day.....	1947
Peptone in migraine.....	*1894, 1910
Physical examinations, periodic.....	1950
Plague, cases of plague within environs of Paris	1947
Pneumonia, pyopneumothorax secondary to	1958
serum therapy of.....	ab-1953
Poliomyelitis, serum therapy of.....	ab-1953
Polycythemia	ab-1954
Practice Act, violation of, patients not alleged to have been human beings in	MI-1952
Pyopneumothorax secondary to pneumonia.....	1958
Queries and Minor Notes.....	1951
Research, International Research Council.....	1948
Rheumatism, salicylates in.....	E-1941
Salicylates in rheumatism.....	E-1941
Serotherapy, symposium on.....	ab-1953
Society Proceedings	1953
Sprue	*1910
Stenson's duct	1951
Stomach ulcer and gallbladder disease.....	1956
Syphilis, lumbar puncture in.....	1957
in children	1949
Tonics and Sedatives.....	Adv. page 22
Trephined persons, criminal liability of.....	1947
Tuberculosis bacilli in feces of tuberculous.....	1956
antituberculosis congress	1949
in Porto Rico.....	1945
Tumors and endocrines.....	ab-1954
Typhus in laboratory workers.....	E-1939
University College, new buildings at.....	1946
Venereal disease in German army.....	1949
prevention of	1946
Vision, defective, treatment of.....	1952
Vital capacity of women.....	1948

Quarterly Cumulative Index to Current Medical Literature

A KEY TO THE MEDICAL THOUGHT OF THE WORLD



An alphabetical compilation of references to all the worth-while contributions appearing in over 200 of the world's leading medical journals. It gives name of author, name of journal, date of publication, and publisher's name and address—everything needed to locate current material on any subject in hand.

For Practitioners, Specialists,
Teachers, Editors,
Writers, Students

With the "Index" you can quickly select just those articles bearing on your problem, your subject of study, or your special field of interest. It obviates hours of laborious searching when compiling bibliographies, preparing papers, verifying abstracts, reviewing literature, etc.

Published quarterly. Each volume contains all references from previous volumes of current year. Price, \$6.00 per current year. Foreign postage 50 cents extra.

AMERICAN MEDICAL ASSOCIATION

535 N. Dearborn St.

CHICAGO, ILL.

JUST READY

BLOMFIELD'S ANESTHETICS IN PRACTICE AND THEORY
424 pages, \$7.50. Have you our latest Bulletin of New Medical Books?
CHICAGO MEDICAL BOOK COMPANY, Congress & Honore Sts., Chicago

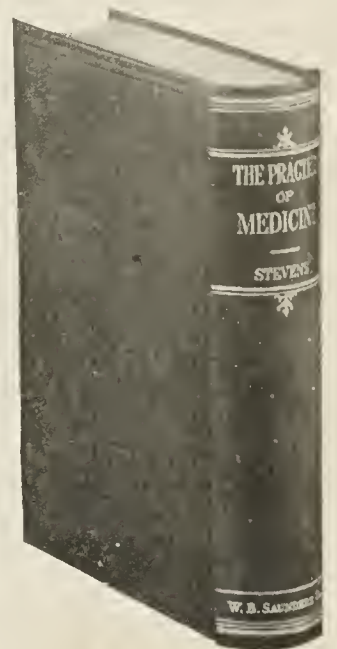
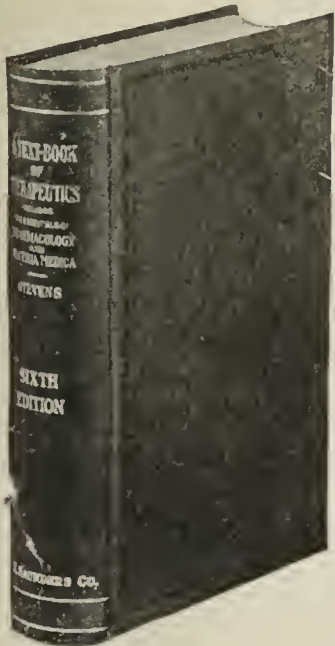
HAVE YOU SUBSCRIBED FOR **HYGEIA** See Page 38

Two Books by Dr. Stevens



A. A. STEVENS, M.D.

Professor of Applied Therapeutics, University of Pennsylvania; Professor of Therapeutics and Clinical Medicine, Woman's Medical College, Philadelphia.



Therapeutics. This new (6th) edition gives you everything new in the field of therapeutics that has been proved of value at the bedside. The work has been rewritten and reset. It gives you over 500 pages on drugs,—their derivation, forms, composition, pharmacologic, local and cumulative actions; their toxicology, therapeutic indications, dosage, and administration. It gives you 200 pages on the *application* of this therapeutic knowledge in the actual treatment of disease—what remedies to use, how to use them, how to treat the complications. It gives you an entire section on remedial measures other than drugs—electricity, massage, heat and cold, spinal puncture, x-ray, radium, actinotherapy, etc. It classifies drugs according to their actions.

Octavo of 793 pages.

Cloth, \$6.25 net

Practice of Medicine. This new work has been printed three times in six months. What are the reasons for this success? They are these: The work is truly what its title says—a *practice* of medicine. It is *not* a record of what others have done, or found, or say, or think; but a record of what *Dr. Stevens* is doing every day with one of the largest private practices in Philadelphia. The diagnoses are definite, and the means of arriving at them clear-cut. The plans of treatment are modern and specific in their application. There is no doubt left as to what to do. It is a summary of a life-time experience in hospital and private practice, presented in a concise and *impressive* style developed through thirty-two years of quizzing and teaching.

Octavo of 1106 pages, illustrated.

Cloth, \$7.50 net

ADD YOUR NAME AND MAIL THIS ORDER FORM TODAY

W. B. SAUNDERS COMPANY

West Washington Square, Philadelphia

Please send the books checked (✓) and charge amount to my account:

Stevens' Practice of Medicine.....	\$ 7.50 net
Stevens' Therapeutics	6.25 net
Keen's Surgery { Eight Volumes and Index.....	79.00 net
{ Volumes 7 and 8 and Index.....	25.00 net

Name.....Address.....

BLAKISTON BOOKS

DAVIS—Plastic Surgery, Its Principles and Practice

American Journal of Surgery—"In this book the author has planned to survey the field of plastic surgery of all parts of the body. The book is attractive in appearance and well illustrated. A bibliography is appended to each chapter."

864 illustrations, 8vo., cloth, \$12.00; By JOHN STAIGE DAVIS, Ph.B., M.D., F.A.C.S., Associate in Clinical Surgery, Johns Hopkins University.

SCHAEFFER—The Nose, Paranasal Sinuses, Nasolacrimal Passageways and Olfactory Organ in Man

Journal of the American Medical Association—"It bears evidence of exhaustive observation and research. The volume is well written and the illustrations are excellent."

204 illustrations, 18 in colors, cloth, \$10.00; by J. PARSONS SCHAEFFER, A.M., M.D., Ph.D., Professor of Anatomy and Director of the Baugh Institute of Anatomy of Jefferson Medical College, Philadelphia.

BINNIE—Operative Surgery—8th Revised Edition

British Medical Journal—"The volume is a mine of information; no operative measure ever made use of seems to have escaped the author's notice."

1628 illustrations, a number are printed in colors. Cloth, \$12.00; By JOHN FAIRBAIRN BINNIE, A.M., C.M. (Aberdeen); Surgeon to the Christian Church, the Research and the General Hospitals, Kansas City, Missouri.

HUGHES—Practice of Medicine—12th Edition

Northwest Medicine—"Most attention is paid to pathology, diagnosis, symptoms and treatment of each disease discussed. For a handy reference book this will be found useful for any practitioner of medicine."

The 12th revised edition, 63 illustrations, cloth, \$4.00; By DANIEL E. HUGHES, M.D., revised by R. J. E. SCOTT, M.D., B.C.L., New York City.

DEAVER and ASHHURST—Surgery of the Upper Abdomen

Surgery, Gynecology and Obstetrics—"No region of the body affords more interesting or complicated pathology than the upper abdomen. This volume gives an enormous amount of information, which is most desirable, and many instructive illustrations. The text is clear and leaves little unsaid so far as our present day knowledge is concerned.

2d Edition, Revised, 207 illustrations including 9 colored plates. One volume. Cloth, \$11.00; By JOHN B. DEAVER, M.D. and A. P. C. ASHHURST, M.D., Associate in Surgery, University of Pennsylvania.

CLARK—Applied Pharmacology

The Lancet, London—"The charm of the book lies largely in the fact that it gives in readable, and not too technical language just what the thinking practitioner wants to know about his drugs."

Illustrated by 50 diagrams. Cloth, \$4.00; By Prof. A. J. CLARK, M.C., M.D., F.R.C.P., Chair of Pharmacology, University College, London.

P. BLAKISTON'S SON & COMPANY, Philadelphia

— — — — — -ON APPROVAL- — — — —

P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia.
Gentlemen.—Please send for 10 days' examination, the following books. I will remit in 30 days for those I keep:
Name.....
Address.....
Books..... Books.....
.....

New Books and New Editions

Physiotherapy Technic

By **C. M. Sampson, M.D.**, Formerly of Physiotherapy Service, Walter Reed General Hospital, U. S. A.; Later Chief of Physiotherapy Service, U. S. A. General Hospital No. 9, Lakewood, N. J.; Later Chief of Physiotherapy Service, U. S. A. Gen. Hosp. No. 41, Fox Hills, N. Y., later named Hoff General Hospital; later Reconstruction Officer U. S. Public Health Service Hospital No. 61, later Veteran's Bureau Hospital No. 61, Fox Hills, N. Y.; Formerly in Charge of Reconstruction at U. S. Public Health Service Hospital, No. 70, New York City. 450 pages, 6x9, with 70 original illustrations. Price, silk cloth binding...\$6.50

A simple, practical and proven explanation both of the physics involved in the making and application of the physical remedies by a man that positively knows his book upon this subject. The Sanskrit of electricity has been translated into plain English for the physician. The same methods used successfully to train hundreds of medical officers and reconstruction aides in the services have been followed in this book.

Tonsillectomy

By Means of the Alveolar Eminence of the Mandible and a Guillotine, with a Review of the Collateral Literature

By **Greenfield Sluder, M.D., F.A.C.S.**, Clinical Professor and Director of the Department of Laryngology, Rhinology and Otology, Washington University School of Medicine, St. Louis. 175 pages, 6½x9½, with 90 illustrations, mostly original. Price, silk cloth.....\$5.00

Sluder presents for the first time his method of tonsillectomy by means of the alveolar eminence of the mandible and a guillotine. He has also reviewed the collateral issues, i. e., embryology, comparative anatomy, general human anatomy, physiology, pathology, clinical laryngology, and surgery. There is a special section on "Adenoidectomy with Direct Vision." The book is beautifully illustrated.

Cerebrospinal Fluid in Health and in Disease

By **Abraham Levinson, B.S., M.D.**, Associate in Pediatrics, Northwestern University School of Medicine; Attending Physician, Department of Contagious Diseases, Cook County Hospital, Chicago, etc. 2d revised edition. 267 pages, with 61 illustrations, including 5 color plates. Price, cloth.....\$5.00

This is one of the most important contributions to the study of the cerebrospinal fluid ever made. The new second edition has been completely revised, greatly enlarged, with many new pictures added. The author has incorporated the results of the most recent research on cerebrospinal fluid done by other investigators as well as by himself in this new edition.

Nursery Guide for Mothers and Nurses

By **Louis W. Sauer, M.A., M.D.**, Senior Attending Pediatrician Evanston Hospital; formerly Attending Physician Chicago Infant Welfare, etc. 188 pages, 5x7¼, illustrated. Price, cloth, with jacket...\$1.75

A new kind of book for mothers and nurses. Sauer gives in clear, concise form all essential details in the care and feeding of infants. Unlike other books it does not give hazardous feeding formulas and prescriptions. The subject matter is coherent and systematic. The book to recommend to your patients.

The Tonsils

(Faucial, Lingual and Pharyngeal)

By **Harry A. Barnes, M.D.**, Instructor in Laryngology, Harvard Medical School; Laryngologist, Mass. Charitable Eye and Ear Infirmary; Laryngologist, Mass. General Hospital, Boston, etc. 2d revised edition. 217 pages, with 45 illustrations, mostly original. Price, cloth...\$5.00

This is a practical work on the tonsils for the busy practitioner. The new second edition has been completely revised and now includes all of the new operations as well as the old, which are described in great detail. The technic of local anesthesia has received special attention. The chapter on focal infections has been rewritten, and the section on x-ray and radium treatment of tonsillar hypertrophy is new. Many new cuts have been added. The posterior and lateral pharyngeal nodules are also described.

Epidemiology and Public Health

By **Victor C. Vaughan, M.D., LL.D.**, assisted by **Henry F. Vaughan, M.S., Dr.P.H.**, and **George T. Palmer, M.S., Dr.P.H.** In 3 volumes—Vol. I, ready; Vol. II, just published, containing 925 pages 6½x9½, with illustrations; Vol. III, ready December, 1923. Price, cloth, per volume, \$9.00. Per set\$27.00

Vol. II on Alimentary Infections, Percutaneous Infections, and Local Infections is now ready. This is a monumental work in preventive medicine and should be in the library of every physician. It is scientific accurate in execution and is presented in a charming literary style.

Optotypes, Test Letters and Pictographs

By **John Green, M.D., LL.D.**, Professor of Ophthalmology in St. Louis Medical College, 1886 to 1913; and **A. E. Ewing, A.M., M.D.**, Professor Emeritus of Ophthalmology in Washington University, St. Louis.

Includes complete set of 35 test plates, 4 sets of small individual pictographs for children, 1 book of explanation, and binder ready to hang. These test charts are based on the Snellen System which is now universally recognized. Sold with and without binder. These test letters and pictographs for measuring the acuteness of vision are valuable to ophthalmologists, opticians, ophthalmic clinics, hospital, the army, the navy, universities, colleges, schools, and manufacturing establishments.

— — — CUT HERE AND MAIL TODAY — — —

(Jour.A.M.A.)

C. V. MOSBY CO.

508 N. Crand Blvd., St. Louis, Mo.

Please send me the books checked with (X) below, for which I enclose check for \$..... or you may charge to my account:

Sampson—Physiotherapy Technic	\$6.50	Barnes—Tonsils	\$ 5.00
Sluder—Tonsillectomy...	5.00	Vaughan—Epidemiology	27.00
Sauer—Nursery Guide..	1.75	Green & Ewing—Optotypes	
Levinson—Cerebr. Fluid.	5.00	Without binder.....	5.00
		With binder.....	8.00

Name

Street

Town..... State.....

REBMAN
59 W. 51st St.



COMPANY
NEW YORK

JUST ISSUED

A Clinical Guide to Bedside Examination—By Dr. H. Elias, Dr. N. Jagic and Dr. A. Luger (Translation by Wm. A. Brams, M.D.).

CONTENTS

Scheme of a Physical Examination at the Bedside—Detailed Consideration of the Foregoing Scheme and the Diagnostic Value of the Several Findings—Percussion and Auscultation—Diagnostic Value of Some of the Physical Findings at the Heart and Vessels—Index. Pocket Size. Flexible Binding. \$1.50.

Kingsbury—DERMOCHROMES. A most complete and best illustrated Portfolio of Skin Diseases. 272 illustrations in life-like colors—about 400 pages of text matter. Three volumes, bound in flexible fabricoid. Gilt edges. Price, \$30.00.

Kroenig & Friedrich—The PRINCIPLES OF PHYSICS AND BIOLOGY OF RADIATION THERAPY. Many illustrations in colors and in black and white. Cloth, \$8.00.

Krause Heymann—SURGICAL OPERATIONS, Vols. 1 and 2. *Surgery of the Head*, 667 colored illustrations of progressive stages of operations. 715 pp. of text matter. Cloth, \$8.00 per volume.

Bockenheimer & Frohse—TYPICAL OPERATIONS IN SURGERY. 60 plates in colors. Three-quarters leather. Price, \$16.00.

Fluhrer—THE PRINCIPLES OF TREATMENT OF BROKEN LIMBS. Illustrated. Price, \$3.00.

Ortner—SYMPTOMATOLOGY OF INTERNAL DISEASES. 2 volumes. I. *Abdominal Pain*, \$3.50. II. *Generalized Pain*, \$5.50. Both volumes together, \$8.00.

Adam—OPHTHALMOLOGIC DIAGNOSIS. Is the best known book on the subject. 86 colored figures. Cloth, \$10.00.

Bing—REGIONAL DIAGNOSIS of Affections of the Brain and Spinal Cord. Many illustrations. Cloth, \$4.00.

Woodruff—MEDICAL ETHNOLOGY or Effects of Tropical Light on White Men. Cloth, \$4.00.

Foster—DIAGNOSIS FROM OCULAR SYMPTOMS. Cloth, \$6.00.

Krause—NORMAL HISTOLOGY. Including Microscopical Anatomy. 30 figures in the text and 208 unequalled colored illustrations. 2 volumes. Cloth, \$8.00.

Krause—TEXTBOOK OF HISTOLOGY. Illustrated. Cloth, \$3.50.

Hart—THE DIAGNOSIS AND TREATMENT OF ABNORMALITIES OF THE MYOCARDIAL FUNCTION. 248 illustrations. Cloth, \$5.00.

Meyer—MEDICAL DICTIONARY. In eight languages. English, French, German, Hungarian, Italian, Japanese, Russian, Spanish. 5500 words in each language. \$6.00.

Zinsser—DISEASES OF THE MOUTH—SYPHILIS AND SIMILAR DISEASES. 73 plates (53 in colors). Price, \$10.00.

Telephone: Circle 1027 **REBMAN COMPANY, 59 West 51st Street, N.Y.**

LABORATORIES
AT BALTIMORE

ETHICAL
PRODUCTS

CRESATIN

does not incite irritation
does not attack normal tissue
does not cause sloughing
does not cause scars



it stands alone

SHARP & DOHME
CHEMISTS SINCE 1860

BRANCHES:

CHICAGO — ST. LOUIS — ATLANTA
NEW ORLEANS — PHILADELPHIA — KANSAS CITY

GENERAL OFFICES: NEW YORK CITY

THE PRIOR THREEFOLD UNIT OF SERVICE

SERVICE NO. 1—CONSULTING BUREAU

The abstruse, the atypical, or the worrying case can be referred to the Consulting Bureau and the literature of the world is expeditiously supplied on the particular phase of any medical subject.

We are giving to thousands of physicians a Consulting Service second to none in the world that cannot be duplicated for many times the entire cost of the PRIOR THREEFOLD UNIT OF SERVICE

No. 3180

CONSULTING SERVICE REQUEST

To the CONSULTING BUREAU

W. F. PRIOR CO., Inc.

Please send me the following information:

I. General Subject:—

APPRECIATION

II. Particular Information:—

The information you are furnishing me, almost daily, is of inestimable value to me in the treatment of the unusual and difficult cases.

Date 5-7-23

Name C.W.

Address Texas

**I. CONSULTING
BUREAU**

II. DIGEST

III. TICE

**I. CONSULTING
BUREAU**

II. DIGEST

III. TICE



W. F. PRIOR COMPANY, Inc.

Publishers of Medical Services

HAGERSTOWN, MARYLAND

LIST OF STATE MEDICAL ASSOCIATIONS

SOCIETY	PRESIDENT	SECRETARY	ANNUAL MEETING
Alabama, Med. Assn. of the State of	W. W. Harper, Selma.....	H. G. Perry, State Bd. of Health, Montgomery	
Alaska Territorial Medical Assn....	J. H. Romig, Nenana.....	H. C. DeVighe, Juneau.....	
Arizona Medical Association.....	Harry T. Southworth, Prescott...	D. F. Harbridge, Goodrich Bldg., Phoenix....	Fayetteville, 1924
Arkansas Medical Society.....	William T. Wootton, Hot Springs...	Wm. R. Bathurst, 810 Boyle Bldg., Little Rock	
California, Med. Soc. of the State of	H. G. Brainerd, Los Angeles....	W. E. Musgrave, Balboa Bldg., San Francisco.	Glenwood Springs, 1923
Colorado State Medical Society.....	J. Crum Epler, Pueblo.....	F. B. Stephenson, Metropolitan Bldg., Denver.	
Connecticut State Medical Society...	David Russell Lyman, Wallingford	C. W. Comfort, Jr., 27 Elm Street, N. Haven.	Middletown, Oct. 8-9, 1923
Delaware State Medical Society....	Dorsey W. Lewis, Middletown....	W. O. La Motte, Indust. Tr. Bldg., Wilmington	
District of Columbia, Med. Soc. of..	L. H. Reichelderfer, Washington.	C. B. Conklin, Med. Science Bldg., Washington	Orlando, May, 1924
Florida Medical Association.....	H. Marshall Taylor, Jacksonville.	Graham E. Henson, Jacksonville.....	Augusta, 1924
Georgia, Medical Association of....	John W. Daniel, Savannah.....	Allen H. Bunce, Healey Bldg., Atlanta.....	
Hawaii, Medical Society of.....	J. E. Strode, Honolulu.....	W. K. Chang, Honolulu.....	Idaho Falls, 1923
Iaho State Medical Association....	John R. Gray, St. Anthony.....	E. E. Laubach, Overland Bldg., Boise.....	
Illinois State Medical Society.....	Edward H. Ochsenr., Chicago....	W. D. Chapman, Silvis.....	Terre Haute, Sept. 26-28, '23
Indiana State Medical Association..	Charles H. Good, Huntingdon....	Chas. N. Combs, Terre Haute.....	Des Moines, May 7-9, 1924
Iowa State Medical Society.....	Oliver J. Fay, Des Moines.....	T. B. Throckmorton, Bk. Tr. Bld., Des Moines.	
Isthmian Canal Zone, Med. Assn. of	Maj. E. A. Boccock, Ancon.....	D. G. O'Neil, Corozal Hospital, Corozal.....	Iola, 1924
Kansas Medical Society.....	Edwin D. Ebricht, Wichita.....	J. F. Hassig, 800 Minnesota Ave., Kansas City	Crab Orchard, 1923
Kentucky State Medical Association..	Frank Boyd, Paducah.....	A. T. McCormack, 532 W. Main St., Louisville	
Louisiana State Medical Society....	Lester J. Williams, Baton Rouge.	P. T. Talbot, 1551 Canal St., New Orleans....	
Maine Medical Association.....	Langdon T. Snipe, Bath.....	B. L. Bryant, 265 Hammond St., Bangor.....	
Maryland, Med. and Chir. Faculty of	Philip Briscoe, Mutual.....	J. A. Chatard, 1211 Cathedral St., Baltimore..	
Massachusetts Medical Society.....	E. H. Bigelow, Framingham C'ter	W. L. Burrage, 182 Walnut St., Brookline 46	Boston, June 10-11, 1924
Michigan State Medical Society....	W. T. Dodge, Big Rapids.....	F. C. Warnshuis, Powers Thr Bldg., Gr. Rapids	Gr. Rapids, Sept. 11-13, '23
Minnesota State Medical Assn.....	Edward Starr Judd, Rochester...	Carl B. Drake, Central Bank Bldg., St. Paul..	St. Paul, October, 1923
Mississippi State Medical Assn....	W. A. Dearman, Long Beach....	T. M. Dye, Clarksdale.....	
Missouri State Medical Association..	George W. Robinson, Kansas City	E. J. Goodwin, 3529 Pine St., St. Louis.....	Springfield, 1924
Montana, Medical Association of..	H. T. Rhoads, Choteau.....	E. G. Balsam, 222 Hart-Albin Bldg., Billings..	Butte, July 11-12, 1923
Nebraska State Medical Association	Benjamin F. Bailey, Lincoln.....	R. B. Adams, 1013 Terminal Bldg., Lincoln...	
Nevada State Medical Association..	J. La Rue Robinson, Reno.....	Horace J. Brown, Thoma-Bigelow Bldg., Reno.	Reno, October, 1923
New Hampshire Medical Society...	Herbert L. Smith, Nashua.....	D. E. Sullivan, 7 N. State St., Concord.....	
New Jersey, Medical Society of...	James Hunter, Jr., Westville....	William J. Chandler, South Orange.....	
New Mexico Medical Society.....	Harry A. Miller, Clovis.....	J. W. Elder S. F. H., Albuquerque.....	
New York, Med. Soc. of the State of	Arthur W. Booth, Elmira.....	Edward L. Hunt, 17 W. 43d St., New York..	Raleigh, 1924
N. Carolina, Med. Soc. of the State of	Vance McGougan, Fayetteville...	L. B. McBrayer, Sanatorium.....	
North Dakota State Med. Assn....	Eric P. Quain, Bismarck.....	H. J. Rowe, Lisbon.....	Cleveland, 1924
Ohio State Medical Association....	Joseph S. Rarden, Portsmouth...	Mr. D. K. Martin, Ex. Sec., 131 E. State St., Columbus	
Oklahoma State Medical Association	McLain Rogers, Clinton.....	C. A. Thompson, 508 Barnes Bldg., Muskogee.	Portland, July 10-11, 1923
Oregon State Medical Society.....	Philip J. Bartle, Eugene.....	C. L. Booth, Selling Bldg., Portland.....	Pittsburgh, 1923
Pennsylvania, Med. Soc. of State of	Lawrence Litchfield, Pittsburgh..	W. F. Donaldson, Jenkins Arcade, Pittsburgh.	Manila, December, 1923
Philippine Islands Medical Assn....	Antonio G. Sison, Manila.....	I. Concepcion, Coll. of Med. & Surg., Manila..	San Juan, Dec. 14-16, 1923
Porto Rico, Med. Assn. of.....	A. Martinez Alvarez, San Juan...	Augustin R. Laugier, San Juan.....	
Rhode Island Medical Society.....	A. T. Jones, Providence.....	J. W. Leech, 369 Broad St., Providence.....	Orangeburg, Apr. 15-17, '24
South Carolina Medical Association.	Leland O. Mauldin, Greenville...	Edgar A. Hines, Seneca.....	
South Dakota State Med. Assn.....	Gilbert G. Cottam, Sioux Falls...	R. D. Alway, 423 S. Lincoln St., Aberdeen...	Knoxville, 1924
Tennessee State Medical Assn.....	Hampton L. Fancher, Chattanooga	J. F. Gallagher, Jackson Bldg., Nashville....	San Antonio, 1924
Texas, State Medical Association of.	Arthur C. Scott, Temple.....	Holman Taylor, 207 1/2 W. 11th St. Fort Worth	
Utah State Medical Association....	J. C. Landerberger, Salt Lake City	Wm. L. Rich, Boston Bldg., Salt Lake City...	Bennington, Oct. 11-12, 1923
Vermont State Medical Society....	J. A. Stevenson, Chester.....	W. G. Ricker, St. Johnsbury.....	Roanoke, October, 1923
Virginia, Medical Society of.....	John Staige Davis, University...	Mr. G. H. Winfrey, 104 1/2 W. Grace St., Richmond	Spokane, September, 1923
Washington State Medical Assn....	John H. O'Shea, Spokane.....	C. H. Thomson, 508 Cobb Bldg., Seattle.....	
West Virginia State Med. Assn....	John N. Simpson, Morgantown...	Robert A. Ashworth, Moundsville.....	
Wisconsin, State Med. Society of...	F. Gregory Connell, Oshkosh.....	Mr. J. G. Crownhart, Ex Sec., 558 Jefferson St., Milwaukee	Milwaukee, Oct. 3-5, 1923
Wyoming State Medical Society....	G. A. Fox, Cheyenne.....	Earl Whedon, Sheridan.....	

List of National Societies appeared in this space two weeks ago; Officers of the A. M. A. last week.

Corrections will be appreciated



Neosalvarsan
TRADE MARK REG. U.S. PAT. OFF.

NEOARSPHENAMINE

—is unseparably linked with the modern arsenic therapy of lues.

The inherent parasitocidal powers of Neosalvarsan are sedulously maintained in every control manufactured in our laboratories and remain unsurpassed. Serving the interests of the profession while conserving our own, by reason of lessened cost of basic ingredients and of manufacture on a larger scale, we offer Neosalvarsan to the practitioner through the legitimate trade channels at the materially lowered prices here-with quoted.

Dosage	I, 0.15 gram	\$.60 per ampule
"	II, 0.3	" .65 " "
"	III, 0.45	" .70 " "
"	IV, 0.6	" .80 " "
"	V, 0.75	" .90 " "
"	VI, 0.9	" 1.00 " "

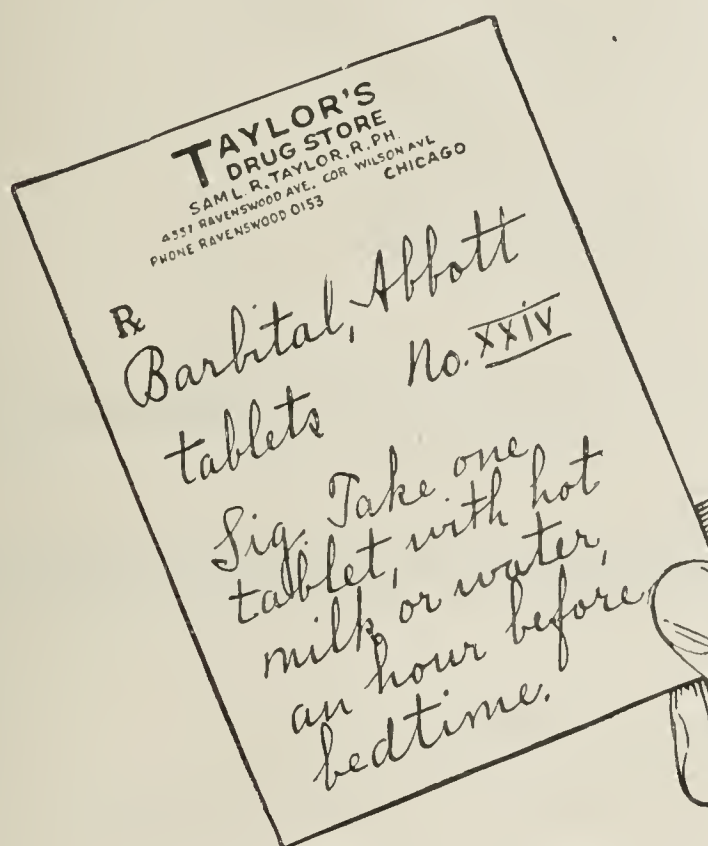


H.A. METZ LABORATORIES, INC.

122 HUDSON ST. NEW YORK



For patients in need of sleep, whom insomnia frets and robs insidiously of strength and recuperative power, the following is suggested as a prescription which is effective and without harmful results:



**At Druggists
on Prescription**



Barbital, Abbott

The same excellent hypnotic and sedative which, some years ago, was introduced in this country from abroad. Identical in composition and therapeutic effect.

Use the American name when prescribing. Write Barbitol, Abbott, upon your blanks and thus make sure of obtaining for your patient a reliable Abbott-quality product. Leaflet (C 327) on request.

Other Important Abbott Prescription Items

*Aromatic Chlorazene
Powder*
Digipoten
Galactenzyme
Argyn
Cinchophen
Neocinchophen
Chlorazene
*Chlorazene Surgical
Cream*
Acriflavine
Neutral Acriflavine
Barbital

The Abbott Laboratories

Executive Offices, Chicago, Ill.

31 East 17th Street
NEW YORK

234 Central Building
SEATTLE

559 Mission Street
SAN FRANCISCO

221 W. Richmond Street
TORONTO

RADIUM

STANDARD CHEMICAL CO.

"Know the Company from Which You Buy"

Instruments and Screens

IN the successful application of Radium much depends upon the instruments and the screens used, and the technique employed in preparing the applicators. In this, as in all other phases of our service, the Radium Chemical Company is daily rendering valuable assistance to the profession.

SOME POINTS OF OUR SERVICE

Necessary instruments and screens for the safe handling and application of radium.

A comprehensive and scientific course of instruction in the physics and therapeutic use of radium.

A loose-leaf Compendium of Abstracts of professional papers, showing the technic and results of radium treatment, with supplements as issued.

"RADIUM"—a quarterly journal, the oldest publication devoted exclusively to the therapeutics of radium.

Complete installations of the latest apparatus for the collection, purification, tubing and measurement of radium emanation.

Medical and technical experts always available for conference or for advice by letter.

Skilled assistance in seeking lost radium.

RADIUM CHEMICAL CO.

PITTSBURGH, PA.

BOSTON

NEW YORK

CHICAGO

SAN FRANCISCO



A DAY'S FEEDING CAN BE
PREPARED BY THE MOTHER
IN A FEW MINUTES

THE ORIGINAL CALCIUM CASEINATE

SO SUCCESSFULLY AND WIDELY
USED IN THE MANAGEMENT OF
FERMENTATIVE DIARRHEAS
AND
NUTRITIONAL DISORDERS
OF
INFANTS AND CHILDREN

Reprints and abstracts of Medical articles on application

The Hoffmann-La Roche Chemical Works, New York

Answering an Important Question

The Question—“Why is it possible to feed S.M.A. with good nutritional results to normal, full-term infants of varying ages (from birth to one year, or even longer if desired), without dilution or change?”

The Answer—This is possible because S.M.A. resembles breast milk, both physically and chemically, in all important respects. In other words, S.M.A. resembles breast milk not only in the quantity of protein, carbohydrate and salt—it also resembles breast milk so closely in the *character* of its *fat* that it is possible for S.M.A. to contain the same *quantity* of fat as breast milk. S. M. A. is also markedly anti-rachitic and anti-spasmophilic. S. M. A. thus offers the physician a means of supplying infants of all ages with the food elements in the same proportion as they would obtain them from breast milk. And this is why, in feeding S.M.A., it is only necessary to increase the *amount* of the prepared food as the infant grows.

S. M. A. is sold by druggists on the order of a physician. If you cannot obtain it from your druggist, please give us his name, and we will furnish you direct till he gets a supply. Complete literature for physicians on request—THE LABORATORY PRODUCTS CO., 1111 Swetland Building, Cleveland, Ohio.

A FOOD TO KEEP BABIES *and* YOUNG CHILDREN WELL

Adapted to Mother's Milk

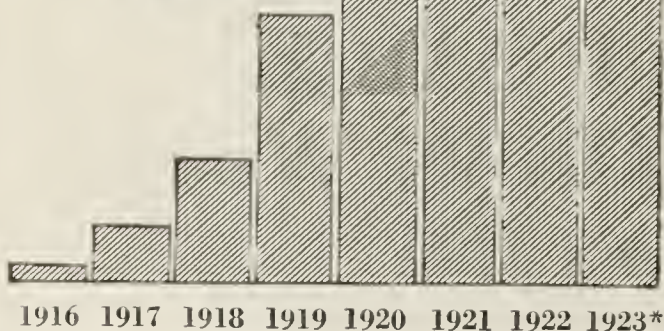
Formula by permission of The Babies' Dispensary and Hospital of Cleveland
owners of the patent rights



The Reward of Merit

THIS simple chart of Baumanometer sales for the past seven years speaks for itself; peculiarly significant is the fact that we are now selling more Baumanometers per week than were sold during the entire year of 1916. This is surely the reward of merit.

SUPPLIED THROUGH
SURGICAL INSTRUMENT
DEALERS ONLY



1916 1917 1918 1919 1920 1921 1922 1923*

* The year 1923 is estimated on sales to date.

Baumanometer
"STANDARD FOR BLOODPRESSURE"

W. A. BAUM CO., INC.
100 FIFTH AVENUE . . . NEW YORK



Here Doctors Agree

The universal use of National High Pressure Sterilizers proves the wholehearted consensus of medical minds on their daily advantages.

National Sterilizers quickly produce a 20 pound steam pressure that sterilizes instruments, gowns, dressings, etc., with an unprecedented thoroughness.

Efficiency and economical operation make them preferred sterilizers the world over.

Sold by supply dealers
everywhere



Aluminum Autoclave
Polished aluminum, fittings nickel-plated. Efficient with any heating element, \$45.



Steel Sterilizer
For hospitals, laboratories, clinics — gas, gasoline burner or steam coil. Doctor's, \$70; Medium, \$100; Hospitals, \$165.

Northwestern Steel and Iron Works

Sole Manufacturers

Dept. 904

Eau Claire

Wisconsin

**SELLS EVERYWHERE
ELSE FOR 50¢**

**OUR PRICE
19¢
PER ROLL**

**UNIVERSAL WIRE
GAUZE SPLINTS**

A Splint for All Purposes

For permanent or temporary dressing of fractures and sprains. Carefully woven gauze of plastic, galvanized wire, made with selva. Splints of any size easily and quickly cut from the 36 x 5 1/4-inch rolls. They are preferred because of snug fit; easily shaped with fingers to fit arm or leg, as required. Assure maximum protection with minimum pressure, not interfering with circulation.



Comes in 3-foot Rolls

These splints permit irrigation, ventilation and easy inspection. They embody economy, adaptability, convenience and cleanliness and retain shape. Every doctor should have a supply of good, substantial, easily adjusted splints like these. The late Dr. John B. Murphy used these splints constantly because of their superiority. Adopted by Army Medical Corps.

ARMY SURPLUS — BRAND NEW

Our enormous purchase of the entire Army surplus enables us to offer this tremendous bargain. Every roll guaranteed brand new and first class. These are the same splints that sell everywhere else for 50c. Our sale price only 19c.

SUPPLY LIMITED — BUY NOW

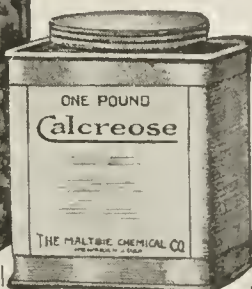
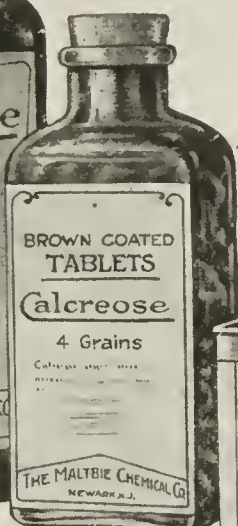
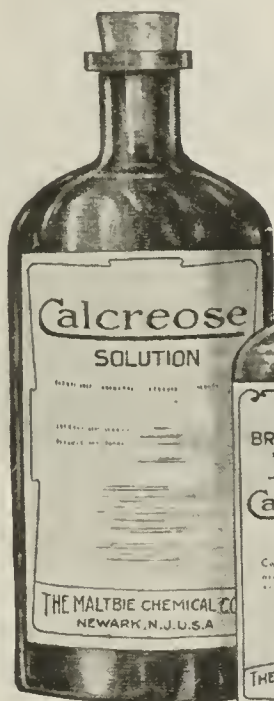
Order at once—get your share. Buy now—in dozen lots—anticipate your wants—this bargain lot will soon be gone.

No. AM6137—Wire Gauze Splints—Per half-dozen rolls.....\$1.00
Per dozen rolls.....1.85

A. S. & ALOE CO.

516 OLIVE STREET

ST. LOUIS, MO.



HOT WEATHER SUGGESTION

"Creosote water is sometimes given to check gastric fermentation."—Sollmann: Manual of Pharmacology, Ed. 2, 1922, p. 581.

PATIENTS object to creosote because of its taste and untoward effects on the stomach. They do not object to taking CALCREOSE—a mixture of approximately equal parts of beechwood creosote and calcium, possessing the pharmacologic activity of creosote but free from its untoward effect on the stomach, therefore,

CALCREOSE solution lends itself admirably to the treatment of gastro-intestinal disorders in which it is desired to get creosote effect.

TABLETS POWDER SOLUTION

THE MALTBIÉ CHEMICAL COMPANY
NEWARK, NEW JERSEY

Meet the "Calcreose Detail Man" in Space 13, Exhibit Hall, San Francisco.

KOLYNOS

DENTAL CREAM

The Phenol Coefficient

The temperature at which it is proposed to use the disinfectant in question must be taken into account in making a coefficient determination. As Kolynos Dental Cream is used in the mouth, a temperature of 36°-37° C was chosen.

PHENOL COEFFICIENTS OF 29 SAMPLES OF KOLYNOS DENTAL CREAM

Age of Sample	Phenol Coefficient	Age of Sample	Phenol Coefficient	Age of Sample	Phenol Coefficient	Age of Sample	Phenol Coefficient
3 hours	0.13	2 days	0.24	3 months	0.13	7 months	0.13
3 hours	0.18	4 days	0.13	3 months	0.16	9 months	0.13
3 hours	0.19	5 days	0.14	5 months	0.18	9 months	0.11
3 hours	0.21	24 days	0.12	6 months	0.16	9 months	0.12
24 hours	0.16	28 days	0.12	6 months	0.14	12 months	0.13
24 hours	0.15	33 days	0.13	6 months	0.19	12 months	0.16
24 hours	0.13	35 days	0.17	7 months	0.14	12 months	0.18
24 hours	0.14						

Average (29 tests) = 0.15

Request Physicians' Samples

THE KOLYNOS COMPANY
NEW HAVEN, CONN.

SULFARSENOL

(SULPHARSPHENAMINE)

Made by Laboratoire de Biochimie Medicale, Paris, France
(U. S. License No. 83)

MAY BE GIVEN SUBCUTANEOUSLY

without pain, local trouble or danger. Ideal method for children or persons with difficult veins. Can also be given intramuscularly or intravenously.

SULFARSENOL is characterized by

Ready Solubility
Remarkable stability
Low toxicity
Efficacy of curative action
Ease of administration

SULFARSENOL has been used extensively with great success for the last few years in France, England, Belgium, Spain, etc., in private practice and in some of the government services. We now offer this valuable arsenical to the American medical profession

Literature, prices and discounts upon request.

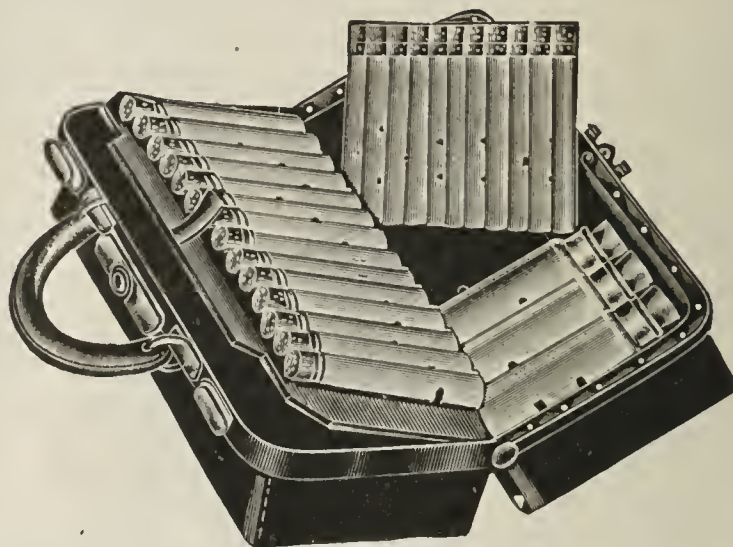
TEN DOSAGES (in Ampoules):

0.06 gm.	0.12 gm.	0.18 gm.	0.24 gm.	0.30 gm.
0.36 gm.	0.42 gm.	0.48 gm.	0.54 gm.	0.60 gm.

CHAS. LEICH & CO. **Evansville, Ind.**

AMERICAN AGENTS

PHYSICIANS' and SURGEONS' Leather Bags and Medicine Cases



WRITE FOR CATALOGUE DESCRIBING OVER 200
DIFFERENT SIZES AND STYLES



WESTERN LEATHER MFG. CO.

184 W. Lake St., Chicago, Ill.

MANUFACTURERS

All leading Physicians' Supply Houses handle the
"WELEMACO" Line

GAUZE BANDAGES

AT 60% UNDER THE MARKET

GENUINE Bauer & Black, 44x40 mesh, sterilized gauze bandages at 60 per cent. of the normal market price. Each bandage offered is individually wrapped and sealed. They are packed, one gross to the carton, each carton containing 4 dozen 2½-inch, 4 dozen 3-inch and 4 dozen 3½-inch compressed bandages, each six yards long. A carton weighs approximately 7 1-5 pounds.



One distinct advantage goes with the flat compressed bandage. It can be cut into narrow widths for finger dressings more easily than the round bandage. If a round bandage is preferred, these flat bandages may be instantly restored to round shape by pressing in the hand.

\$12.50 WORTH OF BANDAGES FOR \$5.00

2AM—Bauer & Black Bandages, per carton.....\$5.00
Carton contains 1 gross of bandages—4 dozen 2½-inch, 4 dozen 3-inch, 4 dozen 3½-inch—weighing 7 1-5 lbs.

2AM—Bauer and Black Bandages, per case.....\$69.00
A case of bandages contains 16 cartons or 2,304 Bauer & Black Bandages divided equally into 2½-inch, 3-inch and 3½-inch sizes, approximately 115 lbs.
Special prices on 5, 10, 20, 50 and 100 case lots.

JUST FILL OUT THE COUPON

FRANK S. BETZ COMPANY, Hammond, Indiana.

Enclosed is \$..... for which please ship cartons of your 44x40 mesh sterilized gauze bandages.

Name

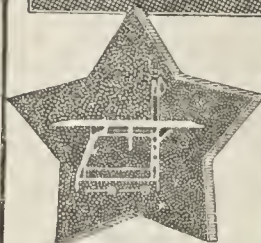
Address

City..... State.....

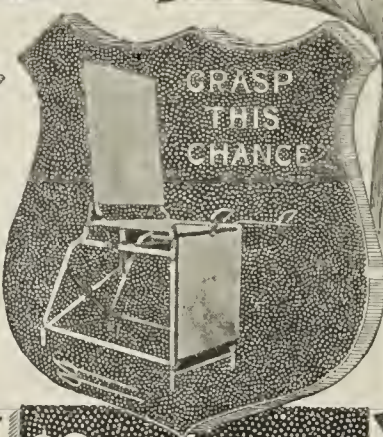
BARGAIN SALE OF ARMY OPERATING TABLES

REGULAR PRICE
\$40.00
SALE PRICE
\$19.75

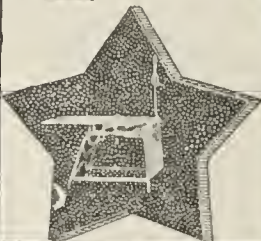
LESS THAN
1/2 PRICE



\$2.50
MONTHLY



\$19.75
REGULAR PRICE
\$40.00



\$225 WITH ORDER
\$2.50 PER MONTH
10% OFF FOR CASH WITH ORDER



An exceptional
bargain opportunity
for doctors, surgeons
and hospitals

An unquestioned
\$40.00 value for
the pre-war price
of only \$19.75

SUITABLE for examining, treatment and operating. Adjusts easily. Made of steel, enameled "snow white." Heel stirrups and leg holders free. Just \$2.25 brings it to you. Try it for 30 days; if not thoroughly satisfactory, return it and we will refund your money. If satisfied, send balance in 7 payments of \$2.50 each. If you prefer to pay cash, we allow 10% discount, making the net cash price \$17.78.

A. S. ALOE CO.

515 OLIVE ST.

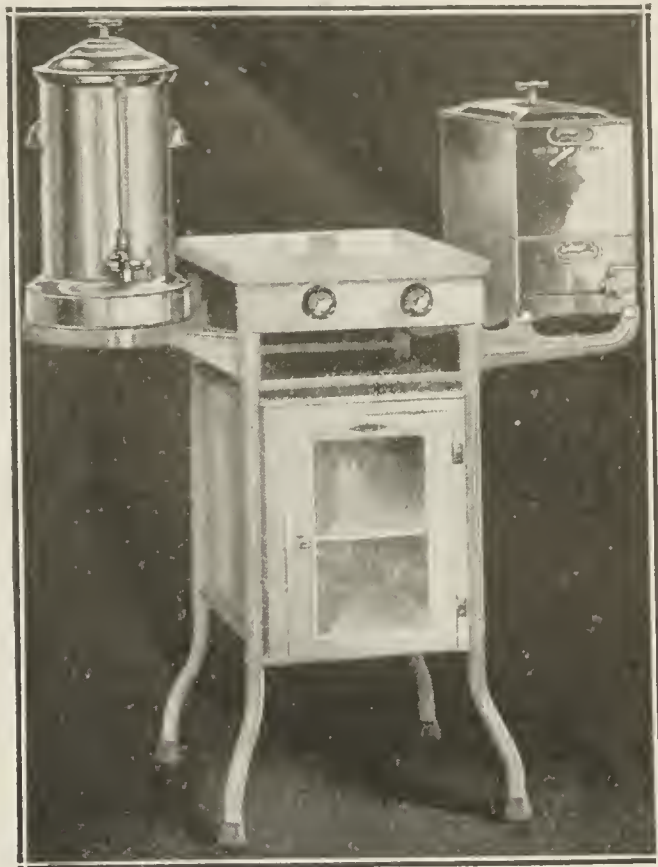
ST. LOUIS, MO.

Sterilize everything at your own office

INSTRUMENTS, dressings and water—all are positively sterilized in the Castle No. 1512. It's completeness saves you a trip to the hospital and makes you sure that everything you use is safe.

Besides, it looks so well that patients ask about it. It gives them confidence.

The famous Rochester Sterilizer steams the dressings (dry) at 212°. Instruments are boiled in the lower section. Every drop of water in the urn is sterilized, gauge glass included. Any heat. Send for more details.



CASTLE



Complete line of Physicians', Dental, Hospital and Bacteriological Sterilizers

WILMOT CASTLE COMPANY, 1155 University Ave., Rochester, N. Y.

"Every patient looks for a sterilizer"

ORGANOTHERAPY

can be effective only through the use of dependable endocrine products. A proper manufacturing process is absolutely indispensable.

"* * * every link in the manufacture of the glandular substance plays a vital part in its future therapeutic value, every stage in its production counts in its efficiency. It may become either a dangerously potent weapon or an inert mass."
—("Our Problems in Endocrinology," Jacob Gutman, M.D., Phar.D., F.A.C.P., Chairman's address to the Endocrinological Society of the City of New York, 1922).

Our products are prepared from fresh glands of healthy food animals in our own laboratory, under the supervision of our own staff of chemists. Every manufacturing process has been carefully tested and every product for which there is a recognized chemical or biological assay is analyzed and standardized.

DESICCATED PITUITARY BODY, U. S. P.
DRIED SUPRARENALS, U. S. P.
DRIED THYROIDS, U. S. P.
SOLUTION OF POST-PITUITARY

Insure potency and constancy of action by prescribing the products of

G. W. CARNRICK CO.

Manufacturers
of



Organotherapeutic
Products

417-421 Canal Street, New York, N. Y.

*First used and approved
over 100 years ago!*



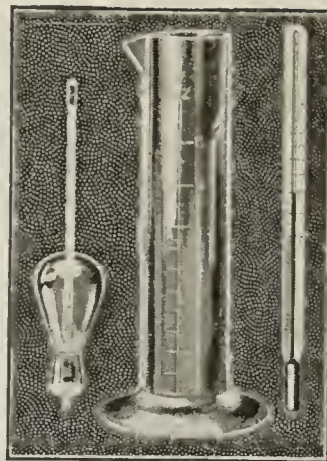
COLMAN'S DOUBLE SUPERFINE MUSTARD

Endorsed and prescribed
by physicians everywhere.

—In plasters and poultices
to relieve congestion and
reduce inflammation,—to
alleviate neuralgic and
other pains and spasms.
Mustard is frequently add-
ed to local baths—as for
the feet.

As a Safe and Reliable
Emetic use 14 grammes in a
glassful of lukewarm water.

J. & J. COLMAN (U. S. A.), Ltd.
90 W. BROADWAY NEW YORK



Tycos Urinalysis Glassware

Of interest to the Medical Examiner, Clinician and
Laboratory worker. Simplified technique. Consis-
tent accuracy with uniform results.

Send for exhaustive bulletin (No. 4) on the analysis
of urine.

Tycos Fever Thermometers and Office Sphygmo-
manometers.

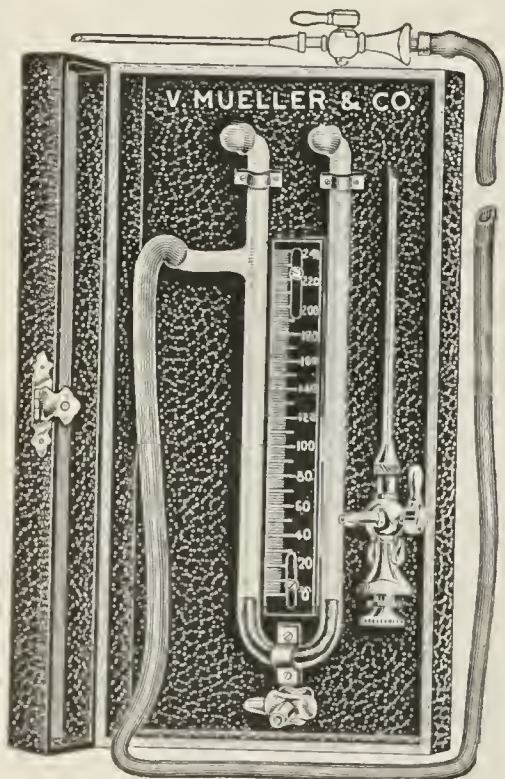
Taylor Instrument Companies
Rochester, N. Y., U. S. A.

Canadian Plant, 110 Church St., Tycos Bldg., Toronto, Ont.

UG:

New Spinal Manometer

Devised by
Dr. Harry Jackson, Chicago



The apparatus
illustrated here
for estimating
intraspinal
pressure is a
greatly simpli-
fied form of
Manometer,
which we have
gradually de-
veloped under
the direction of
Dr. Jackson,
and it has been
used up to date
in several hun-
dreds of cases
by him and
other surgeons
to their entire
satisfaction.

See Journal
American Med-
ical Associa-
tion, October
21st, 1922.

Made by

V. Mueller & Company

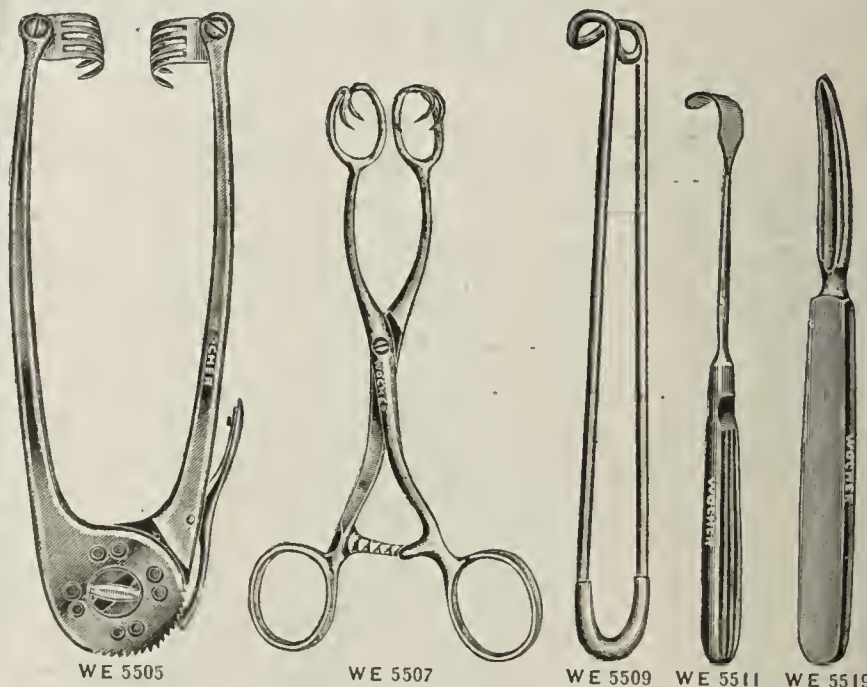
Ogden Ave., Honore and Van Buren Sts.

Chicago, Ill.

Price, complete, \$17.50

NEW GOITRE INSTRUMENTS

as used by DR. ANDRE CROTTI



ABOVE are shown a few of the latest types used by Dr. Crotti.
They consist of: WE 5505, Automatic Goitre Retractor; WE 5507,
Goitre Grasping Forceps; WE 5509, Blunt Retractor; WE 5511,
Blunt Retractor for Ligation; WE 5519, Bronchocele Sound or Dissector.

For a more complete list, see our

NEW CATALOG

Have you received your copy of the new 35th edition? A beautiful
book showing many new instruments, sundries and articles of furniture.
Ask for it.

THE MAX WOCHER & SON CO.

29 - 31 W. 6th Street

Cincinnati, Ohio

STEREOSCOPIC PLATE CHANGING—Electrically

WITH THE

WAPPLER VERTICAL PLATE CHANGER

AND

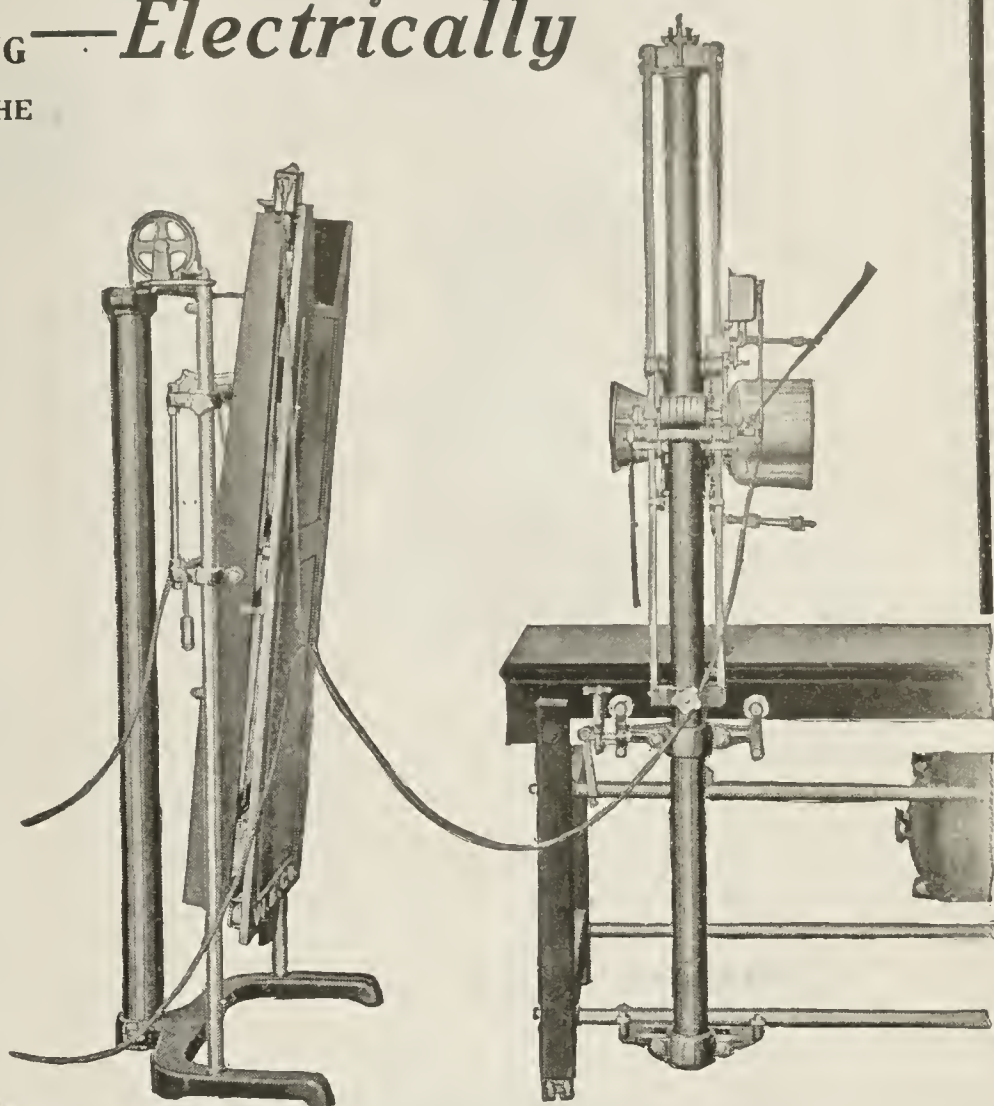
SIMPLEX STEREOSCOPIC TUBESTAND

THE new development shown is extremely interesting to Roentgenologists and Internists making many Stereoscopic chest plates. It shows the Wappler Vertical Plate Changer (a most remarkable development in itself), and the Simplex Stereoscopic Tube stand (another new Wappler Product), equipped with the Wappler Magnetic Shifting device (for the simultaneous and automatic shifting of X-Ray Tube and Plate Changer).

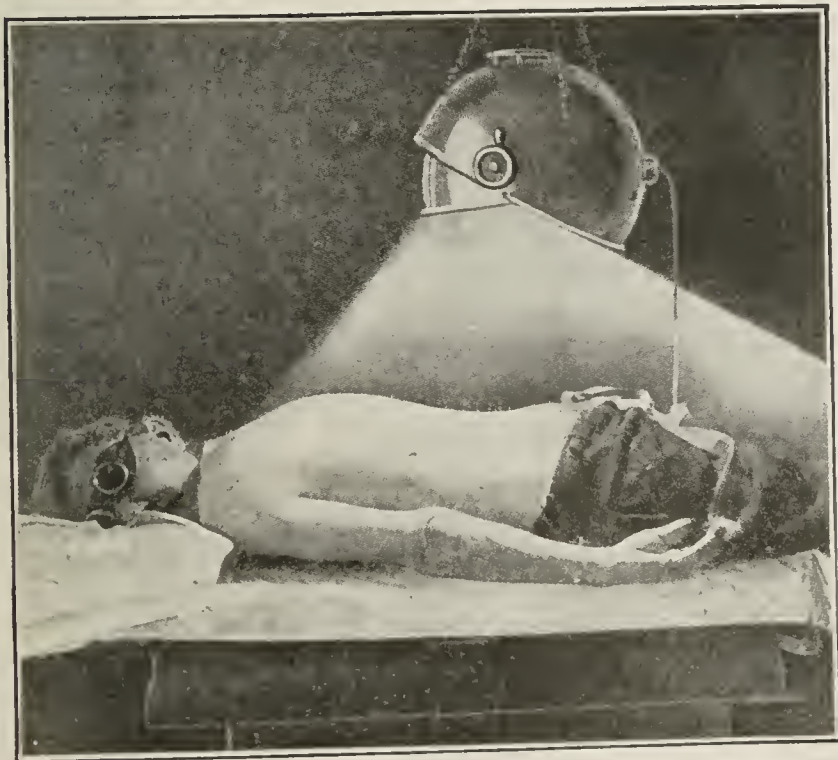
Ⓒ This development is extremely interesting and particularly valuable to the busy Roentgenologist. Send for Catalog Bulletin No. 93-8 describing this equipment.

WAPPLER ELECTRIC COMPANY, Inc.

LONG ISLAND CITY, N.Y., U.S.A.



THE ALPINE SUN LAMP



TWO efficient and dependable means of employing Ultra-Violet Light Therapy—The Alpine Sun Lamp and the Kromayer Lamp.

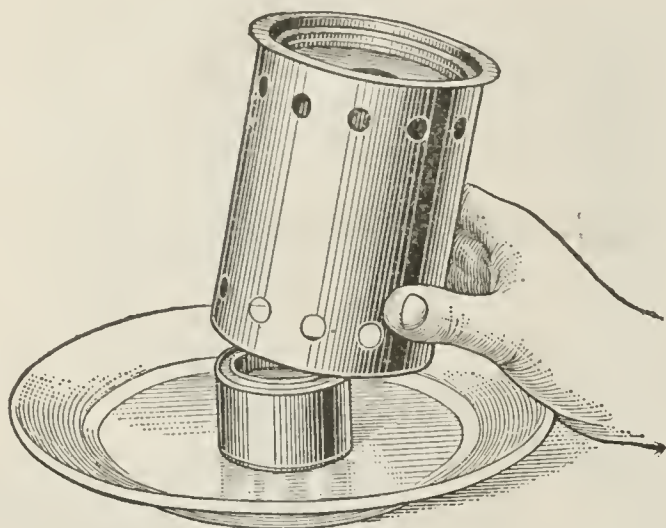
Their field of indication covers disease in most of its manifestations.

We have some very interesting literature on the subject which we will be pleased to send to you upon request for booklet "A."

HANOVIA CHEMICAL & MFG. CO., NEWARK, N. J.

Branch Offices—New York, Chicago, San Francisco

**LISTER'S IMPROVED
FORMALDEHYD FUMIGATORS—
NEW TYPE**



work so rapidly that all the formaldehyd gas is given off in 15 to 30 minutes. This rapid generation is accomplished by using solidified alcohol instead of a slow burning candle.

All physicians are invited to write for descriptive literature of *Lister's Improved Formaldehyd Fumigators—New Type*.

Johnson & Johnson

New Brunswick, N. J., U. S. A.



**CHICAGO
LABORATORY**

**ANALYTICAL
CLINICAL**

25 East Washington St.
CHICAGO, ILLINOIS

Tel. Randolph
3610, 3611, 3612

Ralph W. Webster, M.D., Ph.D.,
Chemical Department.
Thomas L. Dagg, M.D.,
Pathological Department.
C. Churchill Croy, M.D.,
Bacteriological Department.

**OUR
FIRST AIDS
IN
DIAGNOSIS**

BLOOD CHEMISTRY

Blood Sugar
Non-Protein Nitrogen
Urea Nitrogen
Uric Acid
Creatinin

SEROLOGICAL

Wassermann
Colloidal Gold
Complement Fixation
for Gonorrhea and
Tuberculosis

BACTERIOLOGY

TOXICOLOGY

PATHOLOGY

SEND FOR CONTAINERS

EPINEPHRIN

Lederle



Natural Epinephrin

Active principle of the Suprarenal Gland Solution 1-1000
Supplied in one ounce bottles

Price \$1.00 per ounce

Physician's sample on request

LEDERLE ANTITOXIN LABORATORIES

511 FIFTH AVENUE
CORNER OF FORTY-THIRD STREET
NEW YORK CITY

Winkley Artificial Limb Co.

JEPSON BROS., (Proprietors)

**LARGEST MANUFACTORY
OF ARTIFICIAL LEGS
IN THE WORLD**

Patent Adjustable
Double Slip
Socket

Warranted
Not to Chafe the Stump

Perfect Fit Guaranteed
from
Cast and Measurements
Without Leaving Home

Send For Our Large Il-
lustrated Catalog

1330 Washington Ave. No.
MINNEAPOLIS, MINN.
U. S. A.



For amputa-
tion below the
knee, with in-
ner socket
thrown out of
its proper po-
sition in order
to show its
construction.

BACTERIAL
VACCINES

IMMUNOLOGICAL
RESEARCH

BACTERIAL
DIAGNOSIS

BACTERIOLOGICAL LABORATORIES OF
G. H. SHERMAN, M.D.

DETROIT

MICHIGAN

The Management of an Infant's Diet

Constipation

Protein indigestion or the failure to take care of the casein of cow's milk may result in delayed bowel movements.

When constipation in infancy is due to casein curds it is readily overcome by employing some means of preventing the firm coagulation of the casein.

Mellin's Food

acts upon the casein of milk in such a manner that the coagulated casein is presented in a most favorable condition for the action of the digestive fluids; therefore, Mellin's Food is especially indicated in constipation due to faulty protein digestion, and results will at once be apparent if Mellin's Food is used in sufficient amount to thoroughly attenuate the milk casein.

Mellin's Food Company, Boston, Mass.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 N. Dearborn St. Chicago, Ill.
Phone, Superior 0884, Cable Address "Medic, Chicago"

Agents for Great Britain—W. B. Saunders Com-
pany, Ltd., 9 Henrietta St., Covent Garden, Lon-
don, England.

Subscription prices, per annum in advance,
including postage: Domestic, \$6.00; Canadian,
\$7.50; Foreign, \$8.50.

Domestic rates include United States and
possessions, Argentine, Bolivia, Brazil, Colom-
bia, Costa Rica, Cuba, Dominican Republic,
Ecuador, Guam, Guatemala, Mexico, Nicaragua,
Paraguay, Peru, Republic of Honduras, Salva-
dor, Samoa, Spain, Uruguay.

SINGLE COPIES of this and the
previous calendar year, 20 cents; two years
old, 25 cents; three years old, 30 cents; in
other words, 5 cents additional is charged for
each year preceding the last calendar year.

REMITTANCES should be made by
check, draft, registered letter, money or express
order. Currency should not be sent unless
the letter is registered. Stamps in amounts
under one dollar are acceptable. Make all
checks, etc., payable to "AMERICAN MEDICAL
ASSOCIATION."

WARNING: Pay no money to an agent
unless he presents a letter showing authority
for making collection.

CHANGE OF ADDRESS notice
should give both old and new address, and state
whether change is permanent or temporary.

WHEN COMMUNICATIONS
concern more than one subject—manuscript,
news items, reprints, change of address, pay-
ment of subscription, membership, information
wanted, etc.—correspondents will confer a favor
and will secure more prompt attention if they
will write on a separate sheet for each subject.

ADVERTISEMENTS

First advertising forms go to press ten days
in advance of the date of issue. Copy must be
sent in time for setting up advertisements and
for correcting proof.

CONTRIBUTIONS

EXCLUSIVE PUBLICATION:
Articles are accepted for publication on con-
dition that they are contributed solely to this
journal.

COPYRIGHT: Matter appearing in
THE JOURNAL OF THE AMERICAN MEDICAL
ASSOCIATION is covered by copyright. Permis-
sion will be granted on request for the repro-
duction in reputable publications of anything
in the columns of THE JOURNAL if proper
credit be given. However, the reproduction
for commercial purposes of articles appearing
in THE JOURNAL or in any of the special
journals published by the Association will not
be permitted.

MANUSCRIPTS: Manuscripts should
be typewritten, double-spaced, and the original,
not the carbon copy, submitted. Carbon copies
of single-spaced manuscripts will not be con-
sidered. Footnotes and bibliographies should
conform to the style of the Quarterly Cumula-
tive Index published by the American Medical
Association. This requires, in the order given:
name of author, title of article, name of peri-
odical, with volume, page, month—day of
month if weekly—and year. We cannot promise
to return unused manuscript, but try to do so
in every instance. Used manuscript is not re-
turned. Manuscripts should not be rolled.

ILLUSTRATIONS: Half-tones and
zinc etchings will be furnished by THE JOURNAL
when satisfactory photographs or drawings are
supplied by the author. Each illustration, table,
etc., should bear the author's name on the back.
Photographs should be clear and distinct; draw-
ings should be made in black ink on white
paper. Used photographs and drawings are re-
turned after the article is published, if re-
quested.

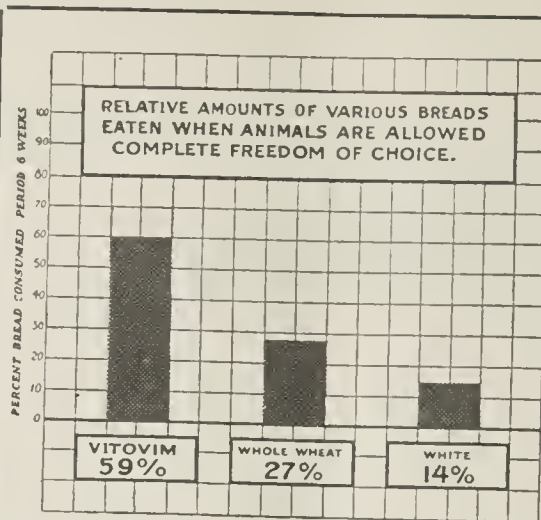
ANONYMOUS CONTRIBU-
TIONS, whether for publication, for infor-
mation, or in the way of criticism, are con-
signed to the waste-basket.

NEWS: Our readers are requested to
send in items of news, also marked copies of
newspapers containing matters of interest to
physicians. We shall be glad to know the
name of the sender in every instance.

PRICE LIST

A price list describing the various publica-
tions of the Association will be sent on request.

AMERICAN MEDICAL ASSOCIATION,
535 N. DEARBORN STREET, CHICAGO



Natural Instinct
Led These Animals
To Eat More of

WARD'S
VITOVIM
BREAD

Than Any Other Kind

One of the most interesting ex-
periments conducted with VITO-
VIM BREAD was the one recorded
on the graph shown above.

In this test albino rats were given
equal portions of ordinary white
bread, whole wheat bread and
VITOVIM BREAD daily during
a six weeks' test. At the end of
each 24 hours the remaining por-
tions were weighed, and the amount
consumed recorded. At the end of
the test it was found that the ani-
mals had used VITOVIM BREAD
for 59% of their diet, whole wheat
bread for 27%, and ordinary white
bread for only 14%.

Natural instinct led them to con-
sume more than twice as much of
the VITOVIM loaf as they did of
the whole wheat bread and nearly
five times as much VITOVIM as
ordinary white bread.

Much present-day malnutrition is
probably due to the public's almost
total ignorance of food values. That
is why we ask the ethical support of
the medical profession in helping to
educate the public to demand food
products of demonstrated nutritional
superiority, for it is the province of
the physician to advise families
under his care in matters dietetic.

VITOVIM BREAD is now avail-
able in the cities listed below and
in towns within a radius of 100
miles from each city. The cities of
Cleveland and Youngstown, Ohio,
will soon be added.

WARD BAKING
COMPANY

New York, N.Y.
Brooklyn, N.Y.
Providence, R.I.
Boston, Mass.

Chicago, Ill.
Pittsburgh, Pa.
Columbus, Ohio.
Syracuse, N.Y.

Newark, N.J.

Business Opportunities

Advertisements under the following headings
cost \$3 for 35 words or less; additional words
8c each. This rate applies for each insertion.

WANTED	Locum Tenens	Sanitaria
Apparatus	Partner	Drug Stores
Assistant	Partnership	Locations for Sanit.
Books	Situation	FOR RENT
Interns	FOR SALE	EXCHANGE
Nurses	Apparatus	MISCELLANEOUS
Location	Practice	

SPECIAL NOTE.—A fee of 25c is charged adver-
tisers who have answers sent % A.M.A. No infor-
mation can be furnished on keyed advertisements. Do not
wire or write us for an address; mail your letter placing
key number on envelope and it will be promptly for-
warded.

RESULTS are better when an advertisement
receives several insertions, and to those who
remit for four consecutive insertions of a classi-
fied advertisement we will give, free, two more
insertions provided the first four do not con-
summate a deal.

NOTICE FOR FREE INSERTIONS must be re-
ceived within two weeks following date of last or
fourth insertion. Requests with original order
for such free insertions will not be considered.

COUNTING WORDS.—Two initials, each ab-
breviation, figures consisting of five numerals
or less are counted as separate words. Head-
ings, and name and address are part of adver-
tisement. When answers are sent % AMA—
the key, "Add—% AMA" is considered four
words. Count words carefully. Write your copy
plainly.

For the following classifications the rate is
\$3 for 20 words or less; additional words 10c
each. This rate applies for each insertion. No
gratuitous insertions given under these headings.

Abstracting	Medical Brokers	Vacation Trips
Automobiles	Educational	Typewriters
Auto accessories	Publishers	Printers
Carriages	Tr. Sch. for Nurses	Salesmen
Collections	Med. Illustrators	
	Miscellaneous Commercial Advt's.	

Classified Ads. are payable in advance. To
avoid delay in publishing, remit with order

OVER 50% of the classified ads are keyed, answers
being sent in care of The Journal; each week we
transmit to advertisers over 600 replies.
It is advisable to send copies instead of original
references.

For current issue, ad must reach us by 4:00 p. m.
Monday.

Journal A. M. A. 535 N. Dearborn St., CHICAGO

N. B.—We exclude from our columns all
known questionable ads. and appreciate notifica-
tion from our readers relative to any misrep-
sentation. The right is reserved to reject or
modify all advertising copy in conformity with
the rules of the advertising committee.

APPOINTMENTS

WANTED — APPLICATIONS FOR AP-
pointment, July 1; one year resident in sur-
gery, resident in medicine; full maintenance
and \$600 per year. Apply Director Hospital
for Children's Training and School for Nurses,
3700 California St., San Francisco, Calif.★ A

ASSISTANTS WANTED

WANTED — WOMAN TO ASSUME
charge of occupational therapy department
in large private hospital for nervous and men-
tal diseases. Add. P. O. Box 4, College Hill,
Cincinnati, Ohio.★ D

WANTED — ASSISTANT BY GENERAL
practitioner about September 15; large prac-
tice in good town near Chicago; macadam
roads; good schools; salary to begin; interest
in business if satisfactory; full particulars and
references first letter. Add. 6173 B, % AMA.

WANTED—JUNIOR ASSISTANT PHYSI-
cian in eastern state hospital for mental dis-
eases; male, single; under 35 years; recent
graduate with general hospital experience pre-
ferred; psychiatric experience not necessary;
beginning salary \$1,500 per year and full main-
tenance; give age, race, nationality, religion
and submit detailed statement regarding pre-
liminary and medical education; furnish at
least three references. Add. 6175 B, % AMA.

WANTED — YOUNG, COMPETENT
roentgenologist with little capital but excel-
lent references as to financial dependability;
opportunity to get splendid outfit and own busi-
ness with little outlay and be the only good
x-ray man in large territory; Wisconsin. Add.
6157 B, % AMA.

(Continued on page 22)



THE MEDICAL MART



21

A Page of ADLETS Classified for Easy Reading

Adlets

ADLETS OCCUPY UNIFORM SPACES of 5 and 10 space lines, first line b. f. type, remainder 5 pt. roman. Insertions may be weekly, e.o.w. or e 4th w. Rates, \$6.00 and \$10.00 per insertion. Adv. Dept., Journal A. M. A., 535 North Dearborn Street, Chicago.

Apparatus for Schick Test

VIM Approved Schick Test Outfit Endorsed by Prominent Public Health Officials. Nonleaking syringes with clear vision scale. Needles specially beveled so lumen clearly visible under skin. Price, \$7.00. Send for booklet. MacGregor Instrument Co., Needham, Mass.

Artificial Limbs

IF YOU HAVE HAD A RECENT AMPUTATION write for the free new booklet **TEST LEGS FOR BEGINNERS.** Erickson Legs are comfortable for the wearer, as they do not chafe, overheat or draw. Established 1892. **E. H. ERICKSON COMPANY,** 36 Washington Ave., N., Minneapolis, Minn.

Automobile Accessories

2-R-3 TIRE CARRIERS
Trouble never comes singly, and when you have used your last spare tire miles from any service station you are sure to need another. Wise motorists save time and trouble with the 2-R-3 Tire Carrier. Special models for Fords as low as \$1.50. Write for details of our models for all makes of cars. **INTERNATIONAL STAMPING COMPANY,** 406 North Leavitt St., Chicago.

KEEP YOUR FORD MOTOR COOL by letting the Flood Pump empty a radiatorful of cold water through your motor once every minute when you car is going 20 miles an hour. Ten days' trial. Pay the Postman \$5—it will be refunded if you are not satisfied. Add to the life of your car—a boiling radiator sends any car 300 miles nearer the junk heap for every 30 minutes it steams. If your dealer does not carry the Flood Pump, order direct. **Luther Grindler Mfg. Co.,** 287 S. Water St., Milwaukee, Wis.



MARK YOUR CAR, DOCTOR with the Physician's Auto Emblem. Many cities grant traffic privileges to cars bearing the Caduceus sign. In goldline metal and crimson enamel. 3 1/4 inches in diameter. Ready for any car. \$1.50. Order from A.M.A.

Books—Journals

HOSPITAL SOCIAL SERVICE
A magazine devoted to medical follow-up work, health education and social diagnosis and treatment. Monthly. \$3.00 per year. Dr. E. G. Stillman, Editor, 9 E. 37th St., New York City.

THE U. S. P. AND N. F. CONDENSED
The "Epitome," a small pocket-size book of 250 pages, gives practically all information essential to physicians. 60 cents postpaid. American Medical Assn., 535 N. Dearborn St., Chicago.

Building Plans

BUILD A HOME OF ENDURING CHARM
The Face Brick house is not only beautiful when completed but takes on a more attractive hue as it ages. Slow depreciation, painting only around doors and windows, low insurance rates and smaller fuel bills are a few of the favorable financial considerations. Send for the free booklet, "The Story of Brick." Any of the 4 books showing plans for 3 to 4 room, 5-room, 6-room, 7 to 8 room houses, 25c each. **AMERICAN FACE BRICK ASS'N,** 1742 People's Life Bldg., Chicago.

Capsules



WHY NAUSEATE the patient with bad-tasting medicines? Conceal them in Konseals—rice flour capsules. Tasteless, soluble and as easily swallowed as a drink of water. Make you independent in prescribing. Use your own formulas. Po teard will bring sample packet of Konseals. **J. M. Grosvenor & Co.,** Lynn, Mass.

Corsets and Supports

IN THE PHYSICIANS' REFERENCE AND PURCHASING INDEX, THE JOURNAL, June 9, the name **Berger Brothers,** New Haven, Connecticut, should appear under these headings:
Abdominal Supporters Maternity Supports
Corsets and Supports Orthopedic Appliances
Hernia Supports Sacro-Iliac Supports
Supports (Abdominal)
Clip this and paste on your Index. At the same time, send for name of nearest Spencer corsetiere.

Diabetic Foods

CELLU FLOUR FOR DIABETES, OBESITY, RESTRICTED DIETS, etc. Everything for the Diabetic. Write for information to the **CHICAGO DIETETIC SUPPLY HOUSE, INC.,** 1750-52 W. Van Buren St., Chicago, Ill.

Dog Mart



FDR SALE
Oorang Airdale trained watch dogs, automobile dogs, farm dogs, hunting dogs, companions and puppies. Catalog free. **OORANG KENNELS,** Box 68, La Rue, Ohio.

Educational

THE NEUROLOGICAL INSTITUTE OF NEW YORK offers Postgraduate Clerkships to graduates of recognized medical schools. For particulars write **Sec'y Medical Board,** 149 E. 67th St., New York City.

Insurance



\$25 Weekly Benefit and \$5,000 Death Benefit from our Accident Policy. Those who take advantage of our special offer of two policies receive \$50 a week if disabled. \$3 membership fee for each policy carries Accident or Health Policy until March 10, 1923. Our policies have been benefitting physicians for over 20 years. No agents. Write for details. **Physicians' Casualty Ass'n,** City Nat'l Bldg., Omaha.

Pharmaceuticals



DEPENDABLE DIGITALIS fresh from the Minnesota leaf, standardized by the Hatcher cat method, is offered in capsule and tincture form. More details in our quarter page Journal ad two weeks ago. Write for interesting literature. **Upsher Smith, Inc.,** 720 Washington Ave., S. E., Minneapolis.

Phonograph Accessories

FREE TRIAL IN YOUR HOME. A new type sound wave transmitter—The Phonoplayer. Fits Victrola. Gives better volume and tone different from other reproducers. Write today. **BLISS LABORATORY,** Box 195, Battle Creek, Mich.

Publishers and Printers

Archives of Dermatology and Syphilology
General practitioners as well as specialists find much that is of everyday help in this illustrated monthly. \$6 a year. Abstracts form a valuable part of this publication of the American Medical Association.

Schools for the Deaf

CALIFORNIA SCHOOL OF LIP-READING
For the Hard of Hearing
MISS KENFIELD—MRS. POINDEXTER
Co-Principals
916 Shreve Bldg., San Francisco
AURISTS—GOOD FOR YOUR DEAF PATIENTS—
Thorough course in speech-reading combined with Colorado climate. Students from 14 states. Send for catalogue. **Whitaker School of Speech-Reading,** 1412 Humboldt Street, Denver.

Repairs

EXPERT MICROSCOPE REPAIRS
Have your Microscopes, Microtomes, Polariscopes, etc., overhauled. Fully equipped and thoroughly experienced for all intricate repair work. **Reichert's American Office:** O. C. Rudolph, 17 Madison Ave., N. Y. City.

Sporting Equipment

THINK OF THE CONVENIENCE OF OWNING A good looking water and rust proof **JEFFYLOCK** Bathing Bag in black or navy sateen. A pull opens or closes it. Ideal for the vacationist or the swimmer at home. Prepaid, \$1.25. **BEYERLE MANUFACTURING COMPANY, INC.,** 160 Fifth Avenue, New York City.

WATERPROOF YOUR TENTS.

Awnings, Auto Tops, Shoes, Sport Clothes. **SEK** will help you to keep dry on that camping trip. If your dealer can't furnish you we ship prepaid any amount from 4 oz. can for shoes for 50c to 5 gal can for canvas for \$11.50. **SEK MFG. CO.,** 4100 W. Lake St., Chicago

Sterilizers

NEW CASTLE STERILIZER HAS NO FUSE PINS or thermostatic metal. Current breaks automatically before water is all gone. Ask for catalog "H" of Sterilizers for Physicians, Hospitals and Laboratories. **Willmot Castle Co.,** 1167 University Ave., Rochester, N.Y.

Tourists' Service

LAST-MINUTE TOURING INFORMATION will be furnished you free whenever you take a motor trip anywhere in the United States. All about roads, points of interest, hotels and garages. This service is given those who buy one of the \$3 volumes of the **AUTOMOBILE BLUE BOOK.** See the books at your motor supply store or order one C.O.D. specifying the particular state you wish information on. **AUTOMOBILE BLUE BOOK COMPANY,** 1060 W. Van Buren St., Chicago.

X-Ray Apparatus and Supplies

Fischer Interrupterless X-Ray Transformers
Four slightly used, completely equipped, high power machines on such easy terms that they pay for themselves. Write for these terms and other equipment bargains. **Thompson Plaster X-Ray Co.,** Leesburg, Va.

Doctor: When You Read This Page have on your desk a few postal cards and write for samples or descriptions of the articles mentioned. You will find many items of value.

The AD vantages of AD reading

2—The Literature of Science

EVERY week brief descriptions of the latest medical volumes are found in the advertising pages of THE JOURNAL. By glancing through the book ads the physician or surgeon can keep himself informed on the literature of science that is most helpful to him. Valuable research aids and survey services relating to all phases of the practice of medicine are offered in the advertising pages. Many interesting brochures and prospectuses are available to those who use the coupons.

It will pay you to read THE JOURNAL ads.

Endocrine Therapy

Many a failure in endocrine medication has been due to inactive preparations.

The sum of our knowledge to date indicates that the following points are the most important in the manufacture of endocrine substances:

1. Control over the killing of the animals and method of saving the glands.
2. Careful trimming of fat and other adventitious tissue from the glands.
3. Adherence to vacuum drying at low temperature.
4. Avoidance of all diluents and strict adherence to the natural ratio of fresh to desiccated gland.

The Wilson Laboratories adhere strictly to these cardinal points, and those who use "Wilson" endocrines are assured of the maximum potency.

This Mark



Your Guarantee

4221 S. WESTERN BOULEVARD
CHICAGO, ILL.

Manufacturers of Gland Substances,
Animal Derivatives, Digestive Ferments
and Ligatures.

If your dealer can't supply, write us direct

Tonics and Sedatives

OFFICIAL CORRESPONDENCE

Letter and reply from our Philippine Colleagues

THE LETTER

Municipal President

, P. I.

Sir: I hope, Sir that notwithstanding the austerity of the chair, your good nature will inclined you to some degree of indulgence towards human frailty, you will not think it unnatural that those who have an object spending which strongly engages their hopes and fears, should be somewhat inclined to superstition. As I came into this province full of anxiety about the event of my motives, I found, to infinite surprise, that the disposal of sewage, by which I had passed sentence as a record of progress on sanitation is found to be a failure.

My principal aim is corporation to insure the service we are to render to our people and to cloth them with human knowledge and human education to all future times and so that the work is final and undisputable in the annals of history. It is with hope that your love and sympathy should be touched with the electric spark of continues service in cementing the solid structure of lasting and enduring education.

If you go from our land to other lands, if you go to the land which has been kept clean and sanitary, if you go to the people of America, if you go to the great man in ancient times who live in the intellect, if you go to the illustrious names that every one recalls—they represent a life thru the instrumental power of sanitation and hygiene.

Great is the advance of civilization, might are the engines of force, but men are greater than that which he produces. Vast is that machine which stands in the dark unconsciously lifting, lifting—the only human slave—the iron—the Corliss engine, but he that made the engine is greater than the engine itself. Wonderful is the skill by which that most exquisite mechanism of modern life, the watch, is constructed, but Greater is the man that made the watch than the watch that is made. Great is the press, Great are hundred instrumentalities and institution and customs of society, but above them all is man. The living force is greater than any of its creation—greater than society—greater than the laws. The sabbath was made for man, and not man for the sabbath, said the Lord. Man is greater than his own institutions, and this living force is worthy, of all culture—of all culture in the power of beauty, of all culture in the direction of persuasion, of all culture in the art of reasoning.

To make man patriots, to make man christians, to make men the sons of God let all comports, enjoyments, happiness and complete education be opened to their eyes, but at present we are incomplete, insanitary and not just to our hundred school children not only to them but to the eyes of the civilized educators. Now let us work hand and hand to establish mutual advantages, united purpose and strength to put at least two closets for the school before the future leaders will once more enter in that temple and nursery of human freedom, where to develop iron brain by the instrumental power of human labor—"The spirit of labor."

Sincerely yours,

(Sgd.) JUAN DE LA CRUZ, R.N., A.B.
School Nurse

THE REPLY

1st Indorsement

April 9, 1923

Respectfully returned to Mr. Juan de la Cruz, R.N., A.B. thru the Division Superintendent of Schools, P. I.

The interesting perusal of the attached letter has pleased the undersigned so much, and due to the profound and wise references with regard to the ark-biblical sentences and sublime philological notions which it embodies the undersigned has been completely swayed and

(Continued on page 24)

(Continued from page 20)

WANTED—ASSISTANT FOR MEDICAL laboratory located in Chicago; must be well qualified in all chemical and bacteriological work; x-ray not required; give full history of training and experience and state salary. Add. 6140 B, % AMA.

WANTED—ASSISTANT PHYSICIAN, experienced in tuberculosis work at Wisconsin State Sanatorium; beginning salary \$1,800; complete maintenance; single man preferred; give full particulars and references in first letter. Add. Dr. L. W. Dudley, Supt., Statesan, Wis. B

WANTED—ASSISTANT, GENTILE, TO A busy doctor in general practice and compensation work in New York City; salary \$150 monthly and commission; board and room provided. Add. 6146 B, % AMA.

WANTED—TWO ASSISTANT PHYSICIANS, A1 graduates; must be single; generous salary; permanent position; internists; one skilled blood chemistry and Wassermann examinations; scientifically equipped ethical sanitarium in middle west; 300 beds; 12 full-time salaried physicians. Add. 5679 B, % AMA.

WANTED—ASSISTANT—GENERAL PRACTICE, in industrial town, near large city; recent graduate preferred; single, Protestant; salary \$225 per month with maintenance; increase after reasonable period; auto furnished; no mines; Pennsylvania license required; state age, nationality, school and send photo first letter; position to be filled at once. Add. 5810 B, % AMA.

WANTED—AN ASSISTANT PHYSICIAN at a Pennsylvania hospital for mental diseases; salary \$1,500 to \$1,800; house for married physician. Add. 6105 B, % AMA.

WANTED—A YOUNG MAN AS ASSISTANT in hospital for the insane in western Pennsylvania; single; graduate of Class A medical school. Add. 6113 B, % AMA.

WANTED—ONE MALE AND ONE FEMALE physician, preferably single, who have just finished internship for one year by manufacturing company in Ohio; salary \$225 per month; must be graduate of Class A school, with one year's internship in recognized hospital, preferably with rotating service; must have Ohio license; not over 35 years of age; state age, height, weight, race, nativity, education and experience; only those whose letters are considered will be answered. Add. 6107 B, % AMA.

WANTED—FOUR RESIDENT PHYSICIANS, graduates of Class A schools; the service is for one year and covers medicine, surgery, obstetrics and psychiatry; salary \$60 per month and maintenance. Apply Superintendent, Gallinger Municipal Hospital, Washington, D. C.* B

WANTED—IN A MIDWEST HOSPITAL for the insane an assistant superintendent; single; at least 3 years' experience in psychiatry; \$2,200 and maintenance; references in first letter. Add. 6094 B, % AMA.

WANTED—WOMAN PHYSICIAN AS ASSISTANT in ear, nose and throat practice; city of 100,000 in middle west; send particulars regarding education, training; also salary expected in first letter. Add. 6100 B, % AMA.

WANTED—ASSISTANT PHYSICIAN under 35 years of age for mine practice; single; Gentile; good habits; registered in Pennsylvania; salary \$200 per month; room furnished. Add. 6092 B, % AMA.

WANTED—PATHOLOGIST AND ROENTGENOLOGIST; must be experienced, capable; M.D. preferred; standardized 100-bed hospital; state salary expected. Add. 6017 B, % AMA.

WANTED—AN ASSISTANT IN A SMALL western town who has surgical ability and some experience; must have A1 references; will pay \$250 per month first year and partnership at end of that time if agreeable to both; give full particulars and description of self in first letter. Add. 6040 B, % AMA.

WANTED—ASSISTANT PHYSICIAN, July 1, in tuberculosis sanatorium near large eastern city; single man only; recent graduate with hospital experience preferred; salary \$1,500 with full maintenance; wonderful opportunity for the right man. Add. 6018 B, % AMA.

(Continued on page 24)

Welch's

"THE NATIONAL DRINK"



PURE wholesome fruit juice—valuable in sickness, in convalescence, in health! Welch's Grape Juice has been famous more than fifty years for its purity and uniform goodness. Made of choice ripe Concord grapes.

At druggists and grocers, in quart, pint, and individual bottles.

**The Welch Grape Juice Company,
Westfield, N.Y.**

Electrically Lighted Surgical Instruments

For Accurate Diagnosis

"E. S. I. Co." electrically lighted instruments, constructed after the designs of eminent physicians and surgeons, are invaluable.

TRANSILLUMINATORS, *Sullivan*

NASOPHARYNGOSCOPE, *Holmes*

BRONCHOSCOPIC AND LARYNGEAL INSTRUMENTS, *Jackson, Lynch*

URETHROSCOPES, *Young, Swinburne, Gordon, MacGowan, Ballenger, Koch*

CYSTOSCOPES, *Braasch, Young*

RECTAL INSTRUMENTS, *Tuttle, Lynch, Buie, Beach, Artell, Bassler*

ILLUMINATED EYE SPUD, NASAL SNARE, MOUTH GAG, TONGUE DEPRESSOR

AURISCOPES, ILLUMINATORS, VAGINAL AND RECTAL SPECULA

SOCKET CURRENT CONTROLLERS, SOCKET AND TABLE CAUTERY TRANSFORMERS, BATTERIES

These instruments and others are described in the Ninth Edition of our Catalogue, just published, which will be mailed upon request.

**ELECTRO SURGICAL
INSTRUMENT COMPANY**
ROCHESTER, N. Y.

WE TEACH

Laboratory Methods

accurately and thoroughly: skilled corps of instructors, didactic lectures by an expert in Laboratory Medicine. For physicians, nurses and high school graduates.

Courses: One to Six Months.

Illustrated Prospectus on request

GRADWOHL SCHOOL
OF LABORATORY TECHNIQUE

3514 Lucas Ave., St. Louis, Mo.
R. B. H. GRADWOHL, M.D., Director
P. S.—Our Graduates are in demand.

MIRACLE

HAND — ARM

Looks }
Acts } **NATURAL**
Feels }

Write or Phone
for Particulars

**MIRACLE ARTIFICIAL
ARM COMPANY**

102 N. Wells St., Chicago
Tel. Franklin 3057

Get Full Value from your Journal—Look through the advt pages.

(Tonics and Sedatives Continued)

dazzled by the splendor of such a wit, since it is an stupendous as well as a unique singularity to make use of, and be armed with, such aphorisms to ask only for two toilets for the school.

Please be advised of the enthusiasm and devotion which the undersigned professes to all those who rightly possess literary knack; and, recognizing, accordingly, your peerless literary endowment and the portent and geniality in which you indulge even in the office letters of the government, the undersigned would feel belittled not to grant such a request termed in glowing and peculiar English expressions.

The undersigned has been and still sees the necessity of furnishing 2 pails for use at the school, and this matter will therefore be taken up with the Municipal Council for consideration at its next session, with the understanding, however, that the school will construct a closet building wherein such pails will be placed.

JUST A LITTLE BLUE

She gently rocked the baby

In its cradle, to and fro;

She sang an old-time lullaby,

The kind our mothers know.

The baby gazed at her askance,

Within its eye a tear;

"Why don't you cut that stuff," it said,

"And jazz it, mother dear?"

—Brown Jug.

He Tells the World!

Harrisburg (Ill.) Register

To whom this may concern: I, John Cathcart, went through an operation for ulcers of the stomach and enlargement of the liver and have been a sufferer for 28 years. I have been to several specialists and got no relief until I went to Dr. Lightner, one of Harrisburg's best surgeons. This is true. You can see me at West Elm street.

TEACHING HYGIENE

BILLY (age 6).—"I was!"

FRANCES (age 8).—"You were not!"

BILLY.—"I was too!"

FRANCES.—"You were not!"

MOTHER.—"What are you children arguing about?"

BILLY.—"Mother, wasn't I an egg before Frances was born?"

S., Oregon.

Lots of Expenses at Home

Ad in San Luis Obispo (Calif.) Obispan

WANTED—Young man will drive car east for expenses. Box 37, Obispan Office.

A Wonderful Thrill

Seattle Star

WOMAN WHOM LAFAYETTE
KILLED IS STILL ALIVE
SHE TELLS WHAT A THRILL

SHE GOT FROM IT

PARIS, March 29.—There is a woman living in France today who was kissed by Lafayette.

A GENTLEMAN OF LEISURE

Census Taker—What's your husband's trade, profession or business?

Mrs. Mokeby (who conducts a one-woman laundry)—He's a gen'tman, mah man is.

"Ah! Living on his money?"

"Livin' on his honey!"—Pickup.

FROM THE DOCTOR'S CORRESPONDENCE

Letter received by a Wisconsin colleague

Dr. you statement receive, thank you doc pleas be kin wait o wile I was gonto mak fu doll on my spring incom abought 70 but big brud sow with a pigs died. so doc I run in behin, soon I get a fu doll I sen' him. Cordilly

C. D.—

(Continued from page 22)

WANTED—RESIDENT PHYSICIAN FOR the Physicians and Surgeons Hospital, Wilmington, Del.; a 75-bed capacity; vacancy June 15; state qualifications and salary expected. Ira Burns, M.D., Secretary Medical Board. B

WANTED — IN THE DEPARTMENT OF Pathology, two men who have had general laboratory experience; those with teaching experience preferred, as pathologists to the two teaching hospitals and as instructors in the School of Medicine, Emory University; salary \$3,000 each, and part maintenance; reference required. Add. Dr. W. S. Elkin, 98 N. Butler St., Atlanta, Ga. B

WANTED — PATHOLOGIST FOR GENERAL hospital; must have extensive experience in all branches of pathology to take complete charge of a modernly equipped laboratory; state experience and salary desired. Add. Superintendent, P. O. Station K, Box 42, Brooklyn, N. Y. B

WANTED—ASSISTANT, SINGLE, PROTESTANT; contract practice, central Pennsylvania; Pennsylvania license required; salary \$200 per month to begin with; all modern conveniences and electrical equipment, including x-ray, cystoscopic and wall plate. Add. 6033 B, % AMA.

WANTED—AN EXPERIENCED PATHOLOGIST; must be a medical man. Apply State Hospital No. 1, Fulton, Mo. B

WANTED — ASSISTANT PHYSICIANS, men and women; salary \$1,500 per year and maintenance; must be single, have good general education and hospital experience; also roentgenologist; give age, education, medical college, hospital and other qualifications; date can accept appointment, including references and a copy of a recent photograph in application. Add. Superintendent, The New Jersey State Village for Epileptics, Skillman, N. J. B

PHYSICIANS WANTED

WANTED—SURGEON TO TAKE OVER modern building, attractive lawn, trees; suitable for 20-bed hospital; county seat, 3,500; 10,000 tributary; richest farming region southern Idaho; no hospital, wants one badly; no active surgeon, 4 M.D.'s; unusual opportunity; \$6,000 will handle. Add. Dr. F. B. Smith, Nampa, Idaho. C

WANTED—MARRIED MAN OF ABILITY, good habits, to take over my practice in a northern Ohio town of 3,000; only two of us under 50 years and one other under 60; exceptional opportunity, as right man will be well introduced; am specializing. Add. 6030 C, % AMA.

WANTED — A1 MAN TO DO GENERAL practice with group in middle west; will make guarantee; give full particulars in first letter. Add. 6171 C, % AMA.

WANTED — TWO MALE PHYSICIANS, September 24, by health clinic responsible for health of 5,000 men and women; general examining, advising, dispensary treatment; main efforts along preventive lines; particularly need men with orthopedic or psychiatric training; location in university town of 20,000, New York state; salary to begin, \$2,000; \$2,250 for nine month year; send references and recent photograph with application. Add. 6169 C, % AMA.

WANTED—PHYSICIAN, GENERAL PRACTICE; mining company, northern Michigan; single, recent graduate; some laboratory work; salary \$2,400; chance for outside work; must room in hospital; state age and references. Add. C. and H. Hospital, Calumet, Mich. C

WANTED—PHYSICIAN—GOOD OPENING for a doctor in a fine prosperous agricultural county. For information communicate with H. Bernard, Schenevus, Otsego County, N. Y. C

WANTED—DOCTOR—ONE OF BEST LOCATIONS in southwest Missouri goes to purchaser of 3-room office and 8-room residence, priced to sell; easy terms; good roads, good churches and schools; good collections; investigate; I am going to California. Add. 6065 C, % AMA.

WANTED — TWO RECENT GRADUATE physicians; man and woman; Northern Indiana Hospital for Insane. Add. Dr. Samuel Dodds, Medical Superintendent, Logansport, Ind. C

(Continued on page 26)



DODGE BROTHERS TOURING CAR

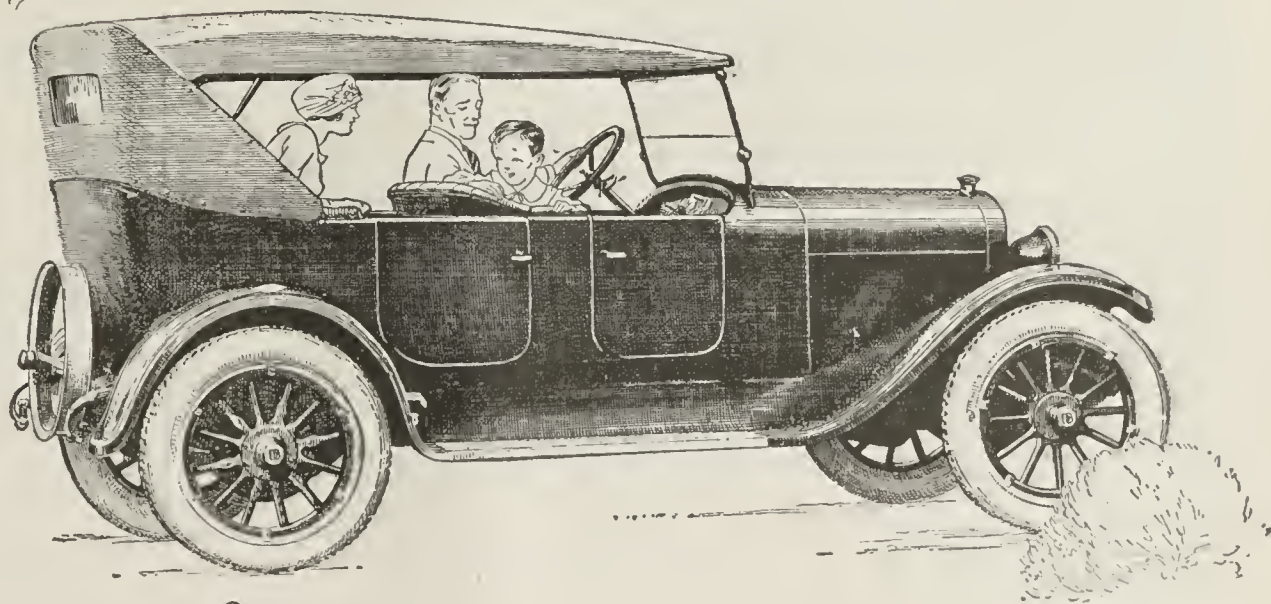
If there is one word which will sum up the average owner's impression of Dodge Brothers Touring Car, that word is *dependable*.

If there is a word to express the quality which Dodge Brothers have striven, above all else, to build into the Touring Car, it is—again—*dependable*.

Indeed, it is not too much to say that the word *dependable* has come to be definitely associated, the nation over, with Dodge Brothers Touring Car—and the other vehicles bearing their name.

Nor have Dodge Brothers built this enviable reputation through advertising. They have built motor cars, so dependable *in fact* that the word has presented itself automatically to the public mind.

The price is \$880 f. o. b. Detroit



© D. B.



RELATIVE humidity only about 50%.

From the standpoint of comfort to the patient alone, the dry atmosphere at Colorado Springs is most desirable. Tuberculosis in all its forms received.

RATES, \$25 TO \$60 A WEEK including private room, porch, board, tray service, medical attention and general nursing.

Physicians are urged to feel free to write for any information, addressing Alexius M. Forster, M.D., Physician-in-Chief.



Craigmor Sanatorium Colorado Springs

DELICIOUS AND SUSTAINING

DIABETIC FOODS

QUICKLY MADE WITH

RICH IN PROTEIN AND FAT **Hepeco** FLOUR CONTAINS PRACTICALLY NO STARCH

Physician's Sample Free Upon Request

Waukesha Health Products Company
8 River Drive Waukesha, Wisconsin

Refreshing Healthful Pure Apollinaris The Queen of Table Waters

COURSES IN ROENTGEN DIAGNOSIS

Short courses in x-ray shadow interpretation in thoracic, abdominal, bone and joint lesions will be available during the summer months to a limited number of graduates in medicine. These courses are designed for the busy physician and surgeon who wishes to increase his knowledge of the x-ray shadow values as an aid to him in diagnosis in his daily practice. (Roentgen therapy and X-ray technique not included.) Write for particulars.

EDW. S. BLAINE, M.D., Roentgenologist
National Pathological Laboratories
5 South Wabash Avenue, Chicago, Illinois

WASSERMANN LABORATORY 2169 Madison Street, Chicago REAGENTS FOR SALE

Alcoholic luetic liver extract, Acetone in soluble Antigen, etc. Amboceptors. Wassermann Tests our Specialty.

GUINEA PIGS FOR SALE

Free instruction "How to do the Wassermann Test."

Names of Classified Advertisers using key number cannot be given out by THE JOURNAL. Kindly do not ask for them.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

HELIO THERAPY. By A. Rollier, M.D., Medical Director of the Institutions for Heliotherapy, Leysin. With the Collaboration of A. Rosselet, D.Sc., M.D., Lecturer on Physiotherapy, Geneva University, H. J. Schmid, M.D., Radiologist at Rollier's Institutions, Leysin, and E. Amstad, M.D., Surgeon at Rollier's Institutions, Leysin. With forewords by Sir John Henry Gauvain, M.A., M.D., M.R.C.S., and Caleb Williams Saleeby, M.D., F.R.S. Cloth. Price, \$8. Pp. 288, with illustrations. New York: Oxford University Press, 1923.

DISEASES OF THE HEART. By John Cowan, D.Sc., M.D., F.R.F.P.S., Physician to the Royal Infirmary, Glasgow, and W. T. Ritchie, O.B.E., M.D., F.R.C.P.E., Physician to the Ministry of Pensions Hospital, Edinburgh. With a chapter on The Ocular Manifestations of Arterial Disease, by Arthur J. Ballantyne, M.D., F.R.F.P.S., Lecturer on Ophthalmology, University of Glasgow. Second edition. Cloth. Price, \$10, net. Pp. 605, with 321 illustrations. New York: Longmans, Green & Co., 1922.

NON-SURGICAL DRAINAGE OF THE GALL TRACT. A Treatise Concerned With the Diagnosis and Treatment of Certain Diseases of the Biliary and Allied Systems, In Their Relation to Gastro-Enterology and General Clinical Medicine. By B. B. Vincent Lyon, A.B., M.D., Chief of Clinic, Gastro-Intestinal Department of the Jefferson Hospital. Cloth. Price, \$10. Pp. 640, with 185 illustrations. Philadelphia: Lea & Febiger, 1923.

THE URETHRA AND THE URETHROSCOPE. A Manual of Practical Urethroscopy. By F. Carminow Doble, M.R.C.S., L.R.C.P., Officer in Charge Gonorrheal Division, Military Hospital, Rochester Row. With a foreword by Major A. T. Frost, O.B.E., R.A.M.C., Officer Commanding Military Hospital, Rochester Row. Cloth. Price, \$3.40. Pp. 120, with illustrations. New York: Oxford University Press, 1923.

TRAITÉ PRATIQUE DE CYSTOSCOPIE ET DE CATHÉTÉRISME URÉTÉRAL. Par G. Marion, Professeur agrégé à la Faculté, Chirurgien de l'Hôpital Lariboisière, and M. Heitz-Boyer, Professeur agrégé de Chirurgie des voies urinaires à la Faculté, Chirurgien de l'Hôpital St-Louis. Second edition. Cloth. Price, 100 francs, net. Pp. 480, with illustrations. Paris: Masson et Cie, 1923.

LES GLANDES ENDOCRINES ET LEUR VALEUR FONCTIONNELLE. Méthodes d'Exploration et de Diagnostic. Par Jacques Parisot, Prof. agr., chargé du cours de Pathologie générale et expérimentale à la Faculté de Nancy, et Gabriel Richard, Ancien interne des Hôpitaux de Nancy. Paper. Price, 15 francs. Pp. 247, with illustrations. Paris: Gaston Doin, 1923.

THE CHEMISTRY OF UREA. The Theory of Its Constitution, and of the Origin and Mode of Its Formation in Living Organisms. By Emil A. Werner, M.A., Sc.D., F.I.C., Professor of Applied Chemistry in the University of Dublin. Boards. Price, \$4.75, net. Pp. 212. New York: Longmans, Green & Co., 1923.

DISEASES OF THE GUMS AND ORAL MUCOUS MEMBRANE. By Sir Kenneth Goadby, K.B.E., M.R.C.S., L.R.C.P., Lecturer on Bacteriology of the Mouth, Dental Department, University College Hospital. Cloth. Price, \$14. Pp. 383, with illustrations. New York: Oxford University Press, 1923.

PRACTICAL LOCAL ANESTHESIA AND ITS SURGICAL TECHNIC. By Robert Emmett Farr, M.D., F.A.C.S. Cloth. Price, \$8. Pp. 529, with 219 illustrations. Philadelphia: Lea & Febiger, 1923.

TRANSACTIONS OF THE TWENTY-THIRD ANNUAL SESSION OF THE AMERICAN PROCTOLOGIC SOCIETY. Cloth. Price, \$3. Pp. 121, with illustrations. New York: Paul B. Hoeber, 1923.

(Continued on page 26)

(Continued from page 24)

WANTED—AT ONCE — PHYSICIAN TO locate in hustling town; nothing to buy; rich farming country; good fees. Write Aredale Savings Bank, Aredale, Iowa. C

WANTED — THE VILLAGE OF INMAN, Neb., wants a resident physician; good opening. Write J. S. Jackson, Secretary Inman Commercial Club. C

WANTED — IN A LARGE INSTITUTION for the insane in middle west, a woman physician; unmarried; kindly give full credentials in first reply. Add. 6046 C, % AMA.

WANTED—CLASS A PHYSICIANS, PATHOLOGISTS for salaried positions; internists, assistants, surgeons, hospitals, contract, industrial, group, appointments; if you desire a permanent position anywhere send for application form. Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. C

WANTED — MEDICAL DIRECTOR AND teacher for negro medical college hospital; young medical man, Class A college graduate; must have had at least one year in good hospital; internist and skilled diagnostician; graduate of Pennsylvania preferred, and must be sympathetic with negro education; state minimum salary expected, religion, married or single, teaching experience, etc. Add. 6053 C, % AMA.

WANTED — SCHOOL PHYSICIAN FOR northern Minnesota; graduate Class A school and qualified to do eye and ear work; state age, experience and salary expected. Add. 6064 C, % AMA.

INTERNS WANTED

Advertisements marked with a star (*) are of hospitals on the list of those approved for intern training by the Council on Medical Education & Hospitals of the A. M. A.

WANTED—INTERNS FOR 100-BED GENERAL hospital; one year service; allowance \$25 per month; bonus of \$100 and diploma at expiration of service; largest industrial city in vicinity of New York City; active dispensary service. Apply to Superintendent, Bayonne Hospital and Dispensary, 12 E. 30th St., Bayonne, N. J.* D

WANTED — INTERN, 175-BED GENERAL hospital, chronic diseases; \$75 per month and maintenance. Send qualifications with applications at once to Dr. W. J. Monaghan, Medical Superintendent, Hudson County Hospital, Secaucus, N. J. D

WANTED—INTERNS FOR ONE YEAR OR six months, beginning July 1, 1923; service rotating medical, surgical and orthopedic. The Children's Hospital of Washington, D. C. Apply M. M. Gibson, Supt.* D

WANTED — AN INTERN FOR A HIGH class small hospital in West Virginia; \$75 a month and maintenance; may increase later; give all details in first letter. Add. 6138 D, % AMA.

WANTED—TWO INTERNS FOR JULY 1 and two for September 1, to complete house staff of 12; 200-bed general charity hospital, outpatient department, laboratories; well organized staff and training school; service rotating surgery, medicine and all specialties; \$25 monthly and bonus of \$100 on completion of term of service, which begins July 1. Add. W. P. Morrill, M.D., Shreveport Charity Hospital, Shreveport, La.* D

WANTED—INTERNS, UNMARRIED—RO- tating mixed service; \$35 first year, \$45 second year, with full maintenance; bed capacity until July, 1923, 120 beds; then enlarged building 250 beds; service to begin July 1, 1923. Apply to Superintendent, Vassar Hospital, Poughkeepsie, N. Y.* D

WANTED—TWO INTERNS FOR 250-BED county hospital; 12 months' service; outpatient department; allowance \$50 monthly and maintenance. Add. Dr. H. E. Morrison, Med. Supt., Sacramento County Hospital, Box 600, Sacramento, Calif. D

LOCUM TENENS WANTED

WANTED — M.D. TO RELIEVE EXAMIN- ing doctor for two weeks beginning as soon as possible; salary \$50 per week; no night work. Add. 6168 F, % AMA.

WANTED — LOCUM TENENS FOR A
period of four to six months, beginning about
September 1; Kansas wheat belt; unopposed
practice, \$3,000 to \$5,000; probably for sale
later. Add. 6154 F, % AMA.

**LOCUM TENENS WORK
WANTED**

WANTED — LOCUM TENENS WORK—
Graduate of reputable eye, ear, nose and
throat hospital wants to take physician's prac-
tice through July, August and September; best
of references given. Add. 6148 FF, % AMA.

**LABORATORY TECHNICIANS
WANTED**

WANTED—EXPERIENCED X-RAY TECH-
nician for a diagnostic clinic in southern
city of 300,000; only women need apply; must
have highest references and photograph must
accompany application; state salary. Add. 6150
V, % AMA.

WANTED — X-RAY TECHNICIAN, FE-
male; 200-bed hospital, New York City; sal-
ary moderate to start, \$100 month; excellent
chance for advancement; plate work and rec-
ords; no therapy. Add. 6141 V, % AMA.

WANTED — LABORATORY TECHNICIAN
capable of doing ordinary city laboratory
work except Wassermanns. Apply to Chairman,
Board of Health, New Britain, Conn. V

WANTED—X-RAY TECHNICIAN—GRAD-
uate nurse required with knowledge of book-
keeping and stenography, as permanent assis-
tant and office executive for dermatologist;
state experience in x-ray, x-ray therapy and
physiotherapy, including special course; give
age, photograph, literary education, depen-
dents, health, eyes; must be willing to work
long hours; salary \$150 per month to per-
son strictly conforming to above requirements.
Add. 6009 V, % AMA.

WANTED—THOROUGHLY TRAINED
laboratory technicians and x-ray operators;
male and female; for positions in all parts of
the country; must be competent and well edu-
cated; All references required; correspondence
solicited. Aznoe's National Physicians' Ex-
change, 30 N. Michigan, Chicago. V

LOCATIONS WANTED

WANTED—INDUSTRIAL OR CONTRACT
practice in Colorado, New Mexico, Arizona,
Utah or Mexico; graduate Class A school; best
of references given. Add. 5764 E, % AMA.

WANTED—LOCATION — WILL TRADE
river bottom cotton farm in Clay County,
Ark., for good residence (modern), office and
equipment in small town in western Missouri,
where roads are good and people prosperous,
or trade for fruit farm southern Florida. Add.
6147 E, % AMA.

WANTED—INDIANA OR ILLINOIS LO-
cation; prefer town of 1,000 or over; com-
petition moderate; must have good roads; use
car year round; would buy property priced rea-
sonable. Lock Box 7, Commiskey, Ind. E

WANTED — BY EXPERIENCED WOMAN
physician, oculist and aurist, assistantship.
location or association with group. Add. 6024
E, % AMA.

WANTED — MEDICAL PRACTICE BY
physician in modern town; partnership con-
sidered; also in same town drug store or op-
portunity to open one by pharmacist; central
states preferred; best references; give details.
Add. 6123 E, % AMA.

WANTED — LOCATION IN CITY OF
20,000 or more; surgeon, 32, able, energetic;
Gentile; graduate 1916 A school; 2 years' in-
ternship; 2 years' work in large clinic; last
3 years general and abdominal surgery; pre-
fer ethical group; will buy practice, accept
partnership or position. Add. 6002 E, %
AMA.

WANTED—LOCATION IN CALIFORNIA
where physician is needed; any part of state;
small investment considered. Add. 6029 E,
% AMA.

WANTED—THE NAME OF EVERY TOWN
in the United States without a physician,
and the name of every doctor with an estab-
lished practice for sale. Aznoe's National Phy-
sicians' Exchange, 30 N. Michigan, Chicago. E
(Continued on next page)



Makes Palatable Strictly Non-Carbohydrate Bread

AND OTHER FOODS

A month's supply (thirty boxes) of this flour . . . \$4.85
Fifteen days' supply (fifteen boxes) of this flour 2.75

— AND —

LISTERS STARCH FREE BRAN

Starch entirely removed by chemical process. Useful in diabetic constipation and
for reduced diets.

In two-pound cartons. Price \$1.00

If you do not find Listers Diabetic Specialties at your druggist ask us for nearest
agency.

LISTER BROS., Inc.

405 Lexington Ave.

NEW YORK CITY

INSTITUTE OF SURGERY

10 Minutes from
Heart of City

CHICAGO

Opposite Mercy
Hospital



Students Limited

Master Operative Surgery

By intensified practice and repetition
Are you prepared to do an end to end anasto-
mosis?
Can you skillfully perform a lateral or end to
side anastomosis?
Can you perform a posterior gastral enteros-
tomy?

How long since you have had a review on the
cadaver of your abdominal surgical anatomy?

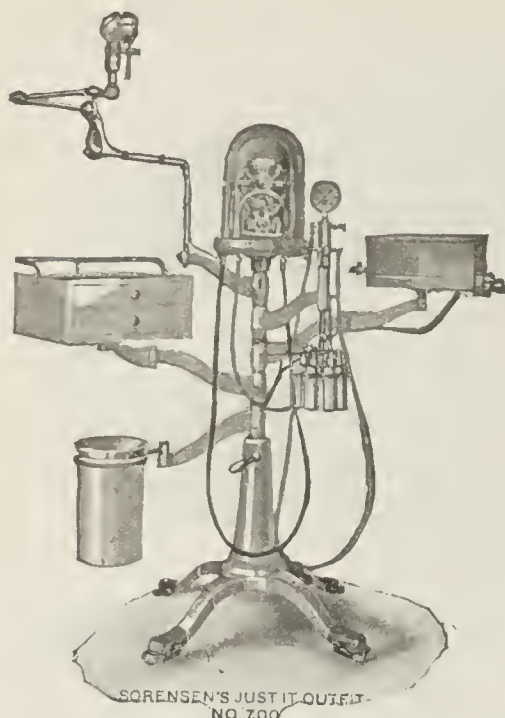
Over thirty-five operations on the head, neck,
thorax, and abdomen and extremities performed
by the student himself.

Operations by student include Thyroidectomy, blood transfusion, gastro
enterostomy, end to end suture, lateral anastomosis cholecystectomy, her-
nia, etc., etc. Special courses in eye, ear, nose and throat

For descriptive literature, address

Dr. W. J. SULLIVAN, Secretary

2550 PRAIRIE AVE.



C. M. SORENSEN CO., Inc.
177 East 87th St., New York City

The Lay View

Reputation, and visible evidence of scientific modern equipment, are the only means by which the layman can be expected to judge of a clinic's ability to treat him.

And what visible evidence of having the very best facilities could so strongly and favorably impress him as your having an adequate, specially designed Clinic Building?

ELLERBE & COMPANY

Architects of Hospitals
and Clinic Buildings

Endicott Bldg.

ST. PAUL, MINN.

MANZANO FOREST SCHOOL FOR BOYS

Is located in New Mexico, 17 miles east of Albuquerque, in the mountains of the Manzano National Forest. Its purpose is to build up the health of those boys of preparatory school age who are physically subnormal, and at the same time to give a thorough college preparatory course, adapting the work to the physical ability of the individual boy. Open the whole year. The days in which life in the open air is not enjoyable are very rare. For information, address
JOHN W. ELDER, M.D., Director. Box 318
Albuquerque, New Mexico.

"QUALITY FIRST" BOOK BINDING

We will bind **THE JOURNAL A.M.A.** for \$2.50 per volume in the **BEST GRADE** of Full Buckram. Same price applies also to other journals of a similar size. **OUR STRONG POINT** is magazine binding. Send your books or a postal for additional information to

THE BOOK SHOP BINDERY
314-322 W. Superior St. CHICAGO

Second Hand Equipment

CAN BE BOUGHT OR SOLD THRU A
CLASSIFIED AD IN THE JOURNAL

(Books Received—Continued)

SENILE CATARACT: METHODS OF OPERATING. By W. A. Fisher, M.D., F.A.C.S., Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College. With the Collaboration of Prof. E. Fuchs, Prof. I. Barraquer, Lt. Col. Henry Smith, Dr. H. T. Holland, and Dr. John Westley Wright. Cloth. Price, \$2.50. Pp. 256, with 160 illustrations. Chicago: Chicago Eye, Ear, Nose and Throat College, 1923.

THE COLLOIDAL STATE IN ITS MEDICAL AND PHYSIOLOGICAL ASPECTS. By Sir William M. Bayliss, F.R.S., M.A., D.Sc., Professor of General Physiology in University College, London. Cloth. Price, \$2.15. Pp. 95, with illustrations. New York: Oxford University Press, 1923.

THE MEDICINE MAN. A Sociological Study of the Character and Evolution of Shamanism. By John Lee Maddox, Ph.D. With a foreword by Professor A. G. Keller. Cloth. Price, \$2.25. Pp. 330, with illustrations. New York: The Macmillan Company, 1923.

HEMATOLOGY IN GENERAL PRACTICE. By A. Knyvett Gordon, M.B., B.C., B.A., Medical Superintendent of the Virol Pathological Research Laboratories. Cloth. Price, \$1.75, net. Pp. 100, with 5 illustrations. New York: William Wood & Co., 1923.

WAR BLINDNESS AT ST. DUNSTON'S. By Sir Arnold Lawson, K.B.E., M.D., F.R.C.S., Senior Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery, Middlesex Hospital. Cloth. Price, \$2.50. Pp. 148. New York: Oxford University Press, 1922.

LEHRBUCH DER UROLOGIE MIT EINSCHLUSS DER MÄNNLICHEN SEXUALERKRANKUNGEN. Von Dr. Leopold Casper, a.ö. Professor a. d. Universität Berlin. Fourth edition. Paper. Pp. 632, with 227 illustrations. Berlin: Urban & Schwarzenberg, 1923.

THE PRE-SCHOOL CHILD FROM THE STAND-POINT OF PUBLIC HYGIENE AND EDUCATION. By Arnold Gesell, Ph.D., M.D., Director of Yale Psycho-Clinic, Yale University. Cloth. Price, \$1.90. Pp. 264. Boston: Houghton Mifflin Company, 1923.

EXPLORATION CLINIQUE ET DIAGNOSTIC CHIRURGICAL. Par Félix Lejars, Professeur de Clinique Chirurgicale a la Faculté de Médecine de Paris. Cloth. Price, 60 francs. Pp. 778, with 907 illustrations. Paris: Masson et Cie, 1923.

CHILD LABOR AND THE WORK OF MOTHERS IN THE BEET FIELDS OF COLORADO AND MICHIGAN. Children's Bureau, Publication No. 115. Price, 20 cents. Pp. 122, with 11 illustrations. Washington: Government Printing Office, 1923.

LEITFADEN FÜR DIE KLINISCH-BAKTERIOLOGISCHEN KULTURMETHODEN. Von Dr. Hugo Schottmüller, Professor und Direktor der medizinischen Poliklinik der Universität Hamburg. Paper. Pp. 96. Berlin: Urban & Schwarzenberg, 1923.

CHOLERA AND ITS MODERN TREATMENT (FOR PRACTITIONERS AND STUDENTS). By Dharendra Nath Banerjee, M.B. With a foreword by Sir Leonard Rogers, C.I.E., I.M.S. Cloth. Pp. 59. Calcutta: Butterworth & Co., 1921.

AN INDEX TO GENERAL PRACTICE. By A. Campbell Stark, M.B., B.S., L.S.A., Exhibitor and Gold Medallist of the University of London. Cloth. Price, \$2, net. Pp. 181. New York: William Wood & Co., 1923.

A SYNOPSIS OF MEDICINE. By Henry Lethby Tidy, M.A., M.D., B.Ch., Assistant Physician to St. Thomas's Hospital. Third edition. Cloth. Price, \$6. Pp. 985. New York: William Wood & Co., 1923.

DUFF HOUSE PAPERS. Edited by Edmund I. Spriggs, M.D., F.R.C.P. Volume One. Cloth. Price, \$9.50. Pp. 387, with 191 illustrations. New York: Oxford University Press, 1923.

COLLECTED PAPERS FROM THE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE. Volume I, 1921. Cloth. Price, \$12. Pp. 1079, with 347 illustrations. St. Louis: C. V. Mosby Company, 1923.

(Continued from preceding page)

NURSES & DIETITIANS WANTED

WANTED—REGISTERED NURSE AS SUPERINTENDENT of a 20-bed hospital; location central Kansas; salary \$100 per month with increase as ability is demonstrated; board, room, laundry, etc.; state age, place of training, year of graduation, experience, religion, reference, etc. Add. 6142 T, % AMA.

WANTED—SUPERINTENDENT OF nurses, assistant superintendents, surgical, general duty, instructresses, laboratory technicians, dietitians desiring hospital positions anywhere in United States, write for free book. Aznoe's Central Registry for Nurses, 30 N. Michigan, Chicago. T

NURSES AND DIETITIANS' LOCATIONS WANTED

WANTED—PHYSICIAN'S WIDOW, AGED 48, congenial and obliging, desires position as dietitian or housekeeper in hospital, sanitarium or physician's home where young daughter would be permitted and where kindness would be appreciated. Add. 6165 W, % AMA.

WANTED — POSITIONS, SUPERINTEN- dent of nurses, assistant superintendents, surgical, general duty nurses, dietitians, laboratory technicians, furnished promptly anywhere in United States; no charge for this service. Aznoe's Central Registry for Nurses, 30 N. Michigan, Chicago. W

PARTNERSHIP WANTED

WANTED — PARTNERSHIP BY OBSTET- rician, of excellent training and experience; Class A school; aged 43; married; have taught clinical obstetrics; consider busy practitioner, group practice or any high class proposition. Add. 6167 H, % AMA.

WANTED—PARTNERSHIP — INTERNIST of ability desires association with group, hospital, surgeon or internist; competent in physical, laboratory and x-ray diagnosis; Protestant, married, aged 40; experienced in general, special and group practice; capable writer and speaker. Add. 6062 H, % AMA.

GROUP PRACTICE

GROUP ORGANIZING IN MIDDLE WEST- ern town of 30,000, offers opportunity to specialists; eye, ear, nose and throat; internist; pediatric and x-ray; real workers preferred; send photo, nationality, experience, age, school, etc. Add. 6008, % AMA.

SITUATIONS WANTED

WANTED—POSITION — YOUNG LADY, college graduate, one year postgraduate work, desires position as laboratory technician; knowledge of bacteriology, serology, clinical pathology, histology, blood and urine chemistry, Wassermanns. Add. 5898 I, % AMA.

WANTED—SITUATION, INDUSTRIAL, railroad insurance, contract, assistant, superintendent; 40 years old; been in active practice since 1909; can furnish best of references. Add. 6136 I, % AMA.

WANTED — LABORATORY POSITION, expert laboratory technician, can do any kind of laboratory work; male; 28 years of age; college graduate; five years' experience. Add. 6152 I, % AMA.

WANTED — POSITION AS CHIEF RESI- dent in tuberculosis sanatorium; young man; experienced; do artificial pneumothorax, laryngeal and x-ray work; references; prefer west. Add. 6153 I, % AMA.

WANTED — EXPERIENCED BACTERIO- logist wants laboratory position; A.B. degree; research; food and water analyses, tissue; blood and urine analyses, including blood chemistry, Wassermanns, etc., and any other routine laboratory work; references. Add. 6164 I, % AMA.

WANTED — SITUATION AS CLINICAL laboratory and x-ray technician; also registered pharmacist; have had full charge of 3 departments for 4 years. Add. 6162 I, % AMA.

WANTED—SITUATION — DO GENERAL practice; unmarried; aged 46; well referenced; good appearance, habits, etc.; registered several states; ready at once. Add. 6166 I, % AMA.

WANTED—UROLOGIST AND ROENTGEN-ologist desires location; hospital or group connections preferred; this adv. appears but once. Add. 6160 I, % AMA.

WANTED — SITUATION — EYE, EAR, nose and throat, preferably eye, and connection with clinic; finishing course leading to degree doctor ophthalmology; aged 35; single; first-class training, references and appearance; go anywhere. Add. Doctor, % Elks Club, Denver, Colo.

WANTED — INTERNSHIP UNTIL OCTO-ber 1 by eye, ear, nose and throat graduate. Add. 6149 I, % AMA.

WANTED — EYE, EAR, NOSE AND throat man, competent, desires position as assistant, associate or in group; have had excellent training in above specialties as resident in hospital; will consider good location. Add. 6028 I, % AMA.

WANTED — GRADUATE REGISTERED nurse, 29 years of age, wishes x-ray techni-cian position; 2 years' x-ray experience; also postgraduate work; may consider combining x-ray with some other hospital work; best of references. Add. 6130 I, % AMA.

WANTED—POSITION IN THE LABORA-tory doing all kinds of work; histoclinicopa-thology, postmortem, blood chemistry, bacteriol-ogy, serology; graduated foreign medical col-lege. Add. 6125 I, % AMA.

WANTED — ASSISTANTSHIP TO SUR-geon, contract practice or surgical residency; M.D., Class A university; 3 years' surgical in-ternship, Bellevue Hospital; one year senior resident surgeon to large New York hospital; formerly associated with well-known New York surgeon; wide experience in cancer and plas-tic surgery; aged 32, single; references. Add. 6104 I, % AMA.

WANTED—SUPERINTENDENT OF health; physician of wide experience wants position with well organized department; long executive training; expert in contagious dis-eases; salary less an object than freedom from political interference; available about Aug-ust 1. Add. 6097 I, % AMA.

WANTED — YOUNG WOMAN LABORA-tory technician, single; 4 years' experience, both clinical and research, desires to go abroad as technician; would be interested in an exp-edition; available August 20; best references. Add. 6034 I, % AMA.

WANTED — BY WOMAN PHYSICIAN, Class A graduate, fine institutional experi-ence, desires college or school work, or would consider hospital position; considerable experi-ence among girls; excellent references; please give all details first letter. Add. 6050 I, % AMA.

WANTED — MANAGING SUPERINTEN-dent of hospital or insane institution, with construction experience desires change. Add. 6071 I, % AMA.

WANTED—WOMAN PHYSICIAN DESIRES institutional or industrial position; Class A graduate; competent; have had experience in tuberculosis work. Add. 6077 I, % AMA.

WANTED—POSITIONS—CLASS A PHYSI-cians are registered with us from all parts of United States for salaried positions any-where; we have candidates whose references, moral and medical standings have been care-fully investigated; open for ethical appoint-ments; no charge for our service. Aznoe's Na-tional Physicians' Exchange, 30 N. Michigan, Chicago.

WANTED — ASSISTANTSHIP TO FIRST-class surgeon by Class A man; intern one year; general practice 18 years; surgeon to small hospital past 10 years; would consider residence physician in surgical hospital. Add. 6014 I, % AMA.

REPRESENTATIVES WANTED

WANTED — REPRESENTATIVES — MEN who want a high grade proposition and a good income; a publisher of medical journals wants a few energetic, well educated solicitors; this work is with the medical profession exclu-sively and good territory is open; instruction and all supplies furnished free; also solicitors now calling on physicians can make some extra money with these journals as a side line; men of good personality and selling ability should investigate at once. For further information add. 5008 JJ, % AMA.

(Continued on next page)

THE HOPE OF THE VARIANT

By

JOHN GEORGE GEHRING, M.D., Sc.D.

THE "VARIANT" of which Dr. Gehring writes so illuminating a book is that person who because of nervous or physical disorder, habits formed in child-hood, improper training, or any one of a hundred other causes, in some measure varies from what we call "normal." This book by a famous doctor is a fascinating account of the methods employed and results obtained during thirty years of treating such persons.

Dr. M. Allen Starr, eminent neurologist, says:

"In these days when much crude psychology is being put before the public it is pleasant to find in Dr. Gehring's 'The Hope of the Variant' a clear and accurate analysis of many perplexing mental states and processes, and to follow him in his hopeful views of the prospect of relief by methods allied to suggestion, but more definite and precise than that rather vague term implies. Every physician should read this book with profit and apply its dictates, putting himself in the place of the 'victim of fears and fancies,' as Dr. Gehring suggests, and by a sympathetic attitude gain the confidence of his patient and thus aid his cure. He does not find it necessary to lead persons through the 'mazes of psycho-analysis'; nor does he approve of the Freudian conception of the origin of mental variation. But he offers definite and appropriate means, in each of the very numerous cases cited, for the mental healing desired. It is a book to appeal to the public as well as to doctors, for it clears up many obscure and puzzling conditions and so may be of great help to many who do not realize that they or their relatives belong to the 'variant' class."

\$2.00 at all bookstores or direct from

CHARLES SCRIBNER'S SONS, NEW YORK



HOOS' ALBUMIN MILK

Its continued use since 1912 by leading Pediatricists speaks for itself.

Package of six cartons, \$2.50

Literature and Samples on request.

Louis Hoos - Scientific Milk Products

5232 Kenmore Avenue

Chicago, Illinois

(Continued from preceding page)

LABORATORY WANTED

WANTED—TO BUY OR LEASE A CLINICAL laboratory; would consider a partnership or establishing a laboratory with a group; state terms, location and net earnings in reply. Add. 5838, % AMA.

LABORATORIES FOR SALE

FOR SALE—CLINICAL LABORATORY—Established; fully equipped with living rooms and bath connected; household furniture goes with laboratory; located in the heart of a modern Oklahoma city; big future for a hustler. Add. 6158 SS, % AMA.

FOR SALE—ESTABLISHED LABORATORY and office practice in southern city; no other laboratory; salaried appointment paying \$100 per month goes with this; business averages \$5,000 per year; price, \$1,500 cash, which just about covers value of equipment; write for details. Add. 6163 SS, % AMA.

APPARATUS, ETC., FOR SALE

FOR SALE — OXYGEN ADMINISTRATION; complete outfit in suit case consisting of reducing valve, mask, etc., for \$8, f.o.b., New York; made for U. S. Army; guaranteed unused and perfect condition; photo and full description on request. Add. 6056 K, % AMA.

FOR SALE—UNUSED X-RAY MACHINES made by Victor, running upon 110 volts alternating current, generating 10 milliamperes with 5-inch backup; self-rectifying radiator type Coolidge tube; price, exclusive of tube and stand, \$150, f.o.b., New York; U. S. government stock. Add. 6055 K, % AMA.

FOR SALE—NEW UNUSED COMPLETE McCaskey register, consisting of cabinet and blank forms; mahogany finish; complete system of professional and financial records purchased for \$200; will sell at any reasonable offer. Add. 6006 K, % AMA.

BOOKS WANTED AND FOR SALE

BOOKS! BOOKS! BOOKS! OF ALL PUBLISHERS, new and second hand; one account fills the bill; old editions taken in exchange; a plan all our own; easy terms to responsible physicians; try us. L. S. Matthews & Co., 3563 Olive St., St. Louis, Mo. M

WANTED — AMERICAN JOURNAL Diseases of Children; 25 cents each will be paid for any of the following copies returned in good condition: 1911: January, February, March, April, May, June; 1912, May; 1916: December; 1920: February; 1922: April. Send to American Medical Association, 535 N. Dearborn St., Chicago, Ill. M

PRACTICES FOR SALE

DO YOU WANT TO SELL OR BUY A practice or hospital? If so, send for free literature. Write Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. N

FOR SALE—FINE PAYING \$7,000 PRACTICE, established 25 years, in one of most beautiful bay cities, California, with equipment; \$1,000 cash; no night nor obstetric work; doctor retires. Add. 6174 N, % AMA.

FOR SALE—COLORADO—FOR PRICE OF splendidly located modern residence and office; large general practice established twenty years in town of 1,000; big territory; competition right; paved streets, electric lights, waterworks, sewerage; excellent climate; transcontinental railroad; good common and high schools; the best lodges; transferable appointments; collections for past six years average over \$10,000; price, \$6,500; \$3,000 cash, balance terms; mention ability to meet terms in first letter. Add. 6143 N, % AMA.

FOR SALE—DRUG STORE AND PRACTICE in town of 350, with good surrounding territory, in east central Idaho; mining and stock raising; nearest doctor and drug store, 50 miles; income average \$10,000, and can be greatly increased by a live wire able to do surgery; best hunting and fishing in the west; reason for selling, am retiring from active practice; price, \$7,000, including dwelling; \$4,000 cash will handle this. Add. Dr. I. B. Keller, Leadore, Idaho. N

—FOR SALE—**Country Estate in Georgia**

AT FOOT OF BLUE RIDGE MOUNTAINS
AT CLARKSVILLE, HABERSHAM COUNTY

Suitable for Hunting Lodge or Small Sanatorium
144 ACRES



THE residence contains 20 rooms, all modern conveniences, flower and fruit hot houses, bowling alley, ample servants' quarters, barns, dairy, etc. The entire premises are in A1 condition, owned and occupied by the present owners for the summer months for many years past, and used by them as a pleasure resort.

Photos will be furnished on request.

Property is known as "Rockwood" and can be seen at any time.

ALEXANDER & GARRETT
Realtors - - Augusta, Georgia

THE STORK MODEL NESMOHT PORTABLE OBSTETRICAL TABLE

"Weighs as much as a good-sized baby."

(1) For deliveries at home, in bed or on kitchen table.

Only apparatus known whereby the patient can be frequently cleansed and externally irrigated during labor.

Absolutely maintains position and sterile field. No assistants needed to hold parts. New method of securely fastening hands and feet.

(2) For all kinds of rectal and perineal operations.

(3) For cystoscopic, rectoscopic or vaginal examinations away from office or hospital.

(4) Can produce the following positions:

The Lithotomy.
The Modified Lithotomy.
The Extreme Lithotomy.
The Fowler Lithotomy.
The Walcher.

Conveniently portable—Collapsible.

"Let the Stork fly to your assistance."

Write for our "Last Word in Obstetrics" and the "Four Photos."

NESMOHT SALES CO. 209-210 Arthur Building.
OMAHA, NEB.

SPECIFY 'HEILKRAFT'

SCARLET R. SALVE

Samples Free

Heilkraft Medical Co. Boston, Mass.

FOR SALE—NORTH CENTRAL ILLINOIS —\$6,000 general practice; 1,000 people; average competition; 7-room cottage; 3-room office on same lot; X-ray; drugs; large Catholic church; parochial school; price, \$5,500; terms. Add. 5986 N, % AMA.

FOR SALE—ILLINOIS — A FINE GENERAL practice; unopposed; finest farming section in state; a good grade school and accredited high school; oil roads; yearly gross \$10,000; modern house, large yard, office and garage. S. H. Tolly, Stine Bldg., Decatur, Ill. N

FOR SALE—ILLINOIS — \$5,000 ESTABLISHED practice in town of 15,000 population; wealthy farming community surrounding; oiled roads, high school, city water, electric lights, churches; competition normal; collections good; drugs and office equipment; specializing. Add. 6159 N, % AMA.

FOR SALE — WESTERN ILLINOIS—Town of 650; no other doctor or drug store; net income last year \$5,500; practice, drug store, stock and fixtures, \$1,500; office in drug store; store will pay back entire outlay in few months and practice will be clear; office furniture and instruments; also Overland and Ford cars optional; good farming country surrounding; will specialize. Add. 6172 N, % AMA.

FOR SALE—CENTRAL ILLINOIS — ESTABLISHED practice; wealthy farming community surrounding; oiled roads, high school, Protestant churches; competition normal; stock of drugs, office equipment, instruments, etc.; death of physician. Add. 6045 N, % AMA.

FOR IMMEDIATE SALE—WESTERN INDIANA; owing to death of husband, equipment for eye, ear, nose and throat practice; rapidly growing town of 13,000; office location; available if taken at once. Mrs. Audrey P. Bruce, Clinton, Ind. N

FOR SALE—IOWA LOCATION—MODERN town 1,800; best roads in state; collected \$7,000 in 1922; normal times, with surgery great increase may be looked for; drugs, furniture only to be sold at invoice; young live Catholic M.D. with surgical ability favored. Add. 6134 N, % AMA.

FOR SALE—SOUTHEAST IOWA—PRACTICALLY unopposed practice; town 500; have been here 6 years; have done \$40,000; sell for price of office equipment (about \$1,000); property optional; don't write unless you mean business; must sell. Add. 6135 N, % AMA.

FOR SALE—CENTRAL IOWA — TOWN 500; unopposed; accredited high school; electricity, sewage; granite roads; rich community; hospital facilities; married man; surgically capable; Protestant; references; will rent equipped office and house to sell later. Add. 6155 N, % AMA.

FOR SALE — IOWA—\$1,000 WILL BUY G.U. office lease, good will, instruments, furniture and library; have occupied same over 30 years; a good opportunity; will introduce man. Dr. W. S. Tharp, Sioux City, Iowa. N

FOR SALE—IOWA — NEW HOSPITAL, general and surgical practice, eye, ear, nose, throat; fully equipped; x-ray, actinic, Morse wave; everything first-class; money maker from start to reliable parties; must be sold at once. Add. 6122 N, % AMA.

FOR SALE—KANSAS—\$6,000 PRACTICE, six-room modern house, good office; 95 per cent. collections; population 600; competition one elderly physician; price, \$6,000; one half down, balance terms; going to specialize. Add. 6151 N, % AMA.

FOR SALE—MASSACHUSETTS — OCULIST and aurist \$4,000 practice; entire equipment \$1,000; records, instruments, furniture, stock; one other oculist; one aurist; city population 22,000; 50,000 outlying district; 30 years same office; largest near city 20 miles distant; going to California. Add. 6170 N, % AMA.

FOR SALE—MINNESOTA — UNOPPOSED practice in southern part; town of 500; for invoice price of equipment; good territory, good collections; pays \$4,500 to \$6,000 annually. Add. 5897 N, % AMA.

FOR SALE—CENTRAL MINNESOTA—UNOPPOSED practice, \$8,000 or better yearly; territory 18, 16, 10 and 9 miles; well developed; rich farming community; collections 95 per cent.; town about 750; modern office equipment, including x-ray; no real estate; good hospital association 18 miles. Add. 6078 N, % AMA.

(Continued on page 32)



X-RAY FLUOROSCOPIC AND RADIOGRAPHIC DIAGNOSIS WITH A SINGLE UNIT

IN many roentgenological laboratories and general practitioners' offices a single unit is needed for fluoroscopic or radiographic diagnosis.

To meet this need the Victor Stabilized Fluoroscopic and Radiographic Unit has been designed. Its principal feature is the Victor-Kearsley Stabilizer, which is found only in Victor equipment and which automatically controls the tube current regardless of the fluctuations in line voltage. The result is that technique can be standardized and uniformly good radiographic results can be counted upon.

In addition there are such refinements as a circuit breaker for protecting opera-

tor, patient and apparatus; the auto-transformer control which permits the selection, through one lever, of any back-up spark from three to five inches; the high-tension, closed core, oil-immersed transformer; and the control stand with its long cable and its convenient on-and-off foot-switch, and its caster-mounting which makes movement in every part of a room possible.

The underlying principles of construction and operation have been established by Victor research, which is a sufficient guarantee that the Unit will meet the requirements of the general practitioner or the roentgenologist.

A descriptive bulletin will be sent on request

VICTOR X-RAY CORPORATION, Jackson Blvd. at Robey St., Chicago, Ill.

Sales Offices and Service Stations in All Principal Cities



(Continued from page 30)

FOR SALE—MICHIGAN — WONDERFUL opportunity; owing to death, an enviable practice of 30 years' standing, including office and equipment, for quick sale; terms easy; town 500; wealthy farming community; collections 99 per cent. Carrie E. Strahan, Pewamo, Mich. N

FOR SALE — MICHIGAN — COUNTRY practice and drug store; income from practice over \$10,000 yearly; drug store sales over \$50 daily; no surgery, no competition; nearest towns 9, 10 and 12 miles; good roads, high school, federated church; wealthy American community; fees best in southern Michigan; drug store at inventory; modern home at less than cost; 9 rooms, bath, hot-water heat; sewer; hard and soft water; electricity, 24-hour service; Detroit gas plant; Detroit, 50 miles; Flint, 20 miles; sickness in family compels selling; competent man should net over \$15,000 yearly. Add. Dr. C., Box 69, Hadley, Mich. N

FOR SALE — SOUTH CENTRAL NEBRASKA; \$6,000 general practice to purchaser drugs, office equipment and Ford; \$1,200; terms; specializing; main line; town 900; modern office and residence on paved main street for rent. Add. 5873 N, % AMA.

FOR SALE—SOUTHEAST NEBRASKA—Unopposed \$5,500 practice; town 400; on two state highways; richest agricultural county in state; hospital 15 miles; good territory; \$1,000 for equipment of 3-room office, drugs and practice. Add. 6076 N, % AMA.

FOR SALE—NEBRASKA—PRACTICALLY unopposed; location in modern town of 500 in productive mining country; offered at price of equipment, which will be sold for from \$750 to \$1,100 according to selection; large surrounding territory; quitting general practice. Add. S-137, Aznoe's National Physicians' Exchange, 30 N. Michigan Ave., Chicago. N

FOR SALE—NEW JERSEY — WELL-ESTABLISHED general practice can be obtained very reasonable in large industrial city near New York, on main Erie line; very good open hospitals; no real estate; money from start. Add. 6161 N, % AMA.

FOR SALE — SURGICAL OPENING IN New Mexico; city of 7,000, with 25,000 more in coal mining camps; 30-bed hospital; open to all; total income \$20,000; surgery \$10,000; practice established 16 years; practice with complete equipment sold for \$10,000; \$4,000 will handle. S-136, Aznoe's National Physicians' Exchange, 30 N. Michigan Ave., Chicago, Ill. N

FOR SALE—NEW YORK—\$10,000 ESTABLISHED practice in town 700 population; American; farming and manufacturing; appointments; large surrounding territory; good roads, good schools; modern home; reason for selling, death of wife. Add. 6073 N, % AMA.

FOR SALE — BROOKLYN, N. Y.—\$12,000 general practice, established 20 years; unexcelled location; leaving state permanently; modern 11-room house with complete office accommodations; garage; price, \$16,500; terms reasonable. R. Byington, M.D., 1851 84th St., Brooklyn, N. Y. N

FOR SALE—NEW YORK—PRACTICE OF \$7,000 or more for physician doing minor surgery; complete office equipment, books, drugs; splendid opening; no other physician; vacancy due to death. Add. 6145 N, % AMA.

FOR SALE — WESTERN NEW YORK—\$8,500 practice; 1,200 population; large territory; good farming community; good roads, schools; valuable appointments; thorough introduction; drugs and practice only; excellent opportunity; specializing; no trifling. Add. 6067 N, % AMA.

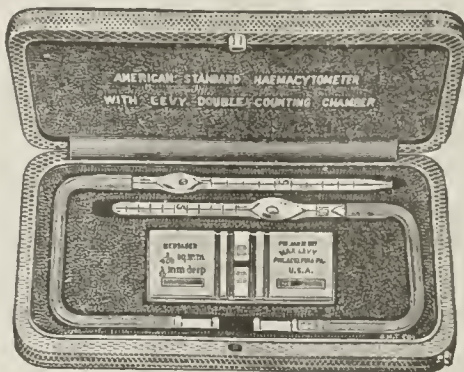
FOR SALE—NORTH DAKOTA—\$4,000 UN-opposed established location in a good part of state; large territory; good schools and fine people; price, \$200 for office fixtures. Add. 6010 N, % AMA.

FOR SALE — OREGON — UNOPPOSED \$6,000 practice in Malheur County; complete high frequency and x-ray optical trial set, cabinets, stands, library, furniture, etc., for \$900; good roads, schools, churches. Dr. H. W. Steelhammer, Vale, Ore. N

FOR SALE — NORTHWESTERN OHIO practice; town 800; rich farming community; good roads; use car all year; centralized high school; electric railway; modern nine-room house and separate office; \$2,000 down; balance easy; will introduce. Add. 6095 N, % AMA.

AMERICAN STANDARD HAEMACYTOMETERS

WITH LEVY COUNTING CHAMBER
In New One-Piece Solid Construction.



No. 3351

3350. Haemacytometer, American Standard, complete with two pipettes and with Levy counting chamber with Neubauer ruling.. \$15.00
3355. ditto, with Bureau of Standards etfs.. 20.50
3351. Haemacytometer, American Standard, complete with two pipettes and with Levy counting chamber with double Neubauer ruling \$18.00
3356. ditto, with Bureau of Standards etfs.. 24.50

Complete descriptive pamphlet on request

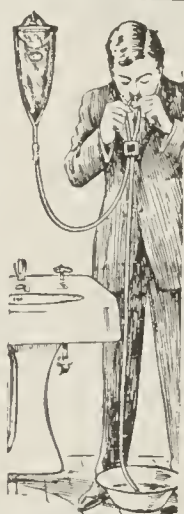
To be had through dealers generally, or
mailed direct by prepaid insured parcel
post to any part of the world when
remittance accompanies order

ARTHUR H. THOMAS CO.

Sole Wholesale Distributors

Laboratory Apparatus
and Reagents

PHILADELPHIA, U.S.A.



NASAL SYPHON (Nichols)

Negative Pressure (Suction)
for the Patients own use
at home

Draws Out Poisonous Secretions

Evacuates the Sinuses

Complete with Syphon Bag . \$5.00
As attachment to any Bag . \$2.50

Leading Drug Stores Everywhere
or direct from

HERBERT NICHOLS
145 East 35th Street, New York

LABELS AND STATIONERY OUR STYLES ARE ORIGINAL

Many of our customers have dealt with us for 12 years. There's a reason **JACOBUS PRINTING COMPANY** 1627 Madison St CHICAGO. Send for Catalogs Now.

BIND YOUR JOURNALS

Don't throw them away but make them a permanent part of your library. We bind single volumes of the Journal A. M. A. in first class buckram at \$2.50 per vol. Other magazines also bound. Discounts on quantity orders.

Write for details or estimate

AMERICAN JOB BOOK BINDERY
501 S. Dearborn St., Chicago. Tel. Wab. 5294

BIOLOGIC THERAPY

A series of articles prepared under the auspices of the Council on Pharmacy and Chemistry of the A. M. A. Serums and vaccines in anti-streptococcic, antipneumococcic, gonorrheal, meningial, tetanic, diphtheritic and influenzal affections are discussed. A convenient booklet of reprints.

61 pages. Price 25 cents.

American Medical Association 535 N. Dearborn St., Chicago

FOR SALE—ONE OF THE BEST EYE, ear, nose and throat practices in Youngstown, Ohio; iron and steel center; population 150,000; established over 20 years; will sell entire equipment and introduce, or records and good will; retiring on account of poor health. For particulars add. Dr. W. L. Carroll, 904 Mahoning Bank. N

FOR SALE — PENNSYLVANIA — \$12,000 general dispensing practice and contract work; energetic man can increase; city near Philadelphia; prominent corner; large home and office; garage; introduction; buying property optional; retiring. Add. 6020 N, % AMA.

FOR SALE—PENNSYLVANIA—WONDER-ful opportunity for Pennsylvania Protestant physician; town 3,000; beautiful modern home and office combined, garage; cheap rent; good roads, churches and schools; \$500 buys office furniture and medicines; reason for moving, leaving state. Add. 6039 N, % AMA.

FOR SALE — PENNSYLVANIA — CON-tract and private practice; 13 miles from Pittsburgh; all hard roads; gas, water, electricity; contract pays \$6,000 per year; private practice from \$3,600 to \$4,800; price, \$3,000; specializing. Add. 6117 N, % AMA.

FOR SALE—SOUTH DAKOTA—WILL DO-nate unopposed practice and appointments to purchaser of my drug store, building, stock and fixtures, including office equipment; a real live town; if interested write for particulars. Add. 6137 N, % AMA.

FOR SALE—SOUTH DAKOTA — 6-BED hospital, combined with residence, equipment and furniture; \$12,000 surgical and general practice, 13 insurance appointments and railroad surgeons, all offered for \$10,000; \$3,000 cash; by doctor wishing to locate on west coast; or will rent hospital and sell equipment or sell only office equipment and x-ray; modern town of 600; medical center. S-138, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. N

FOR SALE — SOUTH DAKOTA—\$8,000 unopposed practice, town 700; rich farming country; equipment, introduction and modern new home for price of property, \$7,500; terms reasonable. Add. 6156 N, % AMA.

FOR SALE—UTAH — \$5,000 UNOPPOSED practice and 5-room brick bungalow furnished, \$4,000; or practice and office outfit, \$500; population 1,000; new, fast growing irrigated section; hunting, fishing; large surrounding territory; fine climate. Add. 5812 N, % AMA.

FOR SALE—WISCONSIN — \$6,000 UNOP-posed village and dairy country practice; established 23 years; nearest competition 7 miles; railroad; trunk roads; unlimited electricity; money made here and invested enables me to retire and sell my beautiful, strictly modern Craftsman house and office furniture; \$2,000 spot cash required; balance easy terms; do not answer unless you have the money. Add. 5968 N, % AMA.

FOR SALE—SOUTHEASTERN WISCON-sin; or partnership until introduced; real estate; town of 4,000; richest farming community; finest schools and roads; railroad center; established \$6,000 practice included; splendid opportunity; investigate immediately. Add. 5951 N, % AMA.

FOR SALE—WISCONSIN—AN OPPORTU-nity to get a \$4,500 practice in north central Wisconsin by buying very reasonably a doctor's convenient home. Add. 5832 N, % AMA.

HOSPITALS, SANITARIA for SALE

FOR SALE—ONE OF THE BEST KNOWN and best paying sanatoriums for the treatment of tuberculosis in the southwest; can be bought for much less than cost; half cash, balance long time. Add. 6139 O, % AMA.

FOR SALE—A WELL-ESTABLISHED SAN-itarium for nervous, mental and habit cases, containing about 35 rooms, located in the south; the institution has a growing clientele with a gross income of \$40,000 annually; attractive terms to purchaser; the owner has grown old in the business and wishes to retire. Add. 6144 O, % AMA.

FOR SALE — SANITARIUM — FULLY equipped; big money maker; patronized by people from all over the country; will sell cheap, as owner wishes to retire. Enquire of E. B. Kreason, Hornell, N. Y.

Dependable Collection Service

UNITED STATES NATIONAL ADJUSTMENT COMPANY INCORPORATED

We Specialize

In handling the accounts of the medical profession. Constructive, efficient, reliable service.

An entire building on beautiful Michigan Boulevard given exclusively to housing a modern collection organization, complete in all its departments. Established twelve years.

You are Invited

to write us about your collection problems. Other physicians profit by using our services. Why not take advantage of our facilities for turning your dead accounts into cash. Write us today.

If you come to Chicago, visit our institution, enjoy our hospitality and see our entire system in operation.

UNITED STATES NATIONAL ADJUSTMENT COMPANY

3408 MICHIGAN AVENUE, CHICAGO, ILLINOIS



FOR SALE—ILLINOIS — 18-BED HOSPITAL; a rare opportunity; in town of 5,500, 38 miles from Chicago; in heart of finest farming community in state; established 6 years; excellent buy for general practitioner or man doing surgery; fine location for sanitarium, railroad or fraternal hospital; price for quick sale, \$22,000; cash required, \$5,000. S-135, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. O

FOR SALE — A GOOD PAYING, OLD- established sanitarium for nervous and mental patients; owner's other interests no longer allow time for conducting institution; located within 40 miles of New York and other large cities; beautiful rural district with mountain views, full equipment for hydrotherapy, electrotherapy, amusements, moving pictures, etc.; ample buildings for careful classification of patients; now running full capacity and receiving large weekly and yearly profits; about \$50,000 necessary as initial payment for sanitarium and large paying farm which have cost about \$200,000. Add. 6089 O, % AMA.

FOR RENT

FOR RENT — WELL ESTABLISHED OF- fice of the late Dr. Wm. A. Ellsworth, with equipment and living rooms, or combined office and residence for sale if desired now or later; excellent opportunity for pediatrician or internist; practice runs \$12,000 per year. Mrs. W. A. Ellsworth, 283 Walnut St., Meadville, Pa. Q

LOCATION FOR SANATORIUM

FOR SALE—A SPLENDID PROPERTY OF 600 acres of fertile land with large handsome brick building that will accommodate 600 patients; all necessary outbuildings, including dairy; delightful shade, beautiful scenery and climate unexcelled; splendid golf course; improvements modern; located in Allegheny Mountains; elevation about 2,000 feet; specially suited for sanitarium; probably cost today \$500,000; price, only \$110,000; easy terms. Add. K. T. Crawley, Mgr., Developments, Chesapeake & Ohio Rwy., Richmond, Va. P

DONIGER & COMPANY SURGICAL INSTRUMENTS

Feature an imported all glass Luer Type Hypodermic Syringe.



Guaranteed against breakage in sterilization

"X-ACTO SYRINGE"

You will recognize it by the blue indestructible scale. At all leading Surgical Supply Houses. The cost is lower but you cannot buy a better syringe.

Wholesale only. 73 5th Ave., New York
Buy from your local dealer.

SEND ONE DOLLAR WITH THIS COUPON

FOR
TRIAL
PACKAGE



TAPPANZEE SURGICAL CO., Box A, NYACK, N.Y.

\$YSTEM for the DOCTOR

means money and time saved, more efficiency in the treatment of the patient and less drudgery for the physician. **THE HOLDEN SYSTEM** is simplicity itself and a recognized economical, complete, uniform and reliable short-cut method for ACCOUNTS and CASE RECORDS. Nineteen years of success.

LET US SHOW YOU! WE CAN
Address Box 88 - Grand Central Station, New York City

**Are You Thinking
OF CHANGING YOUR LOCATION?**
Try a Classified Ad in THE JOURNAL

PUBLISHERS AND PRINTERS

EMBOSSSED STATIONERY—STEEL DIE engraved—impressive and distinctive for the medical profession; samples and prices sent upon request. The Homestead Engraving Company, 1900 Grand Ave., Des Moines, Iowa. GG

STEEL DIE EMBOSSSED STATIONERY — Distinctive and impressive for the medical profession; will send samples and prices upon request. Hammond Printing Co., Fremont, Neb.

SERVICE THAT GIVES "THREE-FOLD service" is described on page 7. The consulting bureau—one of the important links—is featured. Write for further details and learn how this service can aid you. W. F. Prior Co. GG

ALL PHYSICIANS RECOGNIZE THE IM- portance of understanding the mental attitude of each patient. In "The Hope of the Variant," Dr. Gehring gives a sane, simple interpretation of those who are not quite normal. See what an eminent neurologist says of the book on page 29. Charles Scribner's Sons. GG

HAVE YOU USED THE MINIATURE HYGEIAS that you have ordered, or would you order some if you knew who was interested in seeing them? Then see page 38 for suggestions. American Medical Association. GG

CORRECTION IN TITLE—THROUGH AN oversight in the advertisement of "The Infant and Young Child," on front cover of June 9 issue of The Journal, the title of one of the authors was incorrectly stated. Dr. Edwin T. Wyman was given as Professor of Pediatrics at Harvard, whereas this should have read "Instructor in Pediatrics," as appears on the title page of the books. Saunders Publishers. GG

"EDICION EN ESPAÑOL DEL JOURNAL of the American Medical Association." Si habla o lee Ud. el español, y desea conocer esta publicación quincenal, pida un número de muestra de la "Edición en Español del Journal," y con gusto se lo enviaremos libre de porte a su dirección. American Medical Association, 535 North Dearborn St., Chicago. GG

(Continued on next page)

THE JOURNAL OF MEDICAL RESEARCH

NOW THE PROPERTY OF

The American Association of Pathologists
and Bacteriologists

Will resume publication in September, 1923

It will be devoted to the prompt publication of original observations and investigations in the broad field of pathology.

SUBSCRIPTIONS—Five dollars in United States, Five Dollars and a Half in Canada, and Six Dollars in Foreign Countries per volume of about five hundred pages. Should be sent to Dr. F. B. Mallory, Editor-in-Chief, Boston City Hospital, Boston, Massachusetts, U. S. A.

NONSPI

AN ANTISEPTIC LIQUID

*Harmlessly Ends
Armpit Perspiration*

NONSPI—the old, reliable perspiration remedy—applied only twice a week—keeps the underarms dry and odorless—insuring immaculate underarm hygiene, so essential to those who come in contact with the ill and sensitive.

Physicians and nurses endorse it.
Try it and you will never be without it.

Send 4c For Testing Sample

50c (several months' supply) at all leading
toilet and drug counters, or by mail (postpaid)

The Nonspi Co., 2651 Walnut Street, Kansas City, Mo.

NONSPI

THE POCKET PHARMA COPEIA



The Official Drugs Concisely Described

By eliminating long technical descriptions, the U.S.P. and N.F. have been condensed to a little flexible handbook one-half inch thick—the *Epihome of the U. S. Pharmacopeia and National Formulary*.

It gives practically all material of interest to physicians on the official drugs, e.g. official titles, abbreviations, synonyms, dosage, actions, physical properties, and also numerous comments.

Flexible cloth binding. 250 pages, 6 1/4 x 1 1/4 x 1/2 in. Price, 60c.
Use this ad. for ordering. Write name in margin.

AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, CHICAGO

(Continued from preceding page)

HOSPITAL CONSULTANT

HIGH EXPENSES — SMALL REVENUE not always justified; planning, construction, operation. Hospital Consultation Bureau, Oliver H. Bartine, Director, Aeolian Hall, New York City.

DRUG ADDICTS

A LIMITED NUMBER OF DRUG ADDICTS of the higher type who have the opportunity and are capable of doing serious work if freed from their habits will be accepted for private treatment by the Sceleth method; cases will be treated at private hospitals or sanitariums; for particulars address Dr. Chas. E. Sceleth, 25 E. Washington St., Chicago.

EDUCATIONAL

TRAINING FOR TECHNICIANS—INTELLIGENT young men or women can qualify for good positions through our six months' training course. Physicians invited to send names of those interested in our prospectus. Students enter quarterly, beginning January 15. Tuition rates low. Beebe Laboratories, St. Paul, Minn. CC

POSTGRADUATE LABORATORY COURSE for nurses given at the Washington Park Hospital, Chicago. Inquire Dr. R. J. Hennemeyer, Pathologist.★ CC

TRAVEL

ROUND THE WORLD FOR \$1,000—THAT is one of the amazing announcements made by Clark's Cruises on page 35. Write for further details of this extensive trip or the Mediterranean Cruise. Frank G. Clark.

COLLECTIONS

DEPENDABLE COLLECTION SERVICE—See page 33 and write for details. United States National Adjustment Co.

BOUND VOLUMES

OF

THE JOURNAL
A.M.A.

THE last volume of The Journal (July-Dec. 1922) contains a total of 2,312 pages. With its wide variety of original articles, editorials, therapeutic suggestions and abstracts, it forms a valuable reference book when bound for library use. The complete subject Index gives immediate access to any information contained in the volume.

For those who wish to avoid the trouble of preserving their current copies of The Journal, locating bindery, etc., bound volumes are issued every six months, binding half cloth and half leather. Price, \$5.50 per volume. Send the following order and have your name placed on the permanent subscription list for bound volumes.

----- COUPON -----

American Medical Association

535 N. Dearborn St., Chicago

GENTLEMEN:

Until this order is cancelled, send me, charges collect, Bound Volumes of The Journal, current issue, for which I agree to pay \$5.50 per volume. This order is in addition to my regular (\$6.00) Fellowship and subscription.

Name

Address

AUTOMOBILES & ACCESSORIES

WHEREVER YOU GO THERE'S A BLUE Travel Book to guide your auto trail. Even the U. S. Weather Bureau sends last minute information to the blue book headquarters, whence it is relayed to those who wish news for some special trip. See details of this most unusual service on page 21. Automobile Blue Book Co.

ADD TO THE LIFE OF YOUR FORD motor by keeping it cool this summer. The special trial offer of the Flood Pump on page 21 should interest every Ford owner. Luther Grinder Mfg. Co. II

MISCELLANEOUS

THE NEW SPINAL MANOMETER, shown on page 16, is a valuable adjunct in the diagnostician's equipment. See announcement in the pages of The Journal, as mentioned in the adv. V. Mueller & Co. KK

KEEP DRY EVEN IN THE WETTEST weather with SEK, the real water-proofing liquid. Clean and odorless, not greasy nor oily; one treatment lasts for years. See page 21. Sek Mfg. Co. KK

TO GIVE SATISFACTION AN ARTIFICIAL leg must be comfortable—that is why surgeons should send for the free booklet advertised on page 21, so that their patients will be sure they are ordering wisely. E. H. Erickson Co. KK

AN ELECTRIC LANTERN IS MUCH more satisfactory and safer than any other kind. See the description of the Embury model on page 21. Embury Mfg. Co. KK

CARRY 2 OR 3 TIRES IN A 2-K-3 TIRE carrier. Save your time and disposition. See details of carrier on page 21. International Stamping Co. KK

A NEAT, HANDY PACKAGE TO CARRY with you to the beach and a convenient accessory after you reach the water, is the Jiffy Lock Bathing Bag. See page 21. Beyerle Mfg. Co. KK

CLARK'S CRUISES



CLARK'S 4th CRUISE

Jan. 15 From New York, Jan. 31 From Los Angeles

ROUND THE WORLD \$1000 and up

122 Days, including Hotels, Drives, Guides, Fees, etc. Under personal escort of F. C. Clark, originator of Round World Cruises and the only Tourist Agent who has ever run more than one Cruise Round the World by chartered steamer.

By specially chartered **LACONIA** 20,000 tons reg.
Cunard new oil burner

A floating palace for the trip. Route New York, Havana, Panama Canal, Los Angeles, Honolulu, 18 days in Japan and China, Manila, Java, Singapore, Burmah, option of 18 days in India, Ceylon, 3 days in Cairo, Jerusalem, Athens, Naples, Monte Carlo, Cherbourg (stop over), and Cunard flyers "Aquitania," "Mauretania" or "Berengaria" back to New York.

CLARK'S 21st MEDITERRANEAN CRUISE \$600 and up

Feb. 2, 1924, by specially chartered White Star S. S. "Baltic," 23,884 gross tons, 65 days, with 18 days in Egypt and Palestine; Spain, Italy, Greece, etc.

FRANK C. CLARK, Desk W, Times Building, New York.
Established 1894.

Reuter's Soap

Cleanses—Soothes—Protects



PURE enough to EAT

THE three things that make soap perfection are guaranteed in Reuter's by a scientifically correct formula and the purity of every ingredient. Remarkably smooth lather with a high percentage of glycerine not only cleanses the skin without drying, but actually helps repair the ravages of exposure. The germicidal properties of the fragrant essential oils make it mildly antiseptic.

A complexion soap, a health soap, an all-purpose toilet soap that child specialists recommend for infant use. Can we say more?

Try a cake at our expense.
SEND YOUR CARD FOR A CAKE TODAY

REUTER-BARRY, Inc.
26-28 Beaver St. New York
Makers of Fine Toilet Specialties

SALES REPRESENTATIVES
Harold F. Ritchie & Co., Inc.
171 Madison Ave., New York



MEDICAL DIATHERMY— SURGICAL DIATHERMY— ELECTRO-COAGULATION— AUTO-CONDENSATION— HIGH FREQUENCY—

The methods of choice of those who have investigated!

There Are Many Reasons Why

All the better Physicians, Surgeons and Hospitals are installing Physiotherapy apparatus.



A real Portable Diathermy Apparatus—
Catalog No. 1251

The Fischer Portable Hospital Diathermy Unit Embodies:

- Efficiency—4000 Milliamperes available.
- Range—4 Voltage steps; highest Frequency.
- Control—Multiple Spark Gap; Auto-transformer.
- Accurate Meter—Double scale and cut-out.
- Perfect Insulation—No Oil, no Wax.
- Light Weight—Weighs only 50 pounds.
- Neatness—Harmonizes with any surroundings.
- Economy—Full efficiency with small line wires.
- Small Size—12" high, 14" wide by 22" long.
- Low Cost—only \$275.00 for complete unit.

RETURN COUPON

H. G. FISCHER & CO., 2335 Wabansia Ave., Chicago, Ill.

Gentlemen:—

Please send me, without obligation on my part, complete details on your Portable Hospital Diathermy Apparatus, and interesting data on Electro-coagulation.



Purebred Holstein Milk

H. M. McManaway, Superintendent of the Virginia School for the Deaf and Blind, at Staunton, Va., in a statement relative to the milk from the institution's Holstein herd, says:

"Last year we received a total production of 165,444 pounds of milk from our Holstein herd. All of this milk is given directly to the pupils of the school, and it forms a very important part of our dietary. I do not believe that children anywhere are better fed or maintain better records in health and gain in weight than children in our school. I attribute much of this healthfulness and improvement to the beneficial effects of Holstein milk in the diet."

Full information upon request



If you have any difficulty in securing Holstein milk for your patients or institution, write us and we will assist you in securing it. We have a very valuable booklet on "The Milk Road to Child Health," which we will be glad to send you prepaid upon request.

EXTENSION SERVICE

The Holstein-Friesian Association of America
230 East Ohio Street CHICAGO, ILLINOIS

500 Meding TONSIL ENUCLEATORS NOW READY



THE PERFECT INSTRUMENT **WIRELESS KNIFELESS**
A. F. ENGEL, Maker, **EVERYWHERE ACCLAIMED**
2099 Lexington Avenue,
NEW YORK CITY

Literature on request.
Cash or C. O. D. only.

PHENOLPHTHALEIN-AGAR

And all other Agar Medications in accordance with formulas of Dr. Max Einhorn.

List of same and samples supplied by

THE REINSCHILD CHEMICAL COMPANY
47-49 Barclay Street
NEW YORK CITY

THE BLUE BOOK

of

Physicians and Hospitals

1923 Edition

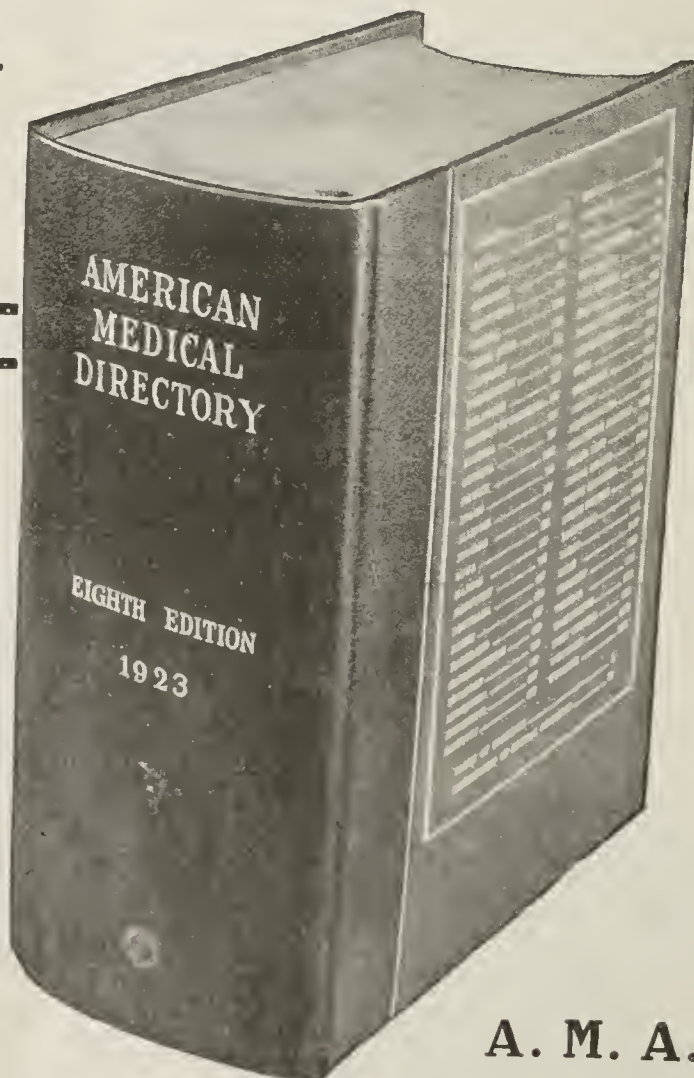
AMERICAN MEDICAL DIRECTORY

Gives real service to individual physicians, hospitals, sanatoria and commercial houses. For making up mailing lists—for giving reliable information to traveling representatives—for checking up addresses—for compiling lists of specialists—for making up hospital and sanatorium lists—for carrying out statistical surveys on the medical profession and on hospitals, it is complete and reliable.

Through the Directory you can reach over

150,000 Doctors

7,500 Hospitals



*For
Correct
Addressing*

2531 Pages

Postpaid \$15
Foreign Postage Extra

**EIGHTH
EDITION
JUST OUT**

*Prospectus on
Request*

A. M. A. PRESS
535 N. Dearborn St., CHICAGO



Skillful Hands Deserve *Perfect* Materials

The surgeon deserves to be given for his work the best materials that nature and science can give.

Some years ago Bauer & Black, aided by good surgeons and by other scientific men working in their own laboratories, developed a new and more nearly perfect suture material, which they have been using in the manufacture of Dermal and Tension Sutures originated by Bauer & Black.

The following years of use have added proof upon proof that these new Bauer & Black Sutures have the virtues of the old without their well known faults.

For a given diameter Dermal Sutures are about twice as strong as horsehair. Tension sutures stand a strain of 10, 15 and 20 pounds traction for fine, medium and coarse sizes respectively.

Both Dermal and Tension Sutures are non-absorbable and may be regarded as having characteristics exactly opposite to those of catgut. They may be employed wherever a non-absorbent suture is indicated.

But the development of these sutures as such, is not the important thing. We are proud of them as keeping step with our ideal to be of service to the profession and by the excellence of our manufacture to deserve preference for all our products.

Among the products bearing the Bauer & Black label are:

Sterile Handy Package Cotton, Sterile Handy-fold Gauze, Sterile Plain and Medicated Gauze and Gauze Bandages; also Plaster Paris Bandages, Ligatures and Sutures, Surgeons Soap, Adhesive Plaster, Formaldehyde Fumigators.

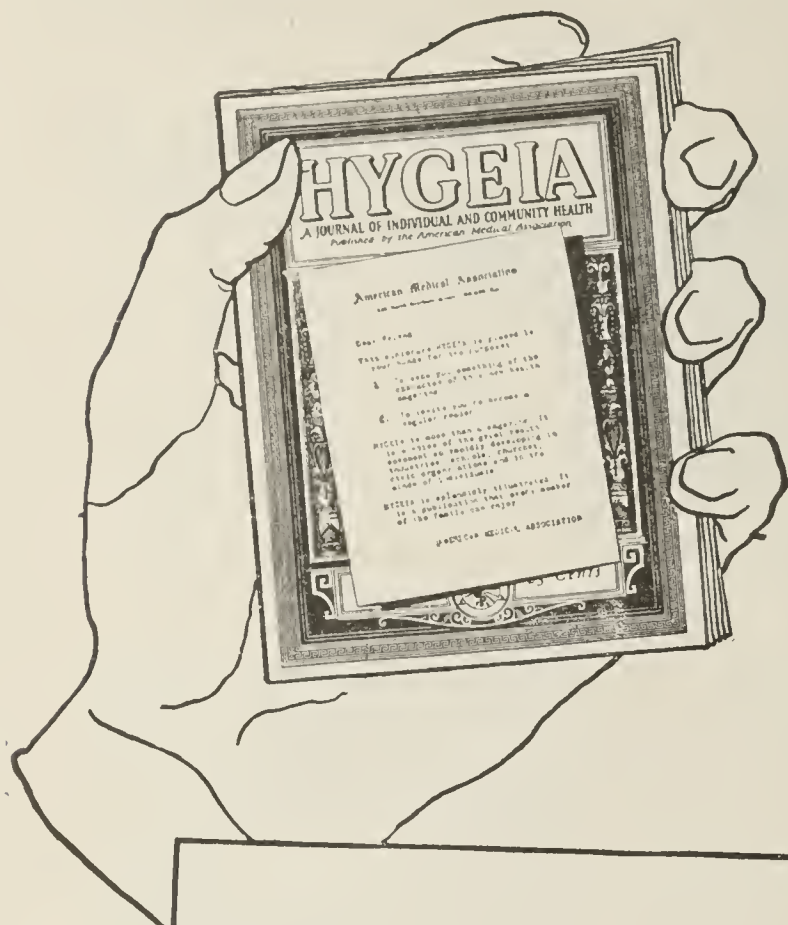
BAUER & BLACK

CHICAGO

NEW YORK

TORONTO

Bauer & Black



PUT HYGEIA into These Waiting Hands

These are the people who have special need of HYGEIA, who will appreciate having the physician mention this new Journal of Individual and Community Health to them, who will be interested in seeing a sample copy or one of the miniature HYGEIAS—

MINISTERS Since those who are the spiritual advisers of men are so often called into homes where sickness is, since these ministers are also looked upon as leaders in all sorts of civic uplift because moral and physical well-being are so closely related, the "doctor of souls" will be particularly interested in the service HYGEIA can give him. Authentic material for sermons and lectures that have a practical message for society will be found in every issue.

TEACHERS Now that physical examinations are rapidly becoming part of the school curriculum, and since the mental development of the child is so recognizedly related to the physical development, the instructor needs the information HYGEIA can give him. The teacher of biology, physiology, sex hygiene, domestic science, and physical training will constantly find in it material for classroom talks.

NURSES The broader significance of the health movement, presented in a readable manner in HYGEIA, will help the nurse in answering many questions she is asked. The more general health knowledge the nurse has the more successful she will be in her profession.

PUBLIC HEALTH WORKERS

News of what other cities and communities are doing along the lines of health improvement, facts about quarantine, prevention of contagious disease, and many other features of HYGEIA will be a constant source of inspiration to the health worker.

CLUB WOMEN The woman who wants to be really informed on the science of health, who is looking for help in carrying out a constructive program through her club, who is interested in making her own home a center of wholesome enjoyment of life needs HYGEIA.

EDITORS Because he appreciates the importance of filling his paper with facts that are really helpful to his readers the editor will find HYGEIA a veritable mine of reliable information and material for editorials which will have a direct influence on community conditions.

There are many other progressive citizens in your community who need HYGEIA. Order a packet of miniature HYGEIAS and distribute them among these people. Above all be sure that HYGEIA has a prominent place on your reception room table. Every aid given HYGEIA is a direct help to the cause of scientific medicine.

— — — — — CUT HERE — — — — —

American Medical Association,
535 N. Dearborn St., Chicago.

Please send me a free packet of miniature HYGEIAS—the 3½ by 5 inch replicas.

Name

Street

City

State

I enclose \$3 for one year's subscription to HYGEIA beginning with the current issue.

New York Post-Graduate Medical School and Hospital

DEPARTMENT OF ROENTGENOLOGY

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9:30—11	*Routine Case Reporting With Advanced Class in Interpretation X-Ray Course No. 3 (Daily)					
11—12	*X-Ray Courses No. 1 or No. 4					Motor Meal and Colon Cases only on Saturday
12—12:45	‡Seminar Courses Eye, Ear, Nose and Throat Genito-Urinary	‡Heart and Lungs	‡Gastro-Intestinal Tract	‡Osseous System	‡Roentgenotherapy	
1:15—2		*Normal Roentgen Anatomy No. 2	*Normal Roentgen Physiology No. 2	*Normal Roentgen Anatomy No. 2	*Physics and Mathematics in Relation to Radiology	*Technique X-Ray Courses No. 1 or No. 4
2—3	*Technique X-Ray Courses No. 1 or 4	*Routine Fluoroscopy X-Ray Course No. 2 or No. 3 (Daily except Saturday)			‡Fluoroscopy	
3—4		*X-Ray Courses No. 2 or No. 3 Intra-Thoracic Lesion	*X-Ray Courses No. 2 or No. 3 Diseases of Gastro-Intestinal Tract	*X-Ray Courses No. 2 or No. 3 Diseases of Osseous System	*X-Ray Courses No. 1 or No. 4	
4—4:45		Radiographic Interpretation	Radiographic Interpretation	Radiographic Interpretation		

*Special Courses.
‡Seminar Matriculants.

SPECIAL COURSES IN ROENTGENOLOGY

BASIC COURSES

Course No. 1—Technique—Principles and Practice of Roentgenology. Monday and Friday at 2:30 p. m. Saturday at 1:30 p. m., and 11-12 on Monday by arrangement. Fee, \$100.

Course No. 2—Fluoroscopy and plate interpretation. Tuesday, Wednesday and Thursday at 2:00 p. m. Fee, \$100.

These courses are of six weeks duration and alternate with courses 3 and 1 every other two months.

Courses 1 and 2 may be combined in a six weeks period. Fee, \$175. (Classes limited to 8 matriculants, minimum 4.)

ADVANCED COURSES

Course No. 3—Fluoroscopy and plate interpretation. Tuesday, Wednesday and Thursday at 2 p. m. and daily at 9:30 p. m. Fee, \$100.

Course No. 4—Roentgen Therapy. Monday and Friday at 2:30 p. m.; Saturday at 1:15 p. m. Also 10:30 a. m. on selected days. Fee, \$100. These courses are of six weeks duration and alternate with courses 1 and 2 every other two months. Courses 3 and 4 may be combined in a six weeks period. Fee, \$175. (Classes limited to 8 matriculants, minimum 4.) Courses 3 and 4 are open to matriculants who have satisfactorily completed courses 1 and 2.

Course No. 5—A special course of three months offered to matriculants who have satisfactorily completed all of the foregoing. Fee, \$100.

Special pamphlet furnished upon request.

For further particulars address DEAN OF THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, 305 E. 20th Av. New York City

Post-Graduate Teaching in All Departments

Special Attention given to Short Courses, Clinical and Laboratory, Operative and Experimental.

Work on Cadaver and Dogs.

Write for book of information to

The Post-Graduate Hospital and Medical School of Chicago — or — The Chicago Polyclinic

Emil Ries, M.D., Sec'y

Dept. B, 2400 S. Dearborn St.

M. L. Harris, M.D., Sec'y

Dept. B, 219 W. Chicago Avenue

SPECIAL POST-GRADUATE WORK IN

Ophthalmology, Otology, Laryngology and Rhinology

Practical and Didactic Courses in Anatomy, Physiology, Pathology, Diagnosis, Treatment, Refraction and Operative Surgery in these specialties. Address

THE CHICAGO POLICLINIC

M. L. HARRIS, M.D., Secretary

219 W. Chicago Ave.,

CHICAGO, ILL.

ILLINOIS POST-GRADUATE MEDICAL SCHOOL Inc.

Gives Clinical courses in all branches of Medicine.

Special courses in Physical Diagnosis, Laboratory and X-Ray technique and diagnosis, Blood Chemistry, Radiological Surgical Diagnosis, Didactic courses on the Eye and Operative Surgery course on Ear, Nose and Throat.

Special Operative courses in Surgery on Cadaver and Dog. Surgical Diagnosis.

Write for literature.

Address JAMES A. CLARK, M.D., Secretary

1844 W. Harrison Street, CHICAGO, ILL.

THE LABORATORY OF SURGICAL TECHNIQUE

Post Graduate Instruction and Practice in Surgical Technique and Surgical Anatomy

The regular TWO WEEKS' COURSE combines CLINICAL TEACHING with the PRACTICAL WORK that has been given at the Laboratory for the past eight years.

SPECIAL INSTRUCTION can be had in one or more operations.

PERSONAL INSTRUCTION—ACTUAL PRACTICE—EXCEPTIONAL EQUIPMENT

EMMET A. PRINTY, M.D., Director
Phone Lincoln 9210

2040 Lincoln Ave., Chicago
(formerly at 7629 Jeffery Avenue)

FACULTY

Dr. Emmet A. Printy
Dr. D. N. Eisendrath
Dr. A. A. Strauss
Dr. Philip H. Kreuseher
Dr. Edmund Andrews
Dr. Wm. J. Pickett
Dr. Geo. J. Musgrave

CONSULTING FACULTY

Dr. E. Wyllis Andrews
Dr. Carl Beck
Dr. William R. Cubbins
Dr. Nelson M. Percy
Dr. Thomas J. Watkins
Dr. Clifford C. Robinson
Dr. C. R. G. Forrester

Johns Hopkins University

Medical School

The Medical School is an Integral Part of the University and is in the closest Affiliation with the Johns Hopkins Hospital

ADMISSION

Candidates for admission must be graduates of approved colleges or scientific schools, with at least two years' instruction, including laboratory work, in chemistry, and one year each in physics and biology, together with evidence of a reading knowledge of French and German.

Each class is limited to 75 students, men and women being admitted on the same terms. *Except in unusual circumstances, applications for admission will not be considered after July 1st.*

If vacancies occur, students from other institutions desiring advanced standing may be admitted to the second or third year, provided they fulfil our requirements and present exceptional qualifications.

INSTRUCTION

The academic year begins the Tuesday nearest October 1st, and closes the second Tuesday in June. The course of instruction occupies four years, and especial emphasis is laid upon practical work in the laboratories, in the wards of the Hospital and in the Dispensary.

TUITION

The charge for tuition is \$300 per annum, payable in three instalments. There are no extra fees except for rental of microscope, certain expensive supplies, and laboratory breakage.

The annual announcement and application blanks may be obtained by addressing the

Dean of the Johns Hopkins Medical School

Washington and Monument Sts.

BALTIMORE, MD.

Summer Work for Graduates in Medicine

Beginning Monday, June 4th, and ending Saturday, July 14th, a course in medical diagnosis and treatment, including laboratory exercises in gross and clinical pathology, ward rounds, group work in physical diagnosis and clinics in dermatology and syphilis and general medical clinics will be offered. The course will be limited to thirty students, fee \$100. Applications should be made to the Dean's Office.

MANHATTAN EYE, EAR & THROAT HOSPITAL

SCHOOL OF POST GRADUATE INSTRUCTION

APPLICATIONS for the fifth class of our nine months' course, beginning the 1st of October, and which is limited to eighteen students, will be considered by the Committee on June 29th. Certificates awarded only after examination on completion of course. Fee, \$900.00.

Competitive examination for the appointment of Internes will be held at the hospital on June 28th, for vacancies in July, October and January. Further information and application blanks on request.

SECRETARY, 210 East 64th St., New York City

SAINT LOUIS CLINICS

This organization makes available to visiting physicians the vast clinical opportunities of St. Louis. All the specialties of medicine are represented. A bulletin is issued daily, listing all important clinics. It is furnished free of charge to visiting physicians. Special courses are arranged from time to time.

For further information address

SAINT LOUIS CLINICS

3525 Pine Street

ST. LOUIS, MO.

HARVARD MEDICAL SCHOOL

COURSES FOR GRADUATES

INSTRUCTIONS OFFERED IN

The Usual Laboratory and Clinical Subjects

For further particulars apply to

Assistant Dean, Courses for Graduates,
Harvard Medical School, Boston, Mass.

The Children's Memorial Hospital

In affiliation with

THE UNIVERSITY OF CHICAGO

Offers

GRADUATE COURSES IN PEDIATRICS

For Particulars address

The Children's Memorial Hospital, 735 Fullerton Ave., Chicago, Ill.

NEW YORK EYE AND EAR INFIRMARY

Special Courses of Post Graduate Instruction in

Operative Surgery of the Eye and Ear.

Refraction.

Muscle Anomalies.

Ophthalmoscopy.

External Eye Diseases.

Functional Testing of the Eye.

Minor Otology.

Histology and Pathology.

Address, Secretary of the School of Ophthalmology and Otology, 218 Second Ave.

CLINICAL COURSES FOR GRADUATES OF MEDICINE
Los Angeles Medical Department

University of California

This institution possesses very good clinical facilities in both dispensary and associated hospital departments.

Clinical Courses open throughout the year. Los Angeles is a marvelously growing city of more than 800,000 population. For catalog, etc., write to

DR. GEORGE H. KRESS, Dean, 737 N. Broadway, LOS ANGELES, CALIFORNIA

W. A. FISHER, M.D., President H. W. WOODRUFF, M.D., Vice-Pres.

Chicago Eye, Ear, Nose and Throat College

POST-GRADUATE INSTRUCTION

Diseases of the Eye, Ear, Nose and Throat, and Fitting of Glasses

A House Physician is Appointed in June and December

Open the year round. Write for announcement to

J. R. HOFFMAN, M.D., Secretary, 235 WEST WASHINGTON ST., CHICAGO.

HERMAN KNAPP MEMORIAL EYE HOSPITAL

School of Ophthalmology

A six months' course is open to qualified medical practitioners. The first three months are devoted to all-day instruction in the following subjects:

- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| 1. Daily Clinics in Dispensary. | 5. Ophthalmoscopy. | 9. Pathology. |
| 2. Refraction. | 6. External Diseases of the Eye. | 10. Ophthalmological Neurology. |
| 3. Ophthalmological Quiz. | 7. Physiological Optics. | 11. Diagnosis. |
| 4. Muscular Anomalies. | 8. Operative Surgery. | |

During the second three months practical instruction is given in the Hospital and Clinic. A new course starts October, January, April and July. A vacancy will occur on the House Staff July 1, 1924.

R. GERALD H. GROUT, Secretary

500 West 57th Street, New York City, N. Y.

NORTHWESTERN UNIVERSITY

MEDICAL SCHOOL

Arthur I. Kendall, Ph.D., Dr.P.H., Dean

Requires for admission two years of college work including courses in inorganic chemistry, qualitative analysis, organic chemistry, physics, biology and either French or German. Seven hospitals. Dispensaries. Seven-year combined courses. For description of courses and advantages address

THE REGISTRAR, 2431 South Dearborn St., Chicago

NEXT SESSION BEGINS SEPTEMBER 29, 1922

RUSH MEDICAL COLLEGE

IN AFFILIATION WITH

THE UNIVERSITY OF CHICAGO

Graduate instruction in Laryngology and Otology, for a limited number, beginning the first of October, January, April and July.

For particulars, address

RUSH MEDICAL COLLEGE, Chicago, Ill.



The College of Medicine of the University of Illinois

Minimum admission requirements fifteen units of work from an accredited high school, eight of which are prescribed, and in addition, two year's work in a recognized college or university, including the following prescriptions—chemistry, twelve semester hours; physics, eight semester hours; biology, eight semester hours; English, six semester hours; modern language, six semester hours.

The course in medicine covers 5 years, including the interne year. Students meeting certain grade requirements will receive the degree of B.S. at the completion of the second year. Well equipped laboratories and good hospital facilities. Located in the heart of Chicago's great medical center. For further information, address, Secretary, Box 50. COLLEGE OF MEDICINE of the UNIVERSITY OF ILLINOIS, Congress and Honore Sts., CHICAGO

University of Pennsylvania

The Medic-Chirurgical
College

Graduate School
of Medicine

Courses for Physicians

Regular Graduate Medical Courses of One to Three Years' Duration, Leading to Appropriate Certificates or Graduate Medical Degrees in the following separately organized and conducted Clinical and Medical Science Departments:

Internal Medicine, Pediatrics, Neuropsychiatry, Dermatology-Syphilology, *Radiology, Surgery, Gynecology-Obstetrics, Orthopedics, Urology, Ophthalmology, Otolaryngology, *Biochemistry, *Anatomy, *Physiology, *Pathology, *Bacteriology-Immunology, *Pharmacology.

In every course the registration quota is limited. All of the stated Regular Courses begin annually in October except in the cases of departments designated by the asterisks, wherein the courses begin whenever vacancy occurs in the quota. A "year" is eight or more months, according to the department concerned.

Certain *Special Courses* (special subdepartmental subjects) are also available, as follows: Tuberculosis, Clinical and Sociologic; Cardiology; Gastroenterology; Protein Sensitization; Parasitology and Tropical Medicine; Infant Feeding; Intubation; Clinical Psychiatry; Clinical Dermatology; Neuroanatomy and Neuropathology; Neurotology; Operative Surgery and Surgical Anatomy; Orthopedic Diagnosis; Operative Orthopedics; Ophthalmic Operations; Ocular Perimetry; Ocular Musculature; Ocular Refraction; Laryngoscopy, Bronchoscopy and Esophagoscopy; Otolaryngologic (cadaver) Operations.

Address: Dean, Graduate School of Medicine, University of Pennsylvania, Philadelphia

UNIVERSITY of LOUISVILLE SCHOOL OF MEDICINE

Eighty-sixth session will begin September 17, 1923. Strict Class A requirements. Clinical teaching in new City Hospital of 400 beds, in which salaried teachers of medicine, surgery and laboratory sciences form nucleus of staff. Combined B.S. and M.D. degrees in six years. Classes limited to 75, 65, 60 and 60. Applications for admission should be filed as early as possible. For further information address the Dean
101 West Chestnut Street
LOUISVILLE, KY.

WASHINGTON UNIVERSITY SAINT LOUIS

Graduate and undergraduate courses. Each undergraduate class is limited to seventy-five. Applicants for admission must be filed by June 15th. For full particulars, address
The Dean, Washington University School of Medicine, St. Louis, Mo.

NEW YORK UNIVERSITY MEDICAL DEPARTMENT

The University and Bellevue Hospital Medical College Session
1923-1924 begins Wednesday, September 19, 1923

The class is limited. For bulletin or further information,
address

DR. JOHN WYCKOFF, Secretary
26th Street and First Ave. NEW YORK, N. Y.

THE JEFFERSON MEDICAL COLLEGE of PHILADELPHIA

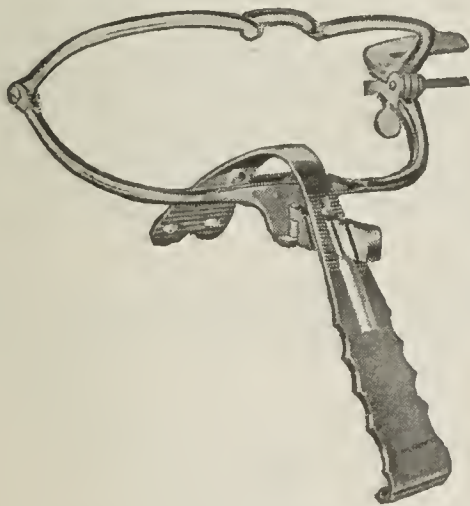
Ninety-Ninth Annual Session begins Sept. 25, 1923, and ends June 1, 1924

FOUNDED 1825. A CHARTERED UNIVERSITY SINCE 1838.

One of the oldest and most successful medical schools in America.
ADMISSION: Not less than two college years leading to a degree, including specified science and language courses.

FACILITIES: Well equipped laboratories; separate Anatomical Institute; teaching museums; free libraries; unusual and superior clinical opportunities in the Jefferson Hospital, Jefferson Maternity and Department for Diseases of the Chest, with instruction privileges in six other hospitals.
APPLICATIONS should be made early. Address

ROSS V. PATTERSON, M.D., DEAN



A VALUABLE ASSISTANT WOLF MOUTH GAG AND TONGUE DEPRESSOR

Holds mouth open and tongue out of the way—the surgeon can give his entire attention to operation.

Doesn't crowd tongue back and interfere with breathing. Adjustable to any size mouth—adults or children. Tongue depressor may be swung to right or left and mouth-gag and tongue depressor may be used separately.

Reprint on request

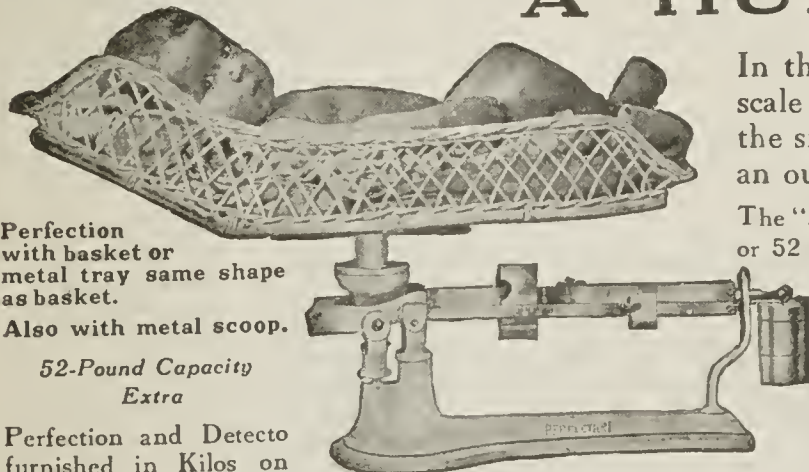
PRACTICAL, CONVENIENT and DURABLE

E. B. Meyrowitz

520 FIFTH AVE.

New York

A HUMAN BAROMETER



Perfection with basket or metal tray same shape as basket.

Also with metal scoop.

52-Pound Capacity
Extra

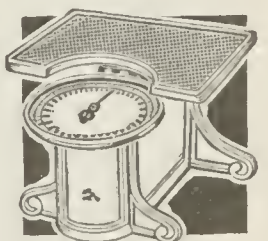
Perfection and Detecto furnished in Kilos on request. Beautifully designed and white enameled.

In the "Perfection" springless scale we offer you a scale that is not only absolutely accurate but registers the smallest fraction of a gain or loss, such as $\frac{1}{4}$ of an ounce.

The "Perfection" registers every $\frac{1}{4}$ of an ounce up to 37 pounds or 52 pounds (52 pounds on request only). The simple construction and the fact that it has no springs give you permanent accuracy, durability and compactness. A few important users of the "Perfection": Post-Graduate Hospital of New York; Columbia Hospital of Washington, D. C.; American Hospital of Chicago, Ill.

If not at your dealer's write us direct.

THE JACOBS BROS. CO. 71 Warren St., NEW YORK CITY Dept. E.



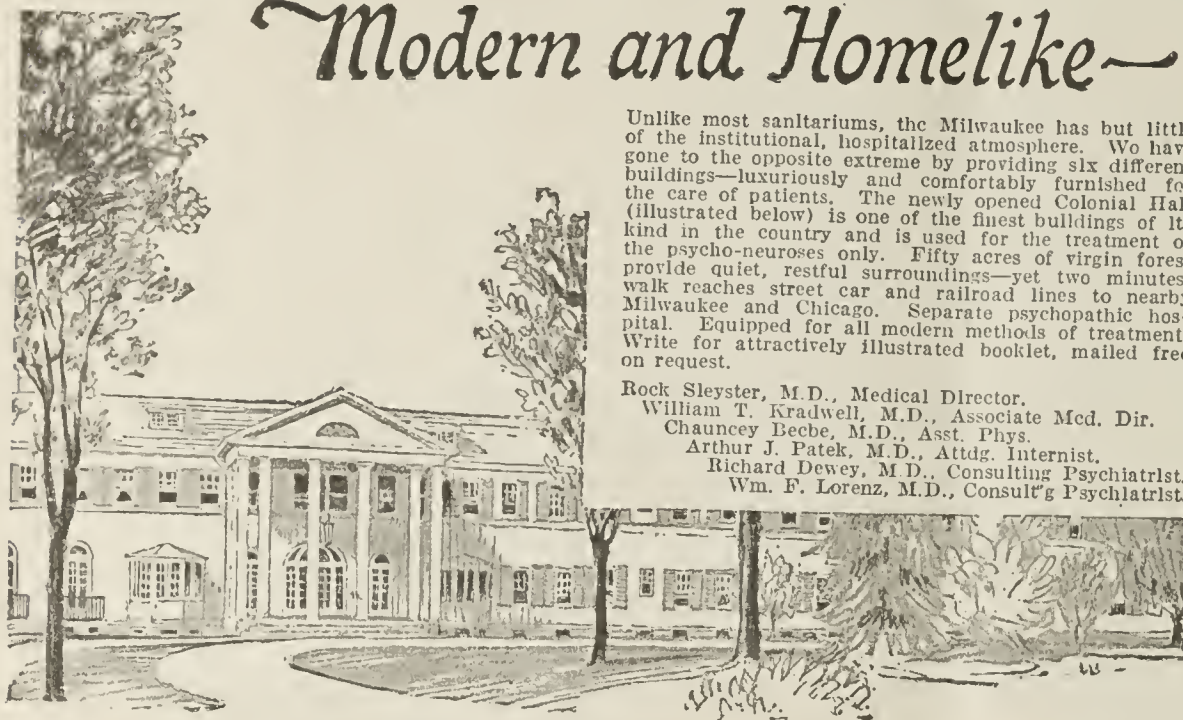
DETECTO

The "Detecto" registers every pound up to 300 pounds, takes less than 12 inches space, has no coil springs, no loose weights.

Modern and Homelike—

Unlike most sanitariums, the Milwaukee has but little of the institutional, hospitalized atmosphere. We have gone to the opposite extreme by providing six different buildings—luxuriously and comfortably furnished for the care of patients. The newly opened Colonial Hall (illustrated below) is one of the finest buildings of its kind in the country and is used for the treatment of the psycho-neuroses only. Fifty acres of virgin forest provide quiet, restful surroundings—yet two minutes' walk reaches street car and railroad lines to nearby Milwaukee and Chicago. Separate psychopathic hospital. Equipped for all modern methods of treatment. Write for attractively illustrated booklet, mailed free on request.

Rock Sleyster, M.D., Medical Director.
William T. Kradwell, M.D., Associate Med. Dir.
Chauncey Beebe, M.D., Asst. Phys.
Arthur J. Patek, M.D., Attdg. Internist.
Richard Dewey, M.D., Consulting Psychiatrist.
Wm. F. Lorenz, M.D., Consult'g Psychiatrist.



Milwaukee Sanitarium, Wauwatosa, Wis.
For Nervous and Mental Diseases—Established 1884

Dr. Moody's Sanitarium, San Antonio, Texas, For Nervous and Mental Diseases, Drug and Alcohol Addictions. Established 1903. Location and Climate delightful. Approved diagnostic and therapeutic methods: 7 buildings, each with separate lawns, bath rooms ensuite; 100 rooms; modern equipments; 15 acres, 350 shade trees.
T. L. MOODY M.D., Supt., and Res. Phys. J. A. McINTOSH M.D., Res. Phys.

DR. GEORGE MICHELL'S FARM
PEORIA For treatment of Mental Diseases ILLINOIS

GRACE LUTHERAN SANATORIUM FOR TUBERCULOSIS San Antonio, Texas

A MODERN institution in beautiful San Antonio. Climate unexcelled the year around for the treatment of tuberculosis. Private rooms with bath and sleeping porches; individual cottages; high-class accommodations; moderate rates; complete medical staff.

For booklet and information address

REV. PAUL F. HEIN, Supt., P.O. Box 214, SAN ANTONIO, TEXAS



Saint Joseph Sanatorium Albuquerque, N. Mexico. For the Tuberculous

ALTITUDE 5,000 FEET

A THOROUGHLY modern institution complete in every detail. Designed to fulfil not only every scientific requirement but to furnish as well the maximum of comforts. Main building with private sleeping porches and baths. Detached cottages with and without private baths and sleeping porches. Steam heated and electric lighted throughout. Hotel cuisine. Complete X-ray and electro-therapeutic department. Roof garden for Heliotherapy. Nurses' Training School. Physicians always on duty. Particulars gladly furnished.

IDEAL CLIMATE

Dr. Leroy S. Peters, Dr. Arno Klein, Medical Directors.

WRITE FOR DESCRIPTIVE BOOKLET

THE CINCINNATI SANITARIUM Inc. For Mental and Nervous Diseases 1873

A strictly modern hospital fully equipped for the scientific treatment of nervous and mental affections. Situation retired and accessible. For details write for descriptive pamphlet.



F. W. LANGDON, M.D., and ROBERT INGRAM, M.D., Visiting Consultants.
D. A. JOHNSTON, M.D., Med. Dir. ELLIOTT HENDRICKS, M.D., Asst. Med. Dir.
H. P. COLLINS, Business Manager, Box No. 4, College Hill, CINCINNATI, OHIO

CALIFORNIA CLIMATE for HEALTH

Redlands Heights Sanatorium

Redlands, California



ADMINISTRATION BLDG.

Rest and Winter Sunshine.

No T. B. or contagious cases.

IDEAL LOCATION.

Special attention given to diet.

Modern Hospital Equipment.

Accommodations Limited

Write for Literature and Rates

E. W. Burke, M.D.

John L. Avey, M.D.
Resident Physicians

RADIUM RENTAL SERVICE

BY
THE PHYSICIANS RADIUM
ASSOCIATION of CHICAGO, Inc.

Incorporated under the laws of Illinois, not for profit, but for the purpose of making radium available to Physicians to be used in the treatment of their patients. Radium loaned to Physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

Careful consideration will be given inquiries concerning cases in which the use of Radium is indicated

THE PHYSICIANS RADIUM ASSOCIATION

1100 Tower Bldg., 6 N. Michigan Ave.
CHICAGO, ILL.

Telephones;
Randolph 6897-6898

Managing Director:
Wm. L. Brown, M.D.

BOARD OF DIRECTORS

William L. Baum, M.D.

Wm. L. Brown, M.D.

Frederick Menge, M.D.

Thomas J. Watkins, M.D.

Louis E. Schmidt, M.D.



THE GLEN SPRINGS

WATKINS GLEN, N. Y. ON SENECA LAKE

William E. Leffingwell, President

CO-OPERATION with the home physician is a vital part of The Glen Springs system. The natural and scientific facilities are available to him for treatment of his patients under his personal supervision. His advice and instructions are always carefully considered. He is kept in touch with the case through letters and reports from The Glen Springs Medical Staff during the entire period of his patient's stay.

Facilities include Nauheim Baths, given with natural calcium chloride brine, clinical and X-ray laboratories, and equipment for hydrotherapy, electrotherapy and mechanotherapy, under specialized professional direction.

The Glen Springs is in beautiful Finger Lakes Region of New York State. Clear, dry, invigorating atmosphere. Every comfort for your patient—and your patient's family. Attractive golf course.

OPEN THE YEAR ROUND

Illustrated and detailed booklets prepared especially for the Medical Profession, on request

On the Northern Central division of the Pennsylvania Railway, the Pennsylvania division of the New York Central, and the main line of the Lehigh Valley. By the Lackawanna and Erie Roads, connection is made at Elmira by the Northern Central Railroad.



16 Miles

North

A WELL APPOINTED SANITARIUM

Located on the shore of Lake Michigan. For the care of Convalescents, Treatment of Nervous Diseases, Insomnia, Affections of the Heart, and Disorders of the Stomach and Kidneys.

NORTH SHORE HEALTH RESORT

Complete Clinical Laboratory with modern High Frequency Outfit—Nauheim Baths—Vierzelen Baths—Hydrotherapy—Medical Gymnastics—Massage and Electricity. Address all communications to

NORTH SHORE HEALTH
RESORT,
Winnetka,
Ill.

Dr. Eugene Chaney
Medical Director

Dr. Georgina A. Grotham
Associate Physician

Dr. Anne H. M. Sharpe
Associate Physician

William R. Whitaker
Manager

of

Chicago



Building absolutely fireproof

WAUKESHA SPRINGS SANITARIUM

FOR NERVOUS DISEASES

BYRON M. CAPLES, M.D.
Superintendent

WAUKESHA : WIS.

DOCTORS' COLLECTIONS

EXTRACT FROM OUR CONTRACT

Commission on money paid by debtors is as per schedule below. The Association agrees to make collections at no expense to client. Monthly reporting system and settlements. Contract limit six months excepting promised payments. **RATES**—25% on accounts \$100 and over; 33 1-3% on accounts \$15 to \$99.99; 50% under \$15. Positively no other charge.

Signed..... Address.....
TEAR OUT, sign, and mail this advertisement with list of accounts AT ONCE.

PHYSICIANS AND SURGEONS ADJUSTING ASSOCIATION
Railway Exchange Bldg., Desk O, Kansas City, Mo.

Sanatorium Care for TUBERCULOSIS

The Baptist Sanatorium at El Paso was planned by great tuberculosis experts. It is designed to give the very best care and sanatorium regime for patients afflicted with this disease. We have trained and skilled workers in every department in the Sanatorium, so that the best of service is assured. For catalog and terms, address

H. F. Vermillion, Supt., El Paso, Texas

SUNMOUNT SANATORIUM SANTA FE, N. M. For TUBERCULOSIS

Unusual advantages of climate and location, highest class modern accommodations and scientific equipment with the romantic atmosphere of old New Spain. Booklet on request.

FRANK E. MERA, M.D., Medical Director
SUNMOUNT, Box 10 Santa Fe, New Mexico

Cragmor Sanatorium

Austin Bluffs, Colorado Springs, Colo.

STAFF: Alexius M. Forster, M.D., Physician-in-Chief; F. M. Houck, M.D., Supt.; J. T. Scott, M.D., T. J. Kinsella, M.D., Assoc. Physicians; S. J. Chapman, M.D., Laryngologist; W. F. Drea, M.D., Oral Surgery; C. T. Ryder, M.D., Director of Laboratory; J. A. Newman, M.D., Clinical Pathologist; Gerald B. Webb, M.D., George B. Gilbert, M.D., J. A. Sevier, M.D., Consultants.

TUBERCULOSIS IN ALL ITS FORMS RECEIVED

A Home School for Subnormal Children THE BANCROFT SCHOOL

One of the oldest and best schools of its kind in existence. A winter and a summer home. Equipment unexcelled. For information address

Box 150, Haddonfield, N. J.

E.A. FARRINGTON, M.D. JENZIA COULSON COOLEY

Health Home

Individual Supervision MATERNITY CASES
Real Home Life CONVALESCENTS

Adamsburg, Pa. Lincoln Highway
G. M. DICKSON, M.D. Pittsburgh 20 miles
Greensburg 6 miles

Marshall Sanitarium TROY, N. Y.

A Private Hospital for the care and treatment of Mental and Nervous Cases. Beautiful location and modern equipment. Terms moderate.

C. J. PATTERSON, M.D., Physician in Charge

The Easton Sanitarium EASTON, PENNSYLVANIA

Established 25 years. Licensed. A PRIVATE INSTITUTION for the care and treatment of nervous and mental disorders, conditions of semi-invalidism, aged people and selected cases of drug addiction and alcoholism. Homelike atmosphere; personal care; outdoor recreation and occupation year round; delightfully located overlooking the Delaware River and the city of Easton; 2 hours from New York City; 68 miles from Philadelphia. For booklet and particulars address Medical Director, or phone 166 Easton.

HOMEWOOD SANITARIUM



OF GUELPH, ONTARIO, Ltd.

A private neuropsychiatric hospital. Especial attention to the study of early or impending nervous and mental diseases. Ample grounds; varied occupations and diversions. Location in one of the healthiest cities of Canada.

Address

Dr. C. B. Farrar
Medical Superintendent

HENDRICKS-LAWS SANATORIUM EL PASO, TEXAS

C. M. Hendricks and J. W. Laws, Medical Directors

Located at an ideal spot for the treatment of tuberculosis and one of the best equipped private institutions in this country.

For Catalogue and Particulars Address
G. R. Daniels, Business Manager

MODERN AND
FIREPROOF

Arizona for Tuberculosis

PHOENIX SANATORIUM PHOENIX, ARIZONA

A home for health seekers in the Land of the Orange. Moderate elevation. Perpetual sunshine. Ideal dry climate. Neither dust nor sand storms. Individual bungalows. Private rooms and sleeping porches. Booklet on request.

Address GEO. H. WOODALL, M.D., Medical Director and Supt.
Phoenix, Arizona

THE NEW MEXICO COTTAGE SANATORIUM

Silver City, New Mexico

A HIGH GRADE, PERFECTLY EQUIPPED INSTITUTION FOR THE TREATMENT OF TUBERCULOSIS IN A WONDERFUL CLIMATE. ALTITUDE 6,000 FEET. HERE OUTDOOR LIFE IS A PLEASURE AT ALL TIMES OF THE YEAR. SEND FOR BOOKLET A.

E. S. Bullock, Physician-in-Chief. Wayne MacVeagh Wilson, Mgr.



Board of Directors: Drs. Norman Bridge, H. G. Brainard, J. H. McBride, W. J. Barlow, F. C. E. Mattison.

A Place for the Treatment of
Nervous and General Diseases
Near Pasadena, California

Situated in a grove of 20 acres of Live Oaks in the country near Pasadena. Large central building and cottages. All chronic organic disorders received. No cases of Tuberculosis or Insanity received.

STEPHEN SMITH Med. Director
Pasadena, California

Grandview Sanitarium Mental and Nervous Diseases Especial Feature of Treatment Is INDIVIDUAL CARE

A well wooded park of twenty-five acres, retired, yet accessible. Modern equipment.

Descriptive Circular on Request

T. A. RATLIFF, M.D.

Resident Medical Director

Glenway Avenue, Price Hill, - CINCINNATI

"NORWAYS" HOSPITAL FOR GENERAL DIAGNOSIS AND NERVOUS DISEASES

1820 East 10th Street, Indianapolis, Ind.

Devoted to the solution of all problems in Medicine, particularly Neurology, based on intensive study, research examination and observation of each individual case. Staff of skilled specialists in close co-operation.

DR. ALBERT E. STERNE, Chief of Staff.

DR. LARUE D. CARTER, Med. Director.

THE MERCER SANITARIUM

FOR Nervous and Mild Mental Disorders, Alcoholism and Drug Addictions. Located at Mercer, Pa., midway between Pittsburgh and Erie. Farm of 75 acres, with registered, tuberculin-tested herd. Recreational measures emphasized, especially arts and crafts and outdoor pursuits. Modern laboratory facilities. Address

W. W. RICHARDSON, M.D.

Medical Director, Mercer, Pa.

(Formerly Chief Physician, State Hospital for Insane Norristown, Pa.)

ELLA OLIVER HOME, MEMPHIS, TENN.

A private maternity home for care of unfortunate young women during pregnancy and confinement. Hospital facilities and graduate nurse. Under board of Women's Christian Association. Adoption or board arranged for babies. Strictly confidential. Rates very reasonable.

Address ELLA OLIVER HOME, 903 Walker Ave. Memphis, Tenn., Phone Walnut 639



For Nervous and Backward Children

The Stewart Home Training School for children of retarded mental development is a private Home and School on a beautiful Country Estate in the famous Blue Grass region of Kentucky. Seven Buildings. Cottage Plan.

For illustrative catalog address

DR. JOHN P. STEWART, Box M, Frankfort, Ky.

Journal Wants Bring Results

OXFORD RETREAT and THE PINES



Write for Descriptive Booklet

A Private Hospital
for Nervous and
Mental Diseases,
Alcoholic and Nar-
cotic Inebriety

A Neuropathic
Hospital for
Women Only



OXFORD, OHIO

R. HARVEY COOK, M.D., Physician in Chief

Neuronhurst



Address Dr. MARY A. SPINK, Supt.

Dr. W. B. Fletcher's Sanatorium

For Nervous and Mental Diseases

Strictly psychopathic hospital for treatment of all forms of disease arising from organic or functional derangement of Brain and Spinal Cord. Buildings fully and modernly equipped. Electro- and Hydrotherapeutic advantages unexcelled. Physicians desiring to place patients in our care will receive every ethical attention.

1140 E. Market St., Indianapolis, Indiana

THE WINYAH SANATORIUM

OPERATED BY THE VON RUCK MEMORIAL SANATORIUM, Inc.
Established 1888 by Dr. Karl von Ruck, ASHEVILLE, N. C.

MEDICAL STAFF

Dr. R. E. Flack Dr. Geo. Alexander Dr. Edw. W. Schoenheit Dr. Louis Dienes

A modern and completely equipped institution for the treatment of tuberculosis. High-class accommodations. Strictly scientific methods. For particulars and rates write to WM. A. SCHOENHEIT, Business Manager.

(Please mention this journal)

DR. BARNES SANITARIUM

Stamford, Conn.

A Private Sanitarium for Mental and Nervous Diseases, also Cases of General Invalidism. Cases of Alcoholism and Drug Addiction accepted. A modern institution of detached buildings situated in a beautiful park of fifty acres, commanding superb views of Long Island Sound and surrounding hill country. Completely equipped for scientific treatment and special attention needed in each individual case. Fifty minutes from New York City. Frequent train service. For terms and booklet address

F. H. BARNES, M.D., Med. Supt. Telephone 1867 Stamford, Conn.

GREEN GABLES—Lincoln

THE DR. BENJ. F. BAILEY SANATORIUM NEBRASKA

Green Gables, operated by the Dr. Benj. F. Bailey Sanatorium Co. MAIN EXECUTIVE BUILDING for all non-contagious non-mental diseases. REST COTTAGE for selected mental cases. Solid brick and stone buildings widely separated. Twenty acres of land, independent water and lighting plants, fully equipped in every particular. Write for illustrated pamphlet giving full particulars and rates.

POTTENGER SANATORIUM

For Diseases of the Lungs and Throat
MONROVIA, CALIF.

F. M. Pottenger, A.M., M.D., LL.D., Med. Director.
J. E. Pottenger, A.B., M.D., Asst. Med. Director, and Chief of Laboratory.
Situated in a beautiful park on the southern slope of the Sierra Madre Mountains. Magnificent valley and mountain views. Elevation 1,000 feet. Winters delightful, summers cool and pleasant. Rooms and bungalows with modern conveniences. Thoroughly equipped for the scientific treatment of tuberculosis. Competent staff. Close personal attention. Excellent cuisine. Near Los Angeles and Pasadena.
Address POTTENGER SANATORIUM, Monrovia, Calif., for particulars.
Los Angeles Office, 1045-6-7 Title Insurance Bldg., Fifth and Spring Sts.

WALLACE-SOMERVILLE SANITARIUM

Succeeding the Petty & Wallace Sanitarium
MEMPHIS, TENN.

Walter R. Wallace, M.D., William G. Somerville, M.D. For the treatment of DRUG ADDICTIONS, ALCOHOLISM, MENTAL AND NERVOUS DISEASES. Located in the Eastern suburbs of the city. Sixteen acres of beautiful grounds. All equipment for care of patients admitted.

DR. GIVENS' SANITARIUM

THE STAMFORD HALL COMPANY, STAMFORD, CONN.

For scientific treatment of nervous and mental diseases, drug addiction and alcoholism, and general invalidism. Detached buildings insure privacy. Beautiful park of 100 acres. Exceptional facilities in hydro and electro therapy and massage. Particular attention paid to amusement of patients—moving pictures, sports, etc. Occupational work under skilled director—needle work, bead work, weaving, basketry, etc. Special facilities for care of elderly people. Fifty minutes from Grand Central Station on the New Haven Railroad.

FRANK W. ROBERTSON, M.D., the President and Medical Director, can be seen at his New York City Office, 412 West End Avenue, Corner 80th St., on Mondays, Wednesdays or Fridays, at Noon. New York Telephone, Schuyler 7533.

Glenmary Sanitarium

OWEGO, TIOGA CO., N. Y.

For the care and treatment of a limited number of selected cases of Nervous and Mental Diseases. Voluntary cases admitted. Epileptics treated and cared for. Absolute privacy and special ethical treatment for Alcoholic and Drug Addictions. Special accommodations for feeble-minded cases. Close co-operation at all times with the family physician.

ARTHUR J. CAPRON, M.D., Physician in charge

THE WILGUS SANITARIUM

ROCKFORD, ILL.

For Mental and Nervous Diseases and Selected Cases of Alcoholic or Narcotic Addiction

Under the supervision of DR. SIDNEY D. WILGUS, formerly superintendent Elgin and Kankakee State Hospitals. Address DR. SIDNEY D. WILGUS, Box 304, Rockford, Ill. Long distance Bell phone 3767. Chicago address, 25 E. Washington St. Telephone Central 1098

Send for a pamphlet.

APPALACHIAN HALL

ASHEVILLE, NORTH CAROLINA

An Institution for the treatment of Nervous and Mental Diseases, Selected Cases of Alcoholic and Drug Habituation.

Located in a beautiful park of twenty-five acres, in one of the famous all-the-year-round climates of the world.

The two physicians in charge reside in the Institution and devote their entire time to the care and treatment of the patients.

For information and booklet write Drs. Griffin and Griffin.

The Norbury Sanatorium

JACKSONVILLE ILLINOIS

Incorporated and Licensed

For the treatment of Nervous and Mental Disorders

Dr. Frank P. Norbury, Medical Director
Dr. Albert H. Dollear, Superintendent
Dr. Frank Garm Norbury } Associate Physicians
Dr. Samuel N. Clark

Address Communications

THE NORBURY SANATORIUM, Jacksonville, Illinois

Physicians interested in the Pollen Therapy of Hay-Fever will find a very complete discussion of the most successful methods of treatment in the paper by Harry S. Bernton, M.D., Associate Professor of Hygiene, Georgetown University School of Medicine, and Special Expert United States Public Health Service, published in *THE JOURNAL of the AMERICAN MEDICAL ASSOCIATION*, May 5th.

It is gratifying to us and will be of interest to physicians that Dr. Bernton found satisfactory the methods developed in the Lederle Antitoxin Laboratories for the preparation and testing of Pollen Antigens. Dr. Bernton states:

"Clock is deserving of much credit for calling attention to the fact that chemical analysis fails to demonstrate the antigenic qualities of pollen extracts. Such analysis reveals only the amount of pollen protein present in solution. Clock has shown that a practical method of determining the antigenic properties of pollen extract is by means of the complement fixation test. * * * *
He has, furthermore, devised a method of preparing a stable antigen, by the use of concentrated salt solution and glycerol. Pollen extracts, prepared by his method, have remained for fourteen months without loss of complement binding capacity. With his glycerolated pollen antigen Clock obtained relief from symptoms in 84% of 1578 cases."

The researches reported by Clock, referred to in Dr. Bernton's paper, were carried out in the Lederle Antitoxin Laboratories. Pollen Antigens Lederle, since their introduction in 1914, have been prepared by extracting the pure mature pollen grains in 66 $\frac{2}{3}$ % Glycerol and 33 $\frac{1}{3}$ % Sodium Chloride Solution. Pollen Antigens Lederle have always been standardized serologically by the complement fixation test.

LEDERLE ANTITOXIN LABORATORIES
511 FIFTH AVENUE
NEW YORK

MEAD'S

INFANT FEEDING SERVICE TO PHYSICIANS

MEAD'S DEXTRI-MALTOSE No. 1, with modified cow's milk
—for the average baby.

MEAD'S DEXTRI-MALTOSE No. 3, with modified cow's milk
—for the constipated baby.

MEAD'S CASEC for fermentative diarrhoeas.

BABY SCALES of precision.

The following articles secure greater co-operation from mothers:

Special Breast Feeding Pamphlet
Formula Blanks
Adjustable Slide Feeding Tables
File Index Cabinet of Corrective Diets
Diets for Older Children
Instructions for Expectant Mothers
Weight Charts
Growth Chart

Please check off literature you wish sent to you and we will gladly forward it at once, together with samples.

THE DOCTOR'S WAY IS MEAD'S WAY



MEAD JOHNSON & COMPANY

Evansville, Indiana, U. S. A.

LONDON ADDRESS:
40 and 41 Lexington Street
LONDON, W. 1.

CANADIAN ADDRESS:
163 Dufferin Street
TORONTO, ONT.

COURSES IN ROENTGEN DIAGNOSIS

SHORT COURSES in x-ray shadow interpretation in thoracic, abdominal, bone and joint lesions will be available during the summer months to a limited number of graduates in medicine. These courses are designed for the busy physician and surgeon who wishes to increase his knowledge of the x-ray shadow values as an aid to him in diagnosis in his daily practice. (These short courses do *not* include roentgen therapy or x-ray technique).

Write for particulars.

EDW. S. BLAINE, M.D., Roentgenologist

NATIONAL PATHOLOGICAL LABORATORIES

5 South Wabash Avenue, Chicago, Illinois

AUTOMOBILE CASUALTIES AMONG PHYSICIANS

SUCH accidents seem to be on the increase. They are one of the dangers to which the professional man is exposed. When accident insurance can be had for as low as \$13.00 per year, it hardly pays to go unprotected——this is the way Dr. _____ of Kansas reasoned it out.

He had carried a P.C.A. policy for some time. While returning from a professional call he had to cross the tracks of the Santa Fe railroad. A swiftly-moving train struck his car, demolished it, killed the doctor and severely injured his daughter. The widow named as beneficiary was promptly paid \$5,000 by the P.C.A.

Thousands of other doctors have reasoned it out the same way as did this Kansas physician. Maybe you never gave it much thought. However, we are making a special offer now and suggest that you send at once for application blank and become a member of this association.

SPECIAL OFFER

A \$3.00 Membership Fee will now carry each policy, Health or Accident, until September 10, 1923.

**PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION**

304-12 City National Bank Bldg. - - - OMAHA, NEB.

PROGRESS ADDS POWER

Thus does the forward stride lend strength to accomplish work yet to be done; and the tangible facts of our assets prove the value of specialized service already performed.

ASSETS

1922 _____	\$1,401,975
1921 _____	1,139,943
1920 _____	909,982
1919 _____	729,339
1918 _____	615,651
1917 _____	440,497
1916 _____	365,979
1915 _____	300,765
1914 _____	253,520
1913 _____	208,118
1912 _____	172,310
1911 _____	148,836
1910 _____	130,237

Prevention — Defense — Indemnity

Originators of professional protection with an experience and knowledge gained in the successful handling of over 16,000 claims and suits, in over twenty-four years of doing one thing right. Only organized corps of legal specialists in malpractice in existence.

The MEDICAL PROTECTIVE COMPANY
of Fort Wayne, Indiana



UNIVERSITY OF ILLINOIS-URBANA



3 0112 047081010